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The Value of Career and Technical Education in Addressing College and Career Readiness and The Ill-Prepared Workforce: A Study of the Perceptions of Community College Administrators and Instructors; District High School Administrators, and Guidance Counselors, and CTE Department; and a Workforce Employer in North Carolina

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The Value of Career and Technical Education in Addressing College and Career
Readiness and the Ill-Prepared Workforce: A Study of the Perceptions of Community
College Administrators and Instructors; District High School Administrators, and
Guidance Counselors, and CTE Department; and a Workforce Employer in North
Carolina

By
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Approval Page

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Dedication

To my mum and dad for their continuous support and prayers; they have been my biggest cheerleaders and travel buddies. My sister, brother (in-law), and nephew (PB), who were always there to hang out whenever I needed a (coffee) break. My great aunt, who showed me that hard work is never in vain. My aunt-like cousin and twin cousin, for paving the “doctoral” pathway first and being excellent examples of what an educator should look like.

Memory

To my great grandmother who said, “You are smart and you’re going to be somebody.” I did not quite know what she meant, but it made me feel important. To my grandfathers and grandmothers, for nurturing and believing in me. To my uncle Norman and uncle Dwight, for always making me feel wise beyond my years and encouraging me to aim high. To my aunt Ina, for being a beautiful example inside and out.

Abstract

The Value of Career and Technical Education in Addressing College and Career Readiness and The Ill-Prepared Workforce: A Study of the Perceptions of Community College Administrators and Instructors; District High School Administrators, and Guidance Counselors, and CTE Department; and a Workforce Employer in North Carolina. Fitzgerald, Kamina, 2018: Dissertation, Gardner-Webb University, College and Career Readiness/ Workforce/Ill Prepared Workforce/CTE

This study examined the perceptions of community college administrators and instructors; district high school administrators, guidance counselors, and CTE department; and a workforce employer of the value of career and technical education. This study also examined the historical and present perceptions of the district- and state-level officials regarding career and technical education and its ability to address the issue of an ill-prepared workforce and college readiness.

Data were collected from several sources. Quantitative data were collected in the form of questionnaires to administrators, teachers, guidance counselors, and a workforce employer in North Carolina. The quantitative data can be used to determine the needs of the local employers and to gain perceptions of community college administrators and instructors; district high school administrators, guidance counselors, and CTE department; and a workforce employer as they pertain to the preparedness of students to be college and career ready.

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Chapter 1: Introduction

“Today I’m setting a goal for North Carolina to have 67 percent of working adults with education and training beyond high school by 2025,” Governor McCrory (2015, p. 9) said. “If we are going to meet this goal, we must be more efficient in how we educate and train people and find new ways of doing business” (McCrory, 2015, p. 9).

Career and technical education (CTE) currently touches the lives of 14 million students in 1,300 public high schools and 1,700 2-year colleges nationwide. At its core, the mission is to prepare students for success in college and careers by helping them develop the skills, technical knowledge, academic rigor, and real-world experience for high skill, high demand, and highly successful careers (Clagett, 2014).

Nature of Problem

A study conducted by Georgetown University Center on Education and the Workforce revealed that in the next several years, 67% of jobs in North Carolina would require skills beyond a high school diploma. Currently, only 54% of North Carolina’s workforce could meet that need (Carnevale, Smith, & Strohl, 2010). The Georgetown University Center on Education and the Workforce conducted a study providing a detailed forecast of jobs and their education requirements. The study was deemed important because the ability of individuals to connect education and careers had become key to employability and to attaining and maintaining middle class status. Also, despite its growing importance, matching education alternatives with career options has been underdeveloped in education.

During his sixth State of the Union Address, President Obama repeatedly emphasized the importance of access to higher quality education at an early age. He also stated that he was committed to redesigning high schools and partnering them with

colleges and employers who offer the real-world education and hands-on training that will lead to good jobs and careers (Politico Staff, 2014).

At schools that have embraced the college-for-all aspiration, CTE is being as outdated as chalkboards and cursive handwriting, yet approximately one third of low-income students who start college earn bachelor's degrees by their mid-20s; the large majority who drop out are left, in many cases, with thousands of dollars in debt (Carr, 2013). Many graduates were unprepared for college, and many unskilled dropouts find it difficult to successfully implement themselves into society. Per Fischer and Reiss (2010), many of these graduates would have been unprepared for college and many unskilled dropouts would have inflated the state's prisons system. Vocational education historically has been prevalent in European countries such as Finland and Germany but often comes with a stigma in the U.S. that suggests only low-performing and troublemaking students end up in such schools. In Germany, children of middle school age take tests and either move on to apprenticeships or a university preparation route, says James Stone III, director of the National Research Center for Career and Technical Education at the University of Louisville (Bidwell, 2014).

The shortage of skilled tradespeople amounts to a tragic mismatch. These jobs can pay well. Including overtime, welders can make more than \$100,000 a year—and the lack of welders means there is plenty of overtime. A welder will need a high school diploma or GED equivalent, followed by at least 9 months of professional training. Private welding schools run about \$16,000, but many junior colleges with a vocational focus offer training for far less. The shortfall in welders alone runs as high as 240,000, and it will get worse. The American Welding Society predicts it will reach 340,000 by 2024. The average welder is 54 years old, compared with approximately age 40 for the

American workforce. Young people simply are not going into skilled trades like welding (Karlgaard, 2016).

Despite the overwhelming importance of CTE for college and career readiness, CTE teachers are often treated as an afterthought in reforms. Policymakers have paid insufficient attention to developing and supporting CTE teachers as part of wider human capital management reform efforts. CTE teachers who enter the classroom with a wealth of technical knowledge and skill often have little preparation in classroom instruction and need mentoring and professional learning opportunities to fill the gaps (American Institutes for Research, 2014). The most effective CTE programs have well-prepared educators who have internship opportunities for targeted professional development; partnerships with businesses that provide students with authentic work opportunities (both as internships during high school and full-time jobs after graduation); and a strong relationship between the technical fields and academic subjects like English, history, science, and math (Weingarten, 2015).

Many programs of study within CTE prepare students for future careers by offering them opportunities for postsecondary success with or without a bachelor's degree. Employment projections predict that many of the jobs that will be added in the next decade will require some college or postsecondary certification. The same projections predict that far fewer jobs will be available for those with only a high school diploma or GED (Carnevale et al., 2010).

Today's economy demands a better educated workforce than ever before, and jobs in this new economy require more complex knowledge and skills than the jobs of the past. Research from the Center for Education and the Workforce at Georgetown University debunks the often-cited myth that the economy lacks jobs for young people to

fill, finding instead that industries across the economy have created a wealth of new jobs that require workers with appropriate education and training (American Institutes for Research, 2013). The center also projects that nearly two thirds of jobs created in the United States by the year 2018 will require some form of postsecondary education (Carnevale et al., 2010). To meet these workforce needs, President Obama set a goal of ensuring that every American has access to at least 1 year of postsecondary training or higher education to gain the skills needed to rebuild the economy and meet workforce demands (American Institutes for Research, 2013). In a 2009 report titled *The Ill-Prepared U.S. Workforce*, data were obtained by surveying 217 employers to examine corporate practices on training newly hired graduates at the high school level, the 2-year college level, and the 4-year college level. Of the companies surveyed, almost half provided remedial training programs to erase deficiencies among their newly hired entrants in skills they expect them to have when hired; however, many of the companies found that these remedial programs failed in fully accomplishing their purpose (Casner-Lotto, Rosenblum, & Wright, 2009).

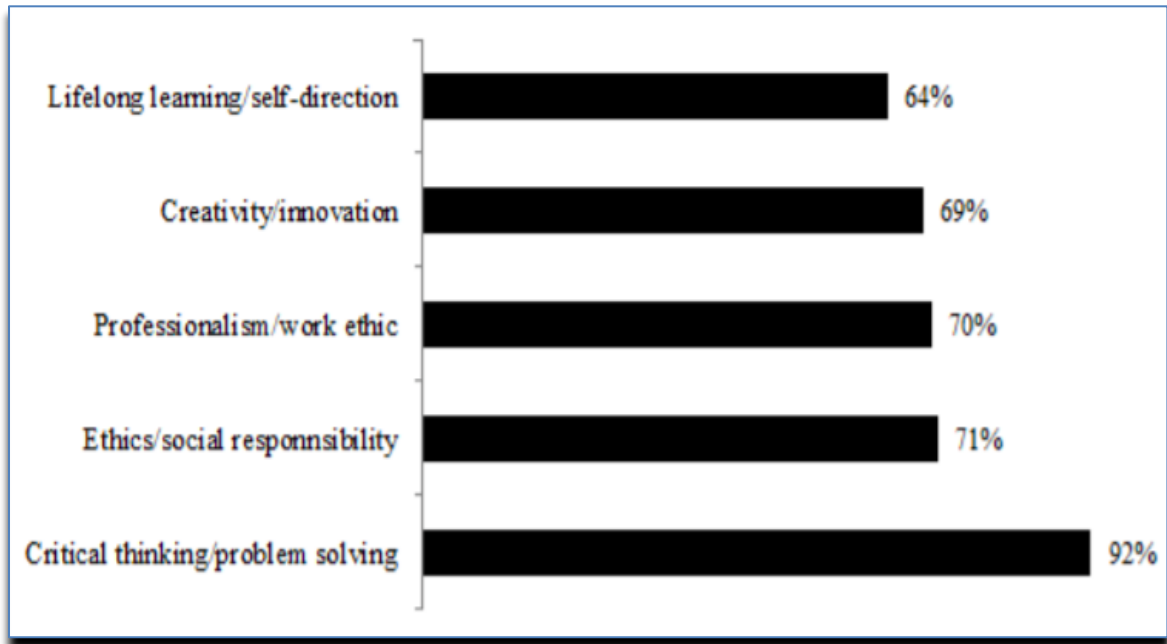


Figure 1. “High Need” Areas for Training (Casner-Lotto et al., 2009).

Note: Percentage of employers who believe that additional training is needed in the perceived high need areas.

Figure 1 illustrates the percentage of employers who believe that additional training is needed in the perceived high need areas (see Appendix A).

The problem studied is that schools are not providing the necessary entry-level skills that are desired by industry that lead to successful employment in the 21st century. Furthermore, this study examined the perceptions of new entrants to the workforce and employers as to the skill level needed to be successful in 21st century industry (Casner-Lotto et al., 2009).

Improving the success of academically underprepared students who need developmental or remedial education is a key challenge facing community colleges today. Many of these students enter college with little awareness of these institutions’ expectations or a clear model for how to make effective decisions about their academic careers. Although there is a growing interest in building programs of study, maintaining

partnerships takes time and resources and can be quite challenging (Rutschow, Cullinan, & Welbeck, 2012).

As reported by Freedman (2016), in the July/August 2016 issue of *The Atlantic*, only one in 20 public high schools offers serious vocational training because of the incorrect perception of a growing pay gap between the college-educated person and the noncollege-educated person. In general, the trend is true, but the skilled-trades jobs are an exception. The average salary for a lawyer in the U.S. is \$135,000, but the median salary is not much over \$110,000. A welder who works hard can make more than a median lawyer, with far less money invested in education. The welder can be earning money by age 18, the lawyer not until 25. A third and controversial reason must do with gender. While women earn 60% of both undergraduate and master's degrees as well as 47% of law degrees and 48% of medical degrees, men still vastly outnumber women in the skilled trades. So, the question is not why Americans are not going into skilled trades, but why are young American men not going into them (Karlgaard, 2016).

Purpose

Clagett (2014) stated that currently, Jobs for the Future is helping five states align their CTE programs of study with their broader career pathways development efforts through partnerships with the U.S. Department of Education's Office of Career, Technical, and Adult Education.

Last century's vocational programs offered old-fashioned woodworking and auto mechanics, providing good skills but also tracking students for jobs right out of high school. 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 postsecondary options (Weingarten, 2015).

Increasing the number of Americans with the education, skills, and training needed for the economy is a multilayered strategy. Some of the steps to achieve this goal include making teaching and learning in secondary schools more rigorous, engaging, and relevant; ensuring that more students are college and career ready; increasing high school graduation rates, especially for lower performing students; providing opportunities for youth to learn about and experience careers; and smoothing the transition to postsecondary success (Balfanz, Bridgeland, Bruce, & Hornig Fox, 2013). While addressing these issues will require significant change across the entire education system, increasing opportunities for students to participate in high-quality CTE is an existing comprehensive strategy that impacts all of them.

Curricula have changed even in woodworking, where today's students learn to read blueprints, make detailed drawings, and use machinery commonly used in a very different woodworking industry. Similarly, automotive careers have adapted to a changing industry where computerized equipment, electronics, and advanced materials are now standard; and students can choose to study fuel cells or electric car design (Weingarten, 2015).

North Carolina has already taken steps to narrow the skill gap by placing career coaches from the community colleges into North Carolina high schools. Governor McCrory (2015) also commissioned the Education Cabinet to ensure North Carolina's education system is preparing students for the 21st century workforce through CTE programs.

Alex Rankin, Chair of the Skills Gap Task Force, outlined recommendations the

task force developed and asked for the adoption of the recommendations by the Commission. His task force found that their conclusions mirrored those of the main report. He outlined recommendations his task force developed following their research and input from business services representatives and workforce boards. Some of the recommendations included collaboration between chambers of commerce and North Carolina community colleges. The recommendation also mentioned that local teams will meet with 10 businesses in each of the 100 counties to ascertain their needs, gather best practices, and learn about how the workforce system is working for them. The meetings will provide an opportunity to figure out what is going right and what needs improvement. The Commission unanimously adopted the recommendations by the Skills Gap Task Force for the 2014-2016 Strategic Action Plan (North Carolina Commission on Workforce Development, 2014).

High-quality CTE addresses the goals of college and career readiness and provides learning options that are appealing for students who might otherwise be at risk of leaving high school. High-quality CTE programs and pathways ensure that coursework is simultaneously aligned to rigorous academic standards and postsecondary expectations and informed by and built to address the skills needed in specific career pathways. CTE pathways and programs applied contextual learning to help students see the relevance of what they are learning and its connection to career opportunities and life goals. These pathways and programs also can provide innovative options for supporting students with different learning styles (American Institutes for Research, 2013). The evolution of CTE is making it a more popular and viable option for students of all abilities.

High schools known as career and technical schools or vocational schools are

increasing their presence throughout the country, at a time when support for CTE is picking up steam as an alternative route to the middle class. There are roughly 90 career and technology schools and centers in Pennsylvania, at least 70 vocational high schools each in Ohio and Massachusetts, and similar numbers in other states (Bidwell, 2014).

Per the National Center for Education Statistics (2011), 90% of high school graduates have earned some CTE credits. Furthermore, research on high-quality CTE programs and pathways shows that these programs reduce dropout rates; encourage participation in postsecondary education; and enable students to earn dual enrollment credits, industry-endorsed certificates, and technical endorsements on high school diplomas. CTE pathways have the potential to engage many more students and increase high school graduation rates and postsecondary success. With a CTE program, a student who might otherwise have wondered about the value of school can see a direct connection between graduation and a good job. In the United States, three of four students graduate from high school on time. For those in CTE programs, nine of 10 students graduate on time, with seven of every 10 students enrolling in postsecondary education. Since 1993, the research group Manpower Demonstration Research Corporation (MDRC) has compared earnings of young men who graduated from career academies and traditional high schools. Eight years out of high school, career academy graduates earn, on average, 16% more than their traditional high school peers (Weingarten, 2015).

Even President Barack Obama has called for more robust job training at both the high school and college levels, saying it is not enough for students to get an education past high school – they also must have the skills needed for in-demand jobs. The president in April 2014 announced more than \$100 million in awards to redesign high

schools to better prepare students for college or specific career industries such as healthcare, technology, and engineering (Bidwell, 2014). The purpose of this research was to investigate the value of the CTE program in addressing the issue of students being ill-prepared for college and career readiness.

Specific Research Questions

To align with the purpose of this study, it was the intent to answer the following questions, which explore the perceptions of participants regarding CTE's effectiveness in contributing to career and college readiness.

1. What are the identifiable needs of high school graduates as they relate to job readiness?
2. Based on the perceptions of administrators, teachers, and guidance counselors, how well does the CTE program prepare students for college and career readiness?
3. What is the overall effectiveness of CTE?

Theoretical Framework

The established theoretical framework that guides CTE is based primarily on the work of David Snedden and Charles Prosser from the early 1900s. David Snedden served as the first State Commissioner of Education in Massachusetts with Charles Prosser as Deputy for Vocational Education. The two found that the public schools did not furnish the skills and industrial intelligence that students needed to participate effectively in industry and life. To deliver the skilled and intelligent workers society needed during that time, Snedden and Prosser advocated the spread of the project method of teaching and the expansion of the common school system by establishing vocational schools for *common* people (Drost, 1967).

Identifying the current perceptions of CTE is of great importance. In addition, it was important to examine the attitudes and the perceptions of former students, especially those for whom many of the school improvement initiatives were being undertaken (Betheil, 2009).

Career and technical programs have a variety of experiences to offer students. The intent of this study was to contribute to considerations of school program and course offerings, especially those in the career technology area for students in Grades 9-12. It is intended that the research results will have an impact on the academic and career planning advisement for students prior to and during high school. Data gathered from this study could lend direction for strengthening career-related intervention programs for students at risk of dropping out of high school. Providing workplace or “real-world” examples to accompany theoretical concepts adds deeper meaning to lessons for students. This research expects to lead to an emphasis on instruction that is performance based, allowing students to experience learning that has practical meaning beyond printed lessons and text (Schimpf, 2011). Preparing students for college seems to permeate pockets of the world of education; however, formal college after high school is not always the most acceptable choice for all students. In fact, one executive director of the Association for Career and Technical Education (ACTE) stated that only about 25% of careers need a college degree (Karp, 2009). Through this study, schools will approach career and academic study as equally important for all students. Additionally, this research will provide additional support for the removal of the stigma associated with career technology study, ending tracking classes of students and strengthening the collaboration between college and career readiness for all participants.

Definitions of Key Terms

ACTE. ACTE is a national education association dedicated to preparing youth and adults for careers through CTE programs at the secondary, postsecondary, and adult levels. The ACTE website includes a CTE Research Clearinghouse, state-by-state profiles of CTE, and advocacy and policy guidance as well as guidance for practice. Resources are available to help CTE educators pursue continuing education, improve instruction, and develop new programs, including through the site's Lesson Plan Library: www.acteonline.org.

CTE. The type of education that integrated academics with vocational skills to prepare students for the workforce or postsecondary educational pursuits (ACTE, 2010).

Skilled labor. This term refers to the specialized part of the labor force with advanced education. Examples of skilled labor include physicians, plumbers, attorneys, engineers, scientists, builders, architects, and professors (Encyclopedia, 2017).

Soft skills. A combination of people skills, social skills, communication skills, character traits, attitudes, career attributes, social intelligence, and emotional intelligence quotients among others that enable people to navigate their environment, work well with others, perform well, and achieve their goals with complementing hard skills (Carney, Lippman, Moore, & Ryberg, 2015).

Twenty-first century curriculum. This term refers to a curriculum conceptualized to encompass the use of virtual technology, computer-assisted instruction, computer simulation, and web-based learning integrated with traditional vocational educational courses to align the curriculum with state and federal technology standards (Beach, Anson, Breuch, & Swiss, 2009).

Vocational education. Vocational education referred to a type of education once

defined as instruction intended to equip persons for industrial or commercial occupations. It was renamed CTE. The two terms are often used interchangeably (ACTE, 2010).

Workforce. The group of people who work for organization or business. The number of people in a country or area who are available for work (Workforce, 2014).

Summary

CTE in high schools has been in the spotlight in recent years. Business and industry see it as a long overdue focus on preparing students for the world of work (Sanchez, 2016). These employment opportunities, however, usually require knowledge and skills that unemployed workers either do not possess or have not developed because they were not needed in their previous positions. These skills include the ability to operate complex computerized machinery, follow complex blueprints, and demonstrate a proficiency in math. This creates a mismatch between the skills of many individuals in low-wage jobs and the skills required for these new employment opportunities, making it difficult for underemployed workers to advance (Rich, 2010). Educators say that CTE, once called vocational education, is an alternative path for high school graduates who do not plan to go to college, at least not right away (Sanchez, 2016).

Today's economy demands a better educated workforce than ever before, and jobs in this new economy require more complex knowledge and skills than the jobs of the past (American Institutes for Research, 2013). Many programs of study within CTE prepare students for future careers by offering them opportunities for postsecondary success with or without a bachelor's degree (Carnevale et al., 2010). Unfortunately, when many people think of CTE, this is not the image they have in mind. CTE can carry a stigma because of its roots in factories and its association with tracking students from low-

income households and students of color into less rigorous academic pathways; but just as the factory model of education is anachronistic, so too are such conceptions of career-oriented schooling. CTE has proven to be a fruitful pathway for student success (Bradley, 2016).

Chapter 2: Review of Related Literature

Introduction

The purpose of this study was to examine the perceptions of CTE programs to demonstrate skills that are taught in order to sufficiently meet the needs of 21st century college and career readiness. By examining this topic, the researcher has added to the current body of knowledge of CTE and the characteristics these programs possess.

A major concern of many Americans is the ill-prepared workforce and college readiness of high school students. Compared to students in other countries, the students from the United States appear to be underachievers. Per a report published by Pearson in January 2015, the United States places 14th in the world in educational performance (Casner-Lotto et al., 2009).

This chapter reviewed previous literature to align the study, validated the research problem, and highlighted the questions that were explored. Multiple sources were utilized such as empirical sources (research reports, journal articles, dissertations, thesis, books, governmental and educational websites). Per ACTE, careers in the 21st century require various levels of education from high school, postsecondary certificates, and 2- to 4-year college degrees. Strengthening those educational requirements is a part of education reform and focus in our nation today.

Theoretical Frameworks and Their Implications

Various theories informing the theoretical frameworks were introduced earlier. A more in-depth explanation of those theories was provided in the literature review. Taken together, the guiding theories revealed (a) the history of CTE, (b) the ill-prepared workforce, (c) CTE's role in college and career readiness, (d) work-based learning, (e) research question, and (f) summary and conclusion.

Vocational education (CTE) holds much promise for many high school students who may otherwise not do as well with the traditional high school curriculum. Some examples of these benefits include students being more productive, contributory to society, and capable of caring for themselves and possibly their families. In many cases, this is something that a traditional high school education without any vocational training simply cannot manage (Wilson, 2010).

The History of CTE

The first formalized vocational education system in America can be traced to apprenticeship agreements of colonial times. The first education law passed in America, the Old Deluder Satan Act of the Massachusetts Bay Colony of 1647, set specific requirements for masters to teach apprentices academic as well as vocational skills. During the Colonial Period, the colonies frequently cared for orphans, poor children, and delinquents by indenturing them to serve apprenticeships. As apprenticeships declined, other institutions were created to care for these youngsters. By the mid-1880s, vocational education in the form of industrial education was synonymous with institutional programs for these youth. The children of defeated Native American leaders were sent to the Carlisle Pennsylvania Indian School, and the curriculum was job training (Houghton, 2014).

The Morrill Act was enacted by the U.S. Congress in 1862. The Morrill Act is also referred to as the Land Grant College Act. The Morrill Act served as an incentive to higher education in America by providing vocational training regardless of class or social economic standing. The Morrill Act also established educational guidelines in each state that was responsible for educating students in the fields of agriculture, home economics, mechanical arts, and other professions that were germane at the time (Gordon, 2008).

After the Civil War, Samuel Chapman Armstrong, the founder of Hampton Institute and the ideological father of Africa-American vocational education, tried to address the racial aspects of the social and economic relations between the former slaves and the White South. His vocational education programs emphasized the need for African-Americans to be good, subservient laborers. The prominent educator, Booker T. Washington, Armstrong's prize student, took the same values and philosophical views as his former mentor. Washington held firmly to his beliefs that vocational education was the ideal route for most African-Americans. W. E. B. DuBois, also an influential African-American educator, strongly objected to Washington's educational program. He accused Washington of teaching lessons of work and money, which potentially encouraged African-Americans to forget about the highest aims of life (Johnson, 1996).

The Smith-Hughes Act of 1917 made \$1.7 million available for secondary-level educational programs (Gordon, 2008). The Smith-Hughes Act of 1917 shed significant light on the need for legislation to take a proactive stance on vocational and technical education. The Smith-Hughes Act of 1917 contained specific elements that contributed to the isolation of vocational education from other parts of the comprehensive high school program. To receive federal funds under Smith-Hughes, each state was required to establish a state board for vocational education. The primary objective was to offer youth an alternative to the general curriculum that existed at that period (Gordon, 2008).

By the 1960s, the vocational education system had been firmly established, and Congress recognized the need for a new focus. Thus, the 1963 Vocational Education Act, while still supporting the separate system approach by funding the construction of area vocational schools, broadened the definition of vocational education to include occupational programs in comprehensive high schools such as business and commerce.

The act also included the improvement of vocational education programs and the provision of programs and services for disadvantaged and disabled students (Gordon, 2008).

The Carl D. Perkins Vocational Education Act of 1984 continued the belief of Congress that effective vocational education programs are essential to the nation's future as a free and democratic society. The act had two interrelated goals, one economic and one social. The economic goal was to improve the skills of the labor force and prepare adults for job opportunities. This was a long-standing goal that is traceable to the Smith-Hughes Act. The social goal was to provide equal opportunities for adults in vocational education. In late summer of 1990, Congress passed the Carl D. Perkins Vocational and Applied Technology Education Act, which amended and extended the Carl D. Perkins Vocational Act of 1984 (Hyslop, 2000).

Educational essentialism is an educational philosophy whose belief is that children should learn the traditional basic subjects thoroughly. The essentialists envisioned education as a system producing workers who were basically hands-on and brains-off automatons (robot like individuals) trained to meet the needs of industry (Turnipseed, 2008). Contrary to essentialist philosophy, Dewey's experiential education philosophy employed an approach wherein students developed physical coordination as they advanced their intellectual capacity. Dewey's pragmatic approach integrated academics and vocational education; his approach also informed the later formulated constructivist approach to teaching and learning (Turnipseed, 2008). The application of constructivist theory in teaching enabled students to see the relevance and real-world applications of in-school learning (Turnipseed, 2008). All those demands could be met in vocational education schools by teachers employing contextual teaching and learning

theory (CT&L), which was linked to Dewey's pragmatic approach by way of constructivism (Turnipseed, 2008).

The Ill-Prepared Workforce

In addition to unemployed workers, there are many workers employed in positions that pay low wages without opportunity to advance because of their limited workplace skills. It may seem logical to assume that there are no jobs available, but there are still many employment opportunities in the job market for workers with the right skill set. The current issue with long-term unemployment stems from a widespread mismatch between unemployed worker skills and the current needs of employers. Unemployed and underemployed workers generally do not have the skills or knowledge to find competitive, full-time employment paying family-sustaining wages and offering opportunities for advancement (ACTE, 2007). While some companies are downsizing, many others are expanding. Many of the jobs available now require some type of education or training beyond high school. This is a trend that is expected to continue, as it is projected by 2018, 63% of all jobs will require some form of postsecondary education (Carnevale et al., 2010).

The "skills gap" is well documented in Wagner's (2008) book, *The Global Achievement Gap*. Wagner identified seven skills that are essential for success in the workforce. This information was obtained through surveying and interviewing CEOs and representatives of major companies in the United States. Through Wagner's research, he found that many new entry level workers lack the necessary soft skills. Soft skills are the interpersonal skills and character traits that distinguishes a person's relationships with other people. In the workplace, soft skills are considered a complement to hard skills, which refer to a person's knowledge and occupational skills (Wagner, 2008).

Employers list the need for workers who can communicate, solve problems, think critically, and display a good attitude. These are skills that can be taught in high school courses to students. Skill development is not only taught in mathematical and reading literacy but also in career and technical literacy. Further training in work place skills are often needed beyond high school. The number of students not being prepared properly in high school and not pursuing a postsecondary education has caused a shortage of qualified workers in the labor force, which is having an adverse effect on the economy (Casner-Lotto et al., 2009).

One of the variables that has had a major impact on the economy is a growing workforce that lacks the skills needed to meet the needs of today's global economy. The primary goal of education is to prepare young people to lead productive lives as adults, so they can contribute to society; meaning all students should be given a foundation of numeracy, literacy, and critical-thinking skills to become lifelong learners. For over a century, the United States led the world in equipping its young people with the education they need to succeed (ACTE, 2007).

The first essential skill identified by Wagner (2008) is critical thinking and problem-solving. The nature of today's workforce requires entrants to take information and process it to solve a problem. In many organizations, the hierarchy has been flattened. Work is no longer defined by one's specialty area. It is defined by the task or problem you and your team are trying to solve or the end goal you want to accomplish. To accomplish the task at hand requires one to think openly and deeply (Wagner, 2008).

The second essential skill is collaboration across networks and leading by influence. With the globalization of the economy in the United States, it is essential for individuals to work with networks of people from different cultures. All new entrants in

the workforce need to understand and appreciate diverse cultures in the 21st century.

The third essential skill is agility and adaptability. People need to be able to adapt to the changing work environment. The intensifying rate of change in the world, the overwhelming amount of data, and the increasing complexity of problems that individuals and teams face every day present new challenges for everyone in the organization (Wagner, 2008).

The fourth essential skill is initiative and entrepreneurialism. Leaders today want to see individuals take more initiative and even be entrepreneurial in terms of the ways they seek out new opportunities, ideas, and strategies for improvement. During the numerous interviews Wagner (2008) conducted, the importance of individuals and teams being able to take the initiative to solve a problem or come up with a better solution was frequently mentioned.

The fifth essential skill is effective oral and written communication. The ability to express one's views clearly in a democracy and to communicate effectively across cultures is an important citizenship skill as well. Employers are seeking individuals who can communicate concisely and effectively (Wagner, 2008).

The sixth essential skill is accessing and analyzing information. Employees in the 21st century must manage an astronomical amount of information flowing into their work lives daily. If individuals are not prepared to manage the flow of information, they will not know how to properly analyze the information to come up with sound decisions.

The seventh and final essential skill is curiosity and imagination. Creativity and innovation are key factors not only in solving problems but also in developing new or improved products and services. The nature of today's workforce requires employees to "think outside of the box" (Wagner, 2008).

The landscape of the U.S. economy and workforce had changed over the years. In 1973, nearly one third of the nation's 91 million workers were high school dropouts, while another 40% had not progressed beyond a high school degree; thus, people with a high school education or less made up 72% of the nation's workforce. In an economy in which manufacturing was still dominant, it was possible for those with less education but a strong work ethic to earn a middle-class wage, as 60% of high school graduates did. By 2007, this picture had changed beyond recognition. While the workforce had exploded nearly 70% to 154 million workers, those with a high school education or less had shrunk to just 41% of the workforce; thus, over the past third of a century, all the net job growth in America had been generated by positions that required at least some postsecondary education. Workers with at least some college ballooned to 59% of the workforce, from just 28% in 1973. Over the same period, many high school dropouts and those with no more than a high school degree had fallen out of the middle class. On the other hand, those who attended college, and especially those with bachelor and advanced degrees, maintained their position (Pathways to Prosperity Project, 2011).

The recent generation entering the workforce is sorely lacking in much-needed workplace skills, both basic academic and more advanced "applied" skills, per a recent report, *Are They Really Ready to Work* (Barrington & Casner-Lotto, 2006). The report is based on a survey of 431 human resources officials that was conducted in April and May 2006 by The Conference Board, Corporate Voices for Working Families, the Partnership for 21st Century Skills and the Society for Human Resource Management. The objective was to examine employer views on the readiness of new entrants to the U.S. workforce: recently hired graduates from high schools, 2-year colleges or technical schools, and 4-year colleges.

While “the three R’s” are still fundamental to every employee's ability to do the job, applied skills such as teamwork, critical thinking, and communication are essential for success at work. The survey also found that too many new entrants to the workforce are not adequately prepared in these important skills. Nearly three quarters of survey participants (70%) cite deficiencies among incoming high school graduates in applied skills, such as professionalism and work ethic, defined as demonstrating personal accountability and effective work habits (Facility Executive, 2006).

Unemployment rates have skyrocketed because of U.S. economic conditions, enhanced by the loss of jobs to globalization and increased use of technology to produce goods that were previously produced manually. In addition to unemployed workers, there are many workers who are employed in positions paying low wages with no opportunity for advancement because they possess limited or outdated skills. With record high unemployment rates, it may seem logical to assume that there are no jobs available. There are still many employment opportunities in the job market for workers with the right skill set. The current long-term unemployment trend stems from a widespread mismatch between unemployed worker skills and the current needs of employers. Unemployed and underemployed workers generally do not have the skills or knowledge to find competitive, full-time employment paying family-sustaining wages and offering opportunities for advancement (ACTE, 2007).

While some industries are downsizing, many others are expanding. The number of job openings nationally increased by 30% between July 2009 and July 2010 (U.S. Department of Labor, Bureau of Labor Statistics, 2010). These employment opportunities usually require knowledge and skills that unemployed workers either do not possess or have not developed because they were not needed in their previous positions.

There is also a mismatch between the skills of many individuals in low-wage jobs and the skills required for these new employment opportunities, making it difficult for underemployed workers to advance.

The Ill-Prepared Student

The economic value attached to completion of education is well documented. Census data indicate that in 2009, adults ages 25 and older who had dropped out of school or had not acquired a GED earned up to 41% less than those who had completed high school or had GEDs. The gap widened when comparing the incomes of high school dropouts with people with bachelor's degrees. In 2009, male and female college graduates earned \$57,714 and \$39,263 respectively, while male and female high school dropouts earned \$21,629 respectively. But the value of a high school education cannot be measured in dollars alone. Among 16- to 24-year old's who were incarcerated, only one in 1,000 had a bachelor's degree, while 6.3% were high school dropouts who did not have a GED (McLaughlin, Palma, & Sum, 2009).

When young people drop out of the educational system, the likely result is that they drop in to other systems such as the criminal justice and welfare systems. Research shows that dropouts are more likely to be "unemployed, living in poverty, receiving public assistance, in prison, unhealthy, divorced, and ultimately single parents with children who drop out from high school themselves" (Bridgeland, DiIulio, & Morison, 2006, p. 36).

The reason students do not complete their education is because most are unprepared and need remedial education. Using the National Educational Longitudinal Survey, researchers concluded that about 11% of high school graduates enrolled in 4-year colleges were not qualified to attend or only marginally so, while another 13% were

minimally qualified. Many students are unaware of the importance of gaining skills needed for college and career success (Berkner & Chavez, 1997).

CTE's Role in College and Career Readiness

CTE is receiving renewed attention as a strategy for increasing school engagement and rigor as policymakers grapple with these complex challenges. At the forefront of the movement to improve America's high schools and ensure all students are prepared for college and careers is the American Diploma Project (ADP). There currently are 32 states in the ADP network, each dedicated to developing and implementing a college and career readiness agenda. These states are working to develop a public policy structure to ensure all students complete high school possessing the knowledge and skills they need to succeed in college courses or entry-level jobs with opportunities for advancement through skilled employment. At the same time, all 50 states are implementing requirements of the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Public Law 109-270), which was passed by the U.S. Congress and signed into law by President George W. Bush in August 2006 (Meeder, 2008).

Students who are college and career ready can qualify and succeed in entry-level careers and college courses leading to a baccalaureate or certificate; however, not all students require the same levels of proficiency in every area. It is the student's career aspirations that influence the exact knowledge and skills needed to be ready for postsecondary studies. The goal of ensuring that all students graduate from high school college and career ready has spread in every state across the nation. While math and English skills are important, effective CTE programs have an inherent advantage because they are modeled more closely after real careers that students may one day enter. Career

and technical courses are embedded in careers that lead to family-supporting wages and benefits. The link between academic and technical preparation for careers intensifies as most middle and high skills jobs require some education and training beyond high school.

To be economically self-sufficient, youth need some education beyond high school. Nonetheless, persisting in college and earning a credential is difficult for many students. To facilitate student transitions into college and careers, policymakers and practitioners are attempting to find ways of connecting formerly separate facets of the education system. One such effort is the establishment of P-16 (preschool through postsecondary) commissions in 30 states, whose goal is to reconceptualize education as a pathway spanning high school, college, and the workplace. Attention is also being paid to the integration of academic and occupational preparation to increase the rigor of CTE and to make stronger connections to high-wage, high-growth occupations (Hughes & Karp, 2006)

In fall 2002, the Office of Vocational and Adult Education, U.S. Department of Education, sponsored the College and Career Transitions Initiative (CCTI). It renews efforts toward the seamless transition from secondary to postsecondary school by coordinating academically rigorous study with career and technical courses across education sectors. The goal of the initiative is to help community colleges, working with high schools and business partners, create career pathways that lead from high school to 2- and 4-year degrees and technical careers. As defined by CCTI, a career pathway is an articulated sequence of rigorous academic and career courses, beginning in the ninth grade and leading to an associate degree, and/or an industry-recognized certificate or licensure, and/or a baccalaureate degree and beyond. The pathway is developed, implemented, and maintained by partnerships among secondary and postsecondary

education and employers. CCTI reflects the national priorities of increased rigor and educational attainment by establishing five very specific long-term outcomes goals: (a) decreased need for remediation at the postsecondary level; (b) increased enrollment and persistence in postsecondary education; (c) increased academic and skill achievement at the secondary and postsecondary levels; (d) increased attainment of postsecondary degrees, certificates, or other recognized credentials; and (e) increased entry into employment or further education (Hughes & Karp, 2006).

Because of diminishing workplace skills, an interest in CTE transition programs is growing in the United States. These programs, also known as career pathway programs, are meant to provide students with the educational support needed to transition from secondary to postsecondary education leading to family sustaining careers.

Career pathway programs are typically offered by high schools and community colleges and sometimes employer and community-based partners also. The curriculum is expected to be articulated and progressively advanced from the secondary to the postsecondary level, integrating CTE and academic coursework. Some CTE transition programs provide secondary students with the opportunity to obtain college credit prior to high school graduation and college entry and to transfer their 2-year occupational degree to a university (Hughes & Karp, 2006).

Jefferson County Public Schools in Louisville, Kentucky succeeded in getting the district and the community to focus on preparing students to be both career ready and college ready. In 2008, the Jefferson school system convened a community task force to examine the needs of the district and to make recommendations. The group decided that the system was obsolete. To address the problem, leaders combined the vision and mission of the district with the economic goals of local business and industry and the

global economy. Fifteen of the 21 high schools in the district were selected to be redesigned around a career theme matching the economic goals of business and industry. These schools were transformed from schools teaching an out-of-date model that prepared some students for mostly manufacturing and factory jobs to schools that expect every student to study a career major along with a rigorous academic core that will prepare them for college and careers. In making the change, the task force declared that there is no distinction between work ready and college ready. The critical thing is for students to be engaged in meaningful learning that connects to their lives (Southern Regional Education Board, 2011).

The students who complete CTE pathways receive training in a variety of areas that are intended to prepare them for life after high school. Many of the program areas offer dual-credit opportunities with local colleges, and the students may receive industry certification by completing certain requirements within the program. One of the goals of CTE in the state is to provide a seamless transition for students between high school and college. Dual-credit courses that are articulated with technical colleges and 4-year universities provide this seamless transition. Dual-credit courses provide the student with the opportunity to earn college credit while receiving units toward high school graduation.

Industry certifications play an important part in CTE. Industry certifications show that students have acquired the skills needed in specific areas (Southern Regional Education Board, 2008). The table contains a list of courses offered at the Career and Technology Center, industry certification offered, and if the program offers dual-credit opportunities (see Appendix B).

Table

Program Overview for Career and Technology Center

Program	Industry Certification	Dual Credit Offered
Agriculture	No	Yes
Automotive Technology	No	No
Business Education	No	No
Carpentry	National Center for Construction and Education Research	Yes
Cosmetology	South Carolina Cosmetology License	No
Culinary Arts	ServeSafe	No
Drafting	No	Yes
Electricity	National Center for Construction and Education Research	No
Engineering	No	No
Graphic Communications	No	No
Health Science	First Aid; CPR; AED; National Health Science Assessment	Yes
Machine Technology	OSHA	Yes
Marketing	No	No
Mechatronics	No	No
Sports Medicine	First Aid; CPR; AED; National Health Science Assessment	No
Welding Technology	National Center for Construction and Education Research	Yes

Note: list of courses offered at the Career and Technology Center, industry certification offered, and if the program offers dual-credit opportunities.

CTE Programs that Work: Career Academies

Requiring all students to have an academic, a career/technical, or a combined focus in high school gives many students a reason for coming to school. School leaders at high-achieving high schools have made it a priority that every student will choose a subject area for in-depth study. Granite High School in Oklahoma uses career/technical concentrations to focus students on learning and hold potential dropouts in school. School leaders believe the career/technical requirement helped increase the school's college-going rate to 64%, compared with 57% statewide. Also, students who graduate from Granite High School have a better completion rate at Oklahoma colleges than students who graduate from other high schools in the state (Bottoms, Presson, & Han, 2005).

Relevance

One approach showing great potential for boosting the success rate of students is

to organize the high school into small learning communities or career academies that blend academic and CTE studies (Southern Regional Education Board, 2011). Career academies were developed more than 30 years ago as a dropout prevention strategy and targeted youth considered most at risk of dropping out of high school. Career academies have broadened the kinds of students they serve, consistent with efforts to integrate rigorous academic curricula with career themes and to attract students who are preparing for postsecondary education. Career academies operate within a larger high school and are guided by a career theme such as healthcare, finance, technology, communications, and public service. Career academies also partner with local employers who provide internship opportunities and mentoring to students, contribute resources, participate in special events, and serve on academy advisory boards.

Akins High School in Austin, Texas is a large urban school that has created a small-school environment for its 2,700 students by organizing into six career academies and maintaining a robust advisory program. Seventy percent of Akins students are Hispanic, and 62% are economically disadvantaged. Students choose an academy based on their interests and goals and are assigned alphabetically to an advisory group of 15 students led by a teacher who remains with the students throughout their 4 years of high school. This arrangement gives students several common points of interest. As members of the same academy, students tend to have career goals in related fields and are taking similar courses to complete an academy-related major. All core academic classes in English/language arts, mathematics, science, and social studies are taught by teachers assigned to specific academies, so students in advisory groups are likely to take many of their classes together or at least with the same teachers. In 2003, only 18% of Texas Assessment of Knowledge and Skills exams at Akins resulted in a proficient score. That

percentage has risen every year since, climbing to 57% in 2009. This improvement of 39 percentage points exceeded the statewide gain of 27 percentage points during the same period. Newsweek Magazine ranked Akins High School among the top 6% of high schools in the nation in 2009-2010 (Southern Regional Education Board, 2011).

Eastern Technical High School, part of Baltimore County, Maryland public schools, is a CTE high school where students gain the knowledge and skills they need to pursue a career in one of 10 career pathways while also taking challenging academic courses at the gifted and talented, honors, and AP levels. Students are fully prepared for both higher education and the workforce. The school is a model for practices that achieve excellent results. In 1992, Eastern Technical High School underwent a major transformation. Programs that were not attuned to the current and future labor market were phased out, while programs were introduced that met the needs of the marketplace. The career majors included highly academic programs such as engineering, information technology, allied health, teaching, law-related careers, and interactive media production. High school students in Maryland must fulfill the requirements of a completer program to receive a diploma. The driving forces behind the success of Eastern Technical High School are the relationships that teachers have established with the students and the relevance in what the students learn (Evans & Cook, 2011).

CTE Programs that Work: Work-Based Learning

One aspect of work-based learning that can be used as a tool for dropout prevention is service learning. Service learning connects community service with the academic curriculum and is usually done through Career and Technical Student Organizations (CTSOs). Effective service learning programs challenge students to reflect on their service experiences through such activities as group discussions and journaling.

Typical service learning projects include writing children's books about historical events and then reading them to younger students or painting a mural for the school depicting themes connected to student learning in science class. Such activities not only promote academic learning but also can help develop student leadership skills, teach them how to be involved citizens, and give them practice in working with others. In the report, *Engaged for Success: Service Learning as a Tool for High School Dropout Prevention*, Bridgeland, Dilulio, and Wulsin (2008) discussed the potential of service learning as a dropout prevention measure. The researchers concluded that students saw the benefits of service learning in promoting high school graduation. Sixty-four percent said that service learning could have a big effect on keeping students from dropping out. When asked whether their own feelings about school would be more positive if they had more classes that incorporated service learning, 82% of respondents said yes (Perkins-Gough, 2009).

Seventy-five percent of students at high-achieving, suburban high schools, compared with 67% at low-achieving schools with similar demographics, receive quality work-site learning experiences. At the high-achieving schools, 75% of students participating in work-based learning had work-site mentors to teach them how to do the work. This compares with 65% of students who had work-site mentors at low-achieving schools. Furthermore, 42% of students engaged in work-based learning at high-achieving schools said their employers encouraged them weekly to develop good work habits. This was the case with only 31% of work-based learning students at low-achieving schools.

Americus High School in Americus, Georgia uses a state law passed more than a decade ago to provide a youth apprenticeship program designed to prepare students for the world of work and further learning. To qualify for the program, students must have a career concentration, a 2.5 grade point average, good attendance, and a clean disciplinary

record. Forty-seven of the 50 students in the school's Health and Medical Career Academy participated in the youth apprenticeship program in 2003-2004. School leaders tell middle grades students about the program, so they will be motivated to make good grades and meet other program requirements 3 years later (Bottoms et al., 2005).

College Readiness: Early-College and Dual-Credit

Preparing students to be college and career ready is one of the main priorities of CTE. Some school districts have supported this mission by providing career centers, early college high schools, and dual credit programs.

Guilford County, North Carolina schools have seen substantial success using the early college model. Four of the schools, which allow students to earn college credits while still in high school, boasted 100% graduation rates for 2011. The other three schools had rates higher than 90%. Guilford County has the largest concentration of early college programs in North Carolina. Guilford County has increased high school completion rates overall, from 74% in 2006 to 84.5% in 2011. The graduation rate for all high schools in North Carolina was 77.9% and 91.2% for early college models (Adams, 2012).

The odds of a student's success are high if they are enrolled in an early college or dual-enrollment program. Early colleges are small schools where students can earn a high school diploma with the potential to earn an associate degree or 2 years of college credit towards a bachelor's degree in 5 years or less. This is accomplished by offering students a higher-level curriculum along with college courses through the partnering college or university. Early college is a strategy for students who may not be well served by traditional high schools; they provide a seamless transition from high school to college, innovative curriculum, and create a small nurturing environment. The initiative

also seeks to change the face of higher education by targeting those students traditionally underrepresented on college campuses. Small student-teacher ratio is one of the appeals of early college. The ideal class size is between 15 to 20 students to one teacher. In this environment, students can receive personal attention and establish positive relationships with their teachers and support staff. Students also can receive college credit for free or minimal cost since they are still in high school.

Summary and Conclusion

CTE courses usually expose students to various career fields which essentially allows them to pursue their interest and remain engaged. While all academic preparation can assist in making career decisions, CTE programs particularly point students in a more specific direction. CTE allows students to understand workplace connections and how they can relate that to everyday living. It also allows them to visualize what their lives will be like once they enter college or the workforce. Also, the relationships created by students and teachers provide the mentorship necessary for students to have continued success during their educational and career future. The research available about CTE reveals that participation in these programs has a lasting effect on students becoming more college and career ready which will in turn address the issue of the increasing number of ill-prepared workers.

Chapter 3: Methodology

The purpose of this study was to examine the perception of CTE programs to determine if the skills that are taught in these programs are sufficient to meet the needs of 21st century college and career readiness and the ill-prepared workforce. Additionally, this study solicited opinionated feedback about the effectiveness of the CTE program in eastern North Carolina.

Background/Problem

A study conducted by Georgetown University Center on Education and the Workforce revealed that in the next several years, 67% of jobs in North Carolina would require skills beyond a high school diploma. Currently, only 54% of North Carolina's workforce could meet that need (Carnevale et al., 2010). The Georgetown University Center on Education and the Workforce conducted a study providing a detailed forecast of jobs and their education requirements. The study was deemed important because the ability of individuals to connect education and careers had become key to employability and to attaining and maintaining middle class status. Also, despite its growing importance, matching education alternatives with career options has been underdeveloped in education.

Research of the literature has documented that a skills gap exists between new entrants into the workforce and the qualifications that are required of existing positions. In 2013, the Organization for Economic Cooperation and Development published *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*. The report suggested that the skill level of the workforce in United States has fallen dangerously behind other nations. The report was based on assessments of literacy, math skills, problem-solving, and using information technology. The assessments were given to approximately

160,000 people ages 16 to 65 in the 22 advanced nations of the Organization for Economic Cooperation and Development. Fewer than 12% of the 5,000 assessed Americans scored in the top two levels of the literacy test. The United States was about average in terms of problem-solving with computers. The U.S.'s biggest deficits were in math (Porter, 2013). The selection process of the participants involved in this study was not disclosed, which could have a positive or negative effect on the results of the study.

By the end of the first decade of the 21st century, there were signs that the U.S. was failing to meet its obligation to prepare millions of young adults. In an era in which education had never been more important to economic success, the U.S. had fallen behind many other nations in educational attainment and achievement. Within the U.S. economy, there was also growing evidence of a skills gap in which many young adults lacked the skills and work ethic needed for many jobs that pay a middle-class wage. A contributing factor to the growing skills gap is the increasing number of students who do not complete school and dropout (Casner-Lotto et al., 2009).

Purpose

Increasing the number of Americans with the education, skills, and training needed for the economy is a multilayered strategy. Some of the steps to achieve this goal include making teaching and learning in secondary schools more rigorous, engaging, and relevant; ensuring that more students are college and career ready; increasing high school graduation rates, especially for lower performing students; providing opportunities for youth to learn about and experience careers; and smoothing the transition to postsecondary success (Balfanz et al., 2013). While addressing these issues will require significant change across the entire education system, increasing opportunities for students to participate in high-quality CTE is an existing comprehensive strategy that

impacts all of them.

To align with the purpose of this study, it was the intent to answer the following questions, which explored the perceptions regarding CTE's effectiveness in contributing to career and college readiness. Based on the literature review, the researcher determined that the best way to answer the research questions was to utilize a quantitative data collection method research design. The purpose of this type of design was to use statistics to generate and subsequently analyze these data to add credence or credibility and use the results to understand the research problem (Creswell, 2012). Quantitative data were collected by administering a survey.

Research Questions

1. What are the identifiable needs of high school graduates as they relate to job readiness?
2. Based on the perceptions of administrators, teachers, and guidance counselors, how well does the CTE program prepare students for college and career readiness?
3. What is the overall effectiveness of the CTE experience?

The purpose of this study was disclosed to all participants and each participant granted permission to the researcher to include their results in this study. By taking the survey, the participants consented to participate in this research study. Questionnaires were administered via SurveyMonkey. SurveyMonkey is an online surveying service. Subject benefits, confidentiality, contact information, risk, voluntary participation, and an affirmation statement was included in the debriefing statement. A debriefing statement was included with the survey. Anonymity was ensured by the researcher. SurveyMonkey allowed authors to disable the storage of email addresses and disable IP

address collection for all collection methods so anonymous survey responses could be collected. Identifying information of individual subjects such as name, address, and email addresses were not collected. The surveying tool was not able to capture or store identifying information.

Participants

The purpose of the survey was to identify the value of CTE in addressing college and career readiness and to gain the perceptions of community college administrators and instructors; district high school administrators, guidance counselors, and CTE department; and a workforce employer. The research sample consisted of two community colleges, 13 traditional high schools, two early colleges, two classical high schools, and a workforce employer in North Carolina.

Quantitative data were collected by distributing a survey to the participants. To analyze the data successfully, the researcher had a goal of 50% rate of return from the workforce employers and 25% rate of return from schools. The researcher set a goal for a high response rate from participants in order to maintain confidence in generalizing the results of the population under study. To ensure a high response rate, the researcher resent surveys to those who did not respond within 2 weeks of the initial distribution. A reminder was also sent 2 weeks after the second distribution to those who had not completed the questionnaire. The total collection of survey results took approximately nine weeks.

Literature Framework

The literature search included empirical studies and relevant theoretical research that were related to efficacy beliefs of community college administrators and instructors; and district high school administrators, guidance counselors, and CTE department; and a

workforce employer. Multiple sources were used for the literature search including *Dissertation Abstracts International*, *Education Resource Information Center (ERIC)*, and *ProQuest* databases. Most the research was extracted using resources available through the Dover Memorial Library on the Gardner-Webb University campus in Boiling Springs, North Carolina. Additionally, search terms included the ill-prepared workforce, college and career readiness, value of CTE, workforce development, CTE's influence on achievement, increasing student achievement, and other similar terms.

Population and Sample

The population included 13 traditional high schools and two early colleges, two classical high schools, two community colleges, and a workforce employer in Eastern North Carolina. The sample consisted of two surveys that were administered to community college administrators and instructors; district high school administrators, guidance counselors, and CTE department; and a workforce employer through email.

Instrumentation

The researcher used two types of instruments to collect data, a Graduate and Employer Skill Survey. Additionally, the researcher received permission to utilize surveys that were distributed to research populations. Quantitative data were collected by distributing a survey to 449 participants. The questions contained in the Graduate and Employer Skills Survey were centered on the perception of preparation in high school for their chosen career field.

Instrument Reliability and Validity

The reliability of the instruments was determined by a test-retest reliability procedure. The test-retest reliability procedure examined the extent to which scores from one sample are stable over time from one test administration to another (Creswell &

Plano Clark, 2011). Each instrument was administered to 449 individuals. Content validity was established by seeking the input and expertise of stakeholders in the education field with experience in creating surveying instruments. To establish content validity, the instrument needed to ask for the information that answers the questions the researcher was asking.

Procedures

To answer Research Question 1, data were extracted from the surveys administered to the administrators, teachers, and guidance counselors. The quantitative data collected were used to identify the needs of graduates as they relate to job readiness and to determine how well CTE programs prepare students for college and career readiness.

Research Question 2 was answered by utilizing data collected by administering surveys to community college administrators and instructors; high school administrators, teachers, and guidance counselors; and a workforce employer. Surveys were utilized to gain perceptions about job and career preparation. The questions that were asked during the survey are as follows:

1. Did you complete vocational or CTE courses when you were in high school?
2. After graduation, did you go directly to work, attend college, attend technical/trade college, enlist in the military, or were you unemployed?
3. Do you feel your education and training prepared you for your career choice?
4. In what areas could you have received additional preparation?

Research Question 3 was answered using historical and performance data on the CTE program, workforce employers, and district high school CTE programs. By examining this data, we were able to ascertain if the skills being taught in vocational and/or CTE

classes meet the needs of the employers.

Limitations

There were several limitations encountered during the course of the research study. One of the limitations was that the surveys could only be administered once. If it could have been resent, there may have been an increase in participants. Another limitation of the study was the time period in which the study was conducted. If more time was allotted, the researcher could have retrieved data from more sources. Due to the nature and scope of this study, a time constraint had to be put in place.

Another limitation is the potential bias of the researcher. The researcher has been employed by both counties in which the research took place and has a CTE teaching license.

Delimitations

All participants in the study were limited to two counties in eastern North Carolina and included two community colleges, one school district, and one workforce employer.

The participants were community college administrators and instructors; district high school administrators, guidance counselors, and CTE department. Most participants are employed by state. Due to the time constraints and scope of this study, the researcher determined these boundaries needed to be in place.

Summary

One purpose of this study was to identify the value of career and technical education in addressing college and career readiness and the ill-prepared workforce. The researcher utilized data from surveys distributed to 17 high schools and two community colleges, district CTE department, and a workforce employer.

Another purpose of this study was to examine the perceptions of community college administrators and instructors; high school administrators, teachers, and guidance counselors; and workforce employers of how CTE prepares students for college and careers. Data were collected from surveys that were administered. Each group provided their perceptions of the importance of CTE in addressing college and career readiness.

The overall opinion of CTE was examined during this study. Historical data were collected on former CTE students and high schools and the North Carolina and U.S. workforce to examine the makeup of the program and how it relates to college and career readiness.

To effectively carry out the purpose of this study, it was determined that the most effective research model would be a quantitative research design model. This method allowed the researcher to investigate aspects of the questions once data were collected.

Chapter 4: Results

The purpose of this study was to identify the value of CTE in addressing college and career readiness and the ill-prepared workforce. The researcher utilized data from surveys distributed to 17 high schools and two community colleges and a workforce employer. It solicited the feedback of employers and graduates about the effectiveness of the CTE program and the development of soft skills in students. According to a study conducted by Seattle Jobs Initiative in 2013, 75% of the businesses surveyed stated that soft skills were as important as or more important than technical skills in securing entry-level employment. Seventy-one percent of businesses stated that soft skills are equally as or more important than technical skills in carrying out company goals. Fifty employers participated in the study (Pritchard, 2013).

Through the findings of this study, it was the intention of the researcher to provide feedback about the value of CTE in addressing college and career readiness. It was intended that the data compiled in this study would provide guidance for future high school/early college programs and curriculum development.

The following three research questions guided this study.

1. What are the identifiable needs of high school graduates as they relate to job readiness?
2. Based on the perceptions of administrators, teachers, and guidance counselors, how well does the CTE program prepare students for college and career readiness?
3. What is the overall effectiveness of the CTE experience?

This chapter presents the results from surveys administered to the management team of a workforce employer, community college employers, and high school

employers. To give a more in-depth perspective, nine former students of CTE programs who are now store managers of Good Year Tire and Rubber Company were randomly selected to participate in the survey during a special window of time. Historical data pertaining to the CTE program were utilized to examine the perception of the overall value of the CTE program.

The purpose of the Graduate Survey (see Appendix C) was to examine the perceptions of professionals in the education and manufacturing field who may have completed CTE programs, obtain information about the influences that aided students in choosing a career field, and obtain information about the importance of various CTE-led activities. The Graduate Survey also explored the perceptions of these professionals as it pertained to the importance of various skills in the workplace. The Employer Skill Survey (see Appendix D) obtained information about the needs of the organization, the type of industry in which the organization operated, and the size of the organization. Employers were also asked to rate the importance of various skills as they related to the success of the organization, the desired level of new hire competence, and the actual level of new hire competence (Green, 2015).

In the 2016-2017 school year, the researcher conducted a comprehensive needs assessment of a CTE program of The Public Schools of Robeson County. Information from the assessment was utilized to gain insight into the CTE program on the high school level. The results of the assessment were used to make recommendations for improvement to the CTE program in order to ensure its effectiveness and value.

Research Question 1 Results

What are the identifiable needs of high school graduates as they relate to job readiness? In order to answer this question, data were collected using the Employer

Skill Survey and a needs assessment that was previously conducted 2 years prior. The Employer Skill Survey was administered to vice presidents, regional managers, and store managers at Good Year Tire and Rubber Company; community college presidents, vice presidents, instructors, and administrative assistants; high school administrators, guidance counselors, and district CTE department. The researcher conducted the Career and Technical Education Needs Assessment for The Public Schools of Robeson County in 2016-2017 school year.

The Employer Skills Survey. The Employer Skills Survey was sent to nine Good Year Tire and Rubber Company management employees ranging from six store managers, a regional manager, and two executives of Good Year Tire and Rubber Company. It was also sent to 340 state employees ranging from community college presidents, vice presidents, instructors, high school administrators, guidance counselors, and district CTE employees.

Seven of the nine participated in the survey from Good Year Tire and Rubber Company (77.77% rate of return); six of the 340 state employees who participated in the survey (.02% rate of return) were community college employees; 63 of 340 state employees with a 19% rate of return were high school administrators and guidance counselors; and 52 of 340 state employees with a 15% rate of return were CTE employees.

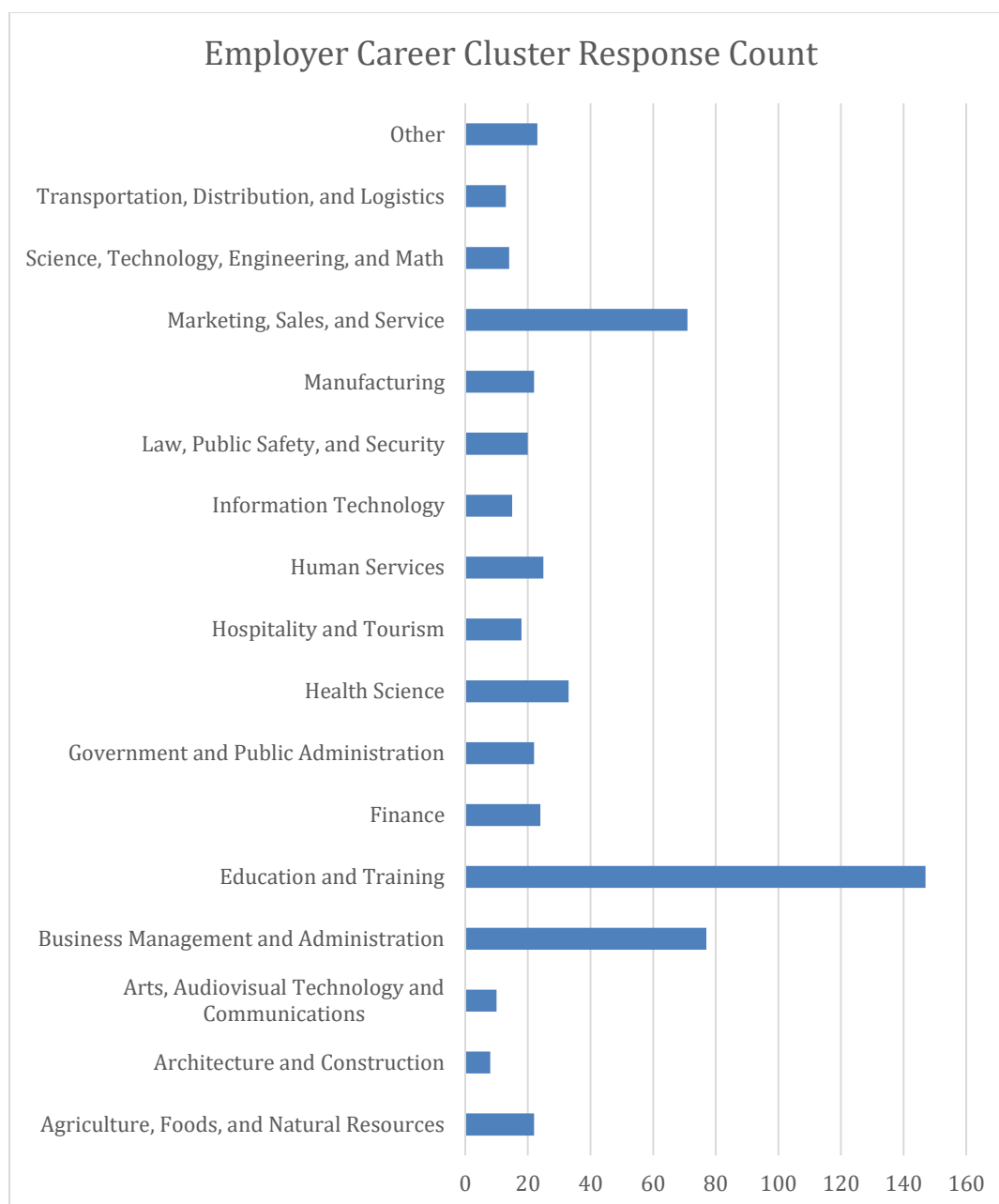


Figure 2. Employer Career Cluster.

Note: The career clusters that were represented by the respondents. Most employers participating in this study operated in the Education/Training and Business/Marketing and Administration career cluster.

According to the Graduate Survey, most of the employers participating in this study operated in the education/training and business/marketing and administration career cluster. The career clusters that were represented by the respondents are displayed in

Figure 2 (see Appendix E).

When asked if high school graduate job seekers were prepared to enter employment immediately after graduation and brought the basic skills needed to complete the job assignments (assuming a high school diploma is all that is required), 20.49% answered yes, 79.51% answered no, and one skipped the question.

The employers were redirected to another question if they answered no. If they answered no to the previous question, they were asked which skills students should have when they left high school in order to be a successful entry-level employee: 78.95% answered critical thinking and problem-solving skills; 64.91% answered a positive attitude; 62.28% answered punctuality; 41.23% answered accessing and analysis skills; 46.49% answered collaboration skills; 75.44% answered communication and written skills; 43.86% answered to have a desire to be a life-long learner; 45.61% answered agility and adaptability skills; and nine skipped the question.

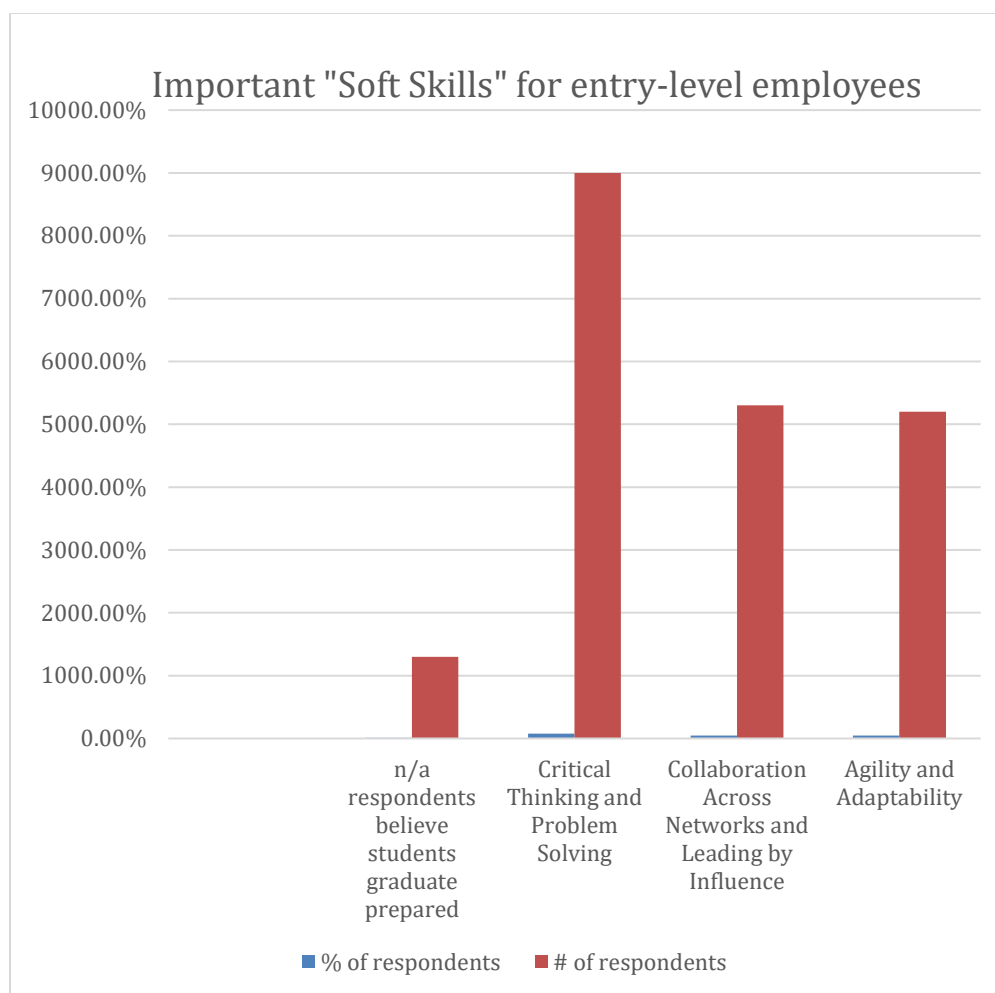


Figure 3. Adecco Staffing's Top Soft Skills for Entry-Level Employees.

Note: List of the essential skills that Adecco Staffing Employers believe are important to achieving their organizational goals.

Figure 3 illustrates Adecco Staffing's pick for top skills important to the overall success of being ready for the workforce (see Appendix F). These are the essential skills employers believe are important to achieving their organizational goals. A study by Adecco Staffing US in 2013 found that nearly 45% of senior executives in the United States believe soft skills are where employees are most lacking; that is compared with just 22% who feel that a lack of technical skills is the main factor contributing to the nation's skills gap. The study was based on surveys of 500 senior executives from a

variety of industries in the United States (Brooks, 2013).

Of the respondents surveyed, 79.51% considered students inadequately prepared and believe that soft skills needed to be added in the classroom, while 20.49% believe high school students graduated adequately prepared for the workforce and/or college, and 15 skipped the question. Critical thinking and problem-solving, communication and written skills rated the highest among the eight skills being chosen by 123 respondents.

When asked, what could the CTE program do to improve college and career readiness, 66.67% answered, “They could do better providing more courses that are aligned with current workforce needs”; while 33.33% answered, “Nothing, I believe Career and Technical Education Program are doing a good job preparing students to be ready for college and/or careers.”

Responses on how to improve College and Career Readiness within CTE from Respondents:

I believe CTE doesn't get enough credit but does more to help our students be ready for the work force than any other areas of education.

I do not know.

We need to do more activities that cause students to get up in front of others, so they know how to speak. Technology is good but has decreased some communication/social skills.

Juniors and Seniors need to learn what to expect, how to dress and prepare for a job interview (prepare, practice, present).

Nothing beats hands-on experience/more internships of job shadowing.

More current curriculums that interest students. Business simulations, for example partner with a real business and find a way in the middle level to make it impactful rather than just a computer skills or computer apps class. Make it the class that the student remembers and always references as I in middle school this class taught me...

Work together on campuses.

broaden the offerings of vocational courses.

We do not instill good work ethics in our students.

Financial Peace University or something for finances: Social Skills, Critical Thinking Course, Basic Tools Workshop.

Reinforce critical thinking skills, make applicable.

Many students are guided towards a 4-year university and the value of a career in trades is no longer touted as professional. Employers stress that students lack soft skills.

Teach skills and crafts that are actually used on the job. Also, high school level work should adequately prepare students for college level work, which should ultimately prepare students for employment.

Working at a technical college that offers so many options, I think that it's important to get the word out to high schools about technical degrees and certifications. Students should be informed of the options that they have in this educational arena as well as at a 4-yr university or the military.

I am not sure. I don't know enough about the program.

Teach and/or enforce the concept of accepting personal responsibility.

enhancing discipline on the soft skills will lead to the development of the hard skills.

It appears that you have a typo in your second answer choice option here.

(continued)

More soft skill integration in CTE courses are needed. It is hard to teach soft skills in a course, but if the same expectations that employers have were integrated into the classroom (i.e. Attendance/punctuality, communication skills) that might help. We also need better career guidance in the high schools. Students are place in CTE courses just to give them an elective and not because anyone spent any time helping the student develop a career plan.
Teaching soft skills.
High schools seem to focus on information rather than skill-based learning.
More soft skills.
These questions to really address the issues. They need a work ethic and they need an adult environment that emphasizes responsibility and deadlines for getting things done.
Not sure if this is what is happening all over the country or just our region, but so many of our students that are coming to our Community College are completely floored to find out we do not allow them to make up their missed assignments, redo test, to turn in work late. It is so widespread that it cannot just be one school or one teacher. Our K-12 are setting so many of our students up for failure.
give as much hands-on experience as possible.
Structure classes as though the students were clocking in at work and ready to perform.
More students should be encouraged to participate in CTE programs.
Incorporate more work-based learning earlier in the high school curriculum.
Hands-on training.
Maintenance/Engineering.

Figure 4. Improve College and Career Readiness within CTE.

Note: Illustrates the comments left by respondents in the Employer Skills Survey. The comments explained what CTE could do better to improve college and career readiness.

Figure 4 illustrates the comments left by respondents in the Employer Skills Survey, explaining what CTE could do to improve college and career readiness within the program (see Appendix G).

The Employee Skills in the survey were based on the literary work of Wagner (2008). Wagner believed there are major gaps that exist between the entry-level skills a new employee possesses versus the skills employers are looking for. This skills gap is well documented in Wagner's book, *The Global Achievement Gap*. Wagner identified

seven skills that were essential for success in the workforce and obtained this information through interviewing and surveying CEOs and representatives of major companies throughout the United States. In his research, Wagner found that a large number of new entrants in the workforce lacked the necessary soft skills. Soft skills are the character traits and interpersonal skills that characterize a person's relationships with other people. In the workplace, soft skills are considered a complement to hard skills, which refer to a person's knowledge and occupational skills (Serby, 2003). The main skills Wagner identified were critical thinking and problem-solving, agility and adaptability, collaboration across networks and leading by influence, initiative and entrepreneurialism, effective oral and written communication, accessing and analyzing information, and curiosity and imagination.

Due to different trends in the economy throughout the years, the needs of employers have continued to change. In 1973, nearly a third of the nation's 91 million workers were high-school dropouts, while another 40% had not progressed beyond a high school degree; thus, people with a high school education or less made up 72% of the nation's workforce. In an economy in which manufacturing was still dominant, it was possible for those with less education but a strong work ethic to earn a middle-class wage, as 60% of high school graduates did (Pathways to Prosperity Project, 2011.) As the economy changes, the skill set of employees also evolves. In the past, the skill set consisted of focusing on a national level, but now employees must learn to compete globally in order to be successful. Of the 122 employers responding to this question, 25 answered "yes" and 97 answered "no." The employers who answered "no" were asked which skills students should have when they left high school in order to be a successful entry-level employee. Some of the responses to this open-ended question were

communicating and writing in a professional manner, being a team player, having the desire to be a life-long learner, being punctual, having a positive attitude, having strong problem-solving skills, and having ability to analyze and adapt to environment.

Thirty respondents left comments on ways to improve CTE programs in Cumberland and Robeson County. The comments had a common theme which consisted of including more hands-on projects, establishing higher expectations, and cultivating soft skills in the classroom. Teachers need to set standards in the classroom for students being punctual, turning in assignments on time, and displaying a professional demeanor in professional settings. Students need to improve interviewing skills and take advantage of more career fairs and work-based learning opportunities.

Research Question 2 Results

Based on the perceptions of administrators, teachers, and guidance counselors, how well does the CTE program prepare students for college and career readiness? To answer this question, survey results from the Employee Skills Survey and survey results from the Graduate Survey were utilized.

Graduate Survey results. The Graduate Survey was administered to the 109 Good Year Tire and Rubber Company employees ranging from office personnel, administrative assistants, clerks, and technicians: 55 of 109 were returned (50.46% rate of return). Of the returned surveys, two were executives, one a regional manager, four store managers, and 48 technicians and office personnel. It was also sent to 340 state employees ranging from community college presidents, vice presidents, instructors, high school administrators, guidance counselors, and district CTE employees: 166 of the 340 state employees participated in the survey (48.82% rate of return).

When asked to indicate their gender, 156 chose female and 65 chose male. When

asked about their race, 135 chose White, 54 chose Black, 19 chose American Indian, six chose Other, four chose Hispanic, and one chose Asian.

When asked who had the most influence over career decisions, 118 indicated that parents and family members had the most influence. The additional influences included school counselors, teachers, and administrators (98); media (5); friends (34); and other (73).

Two of the respondents indicated that they were unemployed after first graduating from high school. Twenty-five indicated that they went into the military; 42 worked full-time; 42 worked part-time; 51 attended a technical/2-year college; and 111 attended a 4-year college. These results yield a positive placement rate of 84.62%. The survey respondents who attended a 2-year or 4-year college were 73.31%. Respondents who indicated they worked or went into the military were 30.31%. Respondents who worked part-time were 19%. The respondents who were unemployed were .90%.

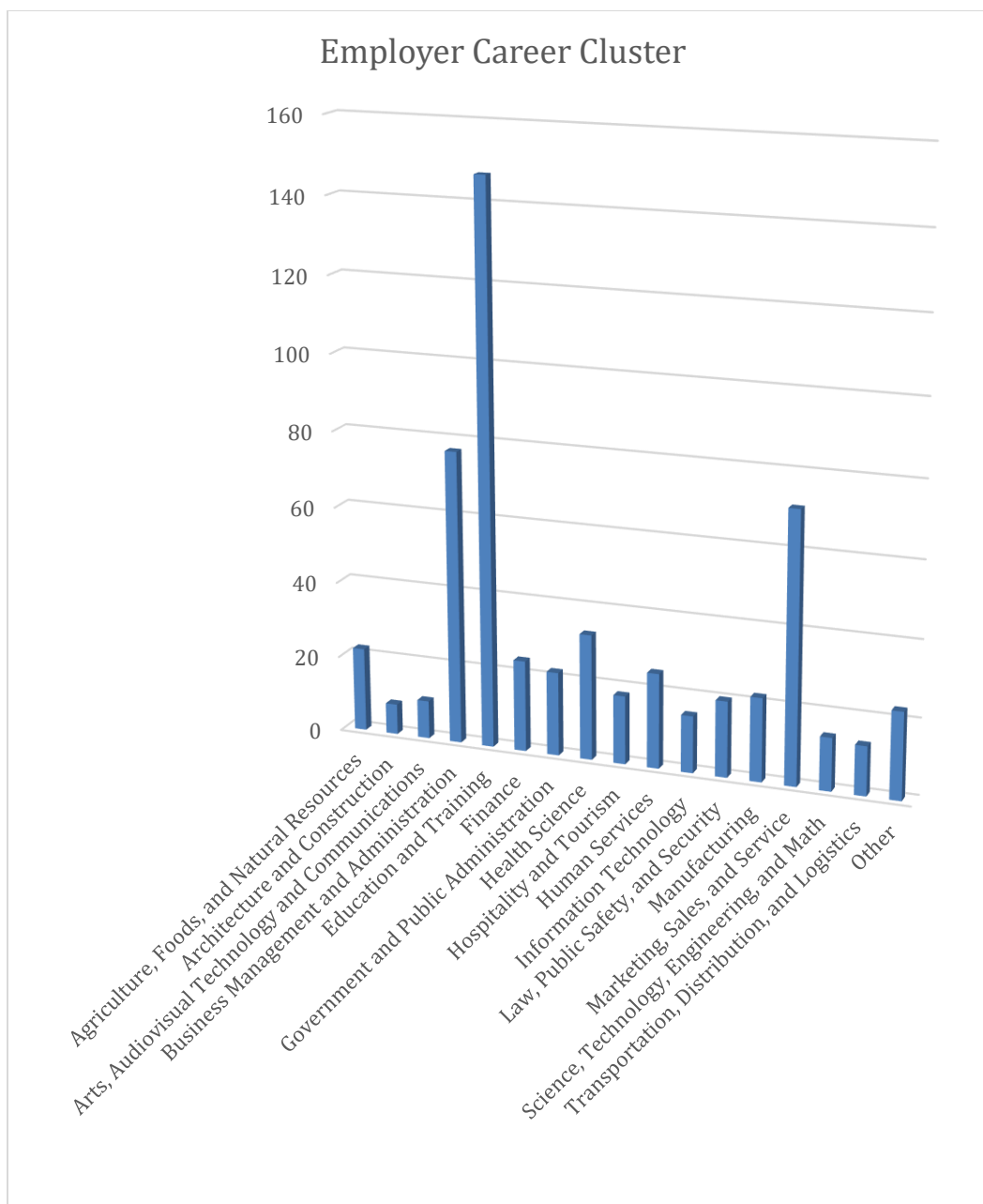


Figure 5. Employer Career Cluster.

Note: Respondents in the Graduate Survey indicated their previous work experiences.

In the Graduate Survey, respondents indicated that they had experiences working in agriculture, foods, and natural resources; business, management, and administration; health science; human services; manufacturing; marketing, sales and service; science, technology, engineering, and mathematics; and transportation, distribution, and logistics.

Figure 5 illustrates the areas in which the respondents have worked (see Appendix H).

When asked if vocational teachers assisted in connecting schoolwork with career interest, 11.11% of the workforce employer respondents answered, “sometimes”; 22.22% answered “often”; 22.22% answered “most of the time”; 22.22% answered “always”; and 22.22% answered “not really.”

When asked if vocational teachers assisted in connecting schoolwork with career interest, 20.97% of the community college employers answered, “sometimes”; 1.61% answered, “often”; 16.13% answered, “most of the time”; 4.84% answered, “always”; 56.45% answered, “not really.”

When asked if vocational teachers assisted in connecting schoolwork with career interest, 19.10% of the high school administrators and guidance counselor employees answered, “sometimes”; 4.49% answered, “often”; 8.99% answered, “most of the time”; 11.24% answered, “always”; 51.69% answered, “not really”; and 5.07% answered, “other,” which consisted of eight comments stating they did not take any vocational courses, one comment stating they had the option to attend a community college while in high school which prepared them more so, and two comments stating it was their vocational teachers and their athletic coach.

When asked if vocational teachers assisted in connecting schoolwork with career interest, 10.53% of the community college employers answered, “sometimes”; 22.81% answered, “often”; 12.28% answered, “most of the time”; 12.28% answered, “always”; 29.82% answered, “not really.”

Of the four different perspectives, 56.45% of community college employers felt the strongest about vocational teachers not helping them connect schoolwork to career interest. High school administrators and guidance counselors came in second with

51.69% feeling vocational teachers did not assist making schoolwork connect with career interest.

When asked if vocational teachers “always” and “most of the time” assisted in connecting school work to career interest, the workforce employer agreed the most at 22.22%. The CTE department had the second highest at 12.28%.

When asked if vocational teachers “often” assisted in connecting school work to career interest, the CTE department agreed the most at 22.81% and the workforce employer at 22.22%.

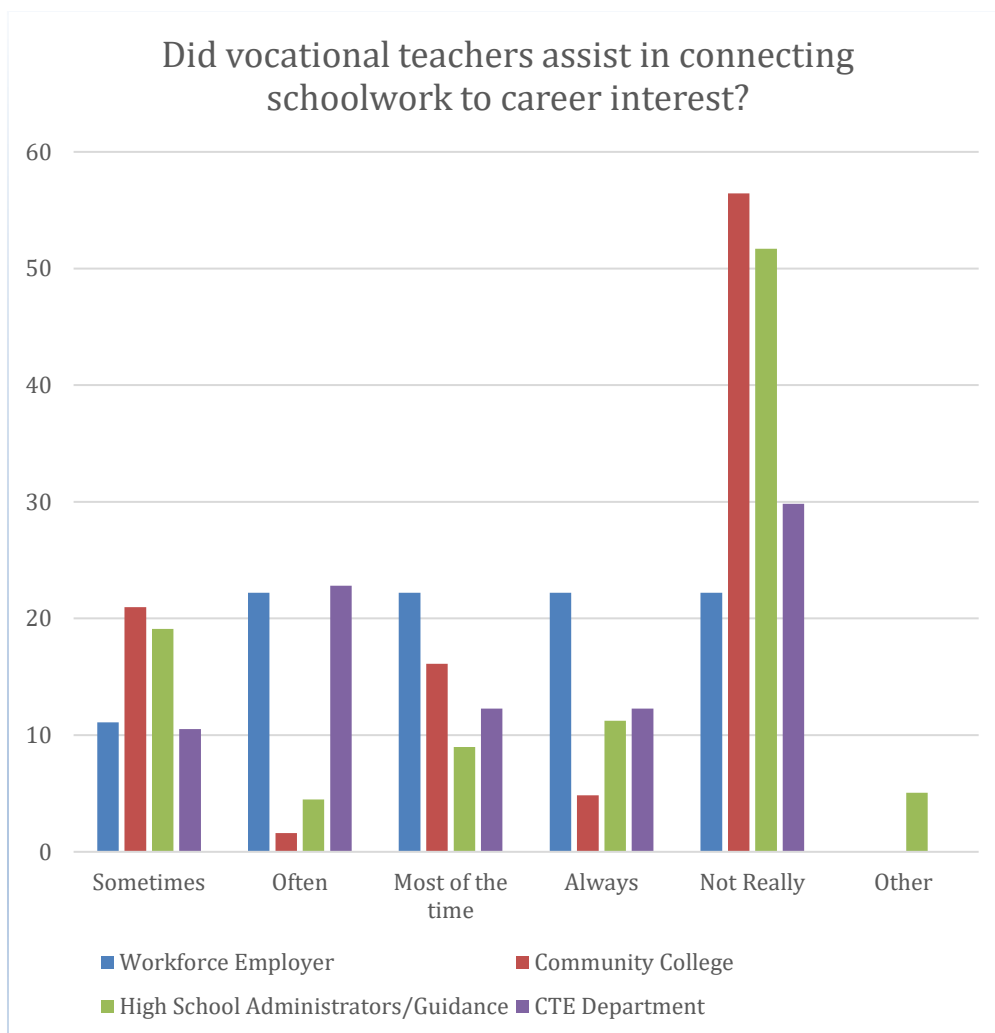


Figure 6. Schoolwork and Career Interest Connection.

Note: Illustrates if the respondents believe their teachers connected schoolwork to their career interest.

Figure 6 illustrates if the respondents believe their teachers connected schoolwork to career interest. In the Graduate Survey, community college, high school administrators, and guidance counselors feel that vocational teachers do not help connect schoolwork to career interest, while the workforce employer and career and technical department believe that they do (see Appendix I).

When asked which career activities the workforce employer respondents participated in while in high school, 57.14% answered, “work-based learning, shadowing

and internships”; 28.57% answered, “company tours”; 28.57% answered, “career guest speakers”; and 28.57% answered, “career fairs.”

When asked which career activities the community college respondents participated in while in high school, 55.81% answered, “career fairs”; 48.84% answered, “career guest speakers”; 37.21% answered, “work-based learning, shadowing and internships”; and 25.58% answered, “company tours.”

When asked which career activities the high school administrators and guidance counselor respondents participated in while in high school, 47.69% answered, “career fairs”; 36.92% answered, “career guest speakers”; 32.31% answered, “work-based learning, shadowing and internships”; and 12.31% answered, “company tours.”

When asked which career activities the CTE department respondents participated in while in high school, 60.47% answered, “career guest speakers”; 58.14% answered, “work-based learning, shadowing and internships”; 48.84% answered, “career fairs”; and 23.26% answered, “company tours.”

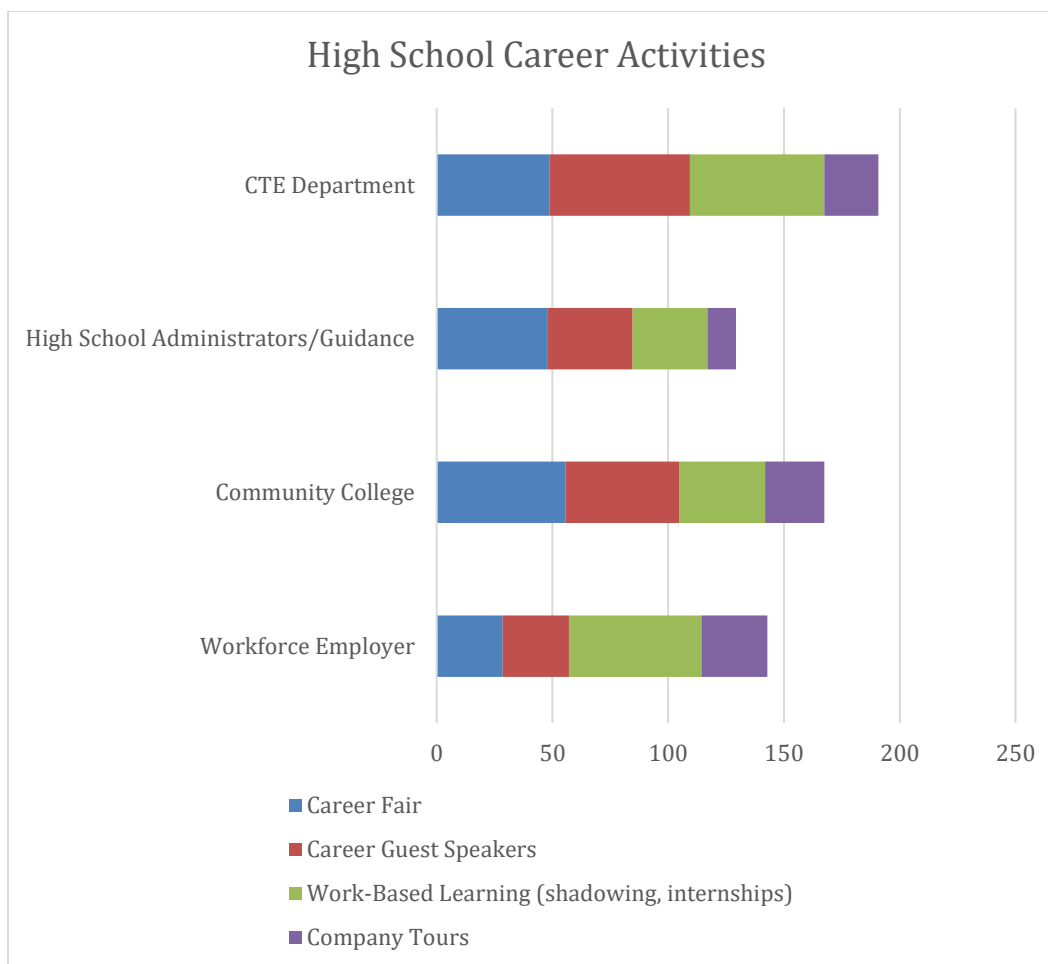


Figure 7. High School Career Activities.

Note: Illustrates the type of high school career activities each respondent experienced.

Figure 7 illustrates the type of high school career activities the respondent experienced. In the Graduate Survey, the career and technical department and community college employers felt that career guest speakers is the main important event in which to participate and the second important activity is work-based learning opportunities. The less important event chosen was company tours (see Appendix J).

When asked if the workforce employer respondents entered into the career field that they prepared for in high school, 66.67 answered, “yes”; and 33.33% answered, “no.”

When asked if the community college respondents entered into the career field they prepared for in high school, 39.34% answered, “yes”; and 60.66% answered, “no.”

When asked if the high school administrator and guidance counselors entered in the career field they prepared for in high school, 43.33% answered, “yes”; and 56.67% answered, “no.”

When asked if the CTE department entered into a career field they prepared for in high school, 46.43% answered, “yes”; and 53.57% answered, “no.”

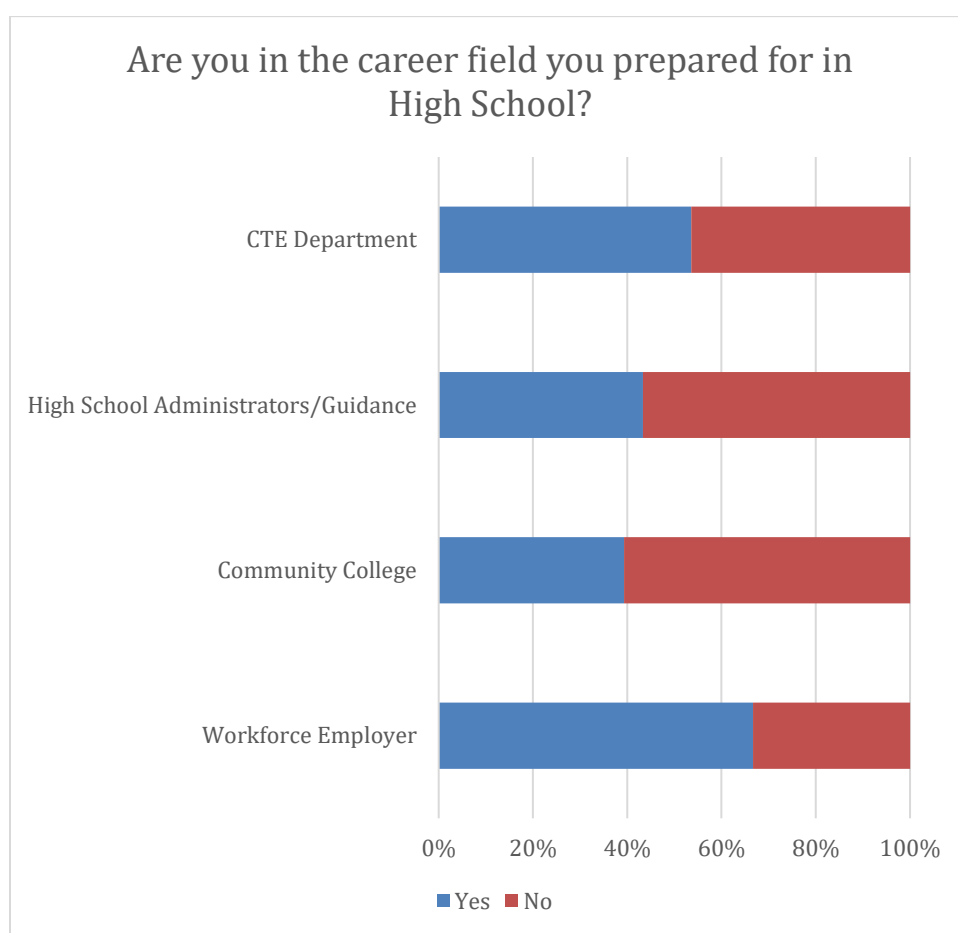


Figure 8. Career Field and High School Preparation.

Note: Illustrates if the respondents are now working in the career field they prepared for in high school.

Figure 8 illustrates if the respondents are now working in the career field they prepared for in high school. Based on responses to the question in the Graduate Survey,

most felt prepared upon graduating from high school. The workforce employers had the largest response with 66.67% feeling they entered into a career field they prepared for in high school. The next in line who felt most prepared upon graduating high school were the CTE department with 46.43% feeling they entered into a career field they prepared for in high school (see Appendix K). The community college employers felt the least prepared with 60.66% answering, “no” to the question.

When asked if CTE and training adequately prepares students for college and career readiness, 55.56% of the workforce employer answered, “yes, but could have done better”; and 44.44% answered, “yes.”

When asked if CTE and training adequately prepares students for college and career readiness, 53.33% of community college employers answered, “yes”; 31.67% answered, “yes, but could have done better”; and 15% answered, “no.”

When asked if CTE and training adequately prepares students for college and career readiness, 49.44% of high school administrators and guidance counselors answered, “yes”; 29.21% answered, “yes, but could have done better”; and 21.35% answered, “no.”

When asked if CTE and training adequately prepares students for college and career readiness, 61.40% of the CTE employees answered, “yes”; 22.81% answered, “yes, but could have done better”; 7.02% answered, “no”; and 8.77% answered, “other”; and left five comments.

Comments from District CTE Department:
It does now. I graduated high school 34 years ago and thought I wanted to be a nurse. CTE has come a long way.
If the student did their work and come to school.
I do not feel I can adequately answer this question.
Less testing emphasis and more internships/job shadowing.
It depends on the school. I believe if administration would put in place and enforce a no phone policy students would be better prepared.

Figure 9. College and Career Readiness Preparation.

Note: List comments from the District CTE Department explaining if they felt students were being adequately prepared for college and career readiness; 53.59% of the respondents felt that CTE adequately prepares students to be college and career ready.

Figure 9 list comments from the district CTE department explaining if they felt students were being adequately prepared for college and career readiness. Based on the results in the Graduate Survey, 53.59% of the respondents felt that CTE and training adequately prepares students to be college and career ready; 14.88% of the respondents believe that CTE does not adequately prepare students to be college and career ready; 29.30% of the respondents believe that CTE adequately prepares students but could do better; 2.33% of the respondents left comments stating that there should be more focus on work-based learning than testing and more administrator support; and one respondent stated they were not in CTE courses (see Appendix L).

Research Question 3 Results

What is the overall effectiveness of the CTE experience? Research Question 3 was answered using historical and performance data on the CTE program, workforce employers, and district high school CTE programs. By examining these data, we were able to ascertain if the skills being taught in vocational and/or CTE classes meet the needs of the employers.

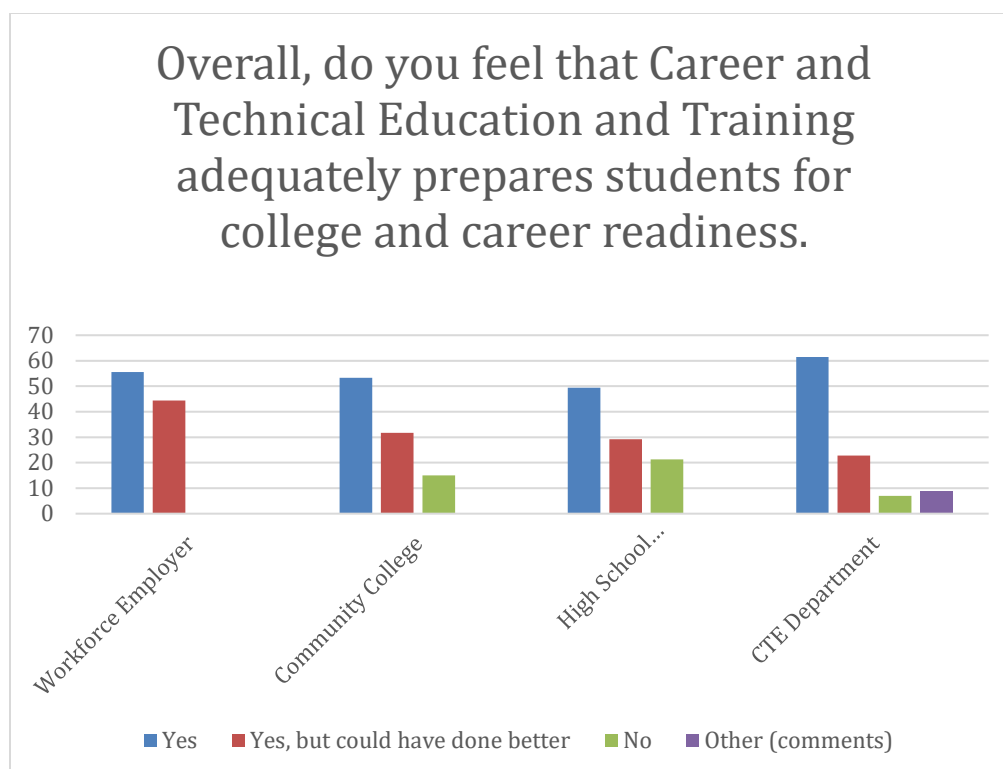


Figure 10. College and Career Readiness.

Note: Illustrates whether or not the groups believe CTE and Training adequately prepares students for college and career readiness.

Figure 10 illustrates the results from the Graduate Survey, stating whether or not the respondents believe CTE and training adequately prepare students for college and career readiness (see Appendix M).

Overall, the respondents felt their experience at their high schools prepared them for life after high school. All of the subjects felt that soft skills play an important role in their preparation for the workforce and that the school system did a good job equipping them with the tools needed to be successful. The subjects also suggested that more opportunities be provided in career fairs, career guest speakers, and work-based learning. This would allow students to have more contact with employers, so they could see firsthand the higher expectations that are established in the workplace. The responses

support the findings of the surveys that were administered.

Summary of Results

The purpose of the chapter was to collect data that provided answers to the following research questions:

1. What are the identifiable needs of high school graduates as they relate to job readiness?
2. Based on the perceptions of administrators, teachers, and guidance counselors, how well does the CTE program prepare students for college and career readiness?
3. What is the overall effectiveness of the CTE experience?

Research Question 1 asked for the identifiable needs of high school graduates as they relate to job readiness. Wagner (2008) identified seven soft skills that employers need to be successful. Most of the workforce and community college employers, high school administrators, guidance counselors, and CTE department also agreed that soft skills needed to be implemented more in the classroom setting to promote college and career readiness. The skills included on the survey were critical thinking and problem-solving, collaboration, adaptability, effective oral and written skills, analyzing, punctuality, positive attitude and desire to be a life-long learner. These are essential skills employees should have in order to be successful within their organizations. The respondents also offered other traits such as hands-on technical training, focus more on career fairs, guest speakers, and implementing work-based project learning in class. Work-based learning will promote real-world relevancy in schoolwork and allow students to gain a better perspective of employer expectations.

Research Question 2 asked how well the CTE program prepared students based

on the perceptions of Good Year Tire and Rubber Company, two community colleges, a district's high school administrators, guidance, and CTE department: 79.51% considered students not as prepared and recommended adding soft skills, while 20.49% believed high school students graduated adequately prepared for the workforce and/or college upon graduation. Respondents also expressed the need for more career fairs and work-based learning opportunities.

Research Question 3 asked about the overall effectiveness of the CTE experience. Based on the results, most respondents felt that CTE and training adequately prepares students to be college and career ready but could do a better job at implementing more career fairs and work-based learning opportunities in order to promote real-world application.

It was not only the intention of the researcher to answer the previously mentioned research questions, it was also to provide recommendations for the CTE program in addressing college and career readiness. The conclusions, implications of findings, limitations, and recommendations are discussed in Chapter 5.

Chapter 5: Discussion and Implications for Further Study

Chapter 5 provides an analysis and discussion of the study's findings and conclusions. Implications of the findings along with recommendations for further research are also included. This perception study adds to research pertaining to the value of CTE in addressing the ill-prepared workforce, skill preparation, and college and career readiness.

In Wagner's (2008) study, employers identified seven skills perspective employees were lacking. The skills are critical thinking and problem-solving, collaboration across networks and leading by influence, agility and adaptability, initiative and entrepreneurialism, effective oral and written communication, accessing and analyzing information, and curiosity and imagination. These seven skills were determined through interviews with human resource professionals and management (Serby, 2003).

To further support the position that new entrants into the workforce lack the necessary skills to be successful, the report *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce* was released in 2006. The Conference Board, Corporate Voices for Working Families, the Partnership for 21st Century Skills, and the Society for Human Resource Management conducted this in-depth study of the corporate perspective on the readiness of new entrants into the U.S. workforce by level of educational attainment. The four participating organizations jointly surveyed over 400 employers across the United States. The employers identified the most important skills needed to succeed in the workplace are professionalism, oral and written communications, teamwork and collaboration, and critical thinking and problem-solving. The findings of this report

indicate that soft skills trump basic knowledge. According to the employers surveyed, high school graduates are deficient in basic knowledge, written communication, critical thinking and problem-solving, and professionalism and work ethic (Barrington & Casner-Lotto, 2006).

The problem that was studied during the current research project was the ill-prepared workforce and lack of college and career readiness among students. This study also examined the perceptions of community college employers, district high school administrators, guidance counselors, and CTE department employees, and Good Year Tire and Rubber Company employers. The employers were asked questions as they pertain to skills needed to be successful in the 21st century. The purpose of the current study was to determine if the skills being taught in the CTE program address the need to increase career and college readiness among graduates.

During the beginning of the 21st century, it was evident that the United States was failing to prepare students with the skills needed to be ready for college and/or careers. Most students entering 2- or 4-year universities have to take remediation courses; or if they go straight to work, employers complain that students coming in from high school lacked the necessary skills needed to be successful employees.

Many graduates are unprepared for college, and many unskilled dropouts find it difficult to successfully implement themselves into society. According to Fischer and Reiss (2010), unskilled dropouts inflate the state's prisons system. Improving the success of academically underprepared students who need developmental or remedial education is a key challenge facing community colleges today. Many of these students enter college with little awareness of these institutions' expectations or a clear model for how to make effective decisions about their academic careers. Although there is a growing

interest in building programs of study, maintaining partnerships takes time, and resources and can be quite challenging (Rutschow et al., 2012).

Education is more valuable now than it has ever been when it comes to economic success, but the United States has fallen behind many other nations in educational achievement. Within the United States economy, there was also growing evidence of a skills gap in which many young adults lacked the skills and work ethic needed for many jobs that pay a middle-class wage. A contributing factor to the growing skills gap is the increasing number of students who do not complete school or dropout (Wagner, 2008).

The current research study utilized two surveying instruments to examine the perceptions of community college employers; district high school administrators, guidance counselors, and CTE department; and a workforce employer. The two surveying instruments determined if the training that graduates received while in high school met the needs of the employers or if it needed improvement.

The following research questions guided the current study.

1. What are the identifiable needs of high school graduates as they relate to job readiness?
2. Based on the perceptions of administrators, teachers, and guidance counselors, how well does the CTE program prepare students for college and career readiness?
3. What is the overall effectiveness of the CTE experience?

Conclusions

Perceptions of workforce employer Good Year Tire and Rubber Company.

The workforce employer was asked to list the main soft skills needed in order to be successful and maintain employment after high school. Critical thinking and problem-

solving, collaboration, accessing and analyzing, effective oral communication and written skills, and positive attitude and punctuality were rated among the top 80% among the workforce employers. Critical thinking and problem-solving were the highest with 100% of respondents rating this skill as necessary for students to have upon entering college and careers. None of the employers rated any of the eight skills as unimportant to the success of the organization; however, agility and adaptability were rated the lowest among the respondents at 33.33%. All responding employers agreed that all eight skill areas were important to equipping students for college and career readiness; 85.71% of the workforce employers answered, “no students did not have the basic skills needed to be prepared for the workforce.” If no was selected, the respondents were asked to complete the questions about the eight skills and be willing to choose which skills they felt were needed in order for students entering employment immediately after high school to be more prepared for the workforce.



Figure 11. Workforce Employer Rating on Soft Skills.

Note: Illustrates the workforce employers' ratings on which soft skills were needed to successful in the workplace.

Figures 11-14 illustrate the results from the Employer Skills Survey on which soft skills the workforce employer, community college, district high school administrators, guidance counselors, and district CTE department rated most important. Depending on the career cluster in which the organization functions, the types of soft skills needed may vary. It is for this reason that there may be a significant difference in which soft skills are rated higher than others (see Appendix N).

Perceptions of community college employers. The community college employers were asked to list the main soft skills needed in order to be successful to maintain employment after high school. Critical thinking and problem-solving,

collaboration, accessing and analyzing, punctuality, and positive attitude were rated among the top 80% among the workforce employers. Critical thinking and problem-solving were the highest with 100% of respondents rating this skill as necessary for students to have upon entering college and careers. Effective communication and written skills and desire to be a life-long learner were rated lowest among the respondents at 50%.

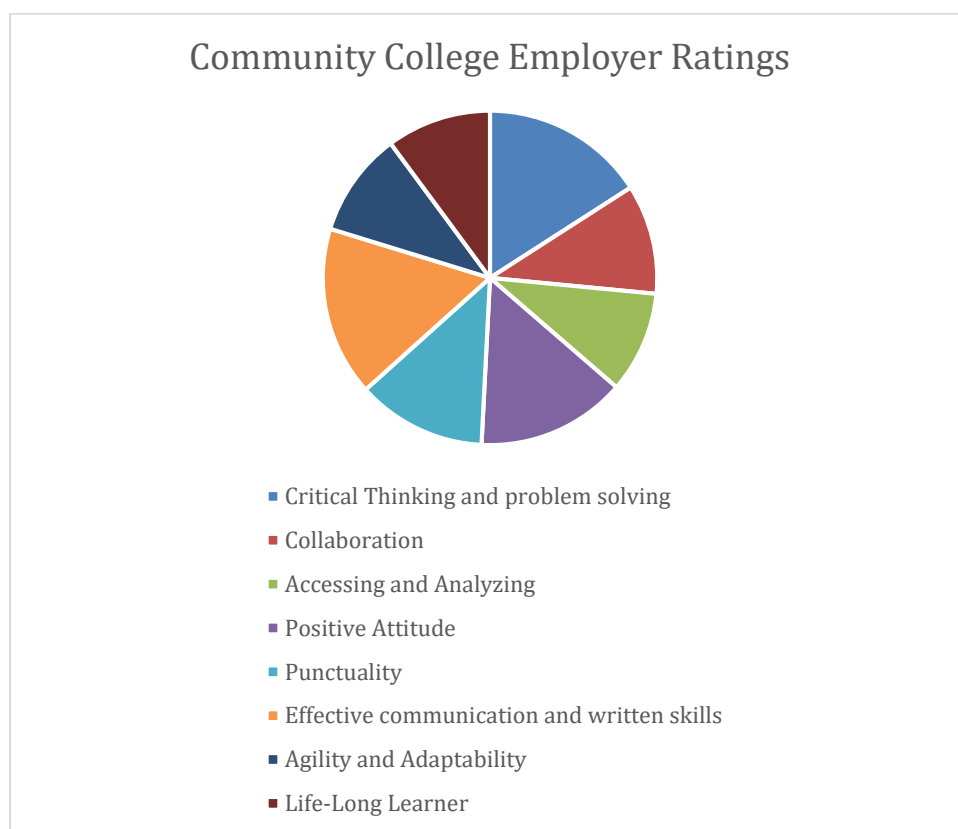


Figure 12. Community College Employers Rating on Soft Skills.

Note: Illustrates the community college employers' ratings on which soft skills were needed to successful in the workplace.

Figure 12 illustrates the results from the Employer Skills Survey for community college ratings on soft skills revealing that 100% of the community college employers answered, “no student had the basic skills needed to be prepared for the workforce.” If

no was selected, the respondents were asked to complete the questions about the eight skills and be willing to choose which skills they felt were needed in order for students entering employment immediately after high school to be more prepared for the workforce (see Appendix O).

Perceptions of district high school administrators and guidance counselors.

The district high school administrators and guidance counselors were asked to list the main soft skills needed in order to be successful to maintain employment after high school. Critical thinking and problem-solving, effective oral and written communication, punctuality, and positive attitude were rated among the top 80% among the district high school administrators and guidance counselors. Critical thinking and problem-solving were the highest with 83.33% of respondents rating this skill as necessary for students to have upon entering college and careers. Desire to be a life-long learner was rated lowest among the respondents at 41.67%; 13.33% did not choose any skills because they felt high school was already doing a good job preparing students to be college and career ready.

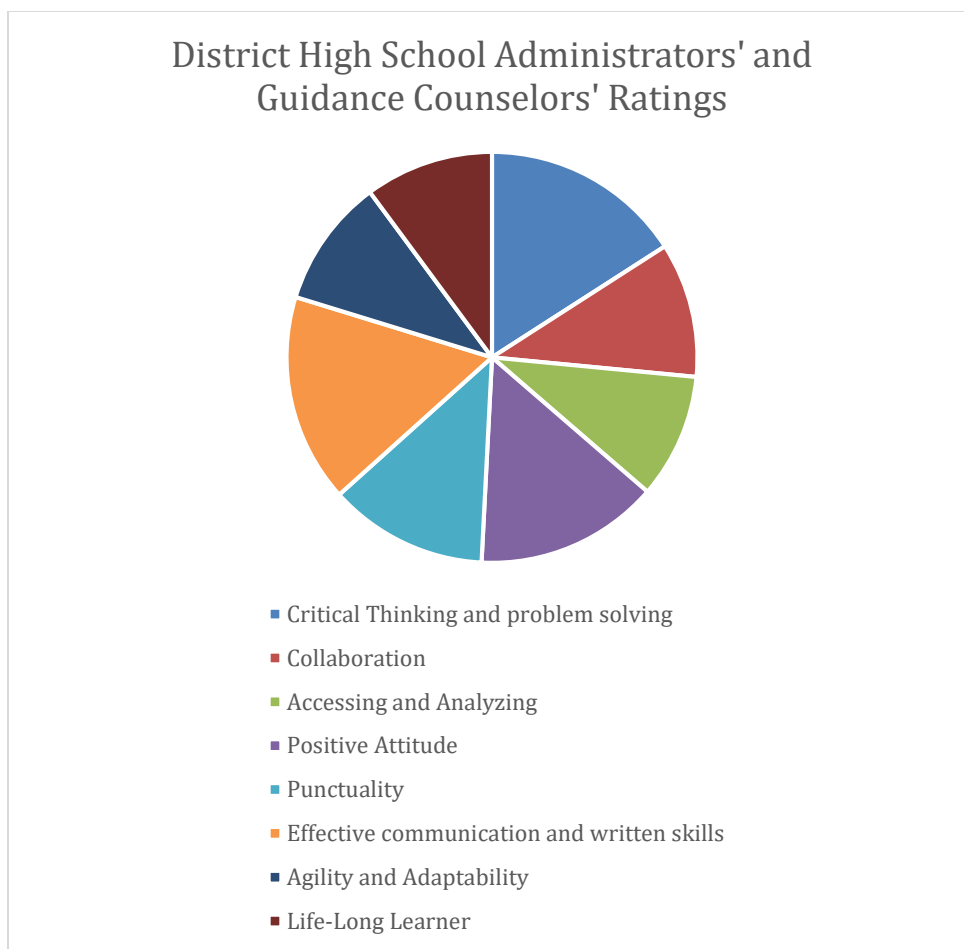


Figure 13. District High School Administrators' and Guidance Counselors' Ratings.

Note: Illustrates the district high school administrators' and guidance counselors' ratings on which soft skills were needed to successful in the workplace.

Figure 13 illustrates the district high school administrators and guidance counselor ratings on soft skills. The Employer Skills Survey stated that 82.54% of the district high school administrators and guidance counselors answered, “no students did not have the basic skills needed to be prepared for the workforce.” If no was selected, the respondents were asked to complete the questions about the eight skills and be willing to choose which skills they felt were needed in order for students entering employment immediately after high school to be more prepared for the workforce (see Appendix P).

Perceptions of district CTE department. The district CTE department was

asked to list the main soft skills needed in order to be successful to maintain employment after high school. Effective oral and written communication, critical thinking and problem-solving, punctuality, and positive attitude were rated as the top four among the district CTE department. Effective oral and written communication were the highest with 72.34% of respondents rating this skill as necessary for students to have upon entering college and careers. Accessing and analysis were rated lowest among the respondents at 34.04%; 10.64% did not choose any skills because they felt that high school was already doing a good job preparing students to be college and career ready.

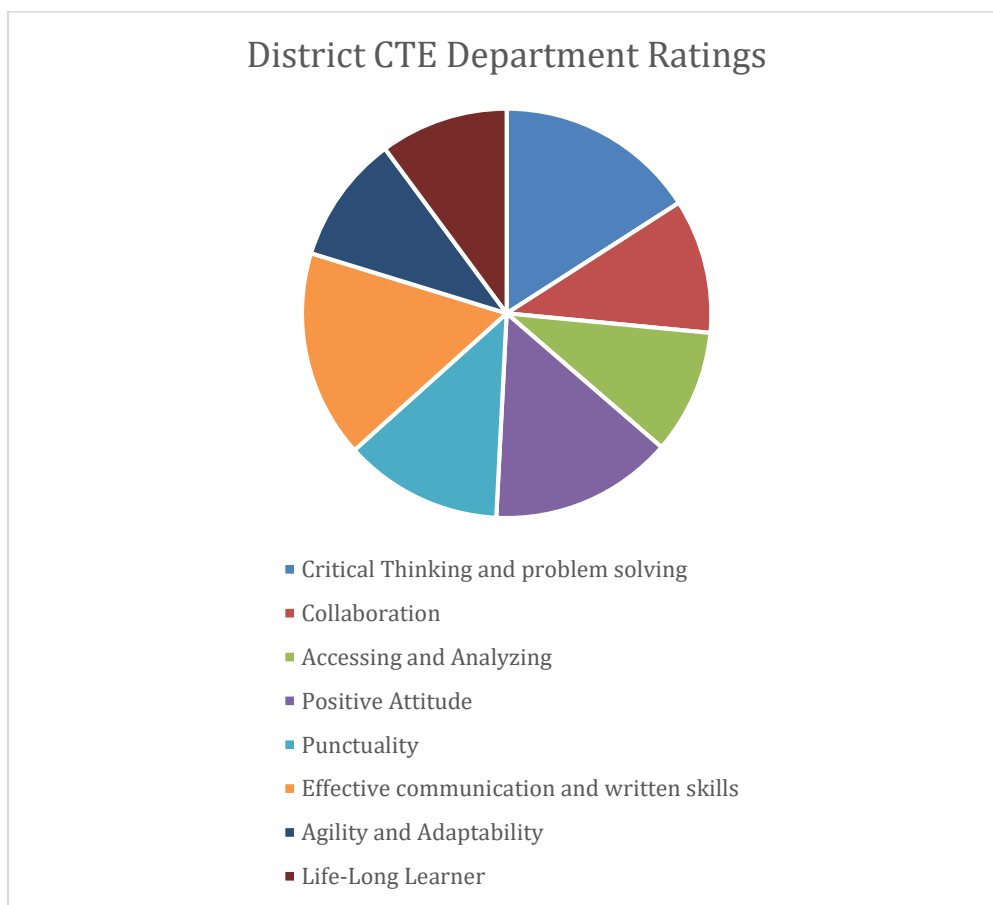


Figure 14. District CTE Department Ratings.

Note: Illustrates the district CTE department ratings on which soft skills were needed to successful in the workplace.

Figure 14 illustrates the district CTE department ratings on soft skills. In the Employer Skills Survey, 76% of the district CTE department answered, “no students did not have the basic skills needed to be prepared for the workforce.” If no was selected, the respondents were asked to complete the questions about the eight skills and be willing to choose which skills they felt were needed in order for students entering employment immediately after high school to be more prepared for the workforce (see Appendix Q).

Recent research found that there is indeed a difference in soft skills by sector. National research on more than 1,000 executives conducted by Deloitte and the Manufacturing Institute found that two of the three top employee skill deficiencies reported by manufacturers were soft skill related. These include problem-solving ability, reliability, verbal communication, listening, and teamwork. A similar research study conducted by the Assessment Technologies Institute for the healthcare sector found that communication, customer service, and positive attitude were the soft skills most desired by employees (Pritchard, 2013).

The number of respondents from the workforce employers served as an indicator of skills needed, since most of their workforce graduated from a CTE program. Representing the manufacturing sector, the workforce employer rated critical thinking and problem-solving, collaboration, accessing and analyzing, and punctuality as their top four. Representing the education and training sector, community college employers rated critical thinking and problem-solving, accessing and analyzing, punctuality, and a positive attitude as their top four. The district high school administrators and guidance counselors rated critical thinking and problem-solving, effective communication and written skills, punctuality, and positive attitude as their top four. The CTE department rated effective communication and written skills, critical thinking and problem-solving,

and positive attitude in their top four.

Compare and Contrast

The workforce employer was the only group to include collaboration in their top four ratings. The CTE department was the only group to list effective communication and written skills as number one in their ratings. The workforce and community college employers were the only groups to included accessing and analyzing in their top four ratings. The district high school administrator, guidance counselors, and CTE department were the only groups to include effective communication and written skills in their top four ratings. All groups listed critical thinking and problem-solving and punctuality in their top four skills. All but the workforce employer listed positive attitude in their top four ratings. On average, the lowest rated skill areas were agility and adaptability.

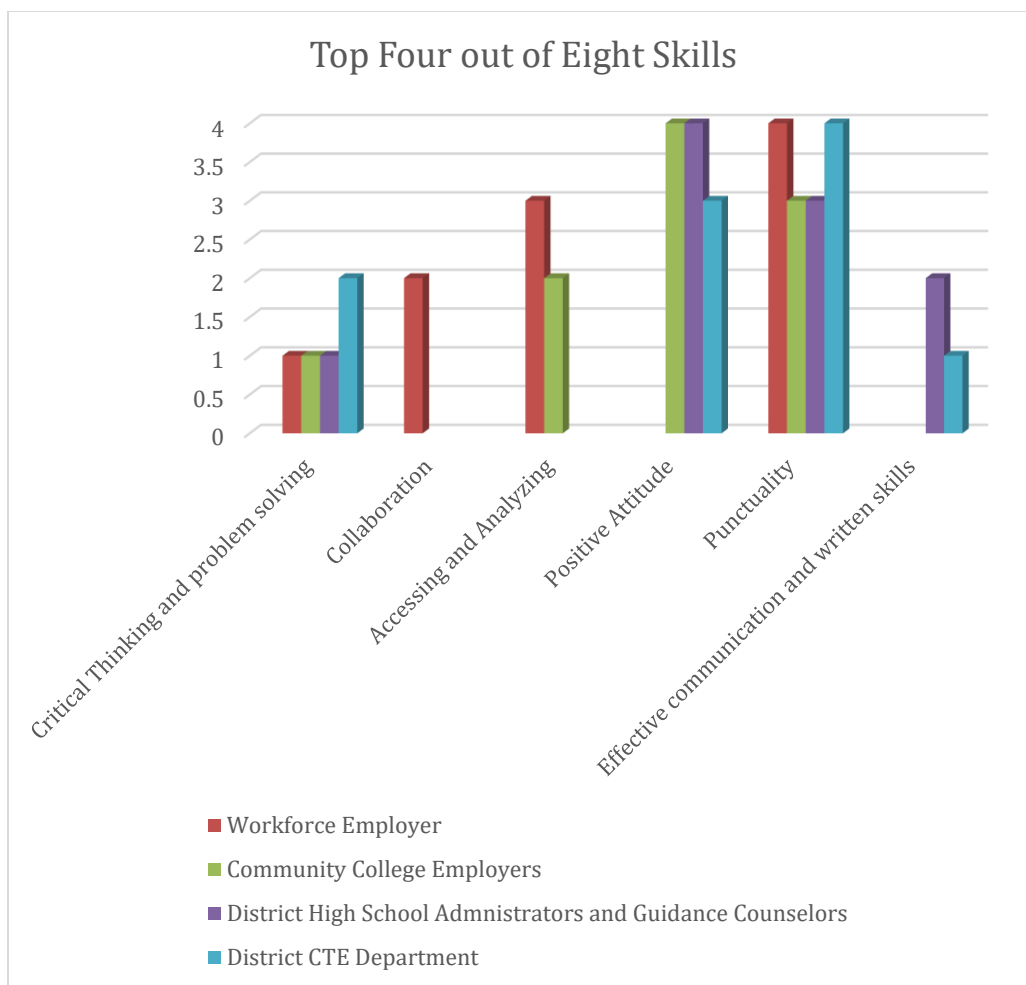


Figure 15. Top Four of Eight Skills among Respondents.

Note: Illustrates the top four out of eight skills chosen by each group, one being the “most important” and four being the “least important” of the four.

Figure 15 illustrates the results of the Employer Skills Survey which states the top four of eight soft skills chosen by each group, one being the “most important” and four being the “least important.” (see Appendix R).

The findings in the Employer Skill Survey are supported by the finding in *The Ill-Prepared U.S. Workforce* released by The Conference Board in August 2009. The report found that there are significant gaps in five areas where 40% of the respondent’s rate as “high need.” The high need areas are creativity and innovation, ethics and social

responsibility, professionalism and work ethic, self-direction, and critical thinking and problem-solving. The results that were gathered from the Employer Skill Survey concerning the actual level of new hire competence were rather surprising. The employers indicated that the levels of new hire competence are significantly lower than the levels they desire and the level they deem important to the success of the organization (Casner-Lotto et al., 2009).

Based on the findings in the current research study, high school CTE programs need to incorporate more soft skills, higher expectations for quality work, and career fairs and work-based learning opportunities. This will promote real-world application and better prepare students to be college and career ready. High school students should also receive more quality technical hands-on training and start integrating more critical thinking and problem-solving, collaboration, and effective oral and written communication into the CTE curriculum.

According to the Graduate Survey, parent/family members are the biggest influence on students when making decisions about careers, followed by teachers. In May of 2002, the report *Decisions Without Direction: Career Guidance and Decision-Making Among American Youth* was released by Ferris State University. The report examined high school student perceptions of career guidance. Of the 809 students surveyed, 78% stated that one or both parents are the primary influence, while 10% stated that school personnel are the primary influence. Of the students who listed parents as their primary influence, 70% claimed to have spent 3 hours or less in the past few months discussing careers with their parents (Career Institute for Education and Workforce Development, 2002). This report supports the findings of the Graduate Survey that parents are the primary adult influence on the career decisions students make:

48.39% felt their teachers (academic and CTE) assisted them with connecting schoolwork with career interest, while 46.54% felt the opposite; 1.85% did not take CTE courses.

Upon graduating high school, 50.23%, which is the majority of respondents, attended a 4-year college; 23.08% attended a technical/2-year college; 19% worked full-time; 19% worked part-time; 11.31% entered the military; and .90% were unemployed.

In the report *Decisions Without Direction: Career Guidance and Decision-Making Among American Youth*, 68% said the best jobs require at least a 4-year college education; 41% attribute a sense of embarrassment to vocational education training programs; and 45% said pursuing technical training might limit their career options (Career Institute for Education and Workforce Development, 2002).

Work-based learning provides connections between the classroom and real-world learning, produces high student completion rates, fosters student ownership, and aids in the development of the critical skills (Rogers-Chapman & Darling-Hammond, 2013). The respondents who completed the Graduate Survey rated career fairs, career guest speakers, and work-based learning opportunities as the most important career activities in which a student could participate. A large amount of students attend career fairs, but a small amount participate in actual internships, apprenticeships, cooperative education, and school-based business projects.

Overall, 53.59% felt that CTE and training adequately prepares students for college and career readiness.

Recommendations for Improvement

One purpose of this study was to examine the perceptions of community college employers; district high school administrators, guidance counselors, and CTE department; and a workforce employer. The perception is the value of CTE in addressing

the ill-prepared workforce and preparing high school students to be college and career ready.

The following recommendations are intended to improve the CTE program.

1. Each program area offered in CTE should provide a national certification that is endorsed and accepted by industry. A national certification would benefit the students to gain a skill they could utilize in the workforce upon graduating from high school. More high schools should partner with postsecondary technical programs that lead to associate degrees and certifications. Industry recognized credentials can increase student chances of finding skilled-based employment which would give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. Employers benefit from a more highly skilled workforce with certifiable skills (National Research Center for CTE, n.d.).
2. Each CTE program should be aligned with a CTSO that is closely related to the CTE classroom program. This would allow students to utilize a hands-on approach to learning while they apply the skills learned in the curriculum. A study of CTSOs found that CTSO activities positively affect student academic engagement; and the more involved the students are, the better the results (Stone, 2006). CTSOs also improve soft skills. When surveyed, 79.51% of the respondents felt students lack the basic skills needed to be prepared for the workforce.
3. To ensure the CTE programs are meeting the needs of the local community and state, program evaluations need to occur on a yearly basis. These

evaluations will monitor the different types of industry available, market trends, and projections. The information obtained from the results should be used to design relevant CTE programs that provide useful skills to meet the needs of regional employers, promote student engagement, and provide career-relevancy to future careers. By aligning the CTE programs with the needs of industry, the schools will be better prepared to meet the needs of the workforce. When surveyed, 53.85% of employers felt that new hires were unprepared to perform entry-level duties. When surveyed, 66.67% of the respondents felt the CTE program needed improvement aligning courses with current workforce needs.

4. Continue to implement WorkKeys in high school CTE programs. WorkKeys is a job skills assessment system that helps employers select, hire, train, develop, and retain a high-performing workforce. This series of tests measures foundational and soft skills and offers specialized assessments to target institutional needs. WorkKeys has helped millions of people in high schools, colleges, professional associations, businesses, and government agencies build their skills to increase global competitiveness and develop successful career pathways. Successful completion of the WorkKeys assessments in Applied Mathematics, Locating Information, and Reading for Information can lead to earning ACT's National Career Readiness Certificate (NCRC), a portable credential earned by more than 1 million people across the United States (ACT, Inc., 2018).

The following recommendations are intended for high schools to improve their CTE program.

1. Outreach to parents should be done to ensure they understand the important role they play in supporting their students in preparing for college and careers. In the Graduate Survey, parents/family members had the largest influence over student career decisions. Further research should be conducted on parent perceptions of the value of CTE in addressing college and career readiness. This would educate the parents and empower the students.
2. Information needs to be shared with high school administrators and guidance counselors about the value of CTE. Administrators have the power to employ CTE teachers, and guidance counselors are the ones who place students in courses. If CTE proves to be valuable, guidance counselors could be more strategic about placing students on the proper career pathway, and high school administrators would be more comfortable supporting and investing in their CTE programs.

The following recommendations are intended for community colleges to improve their CTE program.

1. Develop a taskforce to include representatives from community colleges and district CTE personnel. This would bridge the gap and promote collaborative efforts to work together and provide a quality CTE program.
2. Promote dual enrollment programs. Students who participate in dual-credit opportunities have the benefits of earning credits toward an associate or bachelor's degree at a minimum to no cost. Guilford County, North Carolina schools have seen substantial success using the early college model. Four of the early college schools allow students to earn college credit while still in high school. Each had a 100% graduation rate in 2011 (Adams, 2012). The

graduation rates of CTE students are significantly higher than those of non-CTE students. CTE offers alternative delivery methods, which are appealing to a large number of students. The alternative delivery methods include magnet schools, smaller learning communities, middle college high schools, and accelerated programs (Martin & Halperin, 2006). If dual enrollment increases, more students would graduate prepared ready for college and the workforce.

Recommendations for Further Study

The following are recommendations for further study.

1. Outreach to administrators, guidance counselors, and community college personnel should be made in order to gain a better understanding of why they had a low opinion of CTE. By obtaining this information, more effort could be made to improve the brand and image of CTE in the high schools and community colleges.
2. Strengthen the efforts in career guidance so students can be placed on the best career pathway. Work-based learning is a crucial way for students to determine the right career pathway. The research provided by Bottoms et al. (2005) proved that students in high-achieving rural high schools receive quality work-site learning experiences. As mentioned in this study, several high-performing schools also have a high percentage of teachers who serve as career advisors to students. These teachers are involved in giving both parents and students advice on career and college opportunities.
3. Continue to provide rigorous CTE programs that incorporate math and literacy skills. Based upon the National Research Center for CTE's research-driven

philosophy of fully contextualized curriculum integration, Math-in-CTE is not a curriculum but a process through which the math that naturally occurs in the CTE curriculum is enhanced. Students in these programs performed significantly better on standardized math tests and community college math placement tests than students who received regular CTE curriculum. In developing the Literacy-in-CTE curriculum integration model, which was based on the successful Math-in-CTE curriculum integration study and professional development model, National Research Center for CTE researchers at Cornell University experimentally tested two approaches to integrating literacy skills in CTE. The results showed that both approaches significantly improved student literacy skills, but one framework that utilized authentic texts and implemented specific reading strategies did more to improve student reading comprehension and vocabulary and increase literacy in high school CTE classrooms (National Research Center for CTE, 2013). This type of rigor will provide students with skills needed to compete worldwide.

Limitations

There were several limitations encountered during the course of the research study. One of the limitations was that the surveys could only be administered once. If it could have been resent, they may have been an increase in participants. Another limitation of the study was the time period in which the study was conducted. If more time was allotted, the research could have retrieved data from more sources. Due to the nature and scope of this study, a time constraint had to be put in place.

Another limitation is the potential bias of the researcher. The researcher has been

employed by both counties in which the research took place and has a CTE teaching license.

Delimitations

All participants in the study were limited to two counties in eastern North Carolina and included two community colleges, one school district, and one workforce employer. The participants were community college administrators and instructors; and district high school administrators, guidance counselors, and CTE department. Most participants are employed by the state. Due to the time constraints and scope of this study, the research determined these boundaries needed to be in place.

Conclusions

High school education has evolved over the past half century. Advances in science, technology, engineering, and math have fueled the demand for a highly skilled workforce. These demands have made a high school education transform into a minimum requirement for entry-level positions in the labor market. Currently employers are struggling to fill positions due to the lack of skilled workers, so graduating students who are college and career ready is critical if they wish to successfully compete in the 21st century workforce. High school completion has become a requirement for accessing additional education, training, and career advancement. The skills employers demand today are vastly different than the skills required a number of years ago (Jerald, 2009).

This study examined CTE's role in addressing the ill-prepared workforce and college and career readiness. CTE currently touches the lives of 14 million students in 1,300 public high schools and 1,700 2-year colleges nationwide. At its core, the mission is to prepare students for success in college and careers by helping them develop the skills, technical knowledge, academic rigor, and real-world experience for high skill, high

demand, and highly successful careers (Clagett, 2014). CTE is the only program in high schools cultivated to address successful preparation for the workforce.

This study focused on the perceptions of district high school administrations, guidance counselors, a CTE department, two community colleges, and a workforce employer to determine the value of CTE in addressing the ill-prepared workforce and college and career readiness. The findings of the study identified several areas of deficiencies. The skills that employers look for in employees are not being learned or practiced by students while in high school. Wagner (2008) supported the findings in this study and the findings in *The Ill-Prepared U.S. Workforce* released by the Conference Board in 2009. Through the findings of this study, it is the intention of the researcher to improve CTE, hence improving the quality of employees entering the workforce.

CTE is an important piece of the puzzle when it comes to preparing the future workforce of the United States. It is the American education system's duty to graduate students who are college and career ready, so they can become productive and skilled contributors in the workforce. With the job market requirements and education continuing to change, CTE must be proactive in meeting the challenges of preparing the next generation of the American workforce.

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Appendix A

Explanation of Figure 1

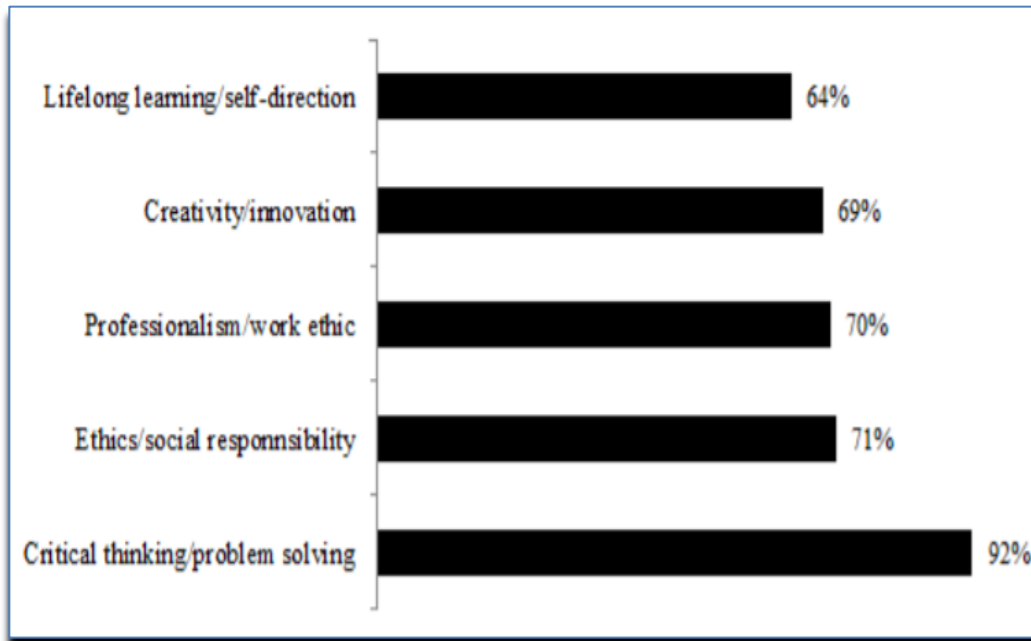


Figure 1: “High Need” Areas for Training (Casner-Lotto et al., 2009).

Note: Percentage of employers who believe that additional training is needed in the perceived high need areas.

Appendix B

Explanation of Table

Table

Program Overview for Career and Technology Center

Program	Industry Certification	Dual–Credit Offered
Agriculture	No	Yes
Automotive Technology	No	No
Business Education	No	No
Carpentry	National Center for Construction and Education Research	Yes
Cosmetology	South Carolina Cosmetology License	No
Culinary Arts	ServeSafe	No
Drafting	No	Yes
Electricity	National Center for Construction and Education Research	No
Engineering	No	No
Graphic Communications	No	No
Health Science	First Aid; CPR; AED; National Health Science Assessment	Yes
Machine Technology	OSHA	Yes
Marketing	No	No
Mechatronics	No	No
Sports Medicine	First Aid; CPR; AED; National Health Science Assessment	No
Welding Technology	National Center for Construction and Education Research	Yes

Note: list of courses offered at the Career and Technology Center, industry certification offered, and if the program offers dual-credit opportunities.

Appendix C
Graduate Survey

Graduate Survey

To better address the needs of potential employers, colleges and the Career and Technical Education Program; you are being invited to participate in a research study. This study will examine the perceptions of District High School Administrators, Guidance Counselors, CTE Department, two Community Colleges; and a Workforce Employer (Good Year Tire and Rubber Company).

The perception sought is the value of Career and Technical Education in addressing the ill-prepared workforce, and whether or not high school training is preparing students to be college and/or career ready. These questions have already been validated in another study. This study is being conducted by Kamina Fitzgerald (Formative Assessment Coach and Gardner-Webb University Ed.D. Candidate).

There are no known risks if you decide to participate in this research study. There are no costs to you for participating in the study. The questionnaire will take approximately ten minutes to complete. The information collected may not benefit you directly, but the information learned should provide more general benefits. Your participation in this study is voluntary. By completing the survey, you are voluntarily agreeing to participate. You are free to decline to answer any question you do not wish to answer for any reason.

I will protect against breach of confidentiality by using a password-protected computer to handle participant information and data. All responses will be identified as anonymous and no identifying information will be provided. Only a numbering system will be used to identify school and individuals participating in this study.

If you have any questions about the study, please contact Kamina Fitzgerald at Kfitzgerald@gardner-webb.edu

Graduate Survey

1. Did you graduate from high school?

- ☐ Yes
- ☐ Received GED
- ☐ Did not graduate

2. What is your gender?

- ☐ Female
- ☐ Male

3. What is your race?

- ☐ White
- ☐ Black or African American
- ☐ American Indian
- ☐ Asian
- ☐ Hispanic
- ☐ Other (please specify): _____

4. Who had the most influence over your career decisions? (choose all that apply)

- ☐ Teachers
- ☐ School Counselor
- ☐ School Administrator
- ☐ Parents/Family Members
- ☐ Media
- ☐ Friends
- ☐ Other (please specify)

5. What did you do the first year after you graduated high school? (choose all that

apply)

- ☐ Worked full-time
- ☐ Entered the military
- ☐ Worked part-time
- ☐ Attended a technical/two-year college
- ☐ Attended a four-year college
- ☐ Unemployed

5. In what career field have you worked?

- ☐ Agriculture, Foods, and Natural Resources
- ☐ Architecture and Construction
- ☐ Arts, Audiovisual Technology and Communication
- ☐ Business, Management and Administration
- ☐ Education and Training
- ☐ Finance
- ☐ Government and Public Administration
- ☐ Health Science
- ☐ Hospitality and Tourism
- ☐ Human Services
- ☐ Information Technology
- ☐ Law, Public Safety and Security
- ☐ Manufacturing
- ☐ Marketing, Sales and Service
- ☐ Science, Technology, Engineering and Mathematics

☐ Transportation, Distribution and Logistics

☐ Other (please specify): _____

7. Did your vocational teachers assist you in connecting your schoolwork with your career interest?

☐ Sometimes

☐ Often

☐ Most of the time

☐ Always

☐ Not Really

8. Which career activities did you participate in while you were in high school?

(choose all that apply)

☐ Career Fair (you visit employer's booths set up in your school)

☐ Career Guest Speakers (employers visit your classroom)

☐ Work-Based Learning (shadowing, internships)

☐ Company Tours (you tour a company)

9. Did you enter into the career field that you prepared for when you were in high school?

☐ Yes

☐ No

10. Overall, do you feel that Career and Technical Education and training adequately prepares students for college and career readiness?

☐ Yes

☐ No

Thank you for participating in this survey

Appendix D
Employer Skills Survey

Employer Skills Survey

In an effort to better address the needs of employers, you are being invited to participate in a research study. This study will examine the perceptions of District High School Administrators, Guidance Counselors, District CTE Department, two Community Colleges; and a Workforce Employer (Good Year Tire and Rubber Company). This study will examine the perceived skills gap of high school graduates. This study is being conducted by Kamina Fitzgerald (Formative Assessment Coach and Gardner-Webb University Ed.D. Candidate)

There are no known risks if you decide to participate in this research study. There are no costs to you for participating in the study. The questionnaire will take approximately ten minutes to complete. The information collected may not benefit you directly, but the information learned should provide more general benefits. Your participation in this study is voluntary. By completing the survey, you are voluntarily agreeing to participate. You are free to decline to answer any question you do not wish to answer for any reason.

I will protect against breach of confidentiality by using a password-protected computer to handle participant information and data. All responses will be identified as anonymous and no identifying information will be provided. Only a numbering system will be used to identify school and individuals participating in this study. If you have any questions about the study, please contact Kamina Fitzgerald at Kfitzgerald@gardner-webb.edu

1. Do you believe employees entering employment immediately after high school bring the basic skills needed to complete the job assignments (assuming a high school diploma is all that is required)? i.e. Are high school graduate job seekers prepared?

☐ Yes or No

2. If you answered “no” to the previous question, which skills should students have when they leave high school in order to be a successful entry-level employee?

- ☐ N/A I answered yes
- ☐ Communication and written skills
- ☐ Agility and adaptability skills
- ☐ Collaboration skills
- ☐ Critical Thinking and problem-solving skills
- ☐ Accessing and analysis skills
- ☐ Desire to be a life-long learner
- ☐ Punctuality
- ☐ Positive attitude

3. What could the Career and Technical Education program do to improve college and career readiness?

- ☐ Nothing, I believe Career and Technical Education Programs are doing a good job preparing students to be ready for college and/or careers.
- ☐ They could do better provided more courses that are aligned with current workforce needs.
- ☐ Other (please specify) Feel free to provide suggestions

Appendix E

Explanation of Figure 2

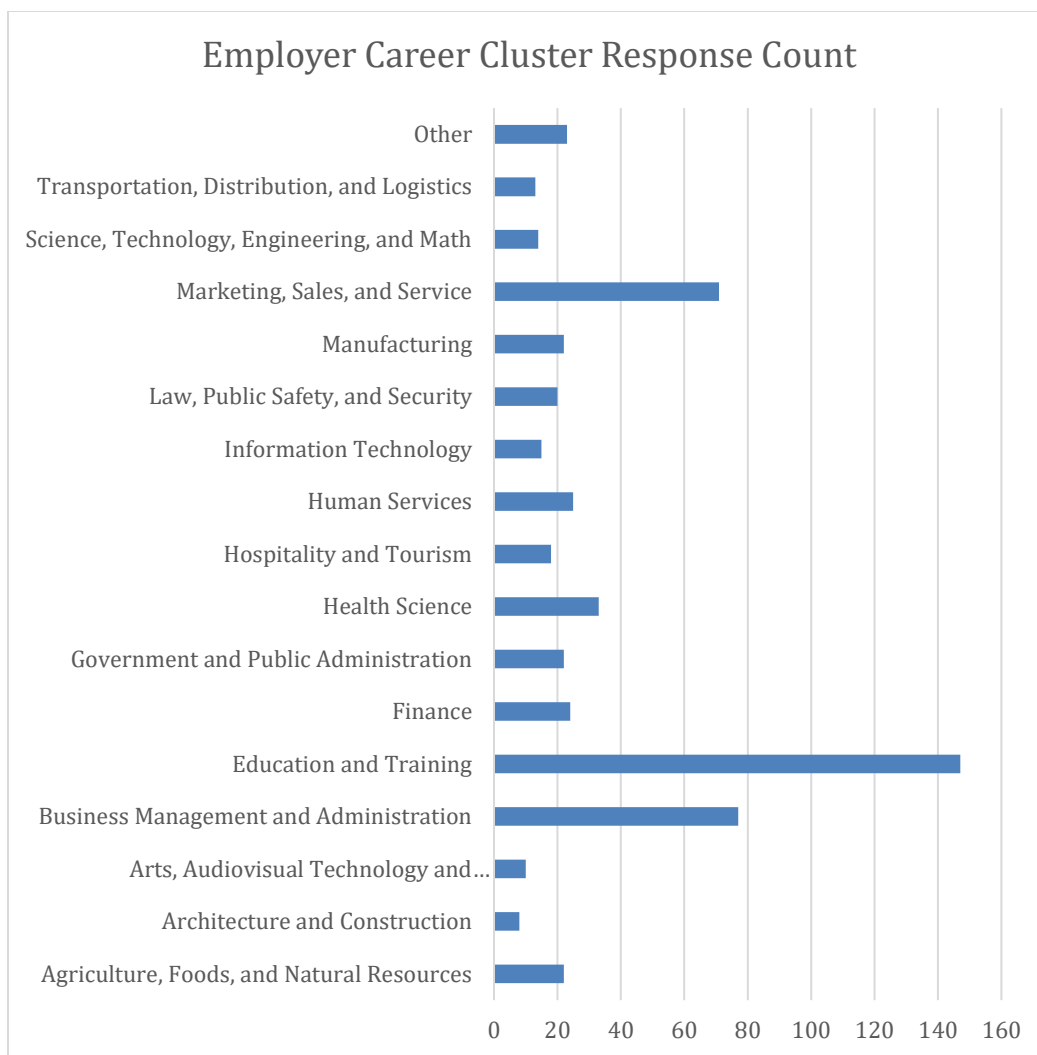


Figure 2: Employer Career Cluster.

Note: The career clusters that were represented by the respondents. Most employers participating in this study operated in the Education/Training and Business/Marketing and Administration career cluster.

Appendix F

Explanation of Figure 3

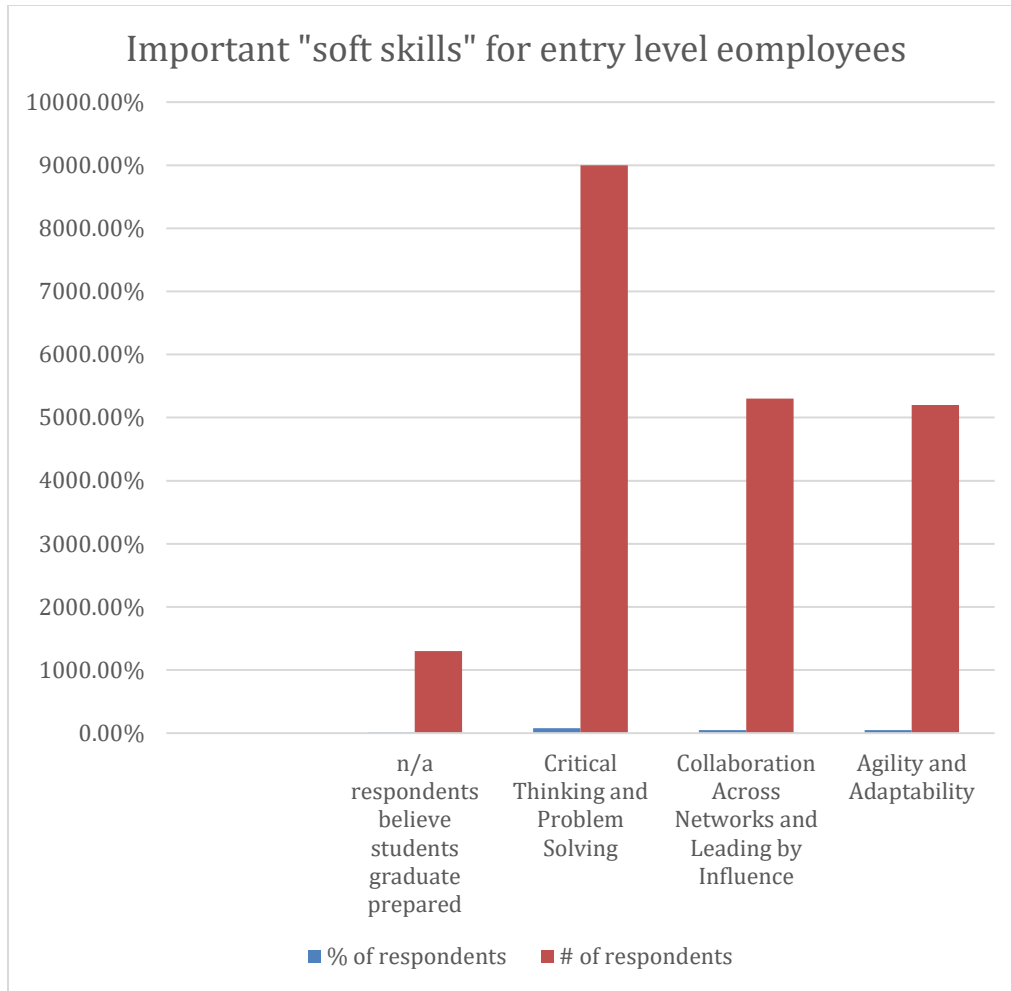


Figure 3: Adecco Staffing's Top Soft Skills for Entry-Level Employees.

Note: List of the essential skills that Adecco Staffing Employers believe are important to achieving their organizational goals.

Appendix G

Explanation of Figure 4

Responses on how to improve College and Career Readiness within CTE from Respondents:

I believe CTE doesn't get enough credit but does more to help our students be ready for the work force than any other areas of education.

I do not know.

We need to do more activities that cause students to get up in front of others, so they know how to speak. Technology is good but has decreased some communication/social skills.

Juniors and Seniors need to learn what to expect, how to dress and prepare for a job interview (prepare, practice, present).

Nothing beats hands-on experience/more internships of job shadowing.

More current curriculums that interest students. Business simulations, for example partner with a real business and find a way in the middle level to make it impactful rather than just a computer skills or computer apps class. Make it the class that the student remembers and always references as I in middle school this class taught me...

Work together on campuses.

broaden the offerings of vocational courses.

We do not instill good work ethics in our students.

Financial Peace University or something for finances: Social Skills, Critical Thinking Course, Basic Tools Workshop.

Reinforce critical thinking skills, make applicable.

Many students are guided towards a 4-year university and the value of a career in trades is no longer touted as professional. Employers stress that students lack soft skills.

Teach skills and crafts that are actually used on the job. Also, high school level work should adequately prepare students for college level work, which should ultimately prepare students for employment.

Working at a technical college that offers so many options, I think that it's important to get the word out to high schools about technical degrees and certifications. Students should be informed of the options that they have in this educational arena as well as at a 4-yr university or the military.

I am not sure. I don't know enough about the program.

Teach and/or enforce the concept of accepting personal responsibility.

enhancing discipline on the soft skills will lead to the development of the hard skills.

It appears that you have a typo in your second answer choice option here.

More soft skill integration in CTE courses are needed. It is hard to teach soft skills in a course, but if the same expectations that employers have were integrated into the classroom (i.e. attendance/punctuality, communication skills) that might help. We also need better career guidance in the high schools. Students are place in CTE courses just to

give them an elective and not because anyone spent any time helping the student develop a career plan.
Teaching soft skills.
High schools seem to focus on information rather than skill-based learning.
More soft skills.
These questions to really address the issues. They need a work ethic and they need an adult environment that emphasizes responsibility and deadlines for getting things done.
Not sure if this is what is happening all over the country or just our region, but so many of our students that are coming to our Community College are completely floored to find out we do not allow them to make up their missed assignments, redo test, to turn in work late. It is so widespread that it cannot just be one school or one teacher. Our K-12 are setting so many of our students up for failure.
give as much hands-on experience as possible.
Structure classes as though the students were clocking in at work and ready to perform.
More students should be encouraged to participate in CTE programs.
Incorporate more work-based learning earlier in the high school curriculum.
Hands-on training.
Maintenance/Engineering.

Figure 4: Improve college and career readiness within CTE.

Note: Illustrates the comments left by respondents in the Employer Skills Survey. The comments explained what CTE could do better to improve college and career readiness.

Appendix H

Explanation of Figure 5

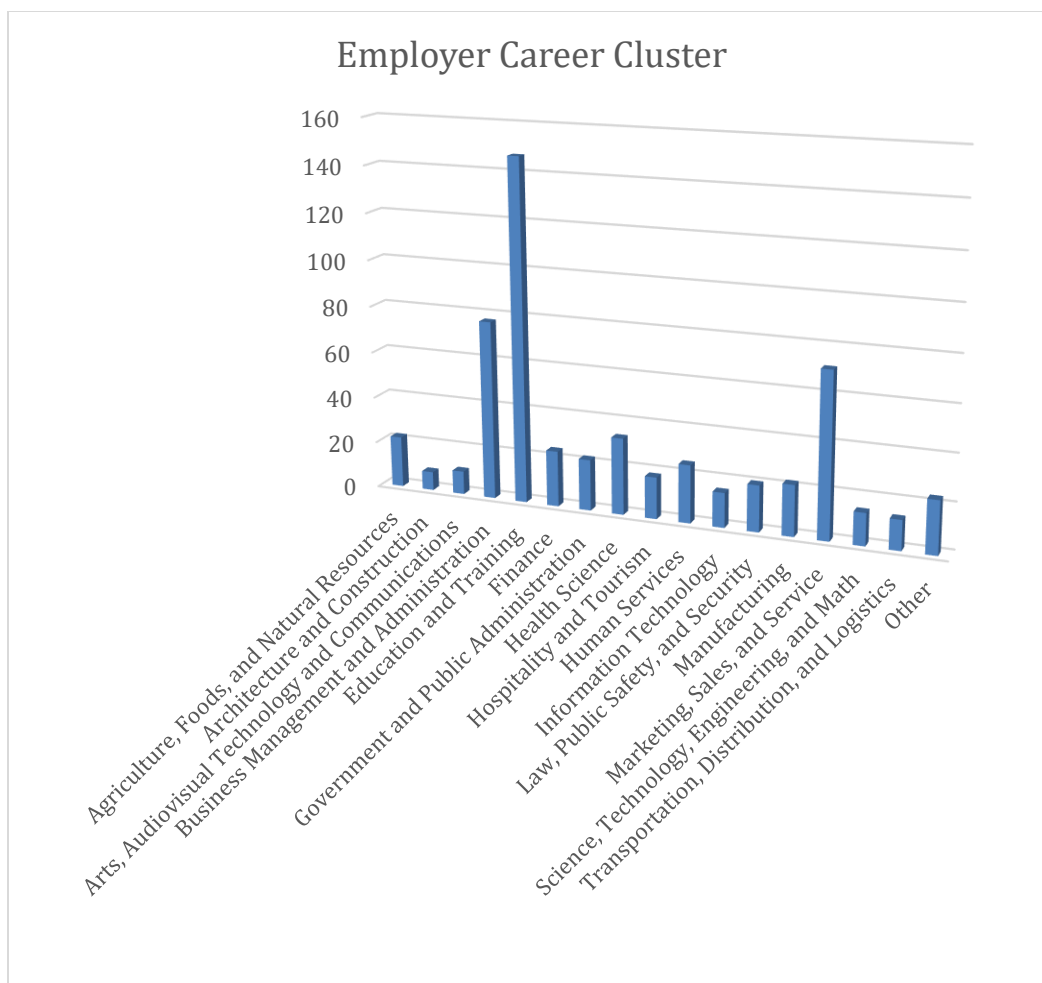


Figure 5: Employer Career Cluster.

Note: Respondents in the Graduate Survey indicated their previous work experiences.

Appendix I

Explanation of Figure 6

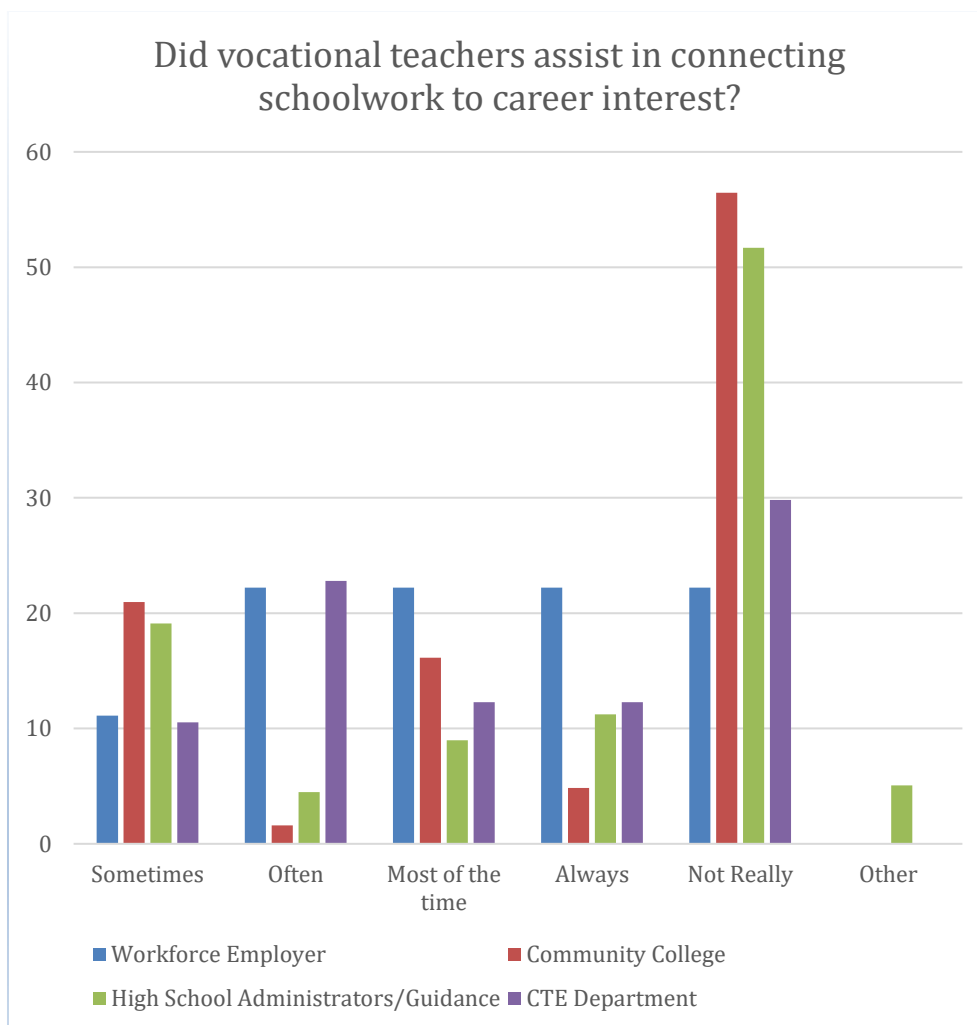


Figure 6: Schoolwork and Career Interest Connection.

Note: Illustrates if the respondents believe their teachers connected schoolwork to their career interest.

Appendix J

Explanation of Figure 7

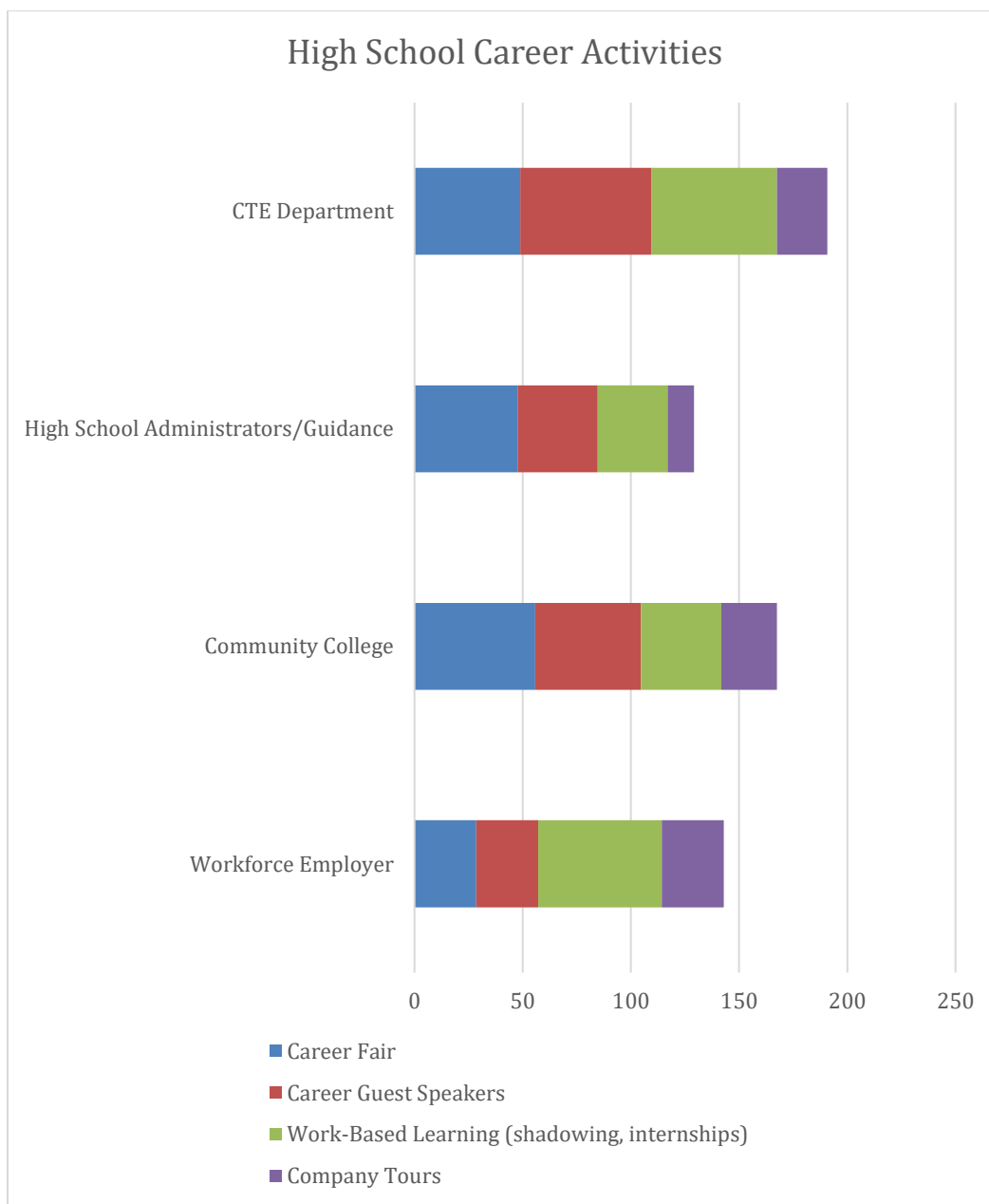


Figure 7: High School Career Activities.

Note: Illustrates the type of high school career activities each respondent experienced.

Appendix K

Explanation of Figure 8

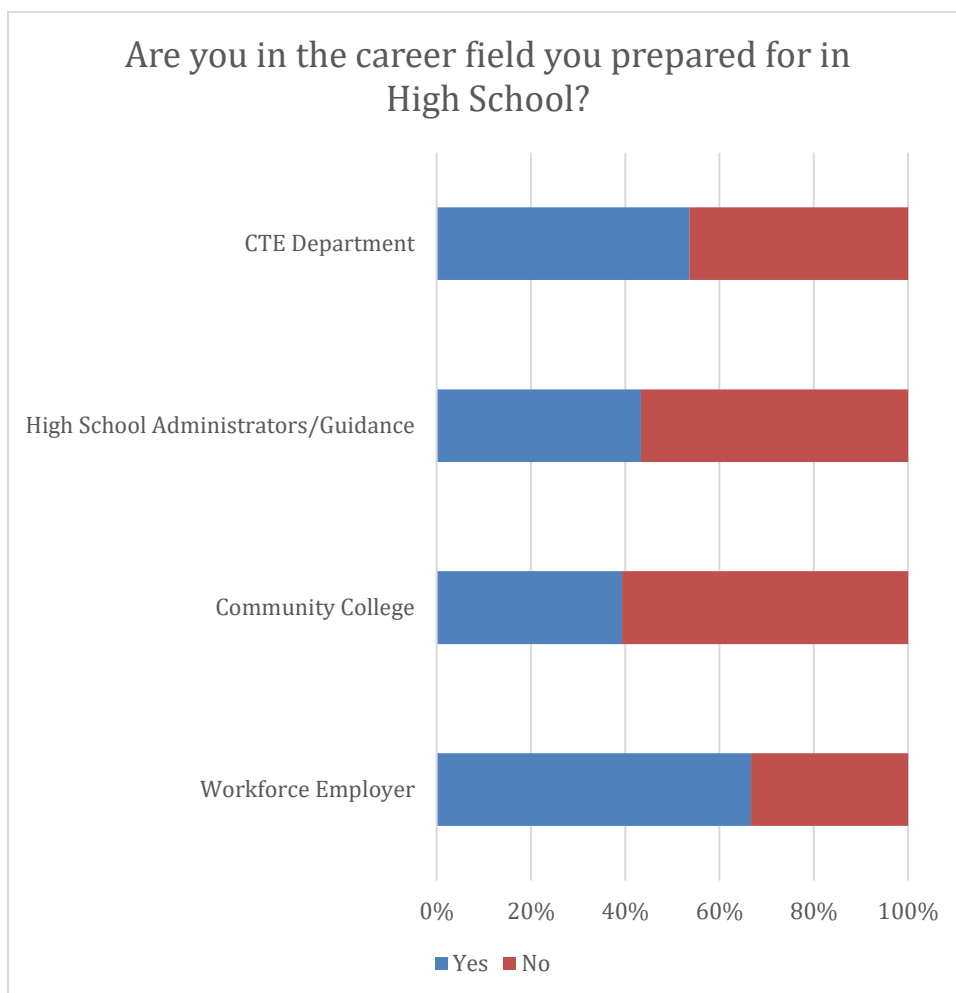


Figure 8: Career Field and High School Preparation.

Note: Illustrates if the respondents are now working in the career field they prepared for in high school.

Appendix L

Explanation of Figure 9

Comments from District CTE Department:
It does now. I graduated high school 34 years ago and thought I wanted to be a nurse. CTE has come a long way.
If the student did their work and come to school.
I do not feel I can adequately answer this question.
Less testing emphasis and more internships/job shadowing.
It depends on the school. I believe if administration would put in place and enforce a no phone policy students would be better prepared.

Figure 9: College and Career Readiness Preparation.

Note: List comments from the District CTE Department explaining if they felt students were being adequately prepared for college and career readiness; 53.59% of the respondents felt that CTE adequately prepares students to be college and career ready.

Appendix M

Explanation of Figure 10

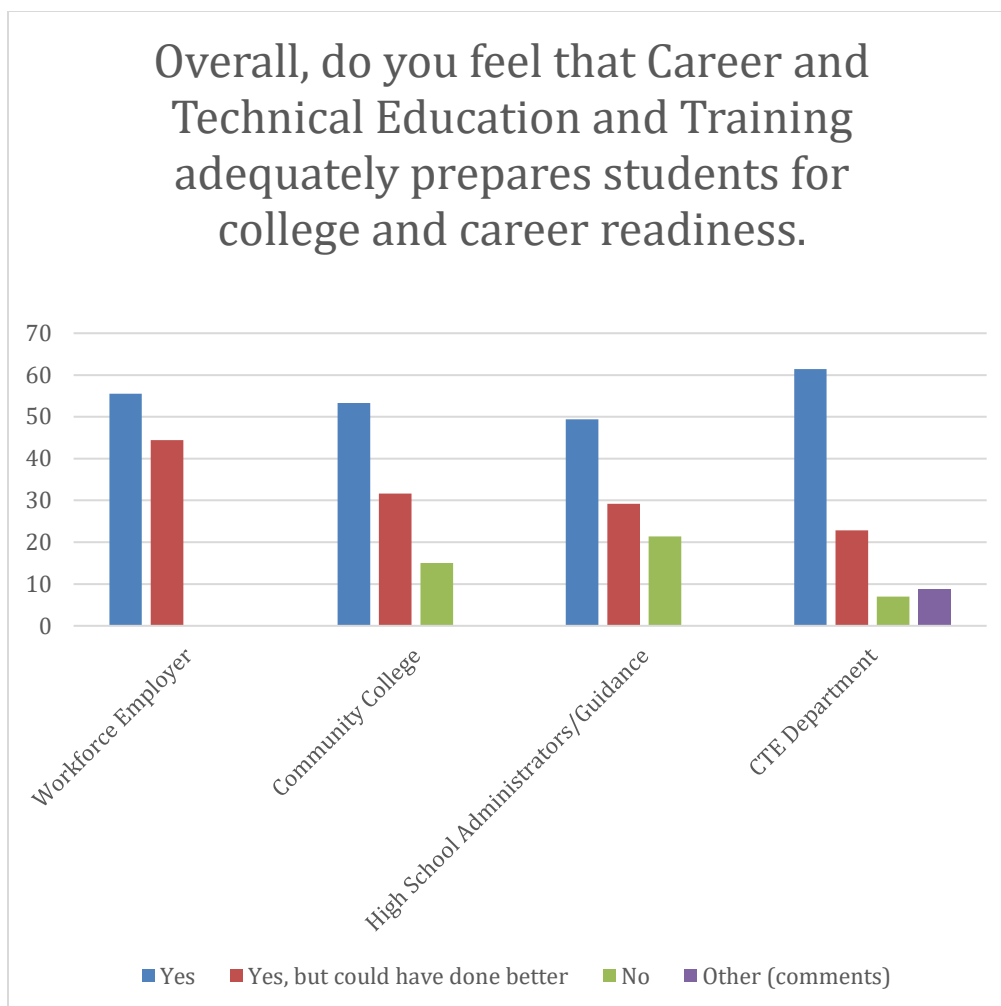


Figure 10: College and Career Readiness.

Note: Illustrates whether or not the groups believe Career and Technical Education and Training adequately prepares students for college and career readiness.

Appendix N

Explanation of Figure 11



Figure 11: Workforce Employer Rating on Soft Skills.

Note: Illustrates the workforce employers' ratings on which soft skills were needed to successful in the workplace.

Appendix O

Explanation of Figure 12

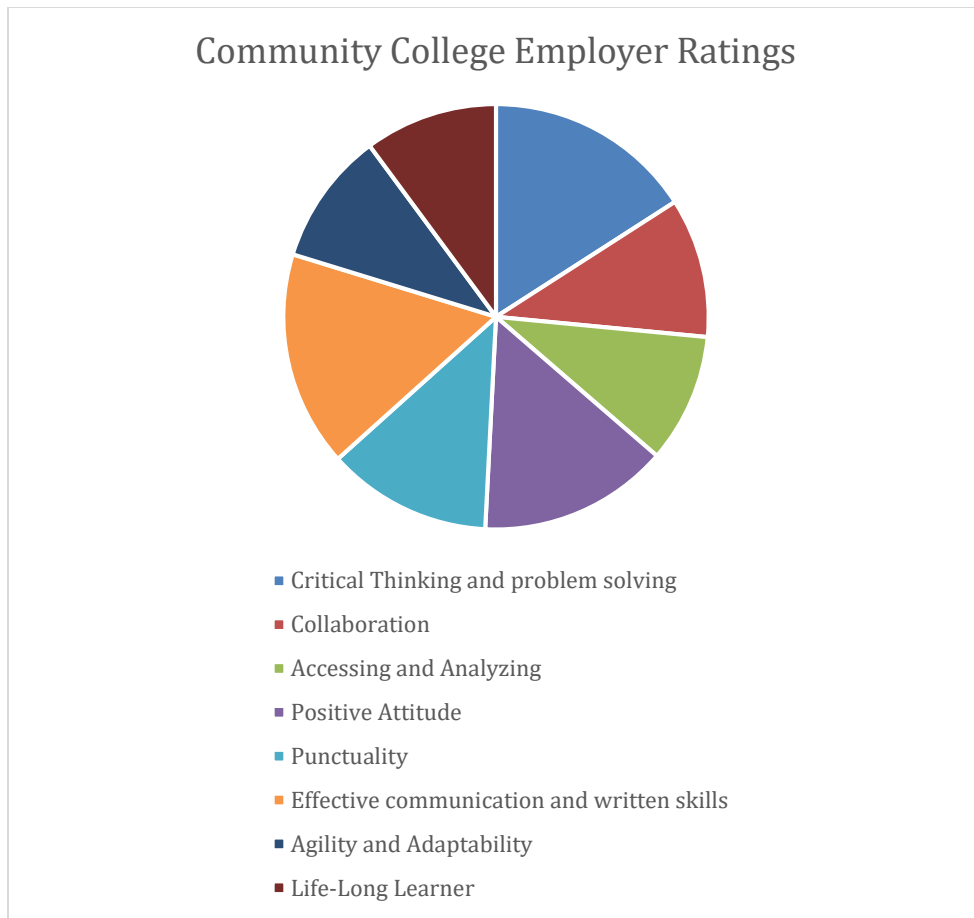


Figure 12: Community College Employers Rating on Soft Skills.

Note: Illustrates the community college employers' ratings on which soft skills were needed to successful in the workplace.

Appendix P

Explanation of Figure 13

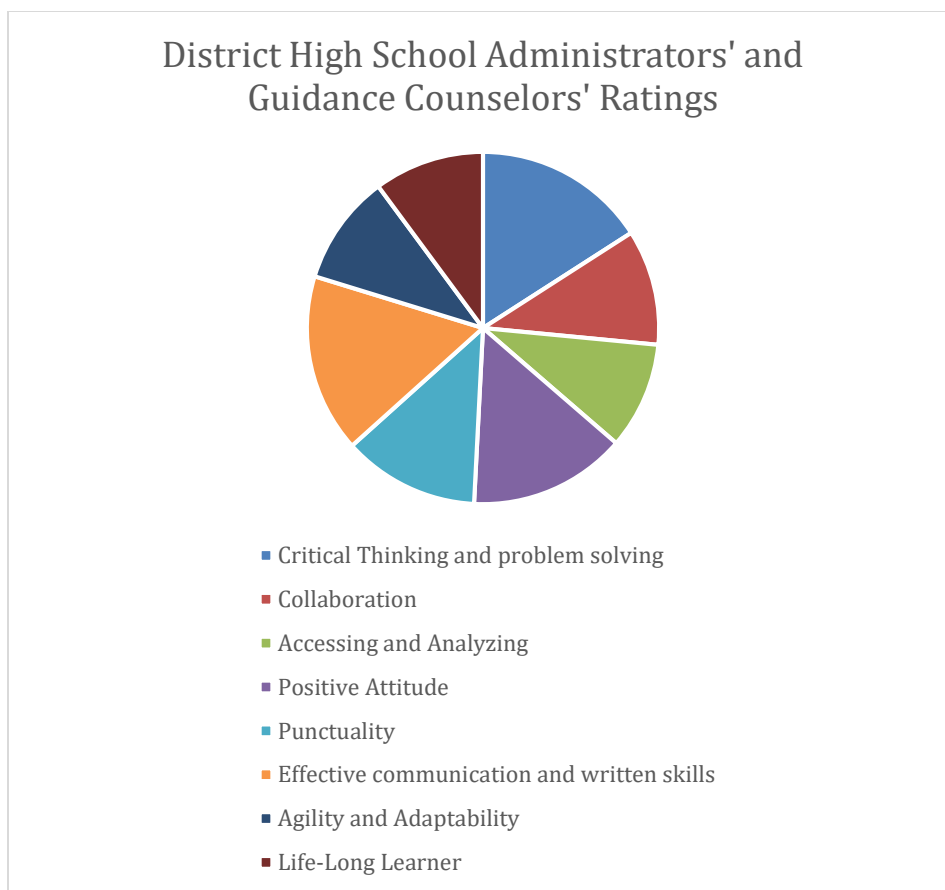


Figure 13: District High School Administrators' and Guidance Counselors' Ratings.

Note: Illustrates the district high school administrators' and guidance counselors' ratings on which soft skills were needed to successful in the workplace.

Appendix Q

Explanation of Figure 14

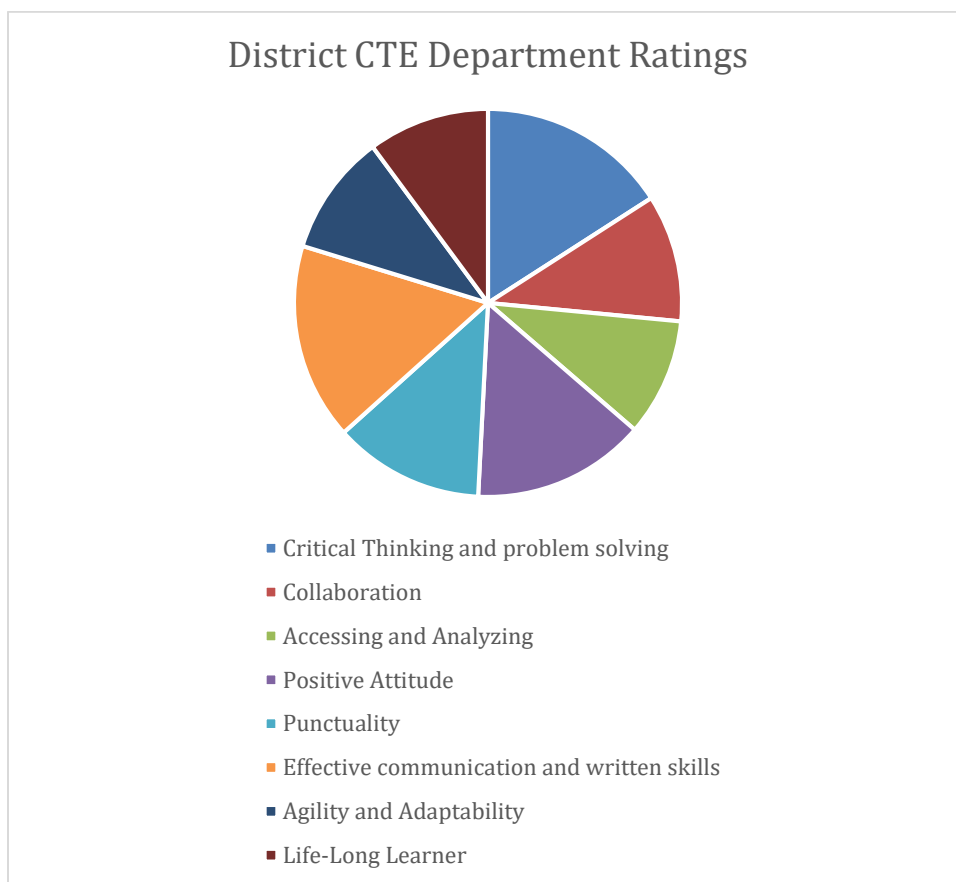


Figure 14: District CTE Department Ratings.

Note: Illustrates the district CTE department ratings on which soft skills were needed to successful in the workplace.

Appendix R

Explanation of Figure 15

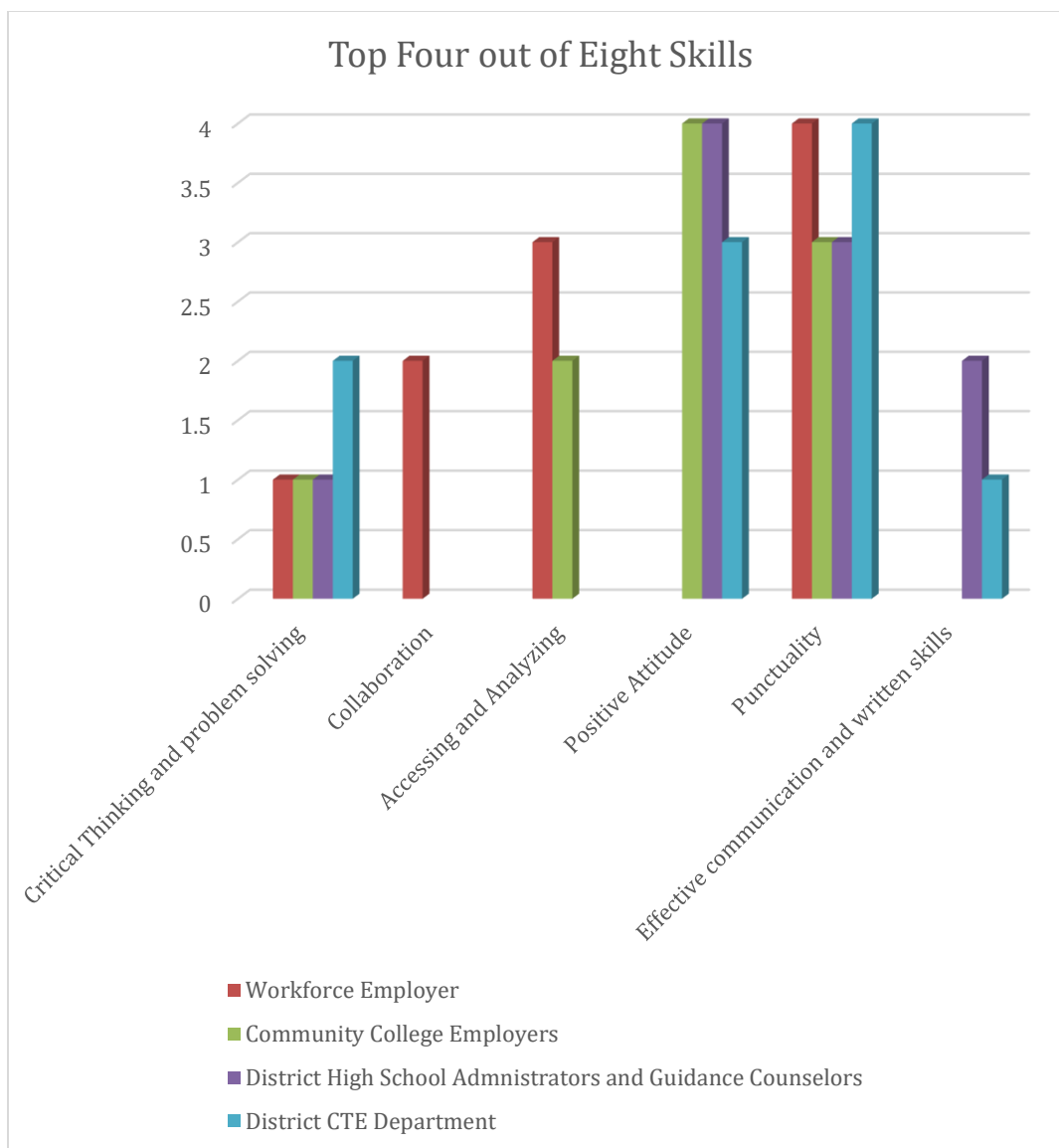


Figure 15: Top Four out of Eight Skills among Respondents

Note: Illustrates the top four out of eight skills chosen by each group, one being the “most important” and four being the “least important” of the four.