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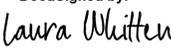
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Equipping Tomorrow's Skilled Workforce by Changing

Perceptions of Career Technical Education

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Abstract

This study sought to identify the perceptions of counselors, parents, and students to arrive at reasons why high school students chose to, or chose not to enroll in a high school's Career Technical Education (CTE) courses. An online survey was given to approximately 500 CTE students composed of mixed grade levels (9th-12th) and approximately 100 students of mixed grades whom had never taken a CTE course. The study's results included the following findings: 1. Only 26 percent of entering 7th graders go on to earn their Bachelor's Degree, while 74% of students presumably entered the workforce; 2. Skilled trade classes were populated with an average of two times the percentage of special education students versus the normal percentage school-wide; 3. Counselors were mostly unaware of the first finding, and on average they believed that 55% of students went on to earn a Bachelor's degree; 4. 72% of parents surveyed had taken a CTE course during their schooling, and had a generally positive view of CTE; 5. Friends were most influential to students choosing to enroll or not to enroll in a CTE class, while parents and teachers each shared the 2nd most influence in students' decisions. Based on literature review and the researcher's data, recommendations were made to improve quality of schools' CTE programs, how to promote CTE courses more effectively, and what recruitment activities had the greatest influence of attracting new students to CTE.

Dedication

I dedicate this work to the God-given creativity which resides in each of us. May the findings of this study inform, motivate, and inspire those who work within the educational system so that it might change for the better: towards a rediscovery and rebuilding of technical education. I thank the Lord Jesus Christ for the inspiration, encouragement, and guidance which has brought me to this place in my life. Thank You for surrounding me with many fathers (Papa Galo, Papa Larry, Papa George, “Pops”) whom have shown me how to be a man, and thank You for amazing friends (Andy, Pat, J-Dawg) who have loved me like a brother.

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CHAPTER 1: DEFINITION OF THE PROBLEM

The primary purpose of this study is to examine the perception of students, parents, and counselors from a comprehensive public high school in San Diego County towards Career Technical Education (CTE) classes. Specifically, this study aims to identify how to shift current perceptions of technical careers and thereby increase enrollment in career technical programs. In the past, “vocational education” was seen as most fitting for disadvantaged students from lower-class families (Campbell, 1986; Levesque & Hudson, 2003; Gaunt, 2005). In general, those from wealthier families were earmarked for more academic education. This separation and disaggregation of classes of people has created a chasm in our education system which still exists today. Today, vocational education and the careers which it prepares students for are viewed as “beneath” those who come from the middle-to-upper classes and are instead encouraged to pursue a university degree (researcher’s observations). Today it seems like there’s a belief among students that a university degree in practically anything would guarantee (financial) success in life (Flemming, 2012). Anecdotal evidence of this is seen in how almost every single high school in America has aligned their graduation requirements with those of university admission requirements. Students are being forced to be college ready even though the majority of students won’t go to college for various reasons (SDCOE, 2015).

CTE courses uniquely engage and support the many students who are disenfranchised by the “university for all” stigma but who are forced to go that direction. Many American students are inducted into a school system whose graduation requirements match those of university entrance requirements. Even if students are determined to enter a career immediately after high school, many are hard pressed to find a satisfactory CTE pathway in their school. Along with the relatively recent and intense focus on college readiness has come an even greater disdain for

technical careers, the trades, or any job where one might get their hands dirty. This disdain can be seen in the ways parents, students' friends, and counselors dissuade certain students from enrolling in a CTE class, while actively persuading and even strategically placing students who have little to no hope in going to college into a "shop class" (San Diego Student Information System Data, 2017-2019).

Purpose of Study

This study will research the perceptions of students, parents, and counselors at SDHS (pseudonym), a comprehensive public high school in San Diego County, and how those perceptions drive certain students toward career technical classes while dissuading others. It will build on the previous research done by others which have focused on either counselors' background knowledge of CTE (Thornburg, 2016), influencing factors of students and their enrollment in CTE at their school (Gaunt, 2005; Rossetti, 1990), or what marketing tactics would yield an increase in enrollment in CTE (St. Gean, 2010). It will also provide an accurate sense of the general climate and attitude toward CTE careers held by various stakeholders within San Diego's public school system. The following research question will be addressed: How can high schools in San Diego County shift current perceptions of technical careers and increase interest and enrollment in CTE programs?

Preview of Literature

One of the most important factors in attracting students to a highly motivating course of study is shifting the perceptions of essential stakeholders such as parents, students, counselors, and teachers concerning a career in a technical career (Brown 2009, Jimoh 2014). St. Gean (2014) found that mothers, female guardians, and friends had the most influence for enrolling students. Many of these participants' perceptions are based on their limited understanding of

CTE as a whole and/or are based on past stereotypes that have been acquired from various sources.

One of the main ways high school students learn about career choices is through some of career counseling, historically provided by guidance counselors. To no surprise, the more career counseling a student receives, the more he or she knows about the many viable and high paying careers that are available. Radcliff (2016) interviewed 17 CTE administrators from Riverside, San Diego, and San Bernardino counties to compile their opinions on many aspects of CTE program site controls as well as recruitment practices, finding that there were two main discouragers to students enrolling into a CTE program. The first was the negative stigma regarding CTE programs held by students, and the second was school counselors actively discouraging students from enrolling in CTE.

Huss and Banks (2001) identified seven powerful strategies for not only educating counselors on the virtues and benefits of CTE programs, but to actively involve them in the inner workings of a CTE department in order to see firsthand how rich an experience from which students can benefit (p. 4).

Preview of Methodology

Research data will be gathered using mixed methods: quantitative and qualitative methodology. Separate surveys for students, parents, and counselors. All students who are enrolled in CTE courses at SDHS (a pseudonym) during the 2017-2018 school year will be asked about the influences affecting their choice to enroll in their CTE courses. Parents' perception of CTE will be determined through an online survey, as will counselor's perception and knowledge of Career Technical Education along with its various virtues and benefits. Given the wide scope of perceptions gathered and the large number of students and parents surveyed (approximately

600 families), online surveys will be the most efficient way of gathering, organizing, and analyzing data (St. Gean, 2005).

Significance of Study

CTE offers a powerful avenue which can give students real-world work-based learning experiences. It is also the ideal launch point for mentor/mentee relationships, job shadowing, apprenticeships, and internships as bridges to allow students to determine career interests. Takeaways from the current research hold potential promise of turning the public perception of CTE for the good. Radcliffe (2016) found that "encouraging factors" included schools possessing a quality or relevant program, if a school linked to employment or additional education, if the CTE program fulfilled a graduation requirement, and if there was a positive perception of CTE on a school's campus. Beneficial recruitment methods were identified as inviting students to visit CTE classrooms, promoting CTE at feeder schools, employing a recruitment specialist, utilizing a student and product showcase, and whether CTE students have a sense of community in their class/program (Radcliff, 2016). I will utilize locally harvested data to uncover negative perceptions which students and parents might have about CTE so that efforts can be made to positively change the enrollment and buy in for various career pathways.

Conclusion

The primary purpose of this study is to uncover the perceptions of counselors, parents, and students towards Career Technical Education in order to identify how to shift current perceptions of technical careers and thereby increase enrollment in CTE programs. As an extension an understanding of SDHS' typical enrollment practices and placement of students in CTE programs will be realized in order to correct any misinformed opinions, which might affect enrollment in future CTE program participants.

Definitions

CTE = Career Technical Education, sometimes called Career and Technical Education. This is the general label on classes that are basically electives, yet have been re-engineered to include an aspect of either career readiness and/or teach technical skills where students use tools and/or technology in order to complete coursework.

Pathways = A CTE pathway is a sequence of two or more CTE courses within a student's area of career interest. Pathways are designed to connect high school classes to college, industry certifications, and/or a career (Vista Unified School District CTE Website).

CHAPTER 2: LITERATURE REVIEW

The purpose of this literature review is to examine history along with past opinions of vocation education. Its purpose is also to discover past efforts to change the perception of parents, students, and school staff of these previously-named “vocational education” - now known as Career Technical Education (CTE), and which of those efforts resulted in the greatest effect.

Tremendous change has occurred in the United States’ educational system over the last two centuries. In the past, vocational education was seen as most fitting for disadvantaged students from lower-class families. In general, those from wealthier families were earmarked for a more academic education (Levesque and Hudson 2003). This separation and sorting of classes of people has created a chasm in our education system which still exists today. Even today, vocational education and the careers it prepares students for are viewed as “beneath” those who come from the middle-upper classes and are instead encouraged to pursue a university degree. Today the standard belief in most schools across America is that a university degree in practically anything would guarantee (financial) success in life.

CTE courses uniquely engage and support the many students who are disenfranchised by the “university for all” stigma, but who are forced to go that direction either because they know of no other direction, because it is built into their graduation requirements, and/or because there are no options for study in a CTE pathway at their school. Students are funneled into the “university-prepared” pipeline because most schools today want to make all students college ready, having exceeded the mandated state graduation requirements by adding three extra classes to appease UC and CSU requirements (CADOED, 2018 and SDCOE, 2015). This phenomena might be attributed in part to our educational system’s historical attempt to adjust to labor demands, legislative initiatives, and advancements in technology and workforce needs. Or perhaps it is due to a “commitment to equity” (SDCOE, 2015) which means to give at-risk students extra support, resources, and care to allow them to achieve. It is a noble and right effort in helping those who are disadvantaged reach otherwise impossible levels of educational achievement. Yet there is a problem: producing more college graduates doesn’t mean there will be a matched increase for “high skill” jobs which require a four-year degree (Fleming, 2012). Along with the relatively recent and intense focus on college readiness has come an even greater disdain for technical careers; the trades, or any job where one might get their hands dirty (Deloitte, 2017). Yet, 50 percent of the jobs in San Diego are “middle skilled” jobs, requiring an industry credential or certification instead of a four-year degree (San Diego Workforce Partnership, 2015). That percentage is forecasted to grow by “10% in the areas of Advanced Manufacturing, Health Care, and Information and Communication Technologies” (p. 4). This disdain might be seen in the way parents, students’ friends, and counselors dissuade certain students from enrolling in a CTE class, while actively persuading and even strategically placing students who have no hope of going to college into a “shop class” (SDSIS, 2017-2019).

There is convincing evidence that shows significant academic and social benefits for students who enroll in CTE classes whom contend with a variety of challenges versus comparable students who are not in CTE classes. This reality creates an opportunity to close both the achievement gap within our schools and the skills gap that exists within our society. The achievement gap is the continued disparity of academic performance and achievement in subgroups within our schools such as socioeconomic status, gender and race/ethnicity. The skills gap is the difference of the desired performance of an employee which an employer expects, and the level of skill that that employee actually has. CTE courses and pathways, along with the new CTE Model Curriculum Standards are poised to effectively alleviate these gaps.

This review will consider research findings of how CTE positively affects graduation rates, college and career readiness, and serves disadvantaged and underserved students. This review will also highlight the reality of the relatively small percentage of San Diego County graduates who enroll in, and complete a Post-Secondary Educational degree versus the majority of (college ready) students who enter the workforce immediately after high school and what this may imply about the mismatch of effort and outcomes.

This review will focus on research with the following themes: how high schools can shift current perceptions of technical careers, and how high schools can increase interest in CTE programs. In order to gain a comprehensive understanding of CTE and how to effectively change its perception, this study will investigate how CTE programs can provide rigorous, relevant, and relatable learning experiences to aid in closing the achievement and skills gap, how CTE has an effect upon graduation rates, and the ways CTE programs can better prepare students for employment in technical careers which account for a large percentage of job openings in the United States.

Recent Changes in CTE

A Nation at Risk, published in 1983 by the National Commission on Excellence in Education, criticized the effectiveness of our educational system after comparing it to other countries' systems of education, reporting that we were not preparing our students for the workforce. Our educational system responded by placing a greater focus on academic skills but did so at the expense of the vocational skills training which students needed (Cashen, 2014). Other reports released shortly thereafter again precipitated more academically-focused changes such as graduation requirements increasing in credits for the core subjects of math, science, English, and social studies. School day hours and the number of days in the school year were also lengthened (Gordon, 2014).

Then in 1984, vocational education received significant support through the Vocational Education Act of 1963 which mandated that all students were to have access to high quality vocational education, was updated and renamed the Carl D. Perkins Vocational Education Act, also known as "Perkins 1". This act further improved access to vocational education, specifically for disadvantaged students including those with special needs. Over the next 22 years, the Perkins Act would go through four revisions in order to provide funds for the integration of technical preparation, vocational, and academic programs, further supporting disadvantaged student populations, giving greater flexibility to the development of CTE programs, and would hold Local Education Areas (LEAs) to higher accountability for what their CTE students were learning. Its latest iteration Perkins 4, which was passed in 2006, focused on strengthening the academic outcomes of CTE students and developed a greater connection between high schools and community colleges (Radcliffe, 2016).

However, five years prior in 2001, the Elementary and Secondary Education Act (ESEA) was reauthorized and took on a new name, No Child Left Behind (NCLB). The renewed and updated law called for a much stronger focus on core academic subjects along with the requirement to set clear learning standards and holding schools accountable for what their students were supposed to learn (Chadd & Drage, 2006). With the intense focus on academic subjects came the necessity to improve student reading levels, if nothing else, to allow them to pass the newly required passing on state exams. It was common practice for schools to allocate CTE money and instructional time to programs to allow for this desired student academic performance, but the problem was that the money and extra instruction was not given to CTE, and forced students to increasingly focus on academics (Cashen, 2014).

Shifting Perceptions

A shortfall of approximately 2 million manufacturing workers is predicted over the next 10 years (Deloitte, 2017; Josephs, 2017). A response to this prediction begs the question: “What types of activities yield the greatest influence in shifting the perception of parents, counselors, teaching staff, and students towards seeing technical careers as being valuable enough to commit to preparation for one by enrolling in a CTE pathway?” This question is quite salient, as there exists a “skills gap” between the currently available skilled workers and employers’ demand for skilled and qualified workers. This reality threatens “San Diego’s recovering economy and limits the economic opportunities for millions of San Diegans (San Diego Workforce Partnership, 2015). One of the most important factors in attracting students to a highly motivating course of study is shifting the perceptions of vital stakeholders such as parents, students, counselors, and teachers concerning a future in a technical career (Brown 2009; Jimoh 2014). Gaunt (2005) and St. Gean (2014) found that mothers, female guardians, and friends had

the most influence for enrolling students. Many of these participants' perceptions are based on their limited understanding of CTE as a whole and/or are based on past stereotypes that they have picked up from various sources. For instance, many would say that CTE is not for college-bound students but instead meant for future "blue collar workers". Of particular interest are similar findings in other studies, covering an array of demographics including low socioeconomic status, students of color, students with learning disabilities, and those considered most at-risk such as foster youth (Hobson, 2015; Smith, 2012). While studying a sample of 550 Michigan high school seniors' perceptions and gathering survey data, it was found that CTE students were significantly economically disadvantaged compared to non-CTE students (Gaunt, 2005). CTE students in his study indicated a poverty rate of 32% while non-CTE students reported a poverty rate of 20%. This is unfortunately the rule rather than the exception of CTE programs and is common to other studies such as the 47% poverty rate in St. Gean's (2010) study which took place in Los Angeles, California.

The same stigma placed on vocational students and vocational education from 30 to 50 years ago is still applied to today's CTE programs (Elliot & Deimler, 2007). Student enrollment data gathered from SDHS's CTE skilled trades classes during the 17-18 and 18-19 not only demonstrate this stigma but shows that these CTE classes are still being used as "dumping grounds" for low-performing students (Lewis, 2001). An examination of the department's courses, it was not uncommon that the SpEd population was double or even triple what it was in relation to the overall school demographic percentage (San Diego Student Information System, 2017 & 2018). The enrollment of these students is largely determined by student counselors and special education case managers. Normal deviation of student demographic percentages is expected in Advanced Placement classes and basic classes, but CTE courses are neither; they are

meant for *all* students. As one would expect, it was found that high school students' reception of career counseling directly increased their awareness of high-paying jobs in the technical industry, leading one researcher to conclude that counselors needed to spend more time providing students with information about those options (Thornburg, 2016).

Radcliff (2016) interviewed 17 CTE administrators from three counties to compile their opinions on many aspects of CTE program site controls as well as recruitment practices, finding that there were two main discouragers to students enrolling into a CTE program. The first was the negative stigma regarding CTE programs and the second was the students' school counselors. On the other hand, encouraging factors included schools possessing a quality or relevant program, if a school linked to employment or additional education, if the CTE program fulfilled a graduation requirement, and if there was a positive perception of CTE on a school's campus. Beneficial recruitment methods were identified as inviting students to visit CTE classrooms, promoting CTE at feeder schools, employing a recruitment specialist, utilizing a student and product showcase, and whether CTE students have a sense of community in their class/program (Radcliff, 2016).

As a way to ensure that high school counselors are well informed about the benefits of, and possess adequate knowledge of CTE, Huss and Banks (2001) brainstormed these strategies: "1. inviting counselors to serve on the CTE industry advisory meeting, 2. invite them to department, business partner, and curriculum meetings, 3. share success stories of former and current students, 4. keeping them informed via email about important information, 5. inviting them to CTE teacher workshops and professional development, 6. offering to do programs at school counselor conferences as well as at their national convention, and 7. ensuring that school counselor education programs in the area include CTE in their curricula" (p. 4).

Theme: Components of a High Quality CTE Course

Work-based learning (WBL) gives CTE students experience in the marketplace. WBL includes service learning where students meet needs within their communities and where the development of technical, interpretive, and critical thinking skills can occur simultaneously. Mastery of competencies is also possible, giving curricular standards a practical way to be realized. WBL quality and effectiveness mainly depends on how committed industry and schools are to one another and how much employers are willing to bring to the table in the sense of time and resources invested. It is within the context working on site with an industry partner company that students can gain real-life experience, practice teamwork, and how students end up achieving higher and experience much lower drop-out rates (Brown, 2009).

It has been found that student needs, when focused on and supported by staff, especially within the context of a class that they see strong relevance in, can result in high levels of motivation to complete high school. One strong CTE program in Texas saw increased success in not only graduation rates, but in transitioning into a well-paying career in the manufacturing industry (Cadena, 2013). Cadena (2013) published findings while working primarily with at-risk Mexican-American students in southwest Texas. The study reports on how students' needs are effectively met in their public school district. Qualitative evidence gathered indicated that at-risk students in this district were better prepared for life's challenges after experiencing academic success in their CTE courses regardless of what they did after high school. This study illuminated five practices within the CTE leadership team which accounted for the higher graduation rate of CTE students at Flores High School than the overall campus.

- First, support and leadership provided by administration at four different levels: providing direction, open communication, classroom visits, observations, and frequent feedback.

- Second, the CTE teachers' commitment to each student's success using specific practices such as (a) giving each student support as needed; (b) reminding students of why the courses were relevant; and (c) continually engaging students academically, socially, and intellectually.
- Third, CTE teachers strove to maintain positive interpersonal interaction with their students in a number of ways: Counseling and encouraging students on an individual basis, taking on the role of student advocate, and seeking positive parental involvement.
- Fourth, constant encouragement and recognition of students' engagement in school.
- Fifth, encouraging students' lifelong engagement with their teachers.

A major aspect of students' success hinged upon the degree to which they perceived care coming from their teachers. At-risk students were able to take on the tasks of learning far better when their individual needs were met. The teacher team used in the study acknowledged that their program was successful largely because of the members of the CTE leadership team and its stakeholders working in a coordinated effort and by garnering strong support from parents (Cadena, 2013).

Following the same theme as Cadena (2013), another researcher reports qualitative interview data from a cohort of CTE concentrators, attempting to identify high-quality indicators of their CTE-POS (Program of Study) "lived experiences". Brown (2015) identifies four major themes of a high-quality and engaging CTE courses: Self Assessment, Curricular Relevancy, Intrinsic Motivators, and External Factors That Drive Student Connections.

There exists many manufacturing-based organization whose mission is to support the future growth of manufacturing as a whole, which offer highly insightful research-based strategies for helping to change perceptions towards careers in manufacturing. One such organization is the National Association of Manufacturers who partnered with the Deloitte Center for Industry Insights to create a report on how modern manufacturers can create positive perceptions within the United States public. They point out that while approximately 80 percent of Americans believe that manufacturing is vital to our country, less than 30 percent of Americans would encourage their children to pursue a career in manufacturing. In addition, less than 50 percent of Americans believe that manufacturing jobs are interesting, rewarding, safe, clean, stable, or secure (Deloitte Center for Industry Insights, 2017). Deloitte (2017), in partnership with the National Association of Manufacturers has devised an executive playbook with eight specific strategies that industry can use to change these negative perceptions, four of which interact with parents, students, and schools.

Theme: Preparing Tomorrow's Workforce

Even though schools now require that all students graduate with coursework to make them CSU (California State University) or UC (University of California) eligible, those who actually enroll in a 4-year university and graduate with a degree account for a small number. The majority of students in San Diego County enter the workforce immediately after high school despite being forced to be college ready. Longitudinal data from the San Diego County Office of Education presented its "San Diego Higher Education Pipeline" chart, showing the number of graduates who not only enroll in post-secondary education, but who graduate with at least a Bachelor's degree in 6 years or less after beginning school. Out of the starting 40,000 students who enter middle school, nearly 8,000 students drop out at some point before finishing 12th grade

(San Diego County Office of Education, 2015). With only 26% students of those graduates earning a Bachelor's Degree, one must ask if the other 74% of students who entered the workforce adequately prepared? The San Diego Workforce Partnership (2015) reported that over 50% of San Diego job openings in the areas of Advanced Manufacturing, Healthcare, and Information and Communication Technologies. These jobs are considered "middle-skilled", requiring less than a four-year degree (p. 4).

CTE programs are a powerful means by which students gain new-found motivation and connection with industry when work-based learning is incorporated in their learning to provide powerful examples of how what they're learning applies to the "real world" (Winborne, 2017). Work-based learning (WBL) is a powerful strategy which gives students real-life experiences that they would see in the workplace. These types of experiences are where they can apply critical thinking, academic and technical skills, and build highly marketable job skills. WBL provides an effective intersection of theoretical understanding with practical experience.

Along with this theme, education mentorships and internships can have a profound impact on the degree to which students are able to acquire technical skills and realize accelerated social growth (Reese, 2008). These aspects of learning work synergistically to boost student motivation to stay in and complete high school, resulting in greater graduation rates (McDuffie, 2013). Brown (2009) asserts, "Through Perkins legislation and a review of research findings, it is evident that all students need a balance of academic and CTE courses so that they are prepared for the workforce of the 21st century" (p. 2). These practices are so valuable that a number of organizations have come into existence to give students experiences in job shadowing such as the San Diego Workforce Partnership, and Junior Achievement of San Diego County. Yet another aspect of furthering students' skills are Perkins' funded articulation agreements with local

community colleges where students earn college credit after completing a class or sequence of classes (Questions and answers regarding the implementation of the Carl D. Perkins career and technical education act of 2006, 2009).

Conclusion

The articles and data sources in this literature review each contain key elements to help shed light on the current level in which students receive about, training for, and assistance in transitioning to career-technical occupations. Despite marginal changes in government support and stakeholders' perceptions, there is much work to still be done in demonstrating the validity and value of technical career occupations. As research shows, a multi-pronged approach is necessary to deliver accurate data, descriptions, and success stories to families, students, and counselors. Further and broader research is needed in this arena to help identify regional and societal mindsets to better tailor outreach and education to parents, students, counselors and policymakers.

Schools need to continue improving career opportunity and skills training for all students including those who are at-risk, special education, of low socioeconomic status, and/or minority students. Discovered gains in student motivation, development of skills, and graduation rates in the research warrant a serious look at the type of career technical training during grades seven through twelve. Further, reaching disenchanted students by offering them mastery in industry-related skills and solid preparation of entering post-secondary school and/or employment in good-paying careers is desperately needed. Leaders need to encourage and support CTE instructors to focus on these things, and in some cases re-train counselors in and/or allow time for separate ongoing time for career counseling/exploration for all students. What is desperately needed in order to ensuring high-quality CTE for all students includes more ubiquitous practices

which allow students to gain a sense of belonging, allow instructors to play a more supportive role instead of one of lecturer and disciplinarian so there are favorable and supportive emotional connections between students and teachers, and encouragement for educational leaders to further support teachers' own professional development (Brown, 2009).

CTE exists as the perfect platform through which to provide students real-world work-based learning experiences. It is also the ideal launch point for mentor/mentee relationships, job shadowing, apprenticeships, and internships as bridges to allow students to determine career interests, to gain a higher level of skill and ability than what can be offered in a CTE program, and to increase student motivation and buy-in. This type of learning is extremely exciting for students, but is also quite difficult for already-busy educators to build if these are not already in place. Research can help discovery if having a dedicated school-career liaison is worth the budget expenditure to have such a person solely focus on career-work connections and more, career-work transitions.

CHAPTER 3: METHODOLOGY

The primary purpose of this study was to determine the perception of students, parents, and counselors towards Career Technical Education (CTE) classes at SDHS (a pseudonym) in order to identify how to shift current perceptions of technical careers and thereby increase enrollment in CTE pathways. This study explored the general research question of, "How can high schools shift negative perceptions of technical careers and increase interest in CTE pathways?" This chapter describes the methodology and procedures used to conduct the study and includes the sections of research design, participants, setting, procedures, and data analysis.

Research Questions for Counselors

- How knowledgeable are counselors about CTE and where did they acquire that knowledge?
- What type(s) of students do counselors believe are best served by CTE?
- How much time do counselors spend per student advising career choice?

Research Questions for Parents

- What is the typical demographic profile of parents of high school students who are enrolled in CTE programs in SDHS?
- What are the perceptions of SDHS CTE versus non-CTE parents regarding CTE?
- What is the percentage of SDHS parents who have taken at least one CTE or vocational class during their time in school?
- What is the percentage of SDHS parents who work in a CTE-related field?

Research Questions for Students

- What is the typical demographic profile of high school students enrolled in a CTE pathway?
- What are the differences of perceptions of CTE between CTE students versus non-CTE students?
- Who are the people who have influenced high school CTE students in their decisions about enrolling in CTE?
- What other factors, if any, have influenced high school CTE students in their decisions about enrolling in CTE?

Design

The study design utilized data from SDHS' county office of education. It also used enrollment data from its online database or "Student Informational System. Qualitative data using an online surveys provided responses to backgrounds, plans, and interpreted perceptions of school counselors, parents, and students. Qualitative data was also gathered in conversations with colleagues regarding their experiences teaching their Building Trades classes over a period of two years. School counselors were invited to take a 42-question survey, and parents of students who took the survey were invited to take a 21-question online survey. Both surveys were meant to provide data on where influences to enroll or *not* to enroll in one of the school's CTE classes might originate. A 25-question survey was administered to nearly 500 students who were either currently enrolled in CTE classes at "SDHS", or part of the school's senior class during the 2018-2019 school year.

A survey was chosen in order to efficiently and accurately gather data about multiple people groups, their attitudes and opinions, and previous experiences relating to awareness of career options, and preparation for those careers via Career Technical Education. Surveys ensure that participants are asked the same questions and makes collecting a large number of responses easy (Shagoury & Power, 2012, p. 130). This allows the researcher to easily organize and refine survey data for the purposes of comparing and contrasting to draw conclusions.

A drawback of surveys is their inability to allow for further questions between an interviewer and interviewee pertaining to particular topics. Surveys are somewhat inflexible, meaning that both the survey itself and the process for collecting data remain constant throughout the process of collecting data. This is unfavorable since the survey cannot rephrase its question or provide additional help for question decoding like a human interviewer could give (St. Gean, 2010). I attempted to enhance the survey instrument by making the survey adaptive;

answering a particular question “yes” versus “no” would result in the survey going to different subsequent sets of questions, as seen in both the student and parent surveys (See Appendices B and C).

Participants

The entire counseling was invited to take part in an online survey. All students in SDHS who were currently enrolled in a CTE course were asked to participate in a student survey along with the school’s entire senior class so that students could provide feedback based on their experiences in, and/or opinions of, CTE courses. The selection of participants helped ensure a targeted and well informed, experienced demographic of CTE enrollees as well as a wide sample of students who have had no CTE experience in their school experience. Parents of all student participants were also invited to take the survey via invitation letter and follow-up emails. This sample was adequate to provide accurate feedback given the range of research questions (McMillan & Schumacher, 2006). The approximately 500 student participants who were from mixed grade levels typically attended school from 7:30am to 2:30 pm, using three different bell schedules during the week.

Given the very large number of survey participants and the relatively low risk, I was granted a waiver of consent for the gathering of students’ data. All surveyed students were given an invitation in either English or Spanish to give to their parents so they too complete a separate online survey just for parents. Participation in the survey was voluntary. All parents were reminded via email to complete the survey by each class’ teacher two times over the course of four days of data gathering.

Setting

This study took place in a high school district in San Diego County, given the pseudonym “SDHS”. At the time of the survey, SDHS had 2243 students. The school calendar consists of two semesters, each with six classes. Its first semester is August through December and the school’s second semester is January through June. SDHS serves a mixed student body that is 58.2% Hispanic/Latino; 33.8% White; 3.9% Asian; 1.7% African American; with smaller percentages of Native American and Pacific Islander students. 52.4% of SPHS students qualify as Socio-Economically Disadvantaged, 13.2% are English Learners and an additional 32% are Re-designated Fluent English Proficient (R-FEP) students. 10% of the student population at SPHS participates in the AVID program which promotes college readiness for traditionally underserved student populations. For students who participate in all four years of AVID at San Pasqual in 2015-2016, 80% of the seniors are attending a four year college (SDHS, 2018).

At the time of the study, the city’s political affiliation was reported as being mostly Republican with an approximate 55% of residents self-identified as active conservatives. The city was in fact found to be the 11th most conservative city in the United States by The Bay Area Center for Voting Research, and is home to approximately 160,000 people.

The demographic makeup of the city was 50% Hispanic or Latino, 39% non-Hispanic White, 7% Asian, and 2.5% African American according to the 2010 census. At the time of the study, the school was 62% Hispanic or Latino, 28% white, 6% Asian & Filipino, and 4% Black, African American, or “other races”. Out of the 64,000 employed citizens, there were 13% in retail trade; 13% in construction; 12% in professional, scientific, management, administrative, and waste management services; 11% in arts, entertainment, recreation, and accommodation or food services; 11% in manufacturing; and 11% in other services (U.S. Census Bureau, 2018).

Instruments

One of the tools used to guide the survey's design and research was SDHS' student demographic and enrollment data in addition to a survey instrument that was similar to David Gaunt's survey (2005). Gaunt used this survey to gather perception data of high school seniors attending a career technical school. Parts of the survey were updated, while other parts were deleted to suit the needs and design of the research study, specifically to include questions which were specific to the context of current educational goals within SDHS' school district.

The online counselor survey consisted of four sections containing 42 questions. The four sections represented the nature of the questions: Tell Me About Your Background, Tell Me About Your Professional Experience, Explain What You Know About CTE, and Perceptions of CTE (Appendix D). The online parent survey contained 21 questions and consisted of sections indicating the major types of data to be gathered: Tell Me About Yourself, Your Opinions about Career Tech Classes, Things That Might Influence You, and Two Short Videos (Appendix C). A student survey was also administered online, containing similar sections as the parent survey: Tell Me About Yourself, People Who Influenced You, CTE Courses, Perceptions of CTE, and Two Short Videos (Appendix B). All three surveys were administered through Google Forms.

Procedures

All students currently enrolled in CTE courses at SDHS high school were invited to take part in a research study, as were all senior students in all sections SDHS's various English classes, including sheltered, Advanced Placement, and College Preparatory. English classes were chosen since all of SDHS's English classes have complete class sets of computer laptops on which they could complete the surveys. A short video presentation was shown to students describing the research project, its use to ultimately help make the school better by informing course availability in the future, as well as provide the school with marketing data for its elective

classes (See Appendix A, “Video Invitation Script for Students”). I emailed each teacher group (eight CTE teachers and ten English 12 teachers) asking teachers to administer the survey to their classes after showing them the invitation video within five days of receiving the invitation. Students could either take the survey in class on the class’ set of laptops or use one of the two computer labs on campus. A different survey was created and given to each of the six counselors who serve the school, as well as parents of all participating students. Data was collected, filtered, and disaggregated to determine results of influences affecting enrollment in CTE courses.

Analysis

In analyzing the data, I used a theoretical lense of cultural value change resulting in increased value for technically skilled jobs. I believe that since our country needs more skilled manufacturing employees entering the workforce shortly after graduating high school, schools need to increase interest and enrollment in their CTE courses. I focused on the current enrollment practices in “San Diego High School” (SDHS), a pseudonym, gathering demographic data for currently enrolled CTE students. I harvested enrollment data directly from the high school’s Student Information System (SIS) and disaggregated it to find trends for enrollment in CTE for the specific student demographics of English Language Learners (ELL) and Special Education (SPED). This data was compared to the overall demographic percentages of the school at large using correlational analysis to determine connections backed by statistical significance.

Electronic survey data were gathered from students, parents, and counselors. An electronic survey was used since they allow the researchers to measure and analyze large amounts of data, and relationship between an independent and dependent variable can be studied

in detail (Jones, 2012). Findings from the data were reliable due to the large sample size of almost 1000 students, some of which were either current or former CTE students. The remainder of students had never taken a CTE course but comprised the rest of the senior class at SDHS.

The data were put into spreadsheets to disaggregate them in order to look for statistical significance using mean analysis and standard deviation. The data were also analyzed to identify factors, influences, and perceptions that either dissuaded or encouraged students in enrolling in CTE courses and pathways. These last two methods were modeled after St. Gean (2010) study of factors influencing student enrollment in an ROP center in Los Angeles County as well as Thornburg (2016) who gave assessments to high school counselors to determine their education level, participation in CTE as former students, and their practices in providing career counseling to their students.

Being able to identify what types of perceptions students, parents, and counselors carried helped me to know how to educate various stakeholders in attempts to change negative and/or ill-informed perceptions of CTE classes and career pathways in order to increase enrollment and participation in the school's CTE offerings. This would have a positive effect in shoring up the skills gap, which is plaguing our manufacturing workforce as more students discover enjoyment and enthusiasm working in the field of careers of their liking (Deloitte, 2017; San Diego Workforce Partnership, 2015).

Conclusion

I investigated factors influencing high school students' decisions to enroll or not to enroll in CTE courses at SDHS, a comprehensive high school in San Diego County. I gathered county-wide data about how many students earn a Bachelor's Degree, demographic information about the students enrolled in CTE, their perceptions of CTE along with that of their parents and

counselors. This was accomplished by having all participants respond to questions in an online survey. The data collected from the survey were analyzed using descriptive statistics. Survey results and data collected from prior research was presented in the literature review. The data gathered are discussed in the next chapter along with results of the statistical analyses are described and discussed in the following Data Analysis section.

CHAPTER 4: DATA ANALYSIS

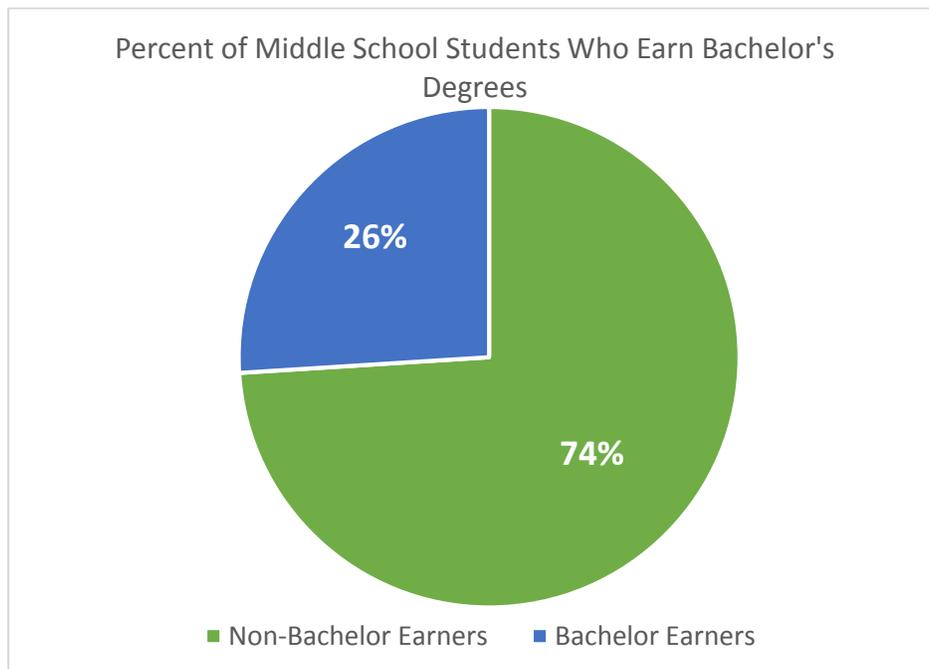
The primary purpose of this study was to determine the perception of students, parents, and counselors towards Career Technical Education (CTE) classes at SDHS (a pseudonym) in attempts to increase enrollment in CTE pathways. This chapter will present the data which were gathered. The data will progress from a large, broad perspective to a very detailed, myopic perspective. First I will display county-wide data showing the number of students who go on to earn a Bachelor's Degree after high school versus those who do not. Second, school enrollment data will be presented which shows student demographics percentages for SDHS's CTE skilled trades classes. Third, school counselor background, practices, and perspective data will be revealed. Fourth, parent perception and opinion data of CTE courses and programs will be exhibited. Fifth, student perceptions and viewpoints of CTE courses and programs will be shown.

The data gathered allowed me to make inferences regarding possible negative perceptions about CTE in order to provide insight into the mindsets that need to be changed to increase interest and buy-in for career technical occupation training at the secondary level. Doing so could better enable schools to shift their educational focus more in the direction of career training and shore up the United States' skills gap which exists in its workforce. This chapter

presents the research data that were gathered and includes the sections of Data Presentation, Data Analysis, Interpretations, and Summary.

Data Presentation
DATA SET 1: BACHELOR'S DEGREE EARNERS

Chart 1: *Bachelor's Degree Earners*

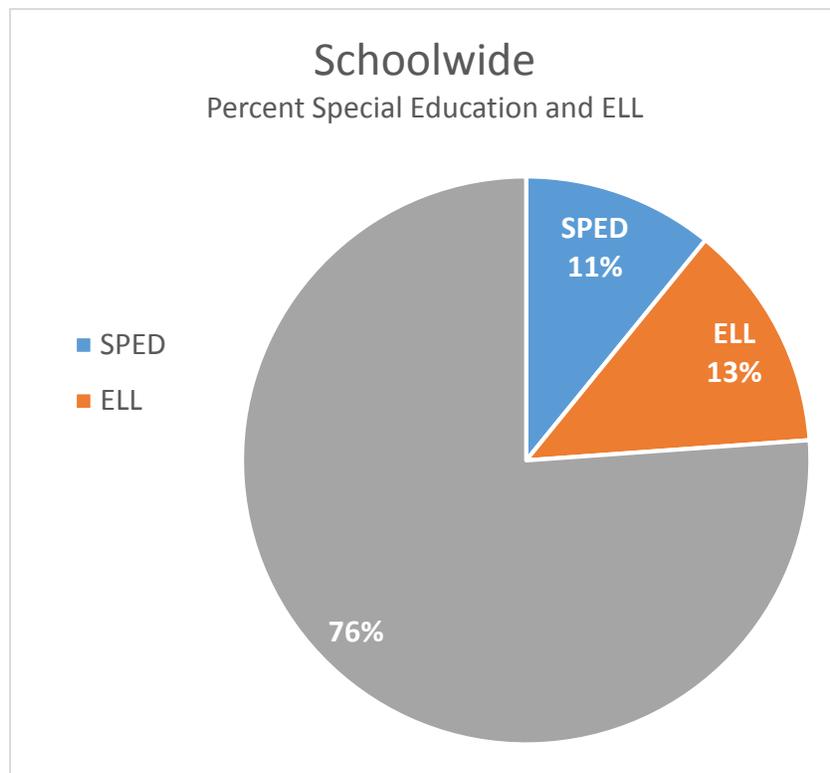


Due to the nature of this study which seeks to change perception of and enrollment practices of CTE programs, I utilized data from the San Diego County of Education (SDCOE). Using their “San Diego Higher Education Pipeline” data chart, I gathered data which shows the number of graduates who not only enroll in post-secondary education, but who graduate with at least a Bachelor’s degree in 6 years or less enrollment. The starting number of 7th grade students in 2014 was 39,329. SDCOE data reports that somewhere between 7th grade and graduating high school more than 8,000 students dropped out, leaving approximately 31,000 who earned a high school diploma representing an 80% graduation rate (San Diego County Office of Education,

2015). Chart 1 provides an understanding of the proportion of students who go on to earn a Bachelor's degree out of all entering middle school students. Chart 1 also provides an understanding of the vast proportion of students who presumably enter the workforce immediately after high school. The next data set will show student demographic data for SDHS' CTE classes.

DATA SET 2: CTE STUDENT ENROLLMENT DATA

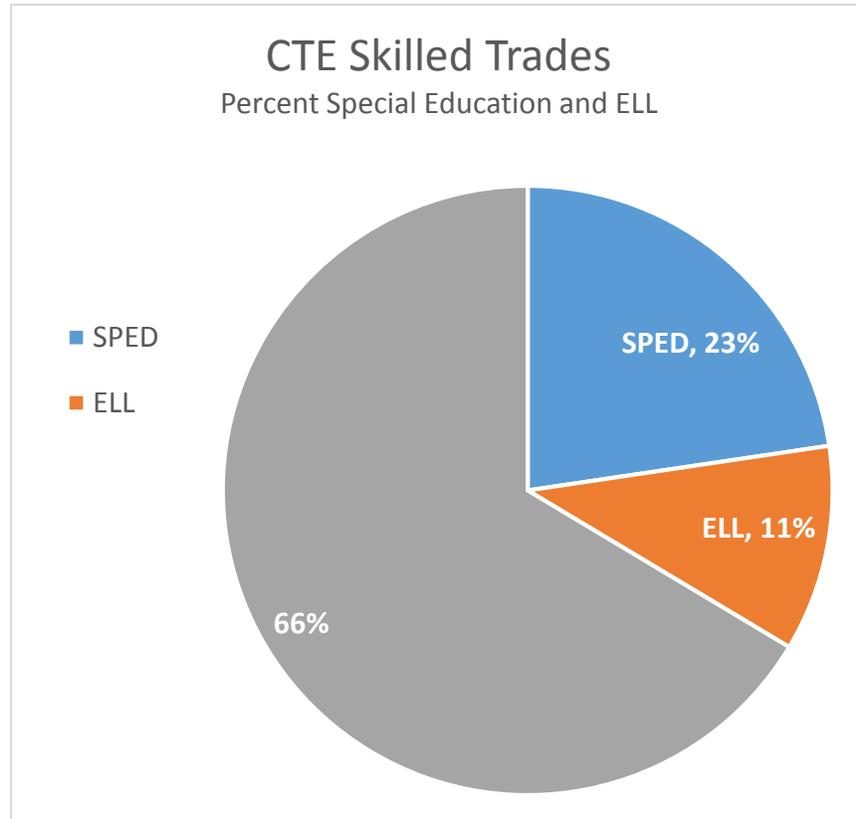
Chart 2: Schoolwide Percentages of Special Education and ELL, '16-17



The school wide percentages at "SDHS's" Special Education and ELL students, were 11% and 13% respectively. Chart 2 displays SDHS' percentage of Special Education students and the percentage of English Language Learners (ELL) for the 2016-2017 school year at SDHS (Ed Data Education Data Partnership, 2017). The percentages of Special Education and ELL students, respectively in SDHS' CTE skilled trades classes were 23% and 11% respectively.

Chart 3 displays SDHS' the averages student demographics for 16 sections of CTE courses at SDHS during the 2017-2018 school year (San Diego Student Information System, 2017).

Chart 3: Teacher Workload Sample of Special Education and ELL, '17-18 and '18-19



Some of the high extremes represented in five of SDHS' CTE courses ranged from 41% to 68% combined Special Education (SpEd) and English Language Learners (ELLs). Teachers for these sections stated that “these classes are extremely challenging to manage and teach”, and “my kids are great, but they can’t pass the safety tests” (researcher’s observation). These challenges are shared across the CTE department at SDHS, frustrating students when they cannot easily pass safety tests and are oftentimes delayed in being able to participate in their classes’ laboratories or “work time”. Special Education teachers are often inundated with follow-up and dedicate inordinate amounts of time just to help their students understand their safety tests, requiring SpEd students to miss precious class and work time in efforts to pass tests while falling

further behind as they miss even more content and work time. CTE teachers are often frustrated that the school system flagrantly throws these students in these [highly] technical classes, and end up failing or at least performing very poorly through the course of the year.

Sometimes the polar opposite end of the spectrum concerning enrollment within SDHS' CTE courses is evident. A handful of classes contained as little as 14% and up to 24% combined percentage of Special Education and English Language Learners. Teachers for these sections commented how much they enjoyed their time in these classes and reported that they sensed an overall greater connection to these classes as a whole, "being able to spend more time connecting with [their] students", and feeling a general sense of accomplishment when an entire class can move through the basic introductory safety curricula and begin working with the tools and technology inherent to the different programs in CTE (researcher's observations). The next section will display the counselor's survey data, describing the various backgrounds, perspectives, CTE experience, and counseling practices that SDHS' counselors possess.

DATA SET 3: SCHOOL COUNSELORS' BACKGROUND, PRACTICE, AND PERSPECTIVE

Counselor data from the online survey was disaggregated and organized in the following five data tables. Table 1 shows the counselors' professional backgrounds, indicating if each participant had taken CTE courses in high school or college, what extent of teaching experience each had, and how much counseling experience each one possessed. Table 2 indicates each counselor's knowledge level of CTE, and where they acquired that knowledge. It also displays their estimation of how many students graduate with a Bachelor's degree and the number or hours of career counseling they provide to each student during a typical year. Table 3 displays each counselors' views of sample perceptions of CTE. These generally negative perception

statements were taken from a CTE informational video (SD COE, 2010). Table 4 lists the responses from counselors concerning statements which are generally positive. Table 5 represents counselors' rejection or agreement concerning five mixed statements that other researchers have used in their surveys (Gaunt 2005, St. Jean 2010).

Table 1: Counselors' Backgrounds

Counselor	Did you take any CTE or vocational classes while you attended high school?	In college did you study in a CTE program area?	Area of Teaching Experience?	Years of teaching experience?	Years of counseling experience?
1	Yes	No	Academic Courses	1--2	9+
2	No	No	None	0	3--8
3	No	No	None	0	0-2
4	No	No	None	0	9+
5	Yes	Yes	Academic Courses	9+	9+
6	Yes	No	Academic Courses	1--2	9+

Table 2: Counselor’s Knowledge of CTE and Time Spent Career Counseling

Counselor	“My knowledge level of CTE is based on the following factors.”	Percent high school grads who earn a Bachelor’s degree within six years after starting college?	On average, about how much career counseling do you provide for each student over the course of a school year?
1	A family member or someone I know personally completed a CTE program; (I have read materials about CTE programming); (My school currently provides CTE programming); (I have toured or observed students in a CTE program); My school administration has discussed CTE programming for our students; I have toured area industry and/or discussed CTE programs with community members	31-45%	Less than 2 hours
2	(I have read materials about CTE programming); (My school currently provides CTE programming); (I have toured or observed students in a CTE program); I have attended state meetings and/or conferences about CTE initiatives	76-90%	7 or more hours
3	(I have read materials about CTE programming); (My school currently provides CTE programming); I have limited knowledge of CTE because I have not been involved, or haven’t learned very much about CTE	46-60%	Less than 2 hours
4	(I have read materials about CTE programming); (My school currently provides CTE programming); (I have toured or observed students in a CTE program)	16-30%*	Less than 2 hours
5	I completed a CTE program in high school, and/or took at least two CTE courses; (I have read materials about CTE programming); (My school currently provides CTE programming); (I have toured or observed students in a CTE program); My school administration has discussed CTE programming for our students	31-45%	Less than 2 hours
6	(My school currently provides CTE programming); (I have toured or observed students in a CTE program); My school administration has discussed CTE programming for our students	16-30%*	4-7 hours

(Items in parentheses indicate the general way SDHS counselors gain CTE knowledge/awareness)

*These counselors were accurate in their assessment of Bachelor’s Degree earners

Table 3: Perceptions Which Counselors Generally Did Not Agree With

Counselor	“CTE classes won't help students get into a high-paying career.”	“CTE classes are weak in academic content.”	"Being in CTE would take away from students' high school experience."	“I tend to discourage college-bound students from taking CTE (vocational) courses.”
1	Strongly Disagree	Strongly Disagree	Strongly Disagree	Disagree
2	Strongly Disagree	Strongly Disagree	Strongly Disagree	Strongly Disagree
3	Disagree	Disagree	Disagree	Disagree
4	Strongly Disagree	Strongly Disagree	Strongly Disagree	Strongly Disagree
5	Strongly Disagree	Strongly Disagree	Strongly Disagree	Strongly Disagree
6	Disagree	Disagree	Disagree	Disagree

Table 4: Perceptions Which Counselors Generally Agreed With

Counselor	“CTE is an avenue to retain students who are at risk.”	“A student to complete a three-year CTE pathway and still get all their required high school credits to graduate.”	“Certifications are valuable for students to secure future employment.”	“CTE courses are primarily designed to serve students of all ability levels.”
1	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
2	Agree	Agree	Agree	Strongly Agree
3	Agree	Agree	Agree	Agree
4	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
5	Neutral	Agree	Agree	Strongly Agree
6	Disagree	Disagree	Neutral	Agree

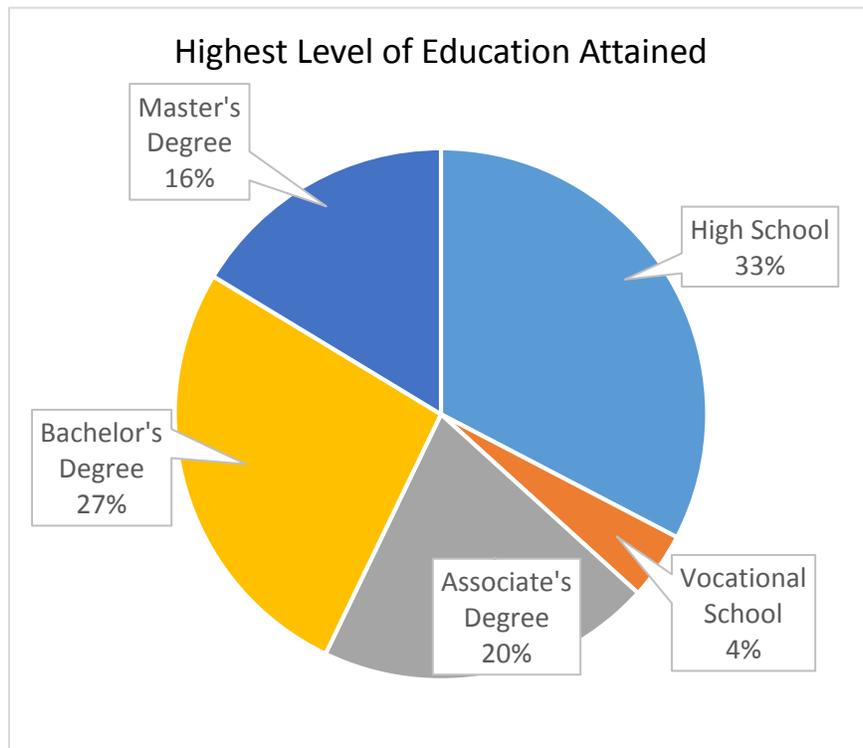
Table 5: Perceptions Which Counselors Had Large Differences

Counselor	“CTE courses are primarily designed to serve students who struggle academically.”	“CTE courses are mostly for students who plan to go to college right after high school.”	“Counselors have sufficient time to expose students to CTE pathways.”	“Counselors have sufficient time to counsel students on their career aspirations.”	“CTE programs serve primarily to support area employment needs.”
1	Disagree	Agree	Agree	Agree	Strongly Agree
2	Neutral	Neutral	Disagree	Agree	Disagree
3	Neutral	Agree	Agree	Agree	Strongly Disagree
4	Strongly Agree	Strongly Agree	Strongly Disagree	Strongly Disagree	Strongly Agree
5	Disagree	Neutral	Agree	Disagree	Disagree
6	Disagree	Disagree	Agree	Agree	Disagree

The general ways which SDHS’ counselors acquired understanding of, and develop a general sense of importance for CTE were by either reading materials about CTE programming, gaining exposure to their school’s CTE programming, or by touring or observing students in a CTE program (Table 2). Counselors generally agreed that CTE programs is a way to keep at-risk students in school, but also serves students with varying levels of abilities (Table 4). Counselors had an array of opinions of the idea that CTE is primarily designed to help students who struggle academically, students who plan on going to college right after high school, and that CTE primarily serve to support the local area’s employment needs (Table 5). Counselors also had vastly differences of opinion whether or not they had enough time to expose students to CTE pathways, or had enough time to counsel students on their career aspirations (Table 5). The next data set will display the data from the parent perception survey.

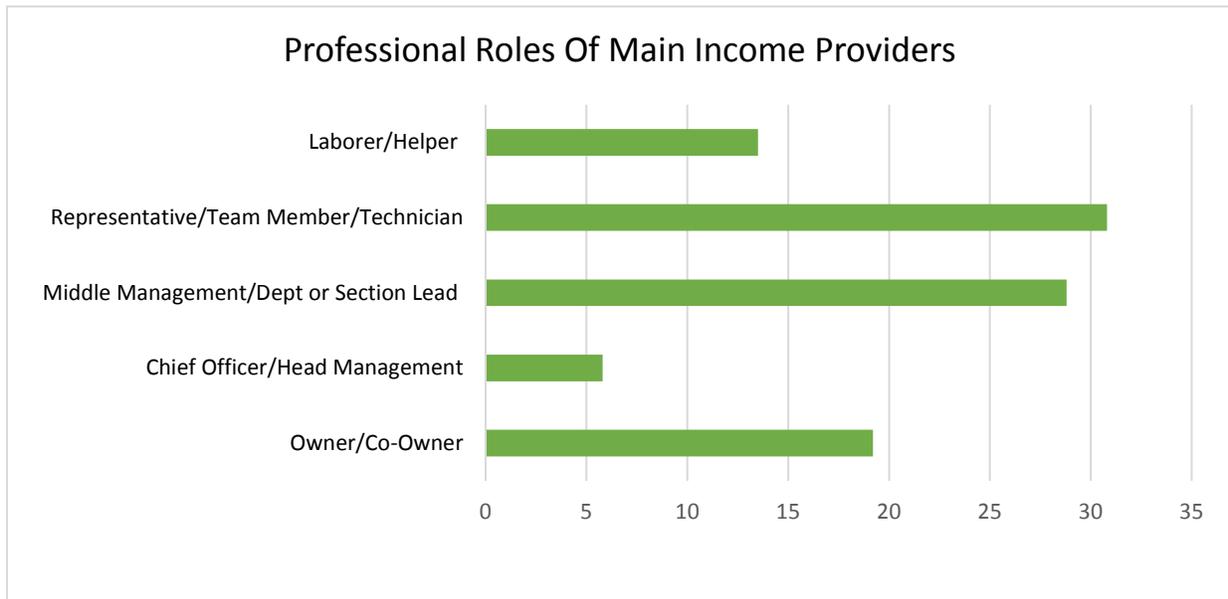
DATA SET 4: PARENT PERCEPTIONS AND OPINIONS

Chart 4: Highest Level of Education Attained by Parents

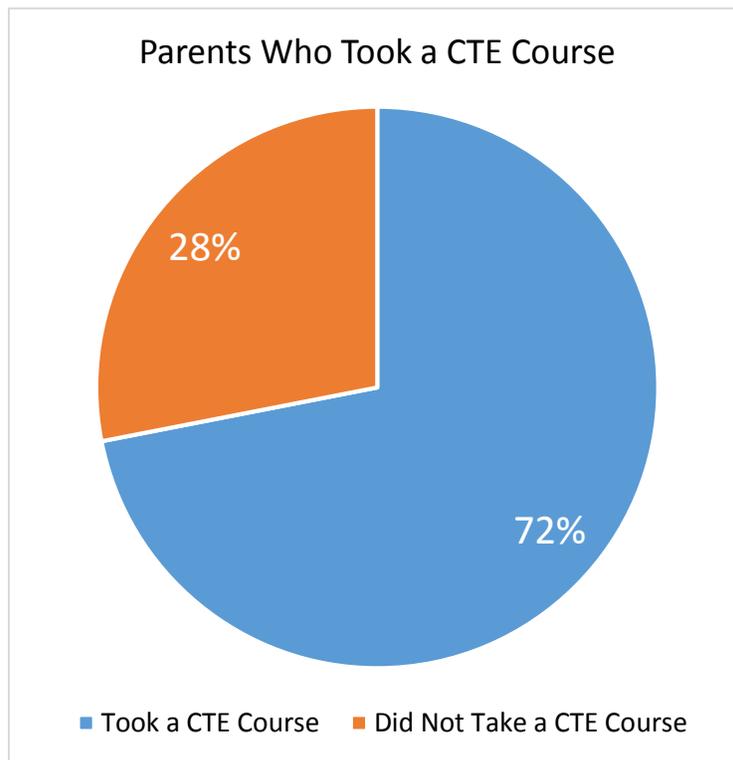


Data was obtained from 52 parents or guardians. Of the participants, 33% were male while 67% were female. Eight parents (15.4%) were Master’s Degree Holders, 13 (25%) had Bachelor’s Degrees, and 10 (19.2%) had earned Associate’s Degrees. Two parents (4%) went to vocational schools, and 16 (30%) were high school graduates (Chart 4). Of the 52 families participating in the study’s survey, the main income provider in the home was identified as: Owner or Co-Owner (19.2%), Chief Officer/Head Management (5.8%), Middle Management/Department or Section Lead (28.8%), Representative/Team Member/Technician (30.8%), Laborer/Helper (13.5%) (Table 5).

Chart 5: Professional Roles of Parents



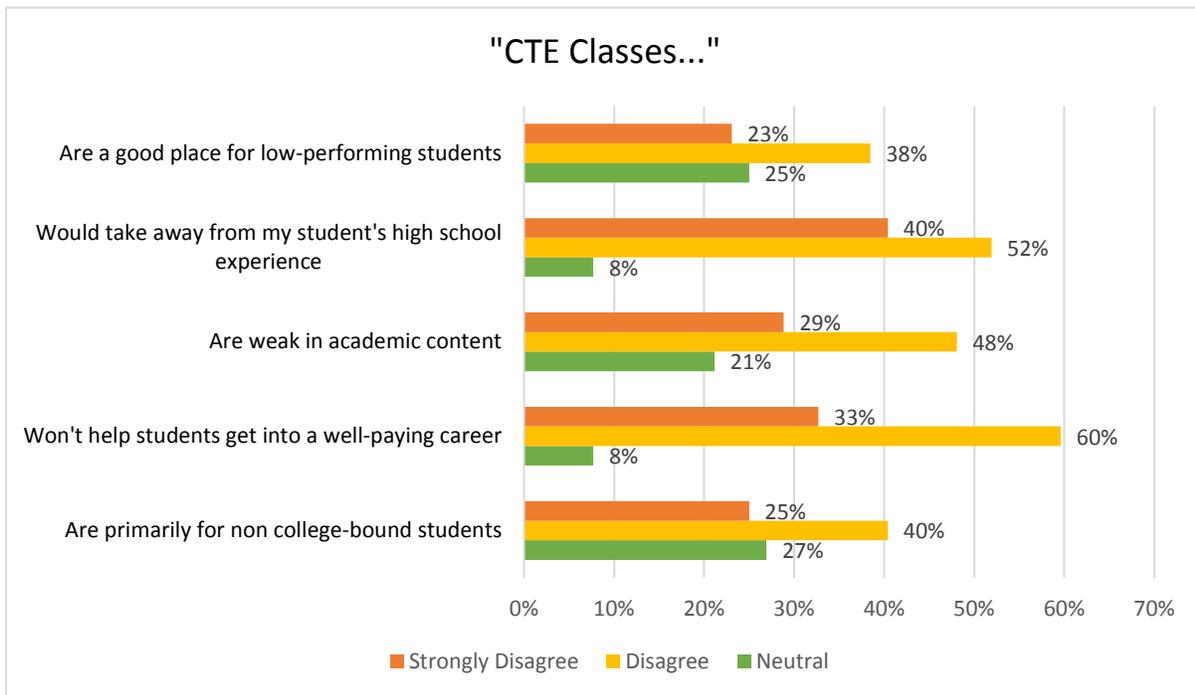
Out of the 52 survey participants, 33 or 63.5% took a CTE course in high school. The courses that parents took included the following CTE pathways: Agriculture and Natural Resources; Arts, Media, and Entertainment; Building and Construction Trades; Business and Finance; Commercial landscape maintenance; Education, Child Development, and Family Services; Energy, Environment, and Utilities; Engineering and Architecture; Fashion and Interior Design; Health Science and Medical Technology; Hospitality, Tourism, and Recreation; Manufacturing and Product Development; Marketing Sales and Service; Public Services; Retail; Transportation.

Chart 6: Percentage of Parents Who Took a CTE Course

The next two question sets asked parents to rate how much they either agreed or disagreed with some statements about CTE in order to gain an understanding of their perceptions of CTE. The rating system used a five-point Likert Scale for parents to choose from: “strongly disagree”, “disagree”, “neutral”, “agree”, and “strongly agree”. The first set of statements and beliefs were negative, with statements like: 1. “CTE classes are a good place for low-performing students”, 2. “CTE classes would take away from my student's high school experience”, 3. “CTE classes are weak in academic content”, 4. “CTE classes won't help students get into a well-paying career”, and 5. “CTE classes are primarily for non-college bound students. Parents were in a unified disagreement with these statements-namely concerning the second third and fourth questions. 40% of parents “strongly disagreed” and another 52% “disagreed” with the notion of CTE classes taking away from their students’ high school experience. 29% of parents “strongly

disagreed” and another 48% “disagreed” with the assertion of CTE being weak in academic content. Finally, 33% of parents “strongly disagreed” and another 60% “disagreed” with the statement that CTE courses wouldn’t help students get into a high paying career (Chart 7).

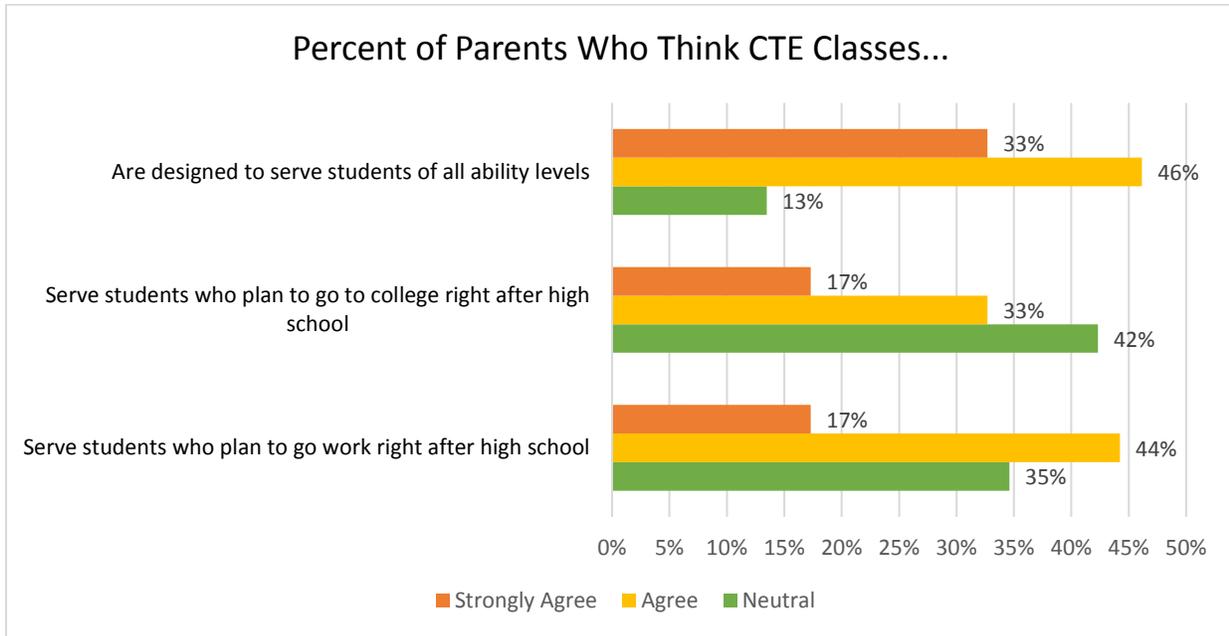
Chart 7: Parent Opinions of CTE



The next set of statements probed parents’ perceptions about what types of students CTE classes were designed to serve, and were more positive in nature. The rating system used a five-point Likert scale consisting of “strongly agree”, “agree”, “neither agree nor disagree”, “disagree”, or “strongly disagree” as a rating system for each question. 79% of parents felt that CTE courses are designed to serve students of all ability levels; 33% “strongly agreed” with this idea, 47% “agreed” with this opinion while 13% were simply “neutral”. 17% of parents “strongly agreed” while 33% “agreed” that CTE is meant for students who plan on attending college immediately after they graduate for a total of 50% possessing this mindset; 42% of parents were neutral to this idea. To the notion that CTE courses serve those who plan to go to work right after graduation, 61% percent of parents surveyed agreed; 17% of the group “strongly

agreed”, 44% “agreed”, while 35% were “neutral” (see Chart 8, “Percent of Parents Who Think CTE Classes...”).

Chart 8: Statements Parents Agreed With



The next section of the parent survey instrument asked parents about various “value added” features of CTE programming and to what extent each would cause them to encourage their students to enroll in a CTE course. I utilized a three-point Likert scale for this set of four questions, in order to decrease the sensitivity of answers. This limit in sensitivity was preferred given the nature of the questions, meaning it was essentially a “yes” or “no” response. 58% of parents said they would encourage their kids to enroll in CTE if they had the opportunity to earn industry credentials or certifications, 62% if part of the purpose of the course was to attend field trips to various businesses, 69% if a course provided focused instruction and training in job-finding skills, and 73% would encourage their child to enroll in a CTE course if it taught manual skills such as tool use. The next data set will display and discuss the student surveys (Table 6).

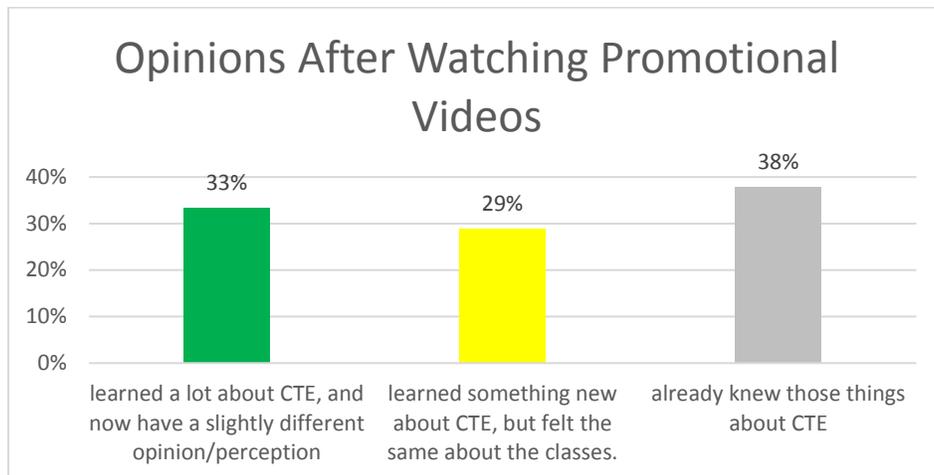
Table 6: CTE Features that Cause Parents to Encourage Enrollment in CTE

CTE Course Features	Percent of Parents Who Said They Would Encourage Enrollment
Earn an industry credential/certification	58%
Attend field trips to various businesses	62%
Receive focused instruction and training in job-finding skills	69%
Learn manual skills such as tool use	73%

Changing/Informing Perceptions

At the end of the parent survey, parents watched two videos about CTE courses. The videos touched on the above negative perception statements in Chart 6 and made a strong case against the perceptions, citing evidence for the opposite of the negative statements. Parents were each asked to indicate whether they; a. learned a lot about CTE, and now have a slightly different opinion/perception, b. learned something new about CTE, but felt the same about the classes, or c. already knew those things about CTE. 15 (33%) parents “learned a lot”, and reported a more positive perception of CTE. 13 (29%) parents learned something new, but still felt the same about CTE, and 17 (38%) parents were unaffected by the videos (Chart 9).

Chart 9: Parent Responses to CTE Informational Videos

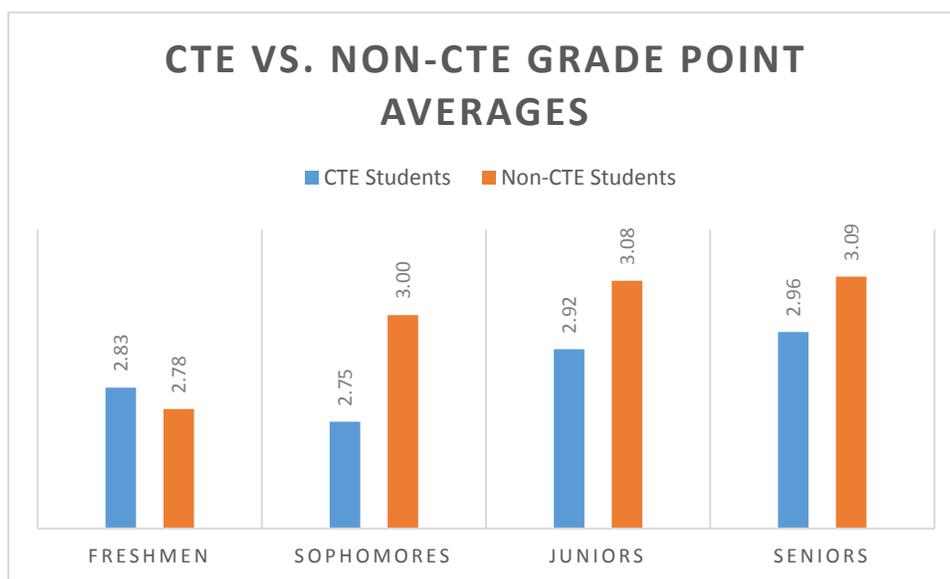


DATA SET 5: STUDENT INFORMATION, PERCEPTIONS AND VIEWPOINTSStudent demographics

A total of 110 students (62 males and 48 females) who took the student survey had not taken a CTE course before or during the time data was collected. Negating weighted grading, non-CTE males reported an average GPA of 2.98, while non-CTE females reported an average GPA of 3.08. All non-CTE freshmen who took the survey had an average GPA of 2.78, Sophomores reported an average GPA of 3.0, Juniors reported an average GPA of 3.08, and Seniors reported an average GPA of 3.09.

A total of 371 students (260 males and 111 females) who took the student survey were enrolled in a CTE course before or during the time data was collected. Negating weighted grading, males who reported haven taken or currently enrolled in a CTE course reported an average GPA of 2.87, while CTE females reported an average GPA of 3.09. All CTE freshmen who took the survey had an average GPA of 2.83, Sophomores reported an average GPA of 2.75, Juniors reported an average GPA of 2.92, and Seniors reported an average GPA of 2.96.

Chart 10: GPAs of CTE vs. Non-CTE Students

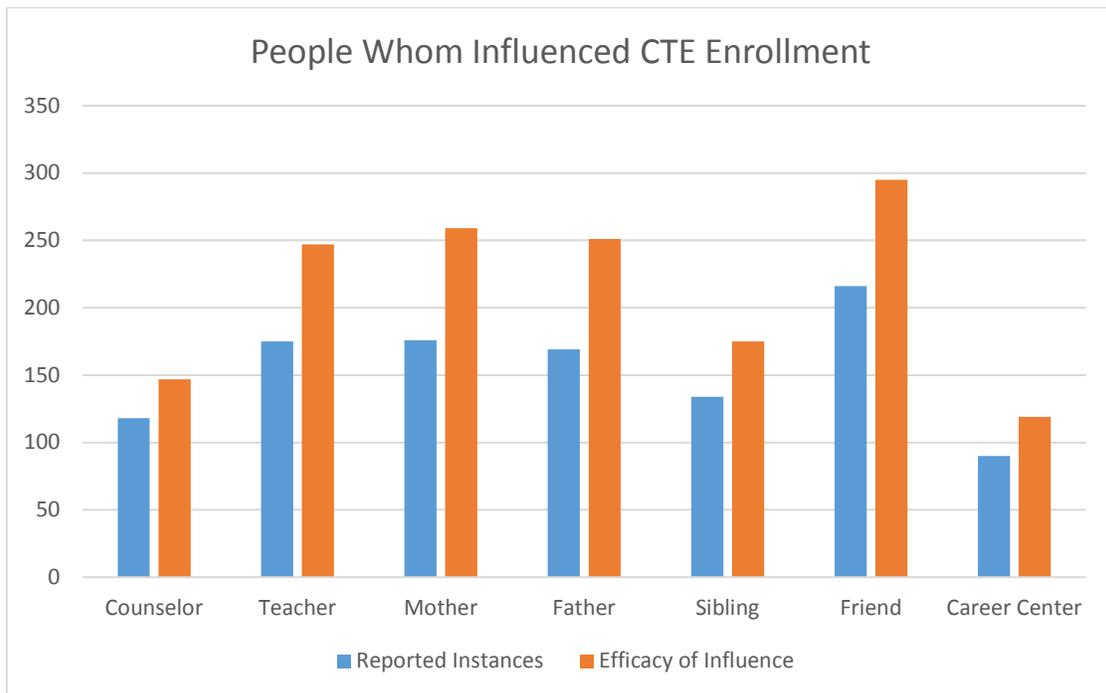


Influencers of CTE Students

The following table (Chart 11) displays who influenced CTE students to enroll in a CTE course. The survey listed out a variety of people and asked students if that person was “Not Applicable” meaning they don’t have that person in their life, “None” meaning no perceived influence in deciding to enroll, “Some” influence, and “A Lot” of influence. I noted not only how many students identified a specific person to be an influencing factor (indicating frequency), but also to what degree that person influenced them (strength of influence). This measure is by no means absolute; it helps identify where students felt the most influence was coming from. High school counselors were named by 118 of 371 or 32% of students, high school teachers were named by 175 of 371 or 47% of students, a mother or female guardian was named by 176 of 371 or 47% of students, a father or male guardian was named by 169 of 371 or 46% of students, a sibling was named by 134 of 371 or 36% of students, a friend was named by 216 of 371 or 58% of students, and a Career Center/Learning Center employee was named by 90 of 371 or 24% of students as influencing student’s decisions to enroll in a CTE course on some level (Chart 10).

I then took the above influence data, assigning a point value to each of the levels of influence; zero points for “None”, one point for “Some”, and two points for “A lot”. Termed “Efficacy of Influence” (strength of influence) is the result of this assignment of value with High school counselors’ efficacy equaling 147, high school teachers’ efficacy demonstrated a rating of 247, mothers’ or female guardians’ efficacy nurturing a profound 259, fathers’ or male guardians’ commanding an efficacy 251, siblings’ effective influence teasing a 175, friends’ bragging an efficacy of 295, and Career Center/Learning Center employees clinging to an effective efficacy of 119 (Chart 10). These findings verify Rosetti’s (1990), Gaunt’s (2005) and St. Jean’s (2010) findings that friends and mothers significantly influenced students’ choices to enroll in CTE courses.

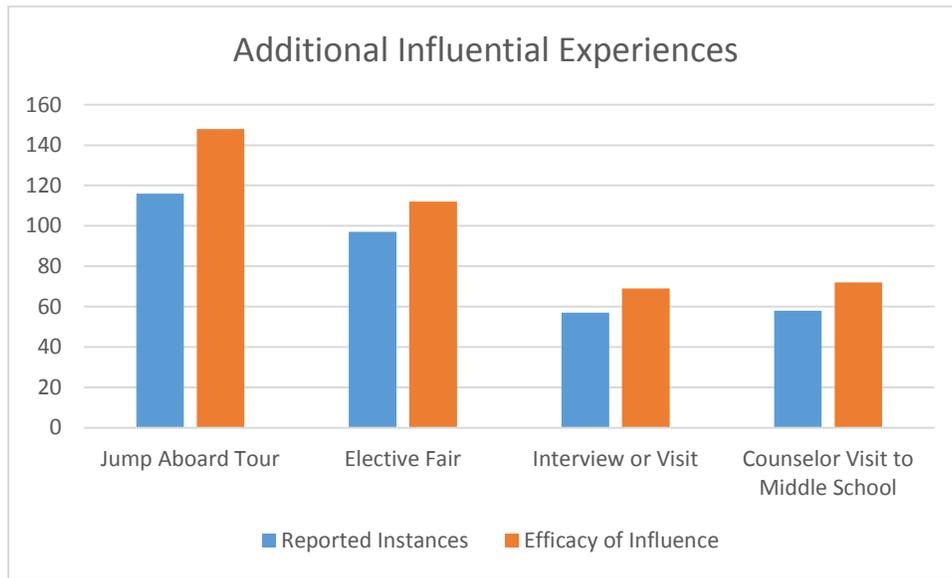
Chart 11: People Whom Influenced CTE Enrollment



Other External Factors

Next, I sought to discover additional factors and influences leading them to enroll in CTE. The survey asked about the ways SDHS informs and/or recruits students using tools like a middle school tours called “Jump Aboard”, elective fairs on campus, counselor’s visits and advertisement at middle schools. Another factor is current CTE students who influence other students’ decisions to take a CTE course by interviewing them and/or inviting them to visit their CTE classroom for a quick tour. Middle school tours on SDHS’ campus was reported by 116 of the 371 survey participants as having a positive influence for students to seek enrollment in a CTE class. Elective fairs involve various electives being put on display to give students a chance to learn more about what these electives teach, and what projects students complete in the classes. Teachers and/or students often staff the tables and displays. Out of 371 survey participants, 97 said they were positively influenced towards CTE. Counselors’ visits to middle schools are a way to inform incoming students about the options of classes that are before them. 57 out of 371 survey participants named these visits as a positive influence in choosing a CTE course. Another teacher-driven initiative to recruit students into CTE courses was an optional assignment where CTE students interviewed up to four other students who had never taken a CTE course with aims of informing the interviewees about the options available and benefits of CTE. As a follow-up CTE students invited those whom they interviewed to tour their CTE class. Out of the 371 students surveyed, 57 students said these interviews and visits influenced them to enroll in a CTE course. As with the previous identification of “Student Influences”, I gave numeric values to each of the indicated levels of influence reported by students to arrive at an “efficacy rating”. These ratings are shown in the following table along with the number of reported instances.

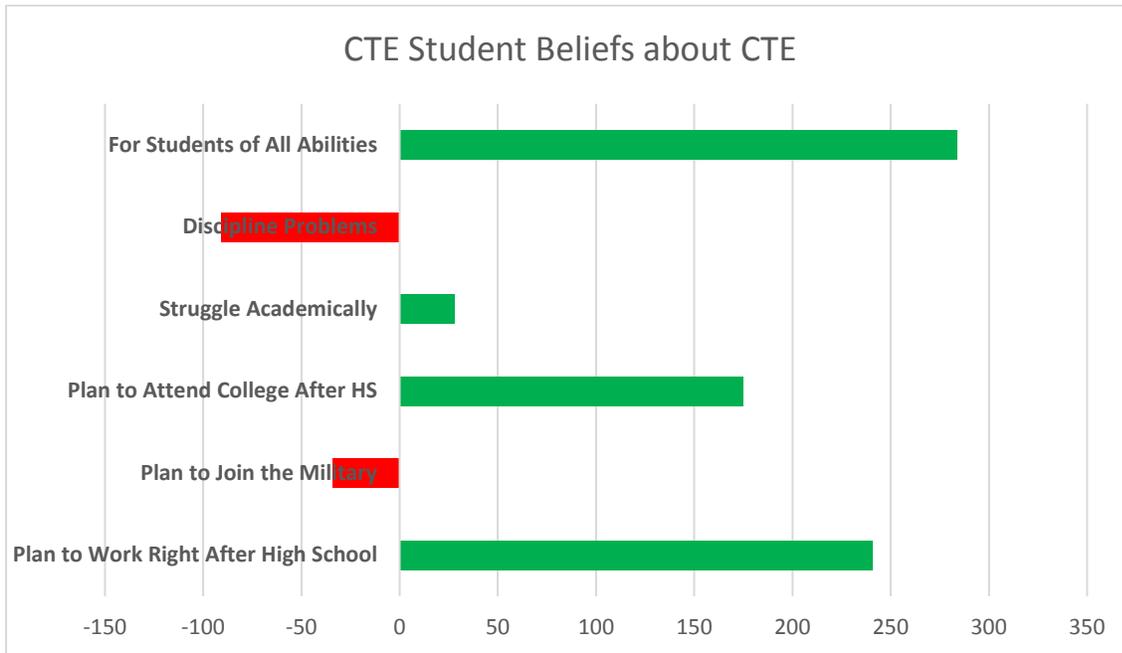
Chart 12: Additional Influential Experiences



Student Perceptions of CTE

The next survey question for students who had taken a CTE course in high school asked what types of students they believed CTE courses were for; who they were primarily meant to serve. A five-point Likert scale was used to allow students to weigh in on what they thought: Strongly Disagree (-2), Disagree (-1), Neutral (0), Agree (+1), Strongly Agree (+2). The statements they responded to were as follows: “For Students of All Abilities” totaled 284 points, “Discipline Problems” totaled -91 points, “Struggle Academically” totaled 28 points, “Plan to Attend College After High School” totaled 175, “Plan to Join the Military” totaled -34, and “Plan to Work After High School” totaled 241 (Chart 13). CTE students believe that career tech classes are for students of all abilities and meant for those who plan to either work or attend college after high school.

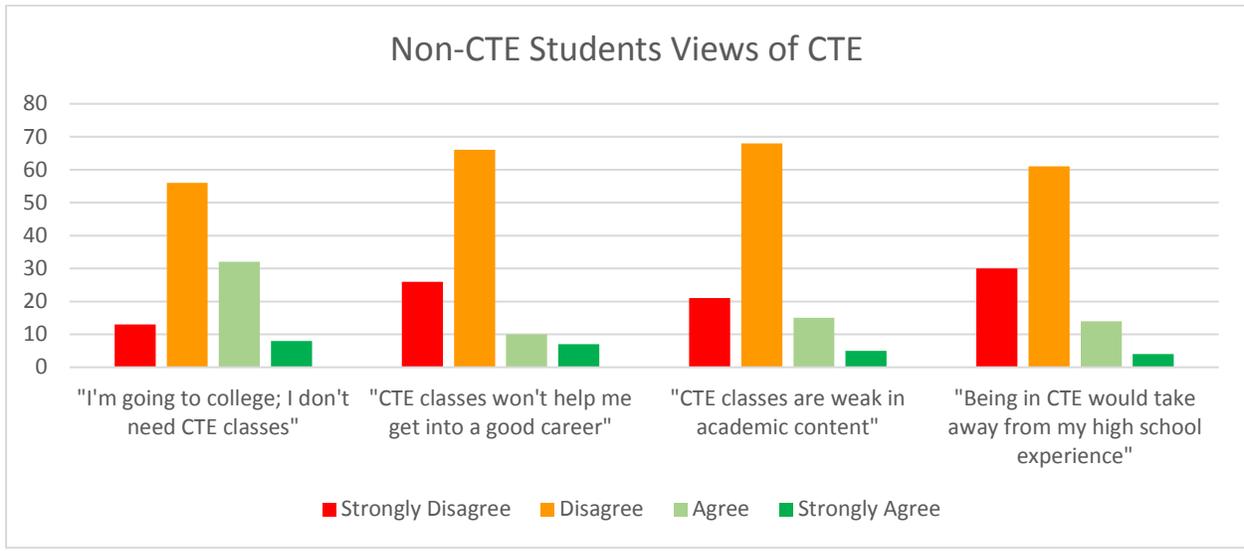
Chart 13: CTE Student Beliefs about CTE



Perceptions of Non-CTE Students

In an attempt to understand students’ mindsets who had never taken a CTE course, they were asked to respond to the following statements: “I’m going to college; I don’t need Career Technical Education classes”, “CTE classes won’t help me get into a good career”, “CTE classes are weak in academic content”, and “Being in CTE classes would take away from my high school experience” (Advance CTE, 2012). These four questions were generally disagreed with among the 110 participants with a disagree-to agree ratio of 3.6:1 (Chart 14). The two ideas that non-CTE students most strongly disagreed with were the statements, “CTE classes won’t help me get into a good career” (92 out of 110 disagreed), and “Being in CTE would take away from my high school experience” (91 out of 110 disagreed). See Chart 14: Non-CTE Student Views of CTE.

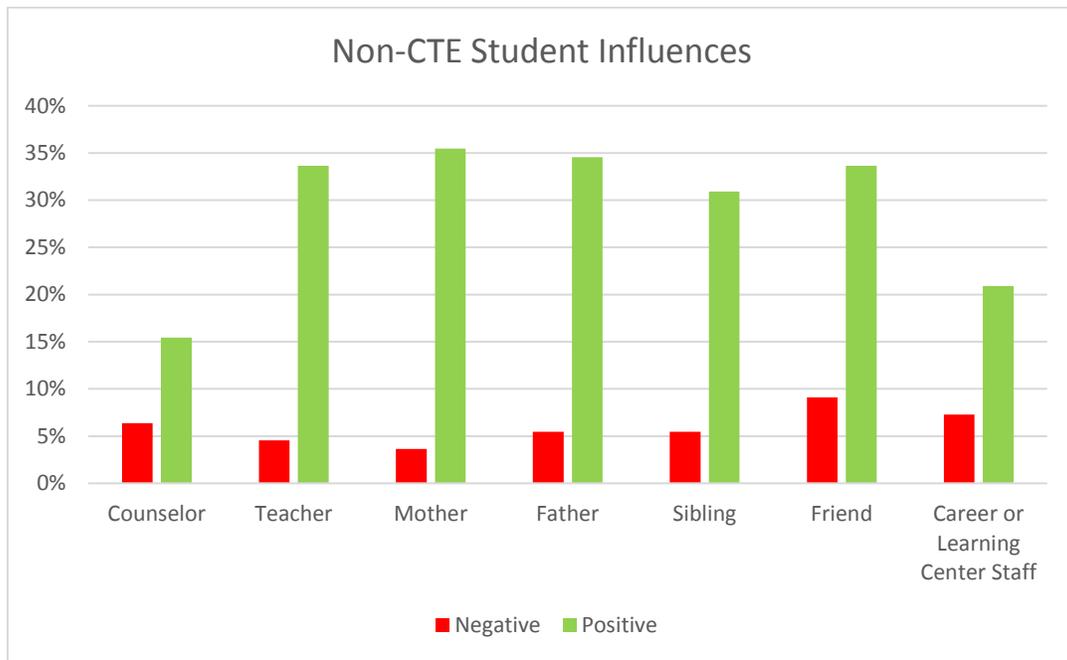
Chart 14: Non-CTE Student Views of CTE



Influencers of Non-CTE Students

The following chart displays the influences of various people in students’ lives which positively (green bars) or negatively (red bars) influenced them to take a Career Technical Class at SDHS. Data gathered during this study validates previous research done by Rosetti (1991), Gaunt (2005), and St. Gean (2010) indicating that strong influences come from friends and parents. As seen in the chart below, positive influences to take CTE courses came from SDHS students’ friends, mothers, fathers, and teachers, while the greatest negative influences came from students’ friends, career or learning center teachers, and counselors (Chart 15).

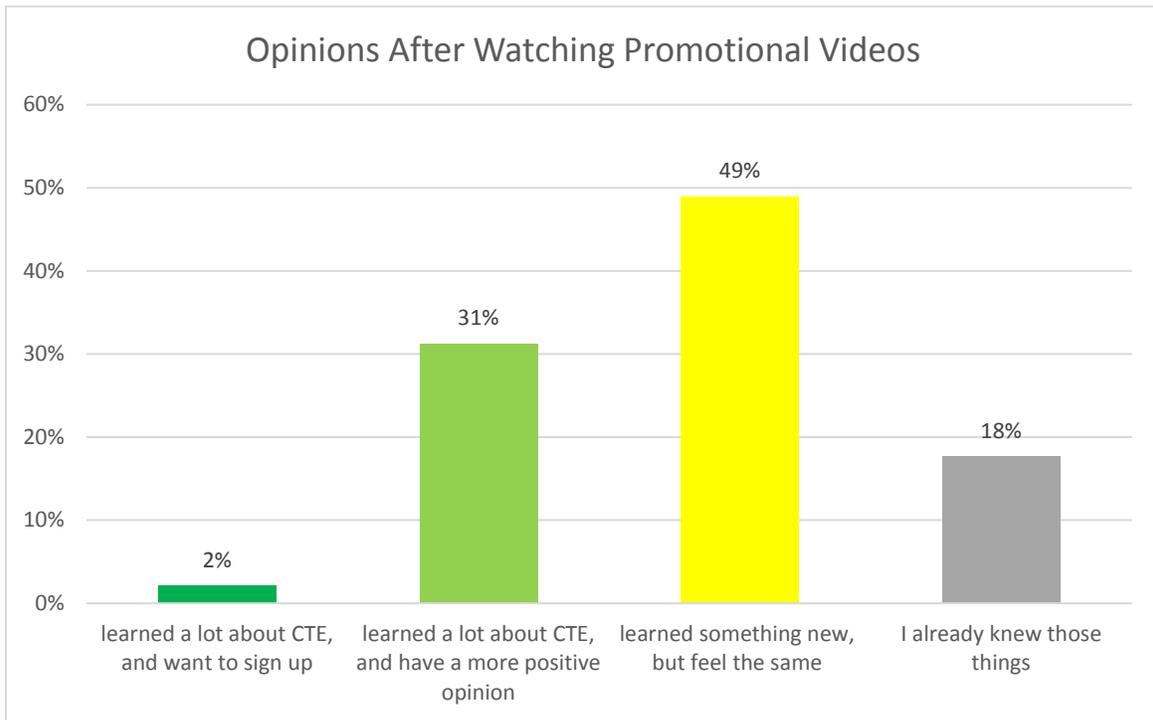
Chart 15: Non-CTE Student Influences



Changing/Informing Perceptions

At the end of the student survey, non-CTE students watched two videos about CTE courses. The videos touched on the above perception statements and made a strong case against the perceptions, citing evidence for the opposite of the negative statements. Students were each asked to indicate whether they; a. learned a lot about CTE, and would want to sign up for a class, b. learned a lot about CTE, and had a more positive opinion of it, c. learned something new about CTE, but felt the same about the classes, or d. already knew the things that were presented about CTE. Two (2%) students experienced a significant change in perception, wanting to sign up for a CTE class just after watching six minutes of videos. 30 (31%) students “learned a lot”, and reported a more positive perception of CTE. 47 (49%) students learned something new, but still felt the same about CTE, and 17 (18%) students were unaffected by the videos.

Chart 16: Non-CTE Student Opinions after Viewing CTE Propaganda



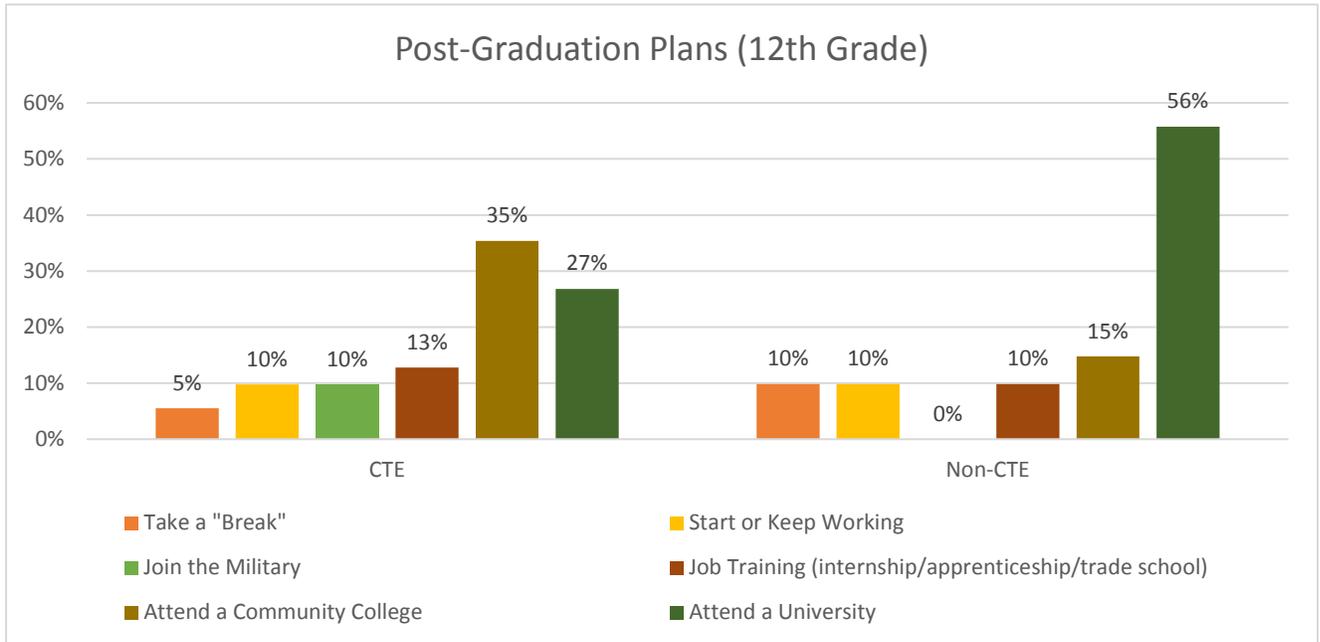
Plans After Graduation

The last data set were the results of questions to both groups of students to ascertain what their plans after high school were comprised of. Senior students who were enrolled in at least one Career Technical Education during their high school career chose from the following options: a. Take a Break (9), b. Start or Keep Working (16), c. Join the Military (16), d. Begin (some form of) Job Training (Internship/Apprenticeship/Trade School) (21), e. Attend a Community College (58), or f. Attend a University (44).

Twelfth grade students who had never enrolled in a Career Technical Education course were asked to choose from the following options indicating their plans at the time of the student survey for what they'd be doing after graduating high school: a. Take a Break (6), b. Start or Keep Working (6), c. Join the Military (0), d. Begin (some form of) Job Training

(Internship/Apprenticeship/Trade School) (6), e. Attend a Community College (9), or f. Attend a University (34).

Chart 17: CTE Students' and Non-CTE Students' Post-Graduation Plans (12th Grade Only)



The next section will describe how the data were analyzed in order to begin to see trends and implications.

Data Analysis

I began analyzing the graduation data by taking the raw data from the San Diego County Office of Education and populating a data table from which percentages could be calculated. Once the data were in percent form, a pie chart was used to communicate the implications of the data. The same was done for the student demographic data harvested from the San Diego Student Information System. These were obtained simply by asking two other CTE skilled trades teachers to provide a print-out of each of their courses' student demographics which took approximately 10 minutes to download and print for each teachers' entire course load. I then

totaled the number of students who had Individualized Special Education (IEP) plans as well as English Language Learner (ELL) students who were between proficiency levels 1 and 3 (beginning to intermediate reading, writing, and speaking skills).

Survey data was collected over a period of two weeks with six counselor responses (n=6), 52 parent responses (n=52), and 481 student responses (n=481). Similar to the graduation and demographic data, I disaggregated the data to group responses based on common Likert scale values. Counselor data was disaggregated to look for connections between their current understanding of the various opportunities for high-paying jobs in a technical occupation and the degree to which they reported steering students in the direction of these careers. Connections were found between students' positive perceptions of Career Technical Education courses and their enrollment in the various courses offered at SDHS and the same effect for parents' positive perception and indicated value in and for CTE. The converse was true for students and parents who had limited understanding of what CTE was or had a negative perception of technical careers which did not require a four year degree.

Data for each of these three groups was organized into tables to begin to not only identify current perceptions, but also to look for reasons for these perceptions – both positive and negative. The next section will address what the implications of the data mean for what needs to change in our current school system and its preparation for the majority of high school graduates as they enter the work force. Oddly enough, non-CTE students had an overall positive view of CTE courses (Chart 16), and at least according to survey data seemed to hold value for these classes and perhaps the various subjects that make them up on our campus.

Interpretation

Despite their lack of involvement in CTE, non-CTE students still have generally positive perceptions of what they understand as Career Technical Education. Parents of both camps of students not only possess an array of industry experience along with a belief that career and technical skills are essential to success, but have the same views as students that CTE classes prepare students for both college and a career (Charts 7 and 8). Since the survey data revealed that non-CTE students shared the same general opinions and influencing factors about CTE, I believe the content of conversations with friends, parents, teachers, and counselors must be the deciding factor of if they enroll in a CTE class or not. The data speaks for itself; students whose plans are to enroll in college generally avoid CTE classes even though they mostly disagree with the notion that since they are going to college, CTE classes are unnecessary (Chart 14, first question).

Conclusion

The next chapter will provide recommendations on how education can adjust to the changing needs of students today as schools return to effective career preparation and training.

CHAPTER 5: RECOMMENDATIONS AND LESSONS LEARNED

This study asked the question, “How can high schools shift negative perceptions of technical careers and increase interest in Career Technical Education pathways?” Despite a major need for manufacturing and building trades workers forecasted in the next 10 years, schools like SDHS struggle to engage students in classes like Construction, Welding, Machining, and Manufacturing. After reading many scholarly papers on this topic and educating myself on what has already been explored, I found that extensive research had been completed, and data

gathered for the purpose of accomplishing two things; to engage more young people in the extremely exciting and rewarding experience of working with one's hands to build something of value, and to also recruit a wide array students of all abilities and backgrounds into a skilled trade. Any school leader would be wise to heed the recommendations of some of these technical education proponents and apply their findings to their school's CTE program, while gathering ongoing local data to inform what future courses of action the school should take in order to strengthen its CTE program. Many of the researchers initiated their research for the very purpose of improving their own school's vocational programs, and many of them provide valuable insight on how to build a strong CTE program that is connected to industry (Reese, 2008), provides stellar support to struggling students (Cadena, 2013), or effectively engages its school counselors (Huss & Banks, 2015). Chapter five will take the data results and interpretations from chapter four which were gathered using online surveys to produce a summary the findings that fit the particular context and needs of the school, its county, and to some extent its state. It will then describe how the various data were analyzed and ultimately interpreted within the context of the different variables that were in the experimental design and what can be learned to help inform next steps for my site as well as extraneous research on a national scope. These findings will result in recommendations for other researchers, schools and districts who also desire to strengthen their students' career interests and skills. Next I will address some of the limitations of my research design, describe the interpretation techniques employed and what I would change if the research was repeated. Lastly, a conclusion to this research project will be provided.

Finding Summary

The goal of changing perceptions is a lofty endeavor, and as the process revealed is a multi-layer effort. During the process of executing this study, it became apparent that both wide and narrow foci would be required in order to consider the mindsets and opinions that result in an overall perception. The study described a national-level perception towards the skilled trades, then progressed to the county-, school-, department-, student group-, building and manufacturing class-, and individual- student perception levels. While the results of the study neither pointed to a generally positive nor negative perception, there were nuances within the data that developed into a definitive perceptual stance once the data were analyzed. All counselors, parents, and students had generally positive opinions of Career Technical Education, yet the current extent to which students willingly take career-focused courses speaks of a practiced belief. That belief is seen as a generally negative stance indicated by the percentage of students who seemingly enter the workforce (74%) within 5 years after graduating high school versus the overall percent of students whom took at least one CTE course during their four years of high school (26%).

Finding Interpretation

Even though schools now require that all students graduate with coursework to make them CSU or UC eligible, those who actually enroll in a 4-year university and graduate with a degree account for a small number. The majority of students in San Diego County enter the work force immediately after high school despite being forced to be college ready. The false belief that a college degree is evident. As a state institution, highly personalized and extensive career exploration, preparation, is not possible. Perceptions and attitudes towards technical careers including the skilled trades are subtle but discernable. As the saying goes, “people vote with their feet”. The values of students and parents are therefore seen in the types of classes in which students enroll, and the goals they choose to pursue after high school. This is to say that

despite the absence of an overall negative perception of CTE, non-CTE students deliberately avoided taking classes in the general category of career preparation even though they generally disagreed with the negative statements and ideas concerning CTE courses (Chart 14). The same goes for school counselors; despite reporting that they do not discourage college-bound students from taking CTE courses, I have regularly had senior students somehow find their way into my machine shop or welding lab and with starry eyes say something to the effect of “I wish I took this class”. My response to this statement is always, “well why didn’t you?” to which they reply, “my counselor told me not to take it”. Taken out of context, this statement seems anti-CTE, but I tend to believe that there were other factors prompting this idea coming from a particular student’s counselor. Perhaps the student needed a core class to simply graduate, or at that student’s stage of maturity or personal situation would not have been able to handle it, and yet maybe it was the general ideology of “all of our students need to go to a university” and “must” go above and beyond the recommended basic classes to graduate.

Even though AVID (Advancement Via Individual Determination) classes are not listed as being CTE in the course catalog, students still receive the same “g” credits as CTE or “practical arts” provides. Credit from these largely academic classes however lack a “Technical Education” component. The “career” in CTE is an umbrella that makes this inclusion possible, and is draining enrollment in the identified industry sectors listed on the It is possible that students are grouping AVID in their assessment of CTE as a whole.

Findings in Context

This study was conducted in a comprehensive high school within San Diego County that has its own set of unique challenges and disadvantages. It also has some very innovative initiatives that have resulted in significant success and could be seen as advantages in

comparison to other schools in the county, state, and nation. I recognize that each school, district, county, state, and region will have its own unique make-up. The factors affecting perceptions of CTE and more, manufacturing in the United States are largely common no matter where a school is located.

Rosetti (1990) found that one of the biggest influences of students enrolling in vocational courses was the programs' or courses' image. This is certainly true for SDHS' CTE courses. I have heard and seen perceptions through students' faces concerning (both positive and negative) various courses. According to the data of this study, friends have the strongest influence of whether or not a student chooses to enroll (Chart 11). Friends may or may not be the best source of information concerning the content and quality of a course, and may simply be operating on hear-say.

Recommendations

With such a large topic, and something that is so important to the nation's future, there is still much work needed to continue to shift perceptions toward technical careers. Below is a list of my recommendations for future research and practices:

1. Future research should focus on discovering the motives of students working towards a four-year degree. In my own experience (mostly in the context of a classes like welding, machining, and woodworking), when students indicate that they are attending a four-year university after high school, questions like "why are you going to a four-year university?", or "what are you going to study?", or "how is a Bachelor's Degree going to help you reach your goals?" either result in blank stares or the response, "I don't know".
2. More data is needed to determine the amount of career counseling students have received by the end of each of their four years of their high school education, and what their

perceptions are of technical careers in order to appropriately respond in efforts to change those perceptions. Over the past 15 years teaching skilled trades, I have learned of the many changes in the skilled trades: the nature of the work, the technology, the wages and benefits, and the vacuum created by retiring baby-boomers. My research demonstrated that even something as quick and simple as showing parents and students an online video can educate parents and students about the benefits and value of working in one of the skilled trades.

3. Further context studies per district and region studying unique demographics, area needs, and locally available resources. Along with this could be a history of a highly effective school or district including their program components, how they got where they are today, in order to provide a blueprint for other districts, schools, and programs to follow.
4. The solicitation of businesses to invite them to partner with schools is largely an untapped resource. All programs funded by the Perkins grant are required to get feedback and recommendations from advisory boards, but the input normally stops after these yearly meetings. Local Education Agencies (LEAs) can and should tailor their career-oriented programs around the needs of local industry and regularly have industry representatives “show up” on campus, talk to and get to know students, all the while selecting who they would like to take on as a young apprentice or entry-level employee. This could comprise an entire study alone, as it demonstrates a novel solution of training and recruiting manufacturing employees in a mutually beneficial relationship between education and industry.
5. With approximately 200 instances within the 371 CTE students indicating profound influences from seeing CTE classrooms during a tour or visit and gaining information first-hand at an Elective recruitment fair, these are practices that should be strengthened

and enhanced as they provide direct influence and education of students' decisions to enroll in a CTE course.

Limitations

There were various limitations to this research study include the broad array of things the study focused on, the way the survey instrument was administered considering timing, the fact that some of the survey questions were inconsistent between CTE and non-CTE students, and the relatively new branding or classification of "CTE", and what it encompasses. My observations for each of these issues and their possible effects on the data gathered are discussed below.

This study's overall research question was quite broad; there are many components that make culminate in arriving at a perception of just one person let alone among a society. I realized how large this study was when I began analyzing the data, and that the scope of the study had perhaps reached a doctoral level. The positive to such a wide focus is that it assures a level of safety; it's much easier to get a skewed or inaccurate measure when focusing on a microscopic level than when attempting to evaluate an entire system of components. In the case of this study, it considered the relationships between the manufacturing and building industries, the evolution of education's relationship between with industrial technology education,

Some of the survey questions were difficult to decode. One question given to both CTE and non-CTE students were very similar in content, but the answer fields were different (4-point vs. 5-point Likert scale), and included "Not applicable" AND "none", leaving only two measurable outputs. This issue may have caused a decrease in the question's responses reliability.

Half of the students who were supposed to be surveyed never took the survey due to teachers being too busy, facing personal issues during data collection, or simply not seeing the value of sacrificing class time for a research survey. This was despite having the support of administration, having good rapport with colleagues, regular reminders and requests asking teachers to administer the survey.

None of the school's Spanish-speaking parents completed the online survey. This may be due, in part, to many Spanish speakers' limited education, and low reading ability in their own language. It could also be attributed to a limit in access to a desktop computer at home. This is where qualitative data in the form of interviews would have been a better way to gain the perspectives of these families.

There was not a question on the parent survey which asked if their child had taken a CTE course or not; it would have been highly insightful to discover the possible relationship between a parent who is supportive of CTE and their child having taken, or not taken a CTE course.

Future Direction

The literature and data sources in this study contain key elements to help shine light on the current level in which students receive about, training for, and assistance in transitioning to career-technical occupations. Schools need to continue improving career opportunity and skills training for all students and especially those who are at-risk: special education, poor, and/or foster/homeless youth. Discovered gains in student motivation, development of skills, and graduation rates shared in published research warrant a serious look at the type of career technical training during grades seven through twelve. Also desperately needed is reaching disenchanted students by offering them mastery in industry-related skills and solid preparation of entering post-secondary school and/or employment in good-paying careers. Focusing on careers

does not mean that preparation for college falls by the way side. Quite the contrary: our schools can return to dedicated preparation of students entering the workforce while at the same time equipping them to be able to go to college as it will no doubt be a part of their development in the various industries they will work in. Leaders need to encourage, professionally develop, and support CTE instructors to focus on these things, and in some cases re-train counselors in and/or allow time for separate ongoing time for career counseling/exploration for all students. The same goes for career center employees.

The researcher had learned about various ways to enhance his CTE program up by initiating mentorships with two different companies, but simply didn't have time to coordinate and implement these. Student applications were used to identify who would be interested, companies bought into the idea, yet there was no follow-up. This facet of a robust or high-quality CTE program is an example of a feature which would warrant a full or part-time employee who can administer and maintain such a feature, not unlike field trips, apprenticeships, job shadowing, or attending technical trainings.

Conclusion

This study sought to uncover the current perceptions of counselors, parents, and students at "SDHS", a comprehensive high school in San Diego County. It not only examined current perceptions, but was included a small trial of how to begin to shift perceptions using two brief informational videos, with the researcher's general goal being to increase the enrollment of SDHS' technical career courses. The data exemplify a causal stigma surrounding vocational education; that CTE is not for college-bound students but instead those labeled as "blue collar workers" (Elliot & Deimler, 2007). It is clear from county longitudinal data that despite many

schools going well beyond the minimum state requirements for graduation and instead matching, and in many cases exceeding university requirements; that approximately three-fourths of students don't need those extra academic classes (San Diego County Office of Education, 2015 and Chart 1). Since the sampled CTE sections were on average 12% higher in Special Education enrollment than that of the school at large, it would seem that the general perception of SDHS' technical trades classes are Special Education students are actively being directed into elective classes more than the now standard course load which ensures students take a rigorous class load in order to accomplish such goals as trying to get into a university after graduation.

The fact that despite a strong focus on making all students college ready, only 25% of graduating students will eventually graduate with a four-year degree could mean that San Diego county is focusing too much on preparing all of its students for university. Given that 75% of graduating students in San Diego end up not going to college, this means that most of these students enter the workforce at some point. During the 2015-2016 school year at SDHS, only 887 of 2200 students participated in CTE programs and only 638 (29%) of those students completed a CTE program. This represents a massive under preparation of SDHS students to go into a career after high school.

Based on CTE enrollment data and graduation requirements, there is an apparent belief by students that they "should" go to college; that it will somehow allow them to achieve financial success. This is the fallout of the "University for All" rhetoric that is sweeping over secondary and elementary education (Fleming, 2012). For why would an average student coming from a family whose median income is \$43,000 take on exuberant student loans which hold them in bondage for decades just to work on earning a degree that is little more than a piece of paper and doesn't usually leave them with any career or technical skills that can command higher pay in a

career (United States Census Bureau, 2018)? The data demonstrates a high value for college attendance, which isn't bad by itself. It IS bad when it becomes the single path that many students are pushed into. It is clear that there are lingering negative perceptions of multiple stakeholders regarding technical careers.

In the wake of Nation at Risk (1983) and ACT NCLB (2001) School districts have long been modifying graduation requirements to be more “rigorous”, while forgetting to offer highly “relevant” education in the form of manual and career skills. A consequence of perhaps allowing market values in our society to shape secondary and (more so) post-secondary education and by extension, teacher preparation programs means very few new vocational teachers graduating from teacher credential programs (Lynch, 1998). This becomes a vicious cycle since schools still have vocational programs, yet must hire instructors without any formal education or training in sound pedagogy and who generally are unable to provide a rigorous curriculum. Despite these instructors being issued emergency credentials, the teaching quality is lacking, and classes are generally chaotic and lacking a controlled, clear and sequential curriculum. Disorder and horseplay often ensue and with it the generally poor reputation of “shop class” is propagated. As a consequence, districts in southern California suffer a steady decline in manufacturing-based, hands-on technical courses. The result? Students have less opportunity to try out one of the trades or technical careers, and the nation's skills gap remains unfilled.

This research has identified a public perception based on college matriculation data and school enrollment data which demonstrate the reality of post-high school paths graduates are taking. Facing these realities and data gives educational leaders the opportunity to begin to turn the tide and focus back to preparing students for good paying careers. Because of the reality that “all students” will eventually go to work, this should drive the way schools educate students.

Schools can start offering a greater variety of technical training opportunities coupled with various aspects of career exploration, and beginning at an early age; something that our overall educational system is currently severely lacking or failing in.

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APPENDIX A: SURVEY INVITATION LETTERS**Student Assent Form:****Equipping Tomorrow's Skilled Workforce by Changing Perceptions of Career Technical Education****Assent Form**

My name is Mr. Beau Haubruge and I go to school at California State University San Marcos. I am also a teacher at San Pasqual High School. I am inviting you to participate in a research study about opinions and perceptions concerning Career Technical Education and ways to improve/strengthen CTE classes at our school. Your parent(s) know I am talking with you about the study. This form will tell you about the study to help you decide whether or not you want to take part in it.

What is the key information about this research study?

The following is a short summary of this study to help you decide whether you want to be a part of this study. Information that is more detailed is listed later on in this form.

The purpose of this study is gain insight into how to strengthen enrollment in our career and technical education (CTE) courses. You will be asked to complete a short online survey. I expect that you will be in this research study for about 10 minutes. The primary risk of participation is losing 10 minutes of instruction in your English class and your CTE class if you are enrolled in one. The main benefit is that sharing your viewpoint will help inform the future of the school's CTE enrollment and offerings, ultimately making it a better school

Why is this study being done?

The purpose of the study is to figure out where and how different people's perceptions of CTE might need to be corrected by providing true facts about CTE. You are being asked to take part in the study because your thoughts and opinions about CTE will directly affect efforts to education students, parents, and counselors.

What do I need to do?

If you decide to be in the study, I will ask you to answer questions in an online survey and watch two short online videos. The complete survey, including the videos will require about 10 minutes of your time.

What are the benefits to me?

If you take part in this study, you might be able to change the future of what types of courses are offered at San Pasqual. Taking part in this study may not have direct benefits to you, but it will help me learn how to make our CTE programs better to provide a valuable experience to students, providing them with valuable career-related skills.

Are there any risks to me if I decide to be involved in this study?

There are no foreseeable risks however some kids might feel bored during the survey, or feel annoyed at some of the survey questions. I have tried my best to make the survey as short as possible and easy to understand so that you can complete it quickly and feel good about your answers. While you will lose approximately 10 minutes of class time, the information you provide will be very

valuable to helping San Pasqual grow into a more relevant school which prepares its students for “the real world”.

How will my information be protected?

Your responses will be anonymous so that none of the survey answers can be tracked back to you. When it’s time to take the survey, your teacher will give you a short URL address which will take you right to the survey found on Google Forms. The results of this study may be used in reports, presentations, or publications but your name will not be used. The results will be kept in a Google Drive account, and only I will have access to the data for a period of three months after which the data will be deleted.

Do I have to be in the study?

No, you don’t. The choice is yours. Your participation in this study is completely voluntary. No one will get angry or upset if you don’t want to do this, and your grade in either your English class or CTE class will not be affected. And you can change your mind anytime if you decide you don’t want to be in the study anymore.

What if I have questions?

If you have questions about the study, you can ask me by visiting me in room 507. You can also e-mail me at haubr003@cougars.csusm.edu or you may reach my advisor, Dr. Josie Jackson at jojackson@csusm.edu. If you have any questions about your rights as a participant in this research or if you feel you have been placed at risk, you can contact the IRB Office at irb@csusm.edu or (760) 750-4029. You will receive a copy of this form for your records.

Signing below means that you have read this form and that you are willing to be in this study.

Name of the Participant (Write your name on the line):

Signature of the Participant (Put your signature on the line):

Date: _____

Video Invitation Script for Students

HELLO EVERYONE, MY NAME IS MR. BEAU HAUBRUGE, AND I TEACH WOODSHOP AND METALSHOP HERE AT SP. I AM WORKING ON MY MASTER’S DEGREE AT CAL STATE SAN MARCOS, AND WANT TO ASK FOR YOUR HELP. THE GOAL OF MY RESEARCH IS TO UNDERSTAND AND POSSIBLY IMPROVE HOW PEOPLE THINK ABOUT OUR SCHOOL’S CAREER TECHNICAL EDUCATION CLASSES. SO I’M LOOKING FOR BRUTALLY HONEST ANSWERS ABOUT WHAT YOU THINK ABOUT THESE CLASSES AND THE CAREERS THAT THEY PREPARE STUDENTS FOR. YOU CAN HELP ME BY TAKING A FIVE TO TEN-MINUTE ONLINE SURVEY WHICH WILL ASK YOU QUESTIONS ABOUT WHAT YOU THINK OF THESE CLASSES. AT THE

END, THERE WILL BE TWO SHORT VIDEOS THAT YOU'LL VIEW, AND THEN ONE MORE SHORT QUESTION.

THIS SURVEY ALONG WITH THE DATA I GATHER COULD HAVE A HUGE IMPACT ON OUR CTE COURSES AND THE FUTURE OF THE PROGRAMS WE CURRENTLY OFFER. OF COURSE, YOU DON'T HAVE TO PARTICIPATE; THIS IS AN OPTIONAL SURVEY, AND IF YOU DON'T WANT TO TAKE PART THERE WILL BE NO PENALTY TO YOUR GRADE. IF YOU DO WANT TO PARTICIPATE, YOUR TEACHER WILL SHOW YOU THE LINK. THE SURVEY WILL BE COMPLETELY ANONOMOUS, AND YOU WILL GIVE OUR SCHOOL SOME POWERFUL DATA SO THAT WE CAN BETTER SERVE YOU.

THANKS FOR YOUR TIME!

Parent Invitation Email:

Equipping Tomorrow's Skilled Workforce by Changing Perceptions of Career Technical Education

Parent Information Email Attachment

Dear valued parent,

My name is Beau Haubruge, and I am working on my Master's degree at California State University San Marcos and have been teaching at SPHS since 2001. I'd like to invite you to participate in a research study about opinions and perceptions concerning Career Technical Education and ways to improve/strengthen CTE classes at our school. The purpose of this form is to inform you and provide information about the study.

What is the key information about this research study?

The following is a short summary of this study to help you decide whether you want to be a part of this study. Information that is more detailed is listed later on in this form.

The purpose of this study is gain insight into how to strengthen enrollment in our career and technical education (CTE) courses. You AND your student will be asked to complete a short online survey. Students will receive a form similar to this one in both their English 12 class and their CTE class if they are in enrolled in one. I expect that it will take about 10 minutes to complete the survey. The primary risk of participation is losing approximately 10 minutes of time that you could use in another way. The main benefit is that sharing your viewpoint could help inform the future of the school's CTE enrollment and offerings, ultimately making it a better school.

Why am I being invited to take part in a research study?

Parents play a key role in helping students make choices about the classes in which they enroll. You are being asked to take part in the study in order to gain an understanding of your thoughts and opinions about CTE, which could affect efforts to educate counselors', students' and parents' desire to participate in CTE courses.

What happens to the information collected for the study?

Your responses will be anonymous so that none of the survey answers can be tracked back to you. I will provide you a shortened URL address which will take you right to the survey found on Google Forms. The results of this study may be used in reports, presentations, or publications but since names will not be asked, the data will be anonymous. The results will be kept in a Google Drive account, and only I will have access to the data for a period of three months after which the data will be deleted.

Who should I contact for questions?

If you have questions about the study, you can e-mail me at haubr003@cougars.csusm.edu or you may reach my advisor, Dr. Josie Jackson at jojackson@csusm.edu. If you have any questions about your rights as a participant in this research or if you have been placed at risk, you can contact the IRB Office at irb@csusm.edu or (760) 750-4029.

What happens if I say no?

If you decide not to participate in this study, the amount of data coming from our students' parents will be narrower, and therefore not be as accurate in providing a sense of what our parents' overall opinion of CTE courses is. I will not be keeping track of who wants to participate and who doesn't. Even though I will email a few reminders to you, I will not track who wants to participate, and who does not want to participate. So whatever you decide to do, please don't respond to my reminders with something like, "I've already taken the survey"; simply delete my reminder so I won't have any data on which parents have provided survey answers.

Here is the link to take the parent 5-10 minute survey: <https://tinyurl.com/y7jn4rrw>

Thank you,

Beau Haubruge

Counselor Invitation Email:**Equipping Tomorrow's Skilled Workforce by Changing Perceptions of Career Technical Education****Counselor Information Sheet**

Dear esteemed colleagues,

In case you were not aware, I am working on my Master's degree at California State University San Marcos. I'd like to invite you to participate in a research study about opinions and perceptions concerning Career Technical Education and ways to improve/strengthen CTE classes at our school. The purpose of this form is to inform you and provide information about the study.

What is the key information about this research study?

The following is a short summary of this study to help you decide whether you want to be a part of this study. Information that is more detailed is listed later on in this form.

The purpose of this study is gain insight into how to strengthen enrollment in our career and technical education (CTE) courses. You will be asked to complete a short online survey. I expect that it will take about 10 minutes to complete the survey. The primary risk of participation is losing approximately 10 minutes of time that you could use in another way. The main benefit is that sharing your viewpoint could help inform the future of the school's CTE enrollment and offerings, ultimately making it a better school.

Why am I being invited to take part in a research study?

Counselors play a key role in helping students make choices about the classes in which they enroll. You are being asked to take part in the study in order to gain an understanding of your thoughts and opinions about CTE, which could affect efforts to educate students' and parents' desire to participate in CTE courses.

What happens to the information collected for the study?

Your responses will be anonymous so that none of the survey answers can be tracked back to you. I will provide you a shortened URL address which will take you right to the survey found on Google Forms. The results of this study may be used in reports, presentations, or publications but since names will not be asked, the data will be anonymous. The results will be kept in a Google Drive account, and only I will have access to the data for a period of three months after which the data will be deleted.

Who should I contact for questions?

If you have questions about the study, you can e-mail me at haubr003@cougars.csusm.edu or you may reach my advisor, Dr. Josie Jackson at jojackson@csusm.edu. If you have any questions about your rights as a participant in this research or if you have been placed at risk, you can contact the IRB Office at irb@csusm.edu or (760) 750-4029.

What happens if I say no?

If you decide not to participate in this study, the amount of data coming from counseling will be more narrow, and therefore not be as accurate in providing a sense of what the entire counseling department's opinion of CTE courses is. I will not be keeping track of who wants to participate and who doesn't. Even though I will email reminders to all counselors, and drop reminder notes in each of your boxes, I will not track who wants to participate, and who does not want to participate. So whatever you decide to do, please don't respond to my reminders with something like, I've already taken the survey; simply say something like "thank you", so I won't have any data on who has taken the survey from counseling.

Here is the link to the counselor's survey: <https://tinyurl.com/yc97ceun>

Thank you,

Beau Haubruge

APPENDIX B: STUDENT SURVEY

CTE Perception Survey for Students

Thank you for taking the time to complete this survey.
Your answers will be used to help expand our course offerings.
Your answers will also help schools better prepare students for college and careers.
You will need headphones to hear parts of the survey...please plug them in now.

* Required

1. CTE means "Career Technical Education", and is comprised of 15 different industry areas; things like Building and Construction Trades, Marketing, Sales and Services, Engineering and Architecture, and Health Science and Medical Technology. Within the 15 areas are 58 specific career categories, each representing 10 to 30 jobs. So we're talking preparation and training for somewhere around 900 different jobs. *

Check all that apply.

Ok...I understand what CTE is and how many careers it represents

Tell us about yourself...

2. What is your gender? *

Mark only one oval.

Male
 Female

3. What grade are you in? *

Mark only one oval.

Freshman
 Sophomore
 Junior
 Senior (and 5th year)

4. What grades do you usually earn? *

Mark only one oval.

Mostly A's
 Mostly A's and B's
 Mostly B's
 Mostly B's and C's
 Mostly C's
 Mostly C's and D's
 Mostly D's
 Mostly D's and F's

5. What are your plans after you're out of high school? *

Mark only one oval.

- Don't know yet...take a "break"
- Start/keep working
- Join the military
- Attend some form of job training (internship/apprenticeship/trade school)
- Attend a community college
- Attend a university
- Other: _____

6. Have you ever taken (or currently enrolled in) a CTE course such as Agriculture, Culinary, Wood, Metal, Construction, Engineering, Game/Graphic Design, Journalism, etc? *

Mark only one oval.

- Yes *Skip to question 9.*
- No *Skip to question 7.*

People who influenced you

PLEASE answer according to your first feelings/thoughts you experience; you won't hurt anyone's feelings!

7. Please rate how much influence each of these people have had in your decision to NOT take a CTE Course *

Mark only one oval per row.

	Not Applicable	Negative; discouraged me	Neutral; did not encourage OR discourage me	Positive; encouraged me
A high school counselor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A high school teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A mother/female guardian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A father/male guardian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A brother or sister	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career Center/Learning Center Staff/Person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Please indicate how strongly you agree or disagree with each statement: *

Mark only one oval per row.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I'm going to college; I don't need CTE classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CTE classes won't help me get into a good career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CTE classes are weak in academic content.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being in CTE would take away from my high school experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Skip to question 13.

CTE Courses

CTE = Career Technical Education

9. Select the Career Technical Education classes you are in, and/or classes you've taken in the past: (ok to check multiple boxes) *

Check all that apply.

- Agriculture/Floriculture
- Computer Science
- Construction
- Culinary Arts
- Graphic Design
- Game Development
- Intro to Architecture
- Intro to Manufacturing
- Journalism
- Manufacturing 1/Machining 1
- Pre-Engineering and Design
- Visual Communications and Visual Media
- Welding and Metal Fabrication 1
- Woodworking 1
- I've never taken any of these

10. Please rate how much influence each of these people had in your decision to take a CTE Course *

Mark only one oval per row.

	None	Some	A lot
A school counselor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A school teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A mother/female guardian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A father/male guardian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A brother or sister	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career Center/Learning Center Staff Person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Perceptions of CTE

11. Rate how much these factors influenced your decision to take a CTE course *

Mark only one oval per row.

	Didn't attend/Not sure	No influence	Little influence	Major Influence
Middle School Tour (Jump Aboard)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elective Fair on Campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Counselor's Visit to my middle school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My high school counselor encouraged me to sign up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A friend encouraged me to sign up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A student approached me and either interviewed me about CTE or invited me to their class to check it out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents encouraged me to take a CTE course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. I believe that Career Technical Education courses are designed to serve students: *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral; I don't agree nor disagree	Agree	Strongly Agree
Who plan to go work right after high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who plan to join the military right after high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who plan to go to college right after high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who struggle academically.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who are discipline problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Of all ability levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Stop filling out this form.

Two Short Videos:

Please take a few minutes to watch each video and respond to the questions at the end:

Video #1: Four minutes long...click the screen below to watch.



<http://youtube.com/watch?v=diTw0XD7ZY>

Video #2: One minute long...click the screen below to watch.



<http://youtube.com/watch?v=EgbZyEITfY>

13. After viewing the videos, which describes you now? *

Check all that apply.

- I already knew those things about CTE.
 - I learned something new about CTE, but feel the same about the classes.
 - I learned a lot about CTE, and now have a more positive opinion of it.
-

APPENDIX C: PARENT SURVEY

CTE Perception Survey for Parents

Thank you for taking the time to complete this survey.
 Your answers will be used to help expand our course offerings.
 Your answers will also help schools better prepare students for college and careers.

* Required

1. CTE stands for "Career Technical Education", and is comprised of 15 different industry areas such as Building and Construction Trades, Marketing, Sales and Services, Engineering and Architecture, and Health Science and Medical Technology. Within the 15 areas are 58 specific career categories, each representing 10 to 30 jobs. So we're talking preparation and training for somewhere around 900 different jobs. The survey data will be collected and compiled into a final summary report using Google Forms. Due to the electronic nature this survey respondents are anonymous to the researcher. Data will be collected and compiled by the researcher. Participation in this research study is voluntary and participants may withdraw from the study at any time. Your participation in this study is greatly appreciated and will lead to a better understanding of the perceptions of CTE in general. *

Check all that apply.

Ok...I understand what CTE is and how many careers it represents

Tell us about yourself...**2. Family Role ***

Mark only one oval.

- Mother/Step-Mother
 Father/Step-Father
 Female Guardian
 Male Guardian
 Female Foster Parent
 Male Foster Parent
 Other

3. Highest Level of Education Attained *

Mark only one oval.

- Some High School
 High School Diploma
 Associate's Degree
 Bachelor's Degree
 Master's Degree
 Doctorate
 Other: _____

4. Industry Sectors You've Worked In: (check all that apply) **Check all that apply.*

- Agriculture and Natural Resources
- Arts, Media, and Entertainment
- Building and Construction Trades
- Business and Finance
- Education, Child Development, and Family Services
- Energy, Environment, and Utilities
- Engineering and Architecture
- Fashion and Interior Design
- Health Science and Medical Technology
- Hospitality, Tourism, and Recreation
- Information and Communication Technologies
- Manufacturing and Product Development
- Marketing Sales and Service
- Public Services
- Transportation
- Other: _____

5. Which best describes the professional role of the main income provider in your home? **Mark only one oval.*

- Owner/Partner
- Chief Officer/Head Management
- Middle Management/Department/Section Lead
- Representative/Team Member/Technician
- Laborer/Helper
- Other: _____

6. In high school, did you ever take a Career Technical Education (or "Vocational Education") course such as Agriculture, Culinary, Wood, Metal, Construction, Engineering, Game/Graphic Design, Journalism, etc? **Mark only one oval.*

- Yes
- No *Skip to question 7.*

Your Opinions about Career Tech Classes

PLEASE answer according to your first feelings/thoughts you experience; you won't hurt anyone's feelings!

7. Please indicate how strongly you agree or disagree with each statement: *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
CTE classes are primarily for non college-bound students	<input type="radio"/>				
CTE classes won't help students get into a well-paying career.	<input type="radio"/>				
CTE classes are weak in academic content.	<input type="radio"/>				
CTE classes would take away from my student's high school experience.	<input type="radio"/>				
CTE classes are a good place for low-performing students.	<input type="radio"/>				

Things that might influence you...

8. Rate how much these factors might influence you to encourage your student to take a CTE course *

Mark only one oval per row.

	No influence	Little influence	Major Influence
To possibly earn an industry credential/certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To attend field trips to various businesses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To receive focused instruction and training in job-finding skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To learn manual skills such as tool use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. I believe that Career Technical Education courses are designed to serve students: *

Mark only one oval per row.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Who plan to go work right after high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who plan to join the military right after high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who plan to go to college right after high school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who struggle academically.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who are discipline problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Of all ability levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Two Short Videos:

Please take a few minutes to watch each video and respond to the questions at the end:

Video #1: Four minutes long



<http://youtube.com/watch?v=diTtw0XD7ZY>

Video #2: One minute long



<http://youtube.com/watch?v=EgbZyEITtFY>

10. After viewing the videos, which describes you now? *

Check all that apply.

- I already knew those things about CTE.
- I learned something new about CTE, but feel the same about the classes.
- I learned something about CTE, and now have a slightly different opinion/perception.

APPENDIX D: COUNSELOR SURVEY

Career and Technical Education (CTE) Perception Survey for Counselors

* Required

1. The following survey is designed to assess the level of understanding and perceptions of career and technical education (CTE) by high school career counselors. CTE is the educational term for a sequence of courses providing relevant academic and technical skills needed to train the 21st century workforce (Carl D. Perkins Act of 2006, sec. 3[5]). CTE was formerly known as vocational education. The survey data will be collected and compiled into a final summary report using Google Forms. Due to the electronic nature this survey respondents are anonymous to the researcher. Data will be collected and compiled by the researcher. Participation in this research study is voluntary and participants may withdraw from the study at any time. Your participation in this study is greatly appreciated and will lead to a better understanding of the perceptions of CTE in general. If you would prefer not to participate in this research study, please mark the appropriate box below and exit the survey. *

Mark only one oval.

Yes, I agree to participate in the following survey and understand my personal information will be kept confidential.

No, I would prefer not to participate in this research study. *Stop filling out this form.*

Tell me about your background...

2. My highest level of education is... *

Mark only one oval.

Bachelor's Degree

Master's Degree

Doctorate Degree

3. As a student, which of the following did you attend? Select all that apply. *

Check all that apply.

A community/junior college

A technical/trade school

A four year college or university

4. Did you take any CTE or vocational classes while you attended high school? *

Mark only one oval.

Yes

No

5. In college did you study in a CTE program area (e.g. Agriculture, Automotive, Electrical, Construction, Computer Graphics, Nursing etc.)? *

Mark only one oval.

- Yes
 No

6. What was your major for your Bachelor's Degree? *

7. What was your major for your Master's Degree? *

Tell me about your professional experience...

8. Area of Teaching Experience? *

Mark only one oval.

- Academic Courses
 CTE Courses
 Both
 No classroom experience; I went right into counseling

9. Years of teaching experience? *

Mark only one oval.

- 0-2
 3-8
 9+

10. Years of counseling experience? *

Mark only one oval.

- 0-2
 3-8
 9+

11. How many students do you currently counsel? *

Mark only one oval.

- Less than 100
 100-300
 300-500
 500+

12. On average, about how much face-to-face contact do you have with each student you counsel per school year? *

Mark only one oval.

- Less than 5 hours
- 5-10 hours
- 10-15 hours
- 16 or more hours

13. On average, about how much career counseling do you provide for each student over the course of a school year? *

Mark only one oval.

- Less than 2 hours
- 2-4 hours
- 4-7 hours
- 7 or more hours

Explain what you know about CTE

14. My knowledge level of CTE is based on the following factors. (Select as many as applicable.)
*CTE programs have at least two sequential classes and often allow students to earn a certificate *

Check all that apply.

- I completed a CTE program* in high school, and/or took at least two CTE courses
- I completed a CTE program* in college, and/or took at least four CTE courses
- A family member or someone I know personally completed a CTE program*
- I have read materials about CTE programming*
- My school currently provides CTE programming*
- I have toured or observed students in a CTE program*
- My school administration has discussed CTE programming* for our students
- I have toured area industry and/or discussed CTE programs* with community members
- I have attended state meetings and/or conferences about CTE initiatives
- I have limited knowledge of CTE because I have not been involved, or haven't learned very much about CTE

15. To the best of your knowledge, what percentage of high school graduates enroll in a college/university, AND go on to EARN a Bachelors degree within six years after starting college? *

Mark only one oval.

- 0-15%
- 16-30%
- 31-45%
- 46-60%
- 61-75%
- 76-90%
- 91-100%

Perceptions of CTE

Think of these questions in terms of your school's enrollment practices, recommendations for students, and what you generally communicate to them...

16. I believe that Career Technical Education courses are primarily designed to serve students: *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Who plan to go work right after high school.	<input type="radio"/>				
Who plan to join the military right after high school.	<input type="radio"/>				
Who plan to go to college right after high school.	<input type="radio"/>				
Who struggle academically.	<input type="radio"/>				
Who are discipline problems.	<input type="radio"/>				
Of all ability levels.	<input type="radio"/>				

17. Please indicate how strongly you agree or disagree with each statement: *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
"CTE classes won't help students get into a high-paying career"	<input type="radio"/>				
"CTE classes are weak in academic content."	<input type="radio"/>				
"Being in CTE would take away from students' high school experience."	<input type="radio"/>				

18. Please indicate how strongly you agree or disagree with each statement: *

Check all that apply.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
CTE programs serve primarily to support area employment needs.	<input type="checkbox"/>				
Certifications are valuable for students to secure future employment.	<input type="checkbox"/>				
CTE is an avenue to retain students who are at risk.	<input type="checkbox"/>				
Exposure to available CTE programming for students should occur prior to the start of high school.	<input type="checkbox"/>				
Students enrolled in CTE programs tend to be well-prepared academically.	<input type="checkbox"/>				
It is feasible for a student to complete a three-year CTE pathway and get all their required high school credits to graduate.	<input type="checkbox"/>				
Parents are supportive of their students enrolling in CTE courses or programs.	<input type="checkbox"/>				
Counselors have sufficient time to expose students to CTE pathways.	<input type="checkbox"/>				
Counselors have sufficient time to counsel students on their career aspirations.	<input type="checkbox"/>				
I tend to discourage college-bound students from taking CTE (vocational) courses.	<input type="checkbox"/>				