

THE ROLE OF VOCATIONAL TECHNICAL TRAINING IN TEXAS EARLY
COLLEGE HIGH SCHOOLS: A DELPHI STUDY

A Dissertation

By

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ABSTRACT

THE ROLE OF VOCATIONAL TECHNICAL TRAINING IN TEXAS EARLY
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(October 2012)

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The study was conducted to document the role of vocational training programs in Early College High Schools (ECHS) and to identify the barriers which may hinder the implementation of robust vocational training programs in ECHS. The study was descriptive in nature, employing a mixed methods model. Specifically, the Exploratory Sequential Design: Instrument Development Variant was used. The researcher had hypothesized that in the context of ECHS, specific roles for vocational training programs as well as barriers which may hinder the implementation of such programs existed. On the basis of qualitative results, which were derived from a 3-round Delphi study, it is concluded that the hypothesis is tenable, as eight roles and fifteen barriers were identified. On the basis of quantitative results, it is concluded that the practitioners involved in ECHS tend to agree with the roles and barriers. Theoretical and practical implications were discussed.

DEDICATION

This dissertation is dedicated in loving memory of my sister, Nancy Marita Simonson (1951 – 2012). Nancy was my best friend, my editor, and my mentor. Nancy was known by her family and friends for her: friendship and courage, cheerfulness and charity, diligence in duties, counsel in adversity, patience in pain—their good servant, and God's first. Nancy is missed by all who knew her. May eternal rest, grant unto her, O Lord; and let perpetual light shine upon her. May her soul, and the souls of all the faithful departed, through the mercy of God, rest in peace. Amen.

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I would like to acknowledge Dr. Kamiar Kouzekanani, my dissertation chair, without whom this entire project would have never been completed. Dr. K. was patient and firm in equal measure; the perfect mentor for my dissertation. Dr. K. stepped into the middle of my Delphi, when I had lost my way and guided me to completion.

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I would like to acknowledge Drs. Dan Pearce, Frank Lucido, Phillip McEndree, Richard Shepperd, and Thomas Baynum for providing me with useful feedback throughout the conduct of the study.

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I would like to thank my sister, Jeanene Jones, who encouraged me to continue and supported me on the long journey. She is a great boss, a wonderful sister and a good friend.

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Chapter 1

Introduction

Background and Setting

The widespread concern that American public schools are not up to the task of educating America's youth for the demands of the future or for competing in a global marketplace has existed for over half a century and is the subject of numerous reports and studies. Periodically, the concern has produced urgent demands for reform from members of the public, educators, and government leaders. The catalysts for reform vary. At times, singular events such as the launch of Sputnik lead to calls for reform. At other times, patterns of events inspire demands for reform. The proposed solutions vary from increased accountability and testing to greater emphasis on practical career and vocational training. The track record of past reform movements is instructive of the need for follow through and of the difficulty in achieving lasting change.

Sputnik—Catalyst for Reform

The Soviet Union's launch of the satellite Sputnik in 1957 "sent shockwaves through America, sparked the space race and wrenched the U. S. from its post-war smugness" (Dickson, 2007, n.p.). Educational reform had been ongoing before the launch of Sputnik but Sputnik galvanized the public. According to Bybee (1997), "[I]t symbolized a threat to American security, to our superiority in science and technology, and to our progress and political freedom" (p. 1). The public understood Sputnik as a threat to the American way of life and supported the call for educational reform. Before Sputnik, the public had largely objected to federal funding of public school education because it would lead to federal control. After Sputnik, the demand for federal

involvement led to passage of the National Defense Education Act of 1958 (Bybee, 1997). The changes inspired by Sputnik focused on science and mathematics preparedness. However, the Sputnik reform did not correct all the problems in the American education system and the renewed interest in improving science and mathematics education instruction gave way to other concerns (Bybee, 1997).

Pattern of Failure—A Nation At Risk to A Nation Accountable

The call for educational reform has, at times, been the result of an analysis of a pattern of events leading to the realization that a significant problem exists. In April 1983, the United States National Commission on Excellence in Education issued a wakeup call in the form of a report on the quality of education in America called *A Nation at Risk: The Imperative of Educational Reform*. The Commission reported the following:

Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is the one that undergirds American prosperity, security, and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people. What was unimaginable a generation ago has begun to occur – others are matching and surpassing our educational attainments.

If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves. We have even squandered the gains in student achievement made in the wake of the Sputnik challenge. Moreover, we have dismantled essential support systems which helped make those gains possible. We have, in effect, been committing an act of unthinking, unilateral, educational disarmament. (1983, p. 1)

A Nation at Risk prompted action on the part of educators, government leaders at all levels, and members of the public. Government leaders enacted requirements for academic standards and standard-based testing (United States Department of Ed, 2008). The No Child Left Behind Act is an example of the legislative response to the warning provided by *A Nation at Risk*. The report has been criticized for prescribing the tired formula of more academics rather than vocational-technical course work. Blank characterized *A Nation at Risk* as paying lip service to “secure gainful employment” as one of the goals of education but only mentioning the need to “attain the mature and informed judgment” to secure employment. *A Nation at Risk* did not address the serious need for appropriate career and vocational training (Blank, 2000, p. 70).

Twenty five years after *A Nation at Risk* was issued, the United States Department of Education issued an assessment of the progress made in *A Nation Accountable*:

If we were "at risk" in 1983, we are at even greater risk now. The rising demands of our global economy, together with demographic shifts, require that we educate more students to higher levels than ever before. Yet, our education system is not keeping pace with these growing demands.

Of 20 children born in 1983, six did not graduate from high school on time in 2001. Of the 14 who did, ten started college that fall, but only five earned a bachelor's degree by spring 2007.

Fortunately, thanks to the recent standards and accountability movement and the No Child Left Behind Act, we are finally taking an honest, comprehensive look at our schools. For the first time in our country's history, we have reliable data to evaluate student performance and address weaknesses in our schools (2008).

We must leverage this information to achieve better results. We simply cannot return to the "ostrich approach" and stick our heads in the sand while grave problems threaten our education system, our civic society, and our economic prosperity. We must consider structural reforms that go well beyond current efforts, as today's students require a better education than ever before to be successful. We know which areas need the most attention. Now we must dedicate ourselves to making sure they get it (2008, p. 1).

The conclusion reached in *A Nation Accountable* was that schools continue to fail, but we are better able to quantify the failure in order to attempt to repair the school system.

Broken Schools

The widely held belief that the public school system is broken and in need of repair has been around for decades. Educational reform efforts have focused on elementary, middle, and high schools at different times over the past decades. Since 2000, a great deal of time, effort, and resources have been directed at restructuring American high schools. That American high schools allow one-quarter of students to read below basic levels; fail to graduate 30% of their students; and prepare far fewer low income than high income students for college are among the facts cited as proof of the breakdown (Gates & Gates, 2005). According to critics, the American high school system requires reform because the high schools were simply not designed to prepare all students for college learning, high-tech workplaces, and 21st century citizenship (Gates & Gates, 2005). According to these studies, the large comprehensive high school model in operation in most parts of the country is the product of the early 1900's and was designed to educate all students efficiently but to prepare a relative handful for college or post-secondary education (Gates & Gates, 2005).

A recent popular book described the earth as “hot, flat, and crowded” and bore testament to the increasing pace of globalization (Friedman, 2008). Advances in communication and other technology have made it possible for entire departments of companies to be moved from one country to another in search of a better trained or cheaper workforce (Friedman, 2005). Business, educational, and political leaders have recognized that workers today must increasingly be prepared to compete in a global

marketplace (Friedman, 2005). With a national dropout rate hovering at 30% and a large percentage of high school graduates having no meaningful job skills or requiring remedial training before beginning college, good reason exists to question whether the United States public schools are failing to meet the demand for a skilled, educated workforce necessary to compete in a global economy (Friedman, 2005).

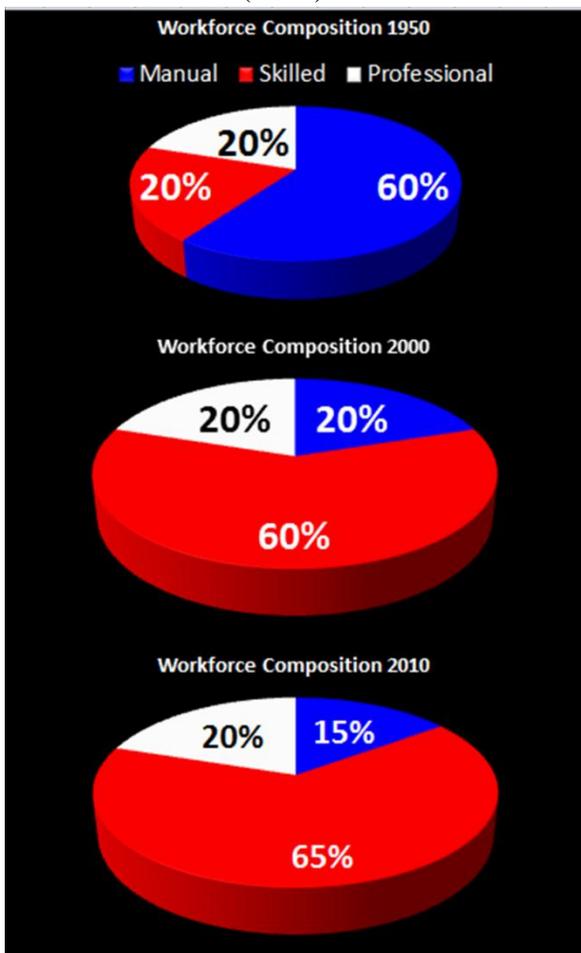
In numerous legislative sessions, the Texas Legislature has sought to address the need for a competitive workforce (Combs, 2008). Among the solutions offered to correct the shortcomings of Texas public schools are the implementation of career training programs (Texas Education Agency (TEA), 2005–2007) or innovative approaches to restructuring high school such as Early College High School (ECHS) models (Tex. Educ. Code § 29.908). Although the ECHS model would seem to fit well with robust Career and Technical Education (CTE) programs known as Workforce programs in a community college context, ECHS in Texas generally have not included CTE as a major component of the curriculum (Wing, C., personal communication, January 29, 2009). In 2008, only one of the 27 ECHS in Texas had a CTE focus (Combs, 2008, p. 31). Substantial speculation exists on why vocational and career training have not been embraced by public high schools; unfortunately, no definitive answer based on reliable evidence has surfaced. Identifying barriers to implementation of robust vocational training programs in high schools is an important step in addressing the failure to equip students for the future

Labor Force Issues

United States

From its foundation to the present, the United States has experienced dramatic changes in the workforce and the related demands on the educational system. In the eighteenth century, “the United States was primarily an agrarian economy; a majority of students went on to become farmers, construction workers, or domestic employees. This

Figure 1. U.S. Bureau of Labor Statistics Workforce Composition Comparison 1950 vs. 2000 vs. 2010 (2012)



negated the need for higher education” (Carr, 2004, p. 42). By the middle of the twentieth century, the workforce was no longer agrarian, but the need for unskilled workers remained substantial.

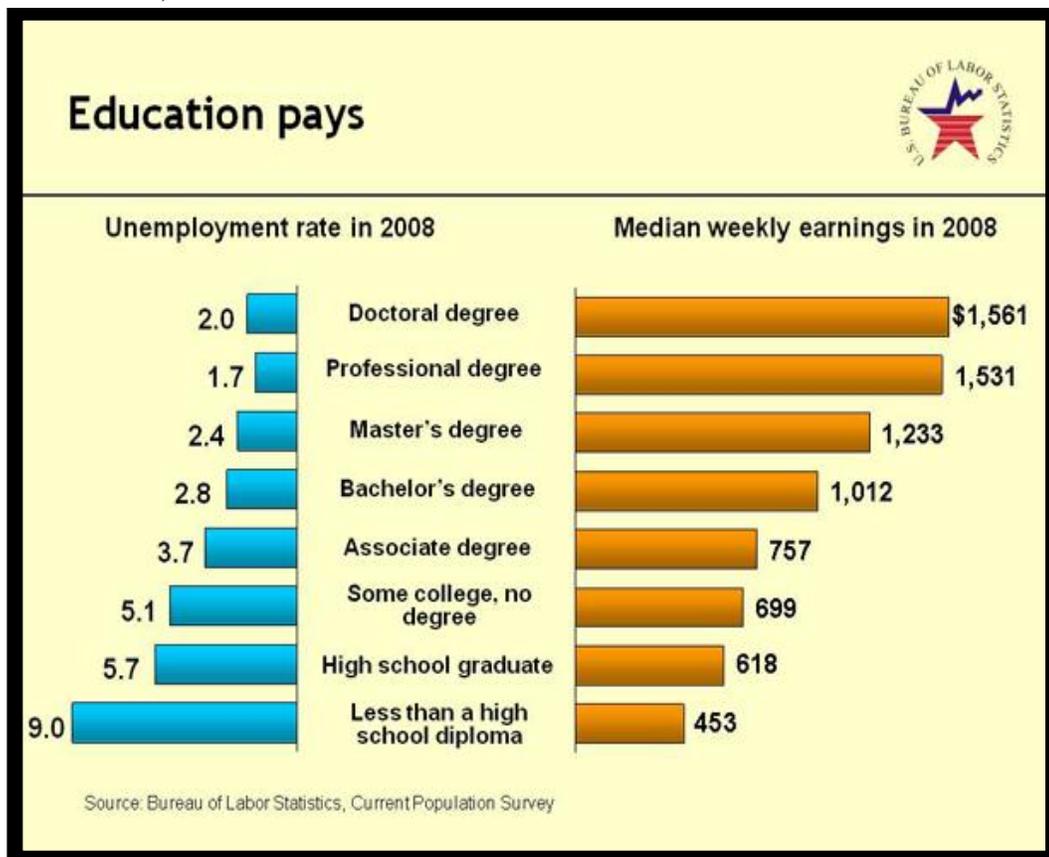
The workforce in the United States has undergone dramatic changes. In 1950, 60% of the workforce consisted of unskilled labor; 20% consisted of skilled labor; and 20% consisted of professionals (United States Bureau of Labor Statistics [U. S. B. L. S.], 2003). The public education system, while considered flawed, was capable of the task of producing skilled labor and professionals in sufficient numbers. By the

1980s, however, the workforce consisted primarily of skilled positions (U. S. B. L. S., 2003), and the national education system was declared to have made the United States A

nation at risk. Carr (2004) observed that, “Due to the nature of the evolving global economy, it was vital that our students were able to compete successfully with the students of the world” (p. 61). The conclusion in *A Nation at Risk* was that the education system was failing to produce students who possessed world class skills. As Carr stated, “[a]s science and technology skill needs are dramatically increasing, achievement in these areas is at an all-time low” (p. 62). As shown in Figure 1, in the year 2000, only 20% of the United States workforce consisted of unskilled labor while the percentage of skilled labor grew to 60% (U. S. B. L. S., 2003). By 2010 skilled positions grew to 65% of the United States workforce. (U. S. B. L. S., 2012).

The unemployment rate in October 2009 was 10.2%, the highest unemployment rate in 26 years (Nutting, 2009). The national unemployment rate in June 2011 was 9.2%.

Figure 2. U.S. Bureau of Labor Statistic Unemployment and Wage by Educational Achievement, 2008



The unemployment rate for high school dropouts (14.3 %) and unskilled workers (10.8%) was substantially higher than the national average (U. S. B. L. S., 2011). Although the unemployment rate is near a decade's high, the United States Department of Labor reported widespread shortages of skilled labor in the health care, technology, construction, and service industries during the 2008 recession. In February 2008, over 140,000 internet technology job openings nationwide went unfilled due to lack of qualified applicants (Talent Search, 2008). According to the *U. S. Department of Labor Occupational Outlook Handbook* (2010–2011) skilled technicians have excellent job opportunities currently, and projected growth for the future. The demand for skilled workers remains unsatisfied while each year one million four hundred thousand high school graduates enter the work force without the skills or experience necessary to success (Barton, 1991).

Texas

The Texas labor market mirrors the national market. The unemployment rate in Texas in June 2011 was 8.2% (U. S. B. L. S., 2011). The unemployment rate is higher for high school drop outs (15.4%) and unskilled workers (9.4%) than the general unemployment rate. The Texas economy demands skilled workers. "According to Texas Workforce Commission projections, Texas will have 44,000 job openings annually through 2016 for occupations requiring associate degrees in vocational areas but only produce 36,442 of the required students" (Combs, 2008, p.21). In contrast, Texas may produce too many four year college graduates. Combs (2008) reported, "A 1995 study found that there are almost twice as many 4 year graduates as there are job openings that require this level of education" (p. 67).

Texas leaders have recognized that the state must compete in a global market. They have also recognized that the state has a vital interest in helping students embark on well-paid careers while supplying area employers with the technically skilled workers they need to succeed. One way to accomplish this goal is to take steps to make parents and students aware of all post-secondary options, “including career and technical education (CTE)” (Combs, 2008, p.75). In a recent assessment made at the request of the Texas Legislature, Combs provided additional tax revenue generated by employers that resulted from the ability of public junior colleges, public state colleges, or public technical colleges to prepare students for employment fields for which there is significant employer demand (Combs, 2010).

According to the Comptroller’s office, the total additional discounted lifetime wages and salaries of all technical program completers was estimated to be \$31.1 billion. The total additional discounted lifetime tax revenue generated by Texas’ public two-year graduates of technical associates and certificate programs is estimated in the aggregate at \$2.4 billion, and per completer, is estimated at \$10,728 (Combs, 2010).

High School Dropout

United States

Responsibility for equipping future workers with the skills they need to compete in a global market place has largely been assigned to public schools (Carr, 2004). For decades, widespread concern has existed that the United States public school system has failed to discharge this critical responsibility and has left the United States *a nation at risk*. American high schools “fail to graduate 30% of their students” (Barton, 2005, p.3). Of grave concern, the high school completion rate has been falling since its peak of

77.1% in 1969 to 69.9% in 2000 (Barton, 2005, p.3). Of additional concern is the fact that many high school graduates are unprepared to enter the work force or to do college level work (National Center for Educational Statistics [NCES], 2008). Over 40% of students admitted and enrolled in college must take at least one remedial course before beginning college level course work (NCES, 2008).

The drop out problem has severe consequences for the individuals, their families, and the nation (NCES, 2008):

Dropping out of high school is related to a number of negative outcomes. For example, the average income of persons ages 18 through 65 who had not completed high school was roughly \$21,000 annually in 2006. By comparison, the average income of persons ages 18 through 65 who completed their education with a high school credential, including a General Educational Development (GED) certificate, was over \$31,400 annually (cite omitted). Among adults age 25 and older, a lower percentage of dropouts are in the labor force compared with adults who earned a high school credential. Among adults in the labor force, a higher percentage of dropouts are unemployed compared with adults who earned a high school credential (cite omitted). Further, dropouts age 25 or older reported being in worse health than adults who are not dropouts, regardless of income. Dropouts also make up a disproportionately high percentage of the nation's prison and death row inmates.

Texas

Texas public high schools have many of the same problems experienced by the troubled national school system. In the 2000 census, 25% of the Texans age 25 or older had not completed their high school diploma or equivalent. In the 2006-2007 school year, Texas high schools had a 30% attrition rate (IDRA, 2009). Less than 40% of students met Texas Higher Education Coordinating Board (THE-CB) standards for higher education readiness in English/Language Arts, and less than 50% met readiness standards in mathematics. Only 28% of students tested ready in both categories. The Texas

Education Agency (TEA) concluded that the majority of high school students are not prepared for post-secondary education or training (Texas Higher Education Coordinating Board [THECB], 2008).

The failure of Texas high schools to equip students with the skills needed to pursue post high school training and education comes at a time when the need for post high school education is increasing (Barton, 2005). Demographic changes in Texas have raised concern about the future. As Combs (2008) noted, “Official Texas population projections point to a less educated workforce if the state continues its current path” (p. 9). The consequences of a declining educational level are grave. Combs (2008) further noted, “A less educated work force translates into lower earnings and fewer skilled workers. Businesses will have a harder time finding qualified employees to fill positions, and may even decide to locate to a different state where skilled workers are plentiful” (p.9).

Legislative Solutions

United States

Although primary responsibility for the operation of public school systems rests with the states, the federal government has used its funding leverage to promote policies intended to address the shortfalls of the United States’ education system. In 1965, the Elementary and Secondary Education Act passed (Javian, 2004). The act sought “to raise students’ performance and maintain accountability for schools and teachers by measuring students’ performance on objective examinations” (Javian, 2004, p. 345). In 1994, the School to Work Act passed. The goal of the legislation was to integrate work based learning with traditional classroom instruction to make education more relevant (Javian,

2004). Work based learning involves an experiential learning model that differs from the standards based model underlying the Elementary and Secondary Education Act and the 2001 No Child left Behind Act (NCLB). The NCLB was modeled on the states' movement of "standards, assessments, and accountability" and marked the federalization of the movement (Ratner, 2007, p. 8). Javian (2004) stated, "The tension between the standards based model of education reform and the experiential learning model has created a legislative environment that is less hospitable for school to work programs" (p. 345). As a possible result of the hostility, the School to Work Act failed to bring about meaningful school to work education on a national scale (Javian, 2004).

Texas

The tension between experienced based learning and the standards/assessment accountability model may exist in the Texas public school model. Texas has been identified as "the flagship for the NCLB" (Ratner, 2007, p. 17). Texas embraced the standard, assessment, and accountability model in 1992 (Ratner, 2007). Texas has also embraced the concept of experience learning. The state has identified equipping students with the career skills necessary to enter the workforce in high paying occupations as a matter of public policy (Tex. Educ. Code §29.). The Texas Education Agency has authorized a wide variety of career and technical training programs in Texas high schools ranging from major appliance technology services (19TAC § 125.43(2009)) to commercial photography (19TAC § 125.92(2009)) and to computer programming (19TAC § 125.65(2009)). Texas has further authorized creation of ECHS programs to address the attrition rate and the lack of college/career readiness of Texas high school students (Tex. Educ. Code § 29.908).

Combs (2008) observed that numerous CTE studies found solid statistical evidence of CTE benefits. Combs (2008) pointed out that “[d]espite such findings, Texas continues to direct more students towards the academic track rather than CTE” (p. 21). Combs (2008) further explained that the “requirements of the four-by-four” curriculum “may limit students’ ability to pursue studies geared toward technical and industrial careers” (p. 21).

Community Colleges

Texas has created a network of community colleges covering the majority of the state. The mission of community colleges includes the role of workforce training (THE-CB, 2010). Community colleges have expanded from offering traditional college level courses leading to a two year degree to “offer[ing] vocationally oriented associate degrees that prepare students for careers ... [and] career training through vocationally oriented courses that lead to a certificate” (Kasper, 2002, p. 14). Community colleges have worked with local high schools to offer dual credit courses and to smooth the transition from high school to college work. Texas community colleges have worked with local employers to build programs to provide the training necessary for a qualified workforce (Combs, 2008). In Texas, community colleges are the main provider of most of the public secondary CTE. Recounting the positive contributions provided by Texas community colleges, Combs stated that community and technical colleges have the ability “to offer our children affordable, state-of-the-art training for jobs with a future after one or two years” (Combs, 2008, p. 2).

Early College High Schools

One of the significant attempts to address the broken system began in 2000 when the Bill and Melinda Gates Foundation started funding initiatives to improve America's high schools. The goals of the various initiatives were to do the following: increase high school graduation rates; increase college readiness rates; increase college entrance rates; and improve completion rates for at risk students (Gates & Gates, 2006, p. 5).

The ECHS program is one of the models explored by the Gates Foundation. Created in 2002, the Early College High School Initiative focused on students who are traditionally under-represented in college programs and on providing such students with an opportunity to pursue a high school diploma and college credit at the same time (Gates & Gates, 2007). The initiative focused on at risk students having one or more of the Texas Education Agency's thirteen at risk indicators.

The ECHS model builds on the concept of dual enrollment programs. Dual enrollment programs were developed to address the problem that many students are not sufficiently challenged by high school curriculum. Students who are insufficiently challenged by the curriculum may find themselves "sitting through a year of school with nothing to learn" or forced "simply to leave school without a diploma—statistically becoming a dropout" (McCarthy, 1999, p. 24). Dual enrollment addresses the problem of under challenged students by "allow[ing] qualified students to enroll simultaneously in high school and college courses" (McCarthy, 1999, p.24). Dual enrollment classes have usually been limited to high achieving or gifted students (Jordan, Cavalluzzo, & Corallo, 2006). The ECHS may change this. Studies suggest that dual enrollment programs that are part of college high schools may benefit "a wide diversity of students with varying

levels of achievement and motivation” (Jordan, et. al, 2006). Middle College High Schools or ECHS are full-scale programs “which seek to improve student readiness, aspiration, and self-confidence to seek and succeed in post-secondary education” (Jordan, et. al, 2006).

In the April 2007 Evaluation of the Early College High School Initiative, the results of the program were found to be promising. Issues such as the proper blend of college and high school instruction, however, remain outstanding and require further study (Gates & Gates, 2007).

Statement of the Problem and Theoretical Foundation

The need for schools to provide students with the training and skills necessary to enter the workforce has been extensively documented. Combs observed that a large number of Texas businesses could have failed to prosper without a growing labor pool of skilled technical employees; and identified partnerships between individual community colleges and industry as a way to create vocational and career training programs that meet the needs of industry and provide graduates with the skills to compete in the global workforce (Combs, 2008). Filling the demand for qualified workers is beneficial to the state interest of increased revenue and beneficial to industry (Combs, 2010). Filling this demand is important to the individual as well as society at large. As explained by Blank (2000), “worker is the dominant role of adulthood in western society.” Blank argued, “since most high school students do not complete a college degree and since many of those who do are underemployed, the high school absolutely must provide more and better opportunities for every student to acquire technical skills necessary for them to begin earning a living wage immediately after leaving high school” (p. 66).

Combs' view that equipping students for the workforce is echoed in other studies. Culpepper (2000) concluded that career awareness should begin in elementary school, asserting, "A child's positive vision of the future is the most powerful predictor of his or her successes in life" (p. 38). Although there is agreement that equipping students for entering the workforce is important, according to Barton (1991), each year 1,400,000 unprepared young people enter an employment environment that is hostile to applicants without experience. Barton argued that in the United States, schools do little for those choosing not to go to a university, providing little help in making the transition from school to work. The recent Occupy Wall Street protests suggest many graduates of Liberal Arts Universities are not receiving the skills and credentials necessary to enter the work force.

Given the success of well-designed vocational technical programs and the assessed benefit to the state and the individual student, the question arises as why career technical programming is generally unavailable in Texas high schools and Texas ECHS. In addressing this question, Combs identified multiple possible barriers to successful integration of CTE into high school and ECHS curricula. A primary barrier identified by Combs is the state's attention devoted to encouraging and preparing students for four year degrees which leads to neglect of "other paths to success." According to Combs (2008), the other paths are neglected "at our peril." The state's focus is geared to a "one size fits all" model designed to push all students into university programs (Combs, 2008). Combs noted the entering class for fall 2007 was required to meet new 4 by 4 standards in language arts, social studies, mathematics and science. The standards are not flexible and applied science and mathematics coursework that would be relevant to technical

degrees and certificates will not count toward the 4 by 4 requirements. As a result, students may be forced to abandon CTE (Combs, 2008). Combs also indicated that the message being sent to students is that technical training is not as valuable or as worthwhile. Combs identified inadequate knowledge about school programs and resources, institutional and bureaucratic obstacles, and financial barriers as challenges that must be overcome to obtain the benefits of career and technology education (Combs, 2008).

Culpepper's research supported the concept of a disconnect between recognition of the need to equip students with the career skills and the widespread failure to do so as resulting from barriers to implementation of career training in schools. Culpepper (2000) suggested two major barriers: 1) The accountability movement which results in teachers focusing extensively on subjects tested causing "[o]ther subjects and development processes, such as career awareness...[to be] minimized, or even abandoned" and 2) a perception that workforce programming is degrading (p. 39).

Texas has recognized the importance of providing students with career skills necessary to enter the workforce in high paying occupations. Texas has further authorized creation of ECHS to address the attrition rate and lack of college/career readiness among Texas high school graduates. Preliminary evidence indicates that robust vocational programs, however, may not be widely integrated into ECHS programs. In 2008, there were 27 ECHS, and only one offered a vocational component (Combs, 2008, p. 31). According to Wing, a TEA field representative for ECHS, that particular ECHS might not be considered robust depending on one's definition of robustness (Wing, C., personal communication, January 29, 2009). Combs' insights on the benefits of

vocational career technical education and her observation that ECHS models offer a clear potential avenue to address the skilled labor needs suggests the importance of determining why so little robust CTE is offered in Texas ECHS and determining if ECHS is the appropriate model to address these concerns.

Purpose of the Study

The study was conducted to build on the work of Combs to define the appropriate role of vocational career training in Texas ECHS programs and to identify barriers to implementation of expanded career/vocational programs in the ECHS model. The purpose of the study was twofold: 1) to document the role of vocational training programs in ECHS, and 2) to identify the barriers which may hinder the implementation of robust vocational training programs in Texas ECHS. The study is guided by the following research questions:

Qualitative

What are the roles of vocational training programs in ECHS, as perceived by the experts in the field?

What are the barriers to offering robust vocational training programs in ECHS, as perceived by the experts in the field?

Quantitative

What is the degree of agreement/disagreement with the roles of vocational training programs in ECHS, as perceived by the practitioners in the field?

What is the degree of agreement/disagreement with barriers to offer robust vocational training programs in ECHS, as perceived by the practitioners in the field?

Definition of Terms

The major terms used throughout the study are summarized in Table 1.

Table 1

Glossary of Terms

4 BY 4. The Texas State Recommended Graduation plan that includes four English classes, four civics classes, four mathematics classes and four science classes. The plan and similar state plans have been identified as possible barriers to Career and Technology training (Combs, 2008; Culpepper, 2000).

BARRIERS TO ROBUST VOCATIONAL TRAINING IN EARLY COLLEGE HIGH SCHOOLS. Impediments that obstruct a market driven level of vocational programming at Early College High Schools operated with community and technical colleges, as identified by experts in Early College High School education.

CAREER AND TECHNICAL EDUCATION (CTE). An educational track that prepares students for high-wage, high-skill jobs in career fields such as allied health, internet technology, mechanics etc. In the community college systems, these fields are known as Workforce Education programs. Career Technical Education programs, as defined by the Texas Education Agency, “are dedicated to preparing young people to manage the dual roles of family member and wage earner. Career and technical programs enable students to gain entry-level employment in a high-skill, high-wage job and/or to continue their education” (TEA, CTE, 2010). The term CTE has replaced the term vocational technical training. The terms career and technical education and vocational education were used interchangeably throughout the document.

EARLY COLLEGE HIGH SCHOOL (ECHS). A school program that allows high school students to obtain up to sixty hours of college credit towards a bachelor, associates or certificate program.

ROBUST CAREER AND TECHNICAL EDUCATION (CTE). A Robust Career and Technical Program that offers students multiple venues to degree and certificate completion. In an ECHS program partnered with a community or vocational college, robustness would be defined as students having access to a significant portion of programs on the Workforce High Demand list for their region.

Delimitations, Limitations, and Assumptions

The study was delimited to roles of vocational training programs and the barriers which may hinder the implementation of robust vocational training programs in ECHS in Texas. Due to non-probability nature of sampling, external validity was limited to study participants. Due to non-experimental nature of the study, no causal inferences were drawn. It was assumed that the study participants were honest in providing the data for various aspects of the study and that the researcher was academically and intellectually rigorous with subjectivity and objectivity with respect to qualitative and quantitative components of the study, respectively.

Significance of the Study

Widespread agreement existed that high schools nationally and in the state of Texas do not adequately prepare a large percentage of students to enter and succeed in the highly competitive workforce. Indicators of the problem included a substantial national and state dropout rate; a high level of students requiring remediation in college; and the number of skilled jobs left unfilled even during a prolonged recession. Consensus exists nationally and in the state of Texas that CTE training is beneficial to most, if not all, students. Even though consensus exists, barriers to widespread implementation of job skill programs throughout Texas and the nation are a problem.

An answer to the inadequacies of the national and Texas high schools appears to be the Early College High School (ECHS) movement. The ECHS allows students to obtain high school diplomas and up to 60 hours of college credit simultaneously. While still in the early stages, with only 27 such schools in operation statewide in 2008, ECHS does not appear to take full advantage of offering a robust vocational option to their

students. Combs identified only one of the 27 as serving a vocational track. The ECHS is being rapidly adopted by districts and expanded to 41 campuses in 2011 (TEA, 2011). The intent of this study was to determine if barriers existed that impeded the implementation of robust vocational training at Texas ECHS and to identify what the main barriers were.

Chapter 2

Introduction

The need to improve high school performance and student readiness has led to creation of a number of programs intended to address the shortcomings of public schools. Among those programs are tech prep, dual credit, and middle colleges. In some respects, Early College High Schools (ECHS) build on the prior programs. The chapter is divided into four sections, namely, 1) Integration of Career and Technical Training in High School, 2) Benefits of Career Training, 3) Identification of Barriers, and 4) Summary. The following data sources were used to identify the relevant literature: EBSCOhost Research Databases, Lexus, ERIC, TEA, THECB, Google Scholar, and Dogpile.

Integration of Career and Technical Training in High School

Tech Prep

Tech Prep classes are high school courses or sequence of courses that prepare students for future college technical educational programs. In a Tech Prep program, a student begins a course of study in high school and may continue in a community or technical college. As a result, the student earns a certificate or associate degree in a career field (techpreptexas.org, 2010).

According to College Tech Prep of Texas, Tech Prep was a federal education initiative described and funded by the Carl D. Perkins Vocational and Technical Education Act. The act was reauthorized in 1998 and in the following year, the Texas legislature passed HB 2401, which describes Tech Prep in Texas (2010). Tech Prep legislation called for the development of secondary and postsecondary programs of study that are linked and that provide opportunities to prepare for employment in jobs that

require highly skilled two-year college graduates (2010). Students in Tech Prep programs can earn college credit through the following: content-enhanced articulated courses (statewide articulation and/or local articulation), dual credit (concurrent enrollment), and/or College Board Advanced Placement courses (techpreptexas.org, 2010).

Dual Credit

The Texas Higher Education Coordinating Board defines dual credit as a process by which a high school junior or senior enrolls in a college course and receives simultaneous academic credit for the course from both the college and the high school. While dual credit courses are often taught on the secondary school campus to high school students only, a high school student can also take a course on the college campus and receive both high school and college credit. Dual credit courses include both academic courses as well as technical courses. These courses are stepping stones from high school to college, serving as a path to academic degree programs or college-level workforce education courses (THECB, 2009).

Middle Colleges

Nationally, the Middle College movement predated the Early College High Schools Initiative. District, charter, and magnet schools have “Middle College High School” in their titles but are classified as high schools by TEA. The rules of Texas Higher Education Coordinating Board do not distinguish between an ECHS and a Middle College. The ECHS provide college courses to students beginning in the ninth grade, while Middle Colleges historically provide college courses for students beginning in the eleventh grade (THECB, 2009). The TEA established an application for designation as

an ECHS as per Commissioner's rules. The application for designation is required now for all currently operational and aspiring ECHS. THE-CB recommended adopting the TEA rules (THECB, 2009).

Early College High Schools

A significant attempt to address the broken public high school system began in 2000 when the Bill and Melinda Gates Foundation started funding initiatives to improve America's high schools. The goals of the various initiatives were to do the following: increase high school graduation rates; increase college readiness rates; increase college entrance; and improve completion rates for at risk students (Gates & Gates, 2006, p. 5). The ECHS program is one of the initiatives explored by the Gates Foundation.

In 2002, the ECHS Initiative was created and focused on students who are traditionally underrepresented in college programs and providing such students with an opportunity to pursue a high school diploma and college credit at the same time (Gates & Gates, 2007). The initiative focused on "at risk" students having one or more of the TEA's at risk indicators. An at risk student 1) is in pre-kindergarten, kindergarten, or grade 1, 2, or 3 and did not perform satisfactorily on a readiness test or assessment instrument administered during the current school year; 2) is in grade 7, 8, 9, 10, 11, or 12 and did not maintain an average equivalent to 70 on a scale of 100 in two or more subjects in the foundation curriculum during a semester in the preceding or current school year or is not maintaining such an average in two or more subjects in the foundation curriculum in the current semester; 3) was not advanced from one grade level to the next for one or more school years; 4) did not perform satisfactorily on an assessment instrument administered to the student under TEC Subchapter B, Chapter 39, and who

has not in the previous or current school year subsequently performed on that instrument or another appropriate instrument at a level equal to at least 110 percent of the level of satisfactory performance on that instrument; 5) is pregnant or is a parent; 6) has been placed in an alternative education program in accordance with TEC §37.006 during the preceding or current school year; 7) has been expelled in accordance with TEC §37.007 during the preceding or current school year; 8) is currently on parole, probation, deferred prosecution, or other conditional release; 9) was previously reported through the Public Education Information Management System (PEIMS) to have dropped out of school; 10) is a student of limited English proficiency, as defined by TEC §29.052; 11) is in the custody or care of the Department of Protective and Regulatory Services or has, during the current school year, been referred to the department by a school official, officer of the juvenile court, or law enforcement official; 12) is homeless, as defined by NCLB, Title X, Part C, Section 725(2); and 13) resided in the preceding school year or resides in the current school year in a residential placement facility in the district, including a detention facility, substance abuse treatment facility, emergency shelter, psychiatric hospital, halfway house, or foster group home (TEA, 2008).

The ECHS model was built on the concept of dual enrollment programs. Dual enrollment programs were developed to address the problem that many students are not sufficiently challenged by high school curriculum. Students who are insufficiently challenged by the curriculum may find themselves “sitting through a year of school with nothing to learn” or forced “simply to leave school without a diploma—statistically becoming a dropout” (McCarthy, 1999, p. 24). Dual enrollment addresses the problem of under challenged students by “allow[ing] qualified students to enroll simultaneously in

high school and college courses” (McCarthy, 1999, p. 24). Dual enrollment classes have usually been limited to high achieving or gifted students (Jordan, et al., 2006). The ECHS may change this. Studies suggest that dual enrollment programs that are part of Middle College High Schools may benefit “a wide diversity of students with varying levels or achievement and motivation” (Jordan, et al., 2006, p.729). Middle College High Schools or ECHS “are full-scale program[s] which seek to improve student readiness, aspiration, and self-confidence to seek and succeed in post-secondary education” (Jordan, et al., 2006).

In the April 2007 Evaluation of the Early College High School Initiative, the results of the program were found to be promising. Issues such as the proper blend of college and high school instruction, however, remain outstanding and require further study (Gates & Gates, 2007). That study will take place in prototype schools being developed across the country.

Benefits of Career Training

Among the parental benefits of a statewide robust CTE program identified by Combs is a skilled workforce sufficient to meet the needs of a growing state. Combs (2008) argued, “Without rapid increases in postsecondary career and technology education (CTE) enrollment, existing worker shortages could worsen with adverse consequences to the state” (p. 19). Another significant benefit is that research shows “that CTE courses actually play a role in reducing dropout rates, especially among students who are at high risk of dropping out” (Combs, 2008, p. 19). Combs also identified an increase in future earning for students who complete CTE courses as a benefit of CTE education (Combs, 2008). In a report to the legislature, Combs identified

substantial revenue enhancements to the state as another important benefit (Combs, 2010).

An issue that arises in designing an ECHS is what the curriculum should be. Most programs have utilized a traditional two-or-four year academic model and have not included career path/skilled workforce preparation (Combs, 2008). The available research suggests gifted and general students both benefit from inclusion of career path/skilled training options in high school (Gentry, Peters, & Mann, 2007). Inclusion of career and technical education options addresses a key reason for students' dropout: "[S]tudents often dropout of school due to their perception that school lacks purposeful experiences, real learning opportunities, or a sense of belonging. An option for students to engage CTE coursework, even if only part time, could help talented and general students find purposeful experience in school" (Gentry, et al., 2007, p. 343).

Research on Benefits of Career Training

Combs identified substantial benefits from following high quality career and technical programs (Combs, 2008). Her conclusion finds support in published research that career and technical programs throughout the public school experience are beneficial. Gentry, et al., (2007) conducted a qualitative study of students attending an exemplary career and technical education center for half a day and a traditional high school for the remainder of the day. The study focused on different perceptions between "general" and "talented" students and examined whether CTE programs offered possible solutions for effectively educating general and talented students. Data were gathered through semi-structured interviews with students identified as talented and randomly selected general students. The central conclusion was that "CTE afforded benefits to both the talented and

general students who participated in the area while they attended high school” (Gentry, et al., 2007, p. 343). The CTE program was perceived as providing the students with “meaningful learning experiences in a manner that simply did not occur in the student’s high schools” (Gentry, et al., 2007, p. 343). The study identified several limitations that weaken the conclusion that the CTE benefits both general and talented students. The first is that the talented students were chosen in a nonstandard manner making the sample questionable. Second, the authors conceded “we cannot be certain whether the CTE experience, the exemplary setting, or the quality of the teachers would be similar in other sites” (Gentry, et al., 2007, p. 343).

In a report regarding career training in elementary schools, Culpepper (2000) argued that “career development is just as important as academic development in the educational process called school” (p. 37) and should begin when students enter elementary school. Culpepper (2000) asserted that “[f]rom the beginning of school, students must understand that people work to live and that there is a positive connectedness between the schooling process and living productive lives” (p. 38). Culpepper observed that students are influenced by their teachers, teachers who need to be aware of the influence they have in shaping children’s aspirations. Culpepper’s evidence of the influence of teachers on children’s career paths consisted of anecdotes regarding a girl who wanted to own a trucking company and a boy who wanted to be a professional basketball player. Both were discouraged from their dreams by their teachers (Culpepper, 2000, pp. 40-41).

The stories offer insight into the possible impact of teachers but are not conclusive. Culpepper’s article is largely a review of research on early childhood career

knowledge and a compilation of programs to provide career information in the elementary grades. Culpepper's conclusion that young students benefit from a career exploratory curriculum appears logical, but the supporting material is not overwhelming.

Klemons (2000) reviewed program designs for career exploration models in middle grades and concluded "career exploration programs belong in middle schools to broaden student awareness of career options and to teach students the necessary competencies to become productive workers upon entering the workforce" (p. 52).

Klemons' review of the best practices is interesting and suggests the wide range of design models available for implementation of career vocational training in the public.

In *Workforce Education at The High School Level*, Blank (2000) explained the rationale for workforce education for high school students. Blank (2000) argued that the traditional mission of public high school has been "mastering academics as preparation for democratic citizenship" and declared such a mission to be "a relic of times past" (p. 61). Blank argued persuasively that the work world has changed and the purpose of high schools "should be to acquire sufficient technical skills to provide students with some degree of initial labor market competitiveness" (Blank, 2000, p. 62). Blank (2000) reported the following facts to support the proposition that the emphasis on college education is misplaced:

- 1) A third of high school students who go to college are not prepared and require remediation.
- 2) Half of the students who begin college drop out in the first year.
- 3) Dropping out carries serious self-esteem issues.
- 4) America's colleges and universities produce approximately twice as many college graduates as the economy can absorb leading to unemployment, underemployment, and dashed career hopes for many graduates.
- 5) Most jobs in our economy do not require a college degree. Only about 20% of jobs in the U.S. economy require a bachelor's degree and that percentage is not expected to rise appreciably in the foreseeable future.
- 6) College is expensive. (pp. 63-64)

Blank (2000) suggested the primary purpose of American high schools in the 21st century should be to aid students in obtaining the “self-knowledge and career-related information needed to make informed career decisions, acquire an initial level of technical competence necessary for immediate employment in a broad career field,” and to “acquire the broad workplace competencies, habit of mind and academic skills and concepts that are important for long term career success and fulfillment” (p. 64). Although acknowledging ongoing debate on the benefits of vocational education, Blank (2000) supported his conclusion by reviewing studies that found vocational programs to “increase retention and graduation rates among high risk students” (p. 73).

Combs supported the conclusion that CTE courses improve the graduation rate. She noted the “solid statistical evidence” that CTE plays a role in reducing the dropout rate and increasing future earnings (2008, p. 21). In her role as Texas Comptroller of Public Accounts, Combs brought a unique perspective to examination of the impact and benefits following from state programs.

Identification of Barriers

The available research makes a compelling case for the benefits of a robust career/vocational program in high schools. The conclusion that career training is beneficial begs the question why most high school programs, particularly ECHS programs, that are designed to be an innovative answer to the problems of at risk students do not incorporate career training in the curriculum. The available research does not definitively answer this question but provides some hints. Blank (2000) speculated that the remedial focus of early vocational educational programs for dropouts may have hurt the public perception of the role of vocational education programs (p. 62).

Combs (2008) outlined a number of possible reasons that “[d]espite the obvious benefits of post-secondary education, ... far too many Texas high school students fail to pursue it” (p. 65). The first reason was lack of knowledge. Students do not know the available options. “[T]eachers and counselors often tell students little or nothing about technical training” (Combs, 2008, p. 65).

Combs observed that “certain state policies may contribute” to the growing shortage of skilled workers. State policy has been directed at pursuing bachelor’s degrees. Further “four- by-four requirements may actually steer students who could benefit from CTE education away from it” (Combs, 2008, p. 65). State policies “may be sending the misleading message that career and technology education is not worthwhile. In addition, they may encourage students to pursue degree plans for which they simple are not suited” (Combs, 2008, p. 67). An example of a policy sending the message that educational leaders do not consider vocational courses on par with academic courses is a rule proposed by THE-CB to remove CTE courses from the uniform calculation of GPA (Combs, 2008, p. 21).

The purpose of the Combs report was to fulfill the role of the Comptroller of Public Accounts “to predict how and where our economy will grow and to provide state leaders with critical information for future decisions” (Combs, 2008, p. 9). Combs provided a survey of existing Texas educational programs and policies, outlined the state of the Texas economy and workforce demands, predicted future trends and needs, and surveyed available research. The Combs report is interesting and provides food for thought but is not definitive and involves much subjective opinion on the impact of existing and potential policies.

Klemons (2000) opined that school administrators have not been supporters of school to work programs and stated, “this is true partly because of the accountability factor in public schools today. Administrators feel pressured to place emphasis on academic subjects to produce high test scores from students” (p. 52). Klemons cited a single study for this conclusion.

Culpepper (2000) identified two possible barriers to successful implementation of vocational career training. The first barrier she identified is the accountability movement placing “pressure on teachers to focus only on the subjects assessed on the tests” (p. 39). The second barrier cited was “the fear of tracking students ... fear that career awareness activities or strategies will steal choice, opportunity and liberty from a child’s future” (p. 39).

Importance of Identifying Barriers

Identifying barriers to implementation of robust career vocational training is an important step in designing a curriculum that prepares students to compete in the global marketplace. The existing research assumes barriers arising primarily from accountability requirements and the belief that career development programs are designed to hold students back (Culpepper, 2000; Blank, 2000). Combs identified an array of possible barriers or challenges, including the reliance on a “one size fits all” model that pushes student to university programs, a high school curriculum (the 4 by 4) that discourages students from taking or may force students to “abandon career and technical education (CTE) courses,” and a lack of information for parents and students on what options are available (Combs 2008, p. 2). Younts (2008), during her application process for an ECHS designation, stated that high school counselors by law cannot talk to

freshman students about any option other than the Recommended Degree Plan (4 by 4). All entering freshmen must be put on a Recommended Degree Plan unless their parents or IEP committee requests otherwise. Only after a student has failed to the point of not being able to complete the Recommended Degree Plan in 4 years may alternative tracks be discussed with the student and their parents (Younts, 2008). Whether there is an actual law, district policy, unwritten policy, or simple misinformation, the perception that a counselor's job includes promoting one track to graduation may be a barrier. Identifying actual barriers in ECHS and determining whether the barriers can be reduced or eliminated would be beneficial.

In designing an ECHS curriculum, discerning the proper mix between emphasis on post-secondary degree attainment and emphasis on career technical education resulting in certificates qualifying students for skilled positions in the workforce merits careful attention. Whether barriers make implementation of vocational training in ECHS unworkable is not settled. The extent to which an ECHS should offer multiple degree paths including career and technical options would benefit from expert exploration.

Summary

While the need to improve high school performance and student readiness has led to creation of a number of programs such as Tech Prep, Dual Credit, and Middle College programs, ECHS build on these prior programs. The ECHS Initiative of 2002 represented an effort to address the broken public high school system and to focus on students who are traditionally under-represented in college programs and provide such students with an opportunity to pursue a high school diploma and college credit at the same time. The ECHS Initiative particularly focused on "At Risk" students. The April

2007 Evaluation of the Early College High School Initiative found the results of the program to be promising. However, this review of the literature helped noting that further study in prototype schools across the country would be useful in determining issues such as the proper blend of college and high school instruction.

The chapter identified the benefits of ECHS, such as a skilled workforce able to meet the demands of business, a reduced dropout rate, and a chance for both general and gifted students to explore purposeful career options that match their talents. Previous research on the benefits of ECHS has been conducted by Combs, Culpepper, Klemons, and Blank. While the previous research focused on different issues, each found certain benefits in the ECHS. The question of why most high schools do not incorporate ECHS has led to the identification of certain barriers, such as lack of knowledge of the existence of such options, an emphasis on the traditional 4 by 4 degree plan, and lack of support from school administrators. Other barriers identified have been the accountability movement and the fear of tracking students.

In addition, the chapter recognized that identifying barriers to implementation of robust career vocational training is an important step in designing a curriculum that prepares students to compete in the global marketplace. The chapter also noted the need for close attention to the proper mix for such a curriculum and for further study on whether the barriers make implementation of vocational training in ECHS unworkable or not. Furthermore, the chapter suggested that the extent to which an ECHS should offer multiple degree paths including career and technical options would benefit from expert exploration.

Chapter 3

Method

The purpose of the study was twofold: 1) to document the roles of vocational training programs in Early College High Schools (ECHS) and 2) to identify the barriers which may hinder the implementation of robust vocational training programs in ECHS.

The study was guided by the following research questions:

Qualitative

1. What are the roles of vocational training programs in ECHS, as perceived by the experts in the field?
2. What are the barriers to offering robust vocational training programs in ECHS, as perceived by the experts in the field?

Quantitative

1. What is the degree of agreement/disagreement with the roles of vocational training programs in ECHS, as perceived by the practitioners in the field?
2. What is the degree of agreement/disagreement with barriers to offering robust vocational training programs in ECHS, as perceived by the practitioners in the field?

Research Design

The study was descriptive in nature, employing a mixed methods model. Specifically, the Exploratory Sequential Design: Instrument Development Variant was used (Creswell & Clark, 2011). In the first phase of the mixed methods inquiry, the Delphi Technique was employed to collect and analyze the qualitative data that were used to identify both the 1) roles of vocational training programs and 2) the barriers to

offering robust vocational training programs in ECHS. The second phase of the study consisted of collecting and analyzing quantitative data to document the degree of agreement/disagreement with 1) the roles of vocational training and 2) the barriers to offering robust vocational training programs in ECHS. The mixed methods model is depicted in Figure 3.

Figure 3. Cresswell & Clark Exploratory Sequential Design (2011)



The Instrument Development Variant of an Exploratory Sequential Design model allows for a linear process to develop a survey questionnaire from a qualitative study. The study's two research questions guided the first phase of the mixed methods inquiry. During this phase, the feedback from respondents was used to refine and expand the themes of roles and barriers, which resulted in the development of the *Career and Technical Questionnaire (CTQ)*. In the second step, the quantitative data were collected and analyzed to draw conclusions, discuss the findings, and suggest practical and theoretical implications.

Development of *Career and Technical Questionnaire (CTQ)*

The Delphi technique was used to develop the CTQ. The Delphi Technique is a group communication process which allows a group of individuals, as a whole, to deal with a complex problem (Yousuf, 2007). The Delphi methodology relies on the use of expert consensus. Gatewood (1983) noted that the Delphi method's strength is allowing a moderator to use expert testimony and, specifically, combining the testimony of a

number of experts into a single useful statement. The Delphi method recognizes human judgment as both legitimate and useful input in generating forecasts. Single experts sometimes suffer biases; group meetings suffer from ‘follow the leader’ tendencies and reluctance to abandon previously stated opinions” (p. 83). The Delphi study permits the experts to give their opinion without the pressure of group dynamics. For the purpose of the study, normative Delphi technique was followed. According to Yousuf (2007), a normative Delphi focuses on establishing consensus on what goals and priorities are desirable. This type of Delphi is suited to the development of a descriptive survey instrument.

Data Collection

Fowles (1978) recommended the following 10 steps in conducting a Delphi study, which were modified for the purpose of the study by adding a third round:

- 1) Formation of a team to undertake and monitor a Delphi on a given subject.
- 2) Selection of one panel to participate in the exercise. Customarily, the panelists are experts in the area to be investigated.
- 3) Development of the first round Delphi questionnaire.
- 4) Testing the questionnaire for proper wording (e.g., ambiguities, vagueness).
- 5) Transmission of the first questionnaires to the panelists.
- 6) Analysis of the first round responses.
- 7) Preparation of the second round questionnaires (and possible testing).
- 8) Transmission of the second round questionnaires to the panelists.
- 9) Analysis of the second round responses (steps 7 to 9 were repeated to conduct the third round).

10) The Delphi technique produced a body of roles and barriers that formed the basis for the CTQ.

To recruit the Delphi participants, a snowball/network sampling (Cohen, 2011) method was employed, starting with the Director of ECHS from the Texas Education Agency and a local college faculty member who had developed a successful ECHS proposal. Fourteen potential participants were identified, with nine agreeing to participate. Prior to the collection of the qualitative data, one panelist passed away and a second elected not to participate. Two replacements with similar backgrounds were identified and agreed to participate. The participants were experts in the field of education in Texas. Specifically, there were three (3) state regulators (TEA ECHS program director, TEA ECHS field representative, and THE CB career and technical contact), four (4) practitioners in workforce dual credit/technology preparation (college district dual credit director, college district Tech Prep coordinator, school district career and technical director, and an education consultant), and two (2) education advocates (an attorney with school reform group and a State representative from the TEA commissioners cabinet). The panel participants were predominately female (88.89%), with the majority identifying themselves as white (66.67%) and the rest were Hispanic. All participants had at least a master's degree with four participants (44.44%) having completed their doctorates, and two participants (22.22%) were ABDs.

There were three rounds in which the panel addressed the two research questions regarding the role of vocational training in ECHS and barriers limiting the availability of vocational training in ECHS.

Delphi, Round 1

Role

In the first round of the Delphi process, the panel participants were asked the following: Is there a role for career and technical training in Early College High Schools (ECHS)? As can be seen in Table 2, the panel was in complete agreement that ECHS were an appropriate vehicle for vocational/career and technical training. The panel participants provided a variety of reasons that ECHS were an appropriate mechanism for career and technical training. The feedback (Appendix 1) was used to formulate a set of roles for the second round of the Delphi process.

Table 2

The Agreement/Disagreement with a Role for Career and Technical Training in Early College High Schools, Round 1, n = 9

Agreement Level	Frequency	Percentage
Agree	9	100.00
Disagree	0	0.00

Barriers

The panel participants were provided with five barriers affecting the robust implementation of vocational programs in ECHS. A systematic review of the literature had been used to identify the barriers. The participants' feedback is available in Appendix 1. The participants' feedback was summarized to develop the round two questionnaire (Appendix 2).

Barrier 1: The accountability movement, which results in teachers focusing extensively on subjects being tested, may cause other subjects and development processes, such as career awareness, to be minimized, or even abandoned.

The majority of the participants (66.67%) agreed that the accountability movement had at least some adverse effect on vocational programs in general. The feedback to this question was extensive with those in agreement focusing on teachers, schools, and administrators being mainly concerned with passing state tests to the exclusion of career and technical training. The respondents who disagreed with the broad statement of accountability being a barrier conceded that some teachers and some schools might focus on the test to the detriment of career and technical training. Their feedback indicated that accountability itself was not a barrier but individuals', schools', and districts' reaction to accountability measures might act as a barrier. Results are summarized in Table 3.

Table 3

Agreement/Disagreement with Barrier 1*, Round 1, n = 9		
Agreement Level	Frequency	Percentage
Agree	6	66.67
Disagree	3	33.33

*Barrier 1: The accountability movement, which results in teachers focusing extensively on subjects being tested, may cause other subjects and development processes, such as career awareness, to be minimized, or even abandoned.

Barrier 2: Workforce programming is degrading.

The second barrier focused on the perception that workforce or vocational programs are degrading to students. The literature review indicated that career and technology programs were viewed as degrading and possibly used in a discriminatory fashion. As shown in Table 4, the majority of the participants (77.78%) agreed that this

perception existed and might act as a barrier to robust implementation of vocational training in ECHS. The feedback included input as to why such perceptions might exist (e.g., workforce programs are targeted to students who are underrepresented in post-secondary such as rural, low-income, minority students) and by whom (e.g., parents, counselors, principals).

Table 4

Agreement/Disagreement with Barrier 2*, Round 1, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	2	22.23

*Barrier 2: Workforce programming is degrading.

Barrier 3: Public and policy-maker expectations that all students, regardless of their post-graduation plans, should have a college preparatory curriculum.

Through legislative action in Texas and guidelines from the U. S. Department of Education, a strong preference for traditional academic track or college preparatory track curriculum was identified in the literature review. In Texas, the Recommended Degree Plan, known as the *4 by 4*, is a college preparatory track curriculum. High school counselors are not allowed to start students on any degree plan other than the recommended one. Districts are evaluated on the number of students who complete the recommended degree plan and are penalized in the State Accountability Ratings for awarding too many general diplomas (Younts, 2009). The majority of the participants (77.78%) agreed that the public and policy-makers preferred a completion of a college preparatory degree program even though it may interfere with implementation of robust vocational programming. The other 22.23% agreed that completion of the preparatory

program was preferred but felt that it would not be a barrier in implementing a robust vocational education program. Results are summarized in Table 5.

Table 5

Agreement/Disagreement with Barrier 3*, Round 1, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	2	22.23

*Barrier 3: Public and policy-maker expectations that all students, regardless of their post-graduation plans, should have a college preparatory curriculum.

Barrier 4: The recommended 4 by 4 degree plan.

The Texas State Curriculum for the Recommended High School degree plan is known as the *4 by 4 plan* because it requires taking four mathematics, four science, four language arts, and four social studies courses in the four years of high school. The plan specifies what level and type of course work satisfies the degree plan. The majority of the participants (88.89%) viewed the 4 by 4 degree plan as a barrier to vocational programming. The feedback indicated that the plan itself was an impediment to robust implementation of vocational programming in the ECHS because of time constraints and/or the narrowly defined course offerings. Results are shown in Table 6.

Table 6

Agreement/Disagreement with Barrier 4*, Round 1, n = 9		
Agreement Level	Frequency	Percentage
Agree	8	88.89
Disagree	1	11.11

*Barrier 4: The recommended 4 by 4 degree plan.

Barrier 5: The perception that the role of ECHS is to serve students interested in university degrees.

The majority of the participants (77.87%) believed the perception exists that ECHS are designed to serve students pursuing a bachelor's degree or beyond. This perception may create a barrier for career track programs because the terminal degree for many vocational programs is an associate degree. The two participants who disagreed with the statement indicated the use of the word "perception" was not correct and that it should have been "intent." One participant cited the Texas statute authorizing the creation of the ECHS. The legislative intent was to promote four year degree program among underserved individuals. The programs of study offered at an ECHS should lead to a university degree. Results are summarized in Table 7.

Table 7

Agreement/Disagreement with Barrier 5*, Round 1, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	2	22.22

*Barrier 5: The perception that the role of ECHS is to serve students interested in university degrees.

Delphi, Round 2

The Round 1 feedback was used to formulate the roles and barriers. Specifically, comments that appeared to be similar or had similar themes were grouped and were used to develop the eight roles and eighteen barriers used in the second round of the Delphi technique. Utilizing all comments was done in an attempt to open diverse avenues of thoughts from the panel participants. Some of the newly identified roles and barriers generated strong feelings on both sides of the statements. Round 2 feedback is summarized in Appendix 2.

Roles

In Round 2, the participants were provided with the eight roles and asked to indicate their agreement or disagreement with each.

Role 1: The high dropout rate indicates the need for diverse paths to graduation, including more vocational paths.

In Round 1, a number of the participants commented on the high dropout rates as a reason for including career tracks as an option in ECHS. In Round 2, the eight panelists who responded to this statement were in complete agreement that the Texas high school dropout rate demonstrated a need for diverse paths to graduation, including vocational training. The majority of the participants (88.89%) agreed that vocational programming and increased avenues to graduation might reduce the dropout rate; one respondent expressed no opinion. Results are summarized in Table 8.

Table 8

Agreement/Disagreement with Role 1*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	8	88.89
Disagree	0	0.00
No Opinion	1	11.11

*Role 1: The high dropout rate indicates the need for diverse paths to graduation, including more vocational paths.

Role 2: The desire for all students to have a college preparatory program does not reflect the actual labor market that students will be entering.

The feedback from Round 1 included a number of comments reflecting the idea that students were not prepared for the labor market after high school. In Round 2, the majority of the respondents (77.78%) agreed that the college preparatory program does not align with the reality found in the Texas labor market. A number of panel participants cited specific examples of chronic shortages of skilled workers such as nurses, welders, and technicians. The respondents indicated that these types of career and technical training programs may fit in an ECHS model. The remaining participants (22.22%) disagreed or had no opinion. The participant who disagreed said that students graduating from high school were adequately prepared to enter the labor market or to continue their education. Results are shown in Table 9.

Table 9

Agreement/Disagreement with Role 2*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	1	11.11
No Opinion	1	11.11

*Role 2: The desire for all students to have a college preparatory program does not reflect the actual labor market that students will be entering.

Role 3: The role of high schools is to prepare students for careers and/or post-secondary education.

Role 3 suggested that at least some panel participants believed a primary role of education was to prepare students to enter the labor market. As noted previously in Role 2, a number of participants believed that schools did not adequately prepare students to enter the labor market. Role 3 addressed the actual purpose of education. As can be seen in Table 10, the majority of the respondents (77.78%) agreed that high school's primary function is to prepare students for entry into the labor force or for additional education. The remaining participants (22.22%) disagreed or had no opinion, and the feedback suggested that the primary role of education was not as simple as the statement indicated. A number of participants used the comments as a forum to complain about the huge number of social agendas that are promoted through the schools. Many comments went well beyond the scope or nature of the study. A complete list of comments is available in Appendix 1.

Table 10

Agreement/Disagreement with Role 3*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	1	11.11
No Opinion	1	11.11

*Role 3: The role of high schools is to prepare students for careers and/or post-secondary education.

Role 4: An unintended consequence of accountability and/or high stakes testing is not serving the needs of a portion of the population of students who will not attend college and may not pursue any post-secondary education.

Role 4 was not well received by the panel participants. As Table 11 shows, a slight majority of participants (55.56%) agreed with the statement. The remainder disagreed or had no opinion (44.44%). The feedback on Role 4 was heated. A portion of participants appeared to find the wording of the statement biased and negative. Other participants elaborated profusely on the problems caused by “high stakes” testing. One participant found the use of the words “students who will not attend” offensive and demeaning and suggested that “students who may not attend” to be less inflammatory.

Table 11

Agreement/Disagreement with Role 4*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	2	22.22
No Response	2	22.22

*Role 4: An unintended consequence of accountability and/or high stakes testing is not serving the needs of a portion of the population of students who will not attend college and may not pursue any post-secondary education.

Role 5: The role of ECHS by legislative intent and original program guidelines is to enable students to earn 60 hours or an associate's degree while working towards a bachelor's degree.

Role 5 was developed in response to the feedback to Barrier 5 in Round 1 regarding the perception that the role of ECHS is to serve students who are interested in university degrees. Role 5 did not appear to clarify the role of ECHS among panel participants. The majority of the respondents (55.56%) agreed that the legislative intent was to increase the number of students earning hours toward a bachelor's degree. The remaining respondents disagreed (22.22%), did not know the legislative intent (11.11%), or did not respond to the question (11.11%). Results are summarized in Table 12.

Table 12

Agreement/Disagreement with Role 5*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	2	22.22
Don't know	1	11.11
No opinion	1	11.11

*Role 5: The role of ECHS by legislative intent and original program guidelines is to enable students to earn 60 hours or an associate's degree while working toward a bachelor's degree.

Role 6: The role of high schools is to prepare students for post-secondary education.

As indicated by the number of statements dealing with the role of high schools, namely, Role 2, Role 3, and Role 6, much of the feedback in the Round 1 comments reflected the desire to clarify the proper or appropriate role or purpose of high school education. Even though the majority agreed that the public and legislature wanted high schools to prepare students for post-secondary education (Round 1, Barrier 3), only a

slight majority of participants (55.56%) agreed that was the actual role of high school. One-third of participants (33.33%) disagreed with the statement, and the remaining participant (11.11%) expressed no opinion. Role 6 generated plenty of feedback regarding the evolving nature and purpose of high school education. Much of the feedback and commentary had nothing to do with the study.

Table 13

Agreement/Disagreement with Role 6*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	3	33.33
No opinion	1	11.11

*Role 6: The role of high schools is to prepare students for careers and/or post-secondary education.

Role 7: Legislation is needed to create a vocational equivalent of an ECHS with flexibility in required curriculum.

As noted in Table 14, a majority of the participants (55.56%) disagreed with the idea that legislation might be needed to create a vocational type of ECHS program in Texas. The respondents who disagreed indicated that the legislative involvement in education was itself more of a problem in education than a source of a solution. Other comments indicated that increased flexibility and more local control would better serve the goal of increased career and technical training. Twenty-two percent of the participants (22.22%) agreed that legislation might be required, 11.11% did not respond, and 11.11% indicated that they did not know enough to provide an opinion.

Table 14

Agreement/Disagreement with Role 7*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	2	22.22
Disagree	5	55.56
No opinion	1	11.11
Don't know	1	11.11

*Role 7: Legislation is needed to create a vocational equivalent of an ECHS with flexibility in required curriculum.

Role 8: The trend of policy makers is turning toward support for vocational programming and training.

In Round 1, a panel participant cited some examples of increasing support for career and technical programs. One citation included comments from a Texas State Board of Education member calling for more options in mathematics and science to include vocational or applied courses. The panel participants did not necessarily agree that a trend toward vocational training was underway in Texas. As indicated in Table 15, the panel was equally divided on the issue of whether there was a trend to support vocational programming. The respondents agreed (44.44%), disagreed (44.44%), or had no opinion (11.12%).

Table 15

Agreement/Disagreement with Role 8*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	4	44.44
Disagree	4	44.44
No opinion	1	11.12

*Role 8: The trend of policy makers is turning toward support for vocational programming and training.

Barriers

There were five original barriers in offering robust vocational training programs in ECHS. On the basis of the feedback, the potential barriers increased to 18. In Round 2, some of the potential barriers were hotly debated. Barriers 10–18 were developed from the comments and were more likely the verbatim feedback from individuals than a consensus of the group. Barriers 10-18 generally received less support and were considered more contentious than were Barriers 1–9.

Barrier 1: The recommended 4 by 4 degree plan.

As can be seen in Table 16, the overwhelming majority of the respondents (88.89%) believed that the Texas State Curriculum Recommended degree plan, the 4 by 4 degree plan, was a barrier to the robust implementation of vocational programming in the ECHS. There were several comments regarding the nature of the barrier. A number of comments suggested that the rigidity of the coursework required to satisfy the degree plan was potentially more at fault than the requirement that students have four years of

each subject matter. Several participants cited the need for flexibility in coursework without a lowering of standards as the solution for expanding career and technology options.

Table 16

Agreement/Disagreement with Barrier 1*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	8	88.89
Disagree	0	0.00
No opinion	1	11.11

*Barrier 1: The recommended 4 by 4 degree plan.

Barrier 2: Vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional.

Barrier 2 was developed in response to Round 1 comments regarding vocational trades being degrading. Everyone who responded to the statement believed that vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional. Eighty-eight percent (88.89%) agreed that the negative perception of vocational trades may act as a barrier to Early College High Schools providing robust vocational programming. As shown in Table 17, one participant (11.11%) had no opinion.

Table 17

Agreement/Disagreement with Barrier 2*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	8	88.89
Disagree	0	0.00
No opinion	1	11.11

*Barrier 2: Vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional.

Barrier 3: Perception that vocational training targets (tracks) students who are underrepresented in post-secondary education (rural, low-income, minority, etc.)

Barrier 3 was also developed to clarify the statement in Round 1 that vocational trades are degrading. The majority of the respondents (88.89%) agreed that a perception exists that vocational training targets students who are underrepresented in post-secondary education and that the perception may limit robust implementation of vocational programming. The remaining respondent (11.11%) did not reply. Results are summarized in Table 18. Most of the feedback to Barrier 3 was based on the respondents' opinions as to why this perception existed.

Table 18

Agreement/Disagreement with Barrier 3*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	8	88.89
Disagree	0	0.00
No opinion	1	11.11

*Barrier 3: Perception that vocational training targets (tracks) students who are underrepresented in post-secondary education (rural, low-income, minority, etc.)

Barrier 4: School counselors and administrators have a strong preference for traditional academic transfer programs.

The majority of the respondents (77.78%) believed that school counselors and administrators may present a barrier to robust access to vocational programming based on their strong preference for traditional academic programs. As noted in Table 19, the remaining respondents either did not know (11.11%) or had no opinion (11.11%). Several comments related to this barrier focused on the perception that vocational programs target or track students. Other comments suggested that parents do not want to consider vocational programs for their children, so counselors are hesitant to broach the subject.

Table 19

Agreement/Disagreement with Barrier 4*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	0	0.00
No opinion	1	11.11
Don't Know	1	11.11

*Barrier 4: School counselors and administrators have a strong preference for traditional academic transfer programs.

Barrier 5: A perception that vocational programs are for students with lower abilities or students with special needs.

In the feedback from Round 1, there was a perception that existing vocational programming in high schools was for students in special education or those with lower abilities. When asked if this might act as a barrier to implementing vocational programs in ECHS, the majority of the respondents (77.78%) agreed, one respondent disagreed (11.11%), and one respondent had no opinion (11.11%), as shown in Table 20.

Table 20

Agreement/Disagreement with Barrier 5*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	1	11.11
No opinion	1	11.11

*Barrier 5: A perception that vocational programs are for students with lower abilities or students with special needs.

Barrier 6: Adult perception that workforce programming is degrading limits the willingness to advise students to consider vocational careers.

Barrier 6 was similar to Barrier 4 and was developed from the same grouping of comments received in Round 1. Barrier 6 addressed the perception of adults regarding vocational programs as being degrading. The majority of respondents believed adults who advise students perceived vocational programming as degrading and this limited their willingness to recommend that students consider vocational careers. As indicated in Table 21, the majority of panel participants (77.78%) agreed this might act as a barrier to implementing vocational programs in ECHS; one respondent (11.11%) disagreed, and one respondent (11.11%) had no opinion.

Table 21

Agreement/Disagreement with Barrier 6*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	1	11.11
No opinion	1	11.11

*Barrier 6: Adult perception that workforce programming is degrading limits the willingness to advise students to consider vocational careers.

Barrier 7: Public and policy maker expectations that all high school students, regardless of their post-graduation plans, should have a traditional “college preparatory” curriculum.

Barrier 7 was a duplicate of Barrier 4 in Round 1 and the wording was left intact.

The panel participants maintained their level of agreement from Round 1 to Round 2.

The majority of the respondents believed that public and policy makers expected that all high school students should complete a traditional college preparatory curriculum. As shown in Table 22, the majority of the respondents (77.78%) agreed that expectation might act as a barrier to implementing vocational programs in ECHS. One respondent disagreed (11.11%), and one respondent had no opinion (11.11%).

Table 22

Agreement/Disagreement with Barrier 7*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	7	77.78
Disagree	1	11.11
No opinion	1	11.11

*Barrier 7: Public and policy maker expectations that all high school students, regardless of their post-graduation plans, should have a traditional “college preparatory” curriculum.

Barrier 8: The 4 by 4 requirements too narrowly define what courses count for mathematics, science, language arts, and social studies.

In the feedback portion of round 1, barrier 4, the panel indicated that the State’s 4 by 4 degree plan in and of itself might not be the barrier. The feedback indicated that the lack of flexibility in the course offerings that fulfill the mathematics, science, language arts, and social studies requirements might be the actual barrier. The majority of the respondents (55.56%) agreed that the narrowness of the course requirements might present a barrier to implementing robust vocational programs in ECHS. The other

participants disagreed (11.11%), did not know (11.11%), or had no opinion (22.22%).

Results are summarized in Table 23.

Table 23

Agreement/Disagreement with Barrier 8*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	1	11.11
No opinion	1	11.11
Don't know	2	22.22

*Barrier 8: The 4 by 4 requirements too narrowly define what courses count for mathematics, science, language arts, and social studies.

Barrier 9: "Accountability" has become the primary mission of schools that limits the opportunity for students to experience vocational programming which is not tested.

According to the feedback from several of the participants, Barrier 9 was an inflammatory statement. The wording had been derived directly from the Round 1 feedback, where a number of panel members expressed frustration with the mission of education being replaced with "accountability" and testing. Even though Barrier 9 had a slight majority of participants (55.56%) agreeing that accountability might be a barrier, the wording of the question engendered numerous negative comments. As noted in Table 24, the respondents agreed (55.56%), disagreed (11.11%), had no opinion (11.11%), or did not know (22.22%).

Table 24

Agreement/Disagreement with Barrier 9*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	1	11.11
No opinion	1	11.11
Don't Know	2	22.22

*Barrier 9: “Accountability” has become the primary mission of schools that limits the opportunity for students to experience vocational programming which is not tested.

Barrier 10: Mistaken belief that one size fits all (one track to graduation) or that a college preparatory plan is for all students.

Barrier 10 was considered to be an inflammatory statement by some panel participants. The “one size fits all” (one track to graduation) language came from the Combs report that acted as the study’s theoretical framework. A panel participant had quoted the Combs report in the feedback section of Round 1. As indicated in Table 25, Barrier 10 had a slight majority of panelist (55.56%) agreeing that a “one size fits all” mentality exists in Texas high schools. The statement appeared to offend three of the panel members, with one expressing concern that the barriers were starting to sound like an “agenda.” One participant commented on the use of the wording “Mistaken Belief” to be inappropriate or biased.

Table 25

Agreement/Disagreement with Barrier 10*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	1	11.11
No opinion	3	33.33

*Barrier 10: Mistaken belief that one size fits all (one track to graduation) or that a college preparatory plan is for all students.

Barrier 11: The accountability movement which results in schools focusing extensively on subjects, which are tested causing “other subjects and development processes, such as career awareness... [to be] minimized, or even abandoned...”

Barrier 11 dealt with the accountability issues as did Barrier 9. The feedback to Barrier 11 was more favorable. The majority (66.67%) agreed that accountability presented a barrier to robust implementation of vocational programs in ECHS. The reason accountability was considered a barrier was subject to disagreement. Much of the feedback centered on the need for accountability. As indicated in Table 26, three panel participants (33.33%) disagreed or had no opinion.

Table 26

Agreement/Disagreement with Barrier 11*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	6	66.67
Disagree	2	22.22
No opinion	1	11.11

*Barrier 11: The accountability movement which results in schools focusing extensively on subjects, which are tested causing “other subjects and development processes, such as career awareness...[to be] minimized, or even abandoned...”

Barrier 12: ECHS allows opportunity for students to explore vocational programs available at colleges.

Barrier 12 was actually a statement that barriers to vocational programming did not exist. Barrier 12 was derived from the feedback in Round 1 where the panelists expressed the view that the current model adequately served student’s vocational interest. As shown in Table 27, the majority of the participants (66.67%) agreed that ECHS allows students to explore vocational opportunities. The remainder disagreed (22.22%) or had no opinion (11.11%).

Table 27

Agreement/Disagreement with Barrier 12*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	6	66.67
Disagree	2	22.22
No opinion	1	11.11

*Barrier 12: ECHS allows opportunity for students to explore vocational programs available at colleges.

Barrier 13: Vocational education and career tracks bring up issues of equity.

Barrier 13 addressed the issue that vocational education might bring about less equity. It was similar to Barrier 3, which used specific buzzwords such as “tracking,” “underserved,” and “minorities.” However, as noted in Table 28, Barrier 13 had only a slight majority of participants (55.56%) agreeing that vocational education may cause equity concerns, unlike the vast majority of participants (88.89%) having agreed under the more descriptive version in Barrier 3. The remaining panelist either disagreed (22.22%) that equity might be a barrier to vocational programs or had no opinion

(11.11%). From the comments, it appeared that panelists believed the perception of inequity was more of a barrier than the actual issue of equity.

Table 28

Agreement/Disagreement with Barrier 13*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	2	22.22
No opinion	2	22.22

*Barrier 13: Vocational education and career tracks bring up issues of equity.

Barrier 14: Associate degrees and technical certificates which can articulate through a four-year degree are heavily preferred in order to maximize student opportunity for further educational attainment.

This statement reflected the requirement for degree plans in ECHS to have a path that leads to a bachelor's degree. The wording of this barrier was unclear based on the feedback. As shown in Table 29, a small majority (55.56%) either disagreed (22.22%) or had no opinion (33.33%). The feedback from panelists indicated confusion on how or why this might be a barrier. Suggestions were made for ways to improve the wording.

Table 29

Agreement/Disagreement with Barrier 14*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	4	44.45
Disagree	2	22.22
No opinion	3	33.33

Barrier 14: Associate degrees and technical certificates that can articulate through a four-year degree are heavily preferred in order to maximize student opportunity for further educational attainment.

Barrier 15: Perception that students in high school need a general education and are not mature enough to select a major (vocational or academic track) at a young age.

As indicated in Table 30, a slight majority of the panelist (55.56%) agreed that a perception might exist in the readiness of students to select a major. The dissenters' (33.33%) feedback appeared to suggest disagreement with the premise more than the idea it may be a barrier itself. Most of the feedback regarding readiness of students appeared to have no relationship to whether people may or may not believe or perceive that "students are not mature enough." Feedback for this barrier largely focused on why students were ready; why they should be ready; or why they should not be locked into a decision but should have the flexibility to change their minds.

Table 30

Agreement/Disagreement with Barrier 15*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	3	33.33
No opinion	1	11.11

*Barrier 15: Perception that students in high school need a general education and are not mature enough to select a major (vocational or academic track) at a young age.

Barrier 16: Perception that students in high school are not ready for college work and are not ready for career training.

There was no consensus on the possibility that Barrier 16 presented a base on the feedback to the question. The barrier proposed that high school students were not ready for college work or career training. As noted in Table 31, 55.56% agreed but 44.44% either disagreed (33.33%) or had no opinion (11.11%) regarding the barrier. Although the feedback was instructive, the panel participants were not addressing the idea that this may be a barrier. Towards the middle of the survey, the panelists increasingly began arguing the merits of the barriers and not whether it could be an actual or perceived barrier. Much of the feedback to Barrier 16 focused on why the students were or were not ready.

Table 31

Agreement/Disagreement with Barrier 16*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	5	55.56
Disagree	3	33.33
No opinion	1	11.11

*Barrier 16: Perception that students in high school are not ready for college work and are not ready for career training.

Barrier 17: ECHS provide students with a wide range of options to investigate Vocational programs.

Barrier 17 was similar to Barrier 12, which indicated that ECHS do provide adequate vocational tracks and came from the same grouping of Round 1 feedback. Barrier 17 was based on feedback from Round 1 that suggested existing ECHS provide access to a breadth and depth of vocational as well as more traditional academic work. The panel was less supportive of this statement with no consensus being achieved. As noted in Table 32, one-third agreed (33.33%), one third disagreed (33.33%) and one third (33.33%) had no opinion. The feedback to this barrier focused on the width and depth of availability of access. How many colleges have the multiple pathways? How many paths are included?

Table 32

Agreement/Disagreement with Barrier 17*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	3	33.33
Disagree	3	33.33
No opinion	3	33.33

*Barrier 17: ECHS provide students with a wide range of options to investigate vocational programs.

Barrier 18: Vocational students need the same college preparatory skills as students entering traditional transfer programs.

There was no clear majority on Barrier 18. As indicated in Table 33, more disagreed (44.45%) than agreed (33.33%) that requiring the same skills for vocational and college preparatory was a barrier. The feedback painted a different picture and appeared to be either in defense of requiring the same curriculum or in favor of differentiated curriculum based on the career track. The majority of the respondents to this query did not appear to be addressing the issue as a potential barrier.

Table 33

Agreement/Disagreement with Barrier 18*, Round 2, n = 9		
Agreement Level	Frequency	Percentage
Agree	3	33.33
Disagree	4	44.45
No opinion	2	22.22

*Barrier 18: Vocational students need the same college preparatory skills as students entering traditional transfer programs.

Delphi, Round 3

In the third round of the Delphi process, an analysis of Round 2 responses was conducted. Towards the end of Round 2, several panelists appeared to lose sight of the goal of developing an instrument to identify perceived or real barriers to robust vocational programming in ECHS. Several of the respondents appeared not to distinguish between whether someone could perceive something to be a barrier without agreeing that it was, in fact, a barrier. An e-mail clarifying the purpose of the study to create an instrument was sent prior to executing Round 3. The clarification appeared to help participants achieve a better consensus.

Utilizing the level of agreement/disagreement and the feedback to each statement, a new series of statements was developed. Statements that had received 100% agreement in the previous round were left intact. Statements that had little consensus were reworked based on feedback or eliminated. A panelist who had participated in Rounds 1 and 2 decided to withdraw from the study. No reason was given and the panelist refused to be contacted by e-mail or phone. The panelist had expressed increased frustration in Round 2 and inquired if there were an “agenda.”

Roles

Role 1: The high dropout rate indicates the need for diverse paths to graduation including more vocational paths.

The eight people who responded to this role were in complete agreement that the Texas high school dropout rate demonstrated a need for diverse paths to graduation, including vocational. As noted in Table 34, all participants agreed that vocational programming and increased avenues to graduation might reduce the dropout rate.

Table 34

Agreement/Disagreement with Role 1*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.0

*Role 1: The high dropout rate indicates the need for diverse paths to graduation including more vocational paths.

Role 2: The desire for all students to have a college preparatory program does not reflect the actual labor market that students in need of skills will be entering.

The majority of the respondents (87.50%) agreed that the college preparatory program does not align with the reality found in the Texas labor market that the students will be entering. Results are summarized in Table 35.

Table 35

Agreement/Disagreement with Role 2*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	7	87.50
Disagree	1	12.50

*Role 2: The desire for all students to have a college preparatory program does not reflect the actual labor market that students in need of skills will be entering.

Role 3: The role of high school is to prepare students for entry into the labor market.

Role 3 was a reworded statement based on feedback in Round 2. It actually lost support of one of the panelists who had agreed with a broader statement that the role of high school is to prepare students for entry into the labor market or to continue higher education. As shown in Table 36, the majority of participants (75.00%) agreed that the role of high school is to prepare students for the labor market.

Table 36

Agreement/Disagreement with Role 3*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	6	75.00
Disagree	2	25.00

*Role 3: The role of high school is to prepare students for entry into the labor market.

Role 4: Accountability issues distract from vocational programming since only CORE courses are tested.

Role 4 was modified based on feedback from Round 2. All panelists agreed with the revised statement that accountability and testing of CORE subjects might be an impediment to robust vocational programming, as shown in Table 37. The CORE subjects are mathematics, language arts, science, and social studies.

Table 37

Agreement/Disagreement with Role 4*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.00

*Role 4: Accountability issues distract from vocational programming since only CORE courses are tested.

Role 5: The role of ECHS by legislative intent and original program guidelines is to enable students to earn 60 hours or an associate's degree while working towards a bachelor's degree.

Role 5 dealt with the intent of the original legislation and guidelines established for opening ECHS. As noted in Table 38, 67.50% agreed that the legislative intent was to increase the number of students earning hours toward a bachelor's degree.

Table 38

Agreement/Disagreement with Role 5*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	5	67.50
Disagree	2	25.00
Don't know	1	12.50

*Role 5: The role of ECHS by legislative intent and original program guidelines is to enable students to earn 60 hours or an associate's degree while working towards a bachelor's degree.

In Round 3, Round 2 roles 6, 7 and 8 were eliminated due to lack of consensus or agreement. A new role emerged from the feedback that became Round 3, Role 6.

Role 6: The portion of the population of students who will not attend college and may not pursue any post-secondary education is underserved by high schools.

As shown in Table 39, the majority of the panelists (87.50%) agreed that existing high schools underserved the portion of the population of students who may not attend college and may not pursue any post-secondary training. The dissenting opinion came from a panelist who appeared to agree that students are underserved. However, her opinion indicated that it was the colleges that were underserving the students, not the high schools.

Table 39

Agreement/Disagreement with Role 6*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	7	87.50
Disagree	1	12.50

*Role 6: The portion of the population of students who will not attend college and may not pursue any post-secondary education is underserved by high schools.

Barriers

Barrier 1: The recommended degree plan (4 by 4) may be a barrier to vocational programs.

The overwhelming majority of the participants (87.50%) believed that the Texas State Curriculum Recommended Degree plan (i.e., *The 4 by 4*) was a potential barrier to the robust implementation of vocational programming in ECHS. Results are summarized in Table 40.

Table 40

Agreement/Disagreement with Barrier 1*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	7	87.50
Disagree	1	12.50

*Barrier 1: The recommended degree plan (4 by 4) may be a barrier to vocational programs.

Barrier 2: Vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional.

Everyone believed that vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional (Table 41). All participants agreed that the negative perception of vocational trades may act as a barrier to ECHS providing robust vocational programming.

Table 41

Agreement/Disagreement with Barrier 2*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.00

*Barrier 2: Vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional.

Barrier 3: A perception exists that vocational training targets (tracks) students who are underrepresented in post-secondary education (rural, low-income, minority, etc.)

The respondents agreed that a perception suggesting that vocational training targets students who are underrepresented in post-secondary education does exist. As can be seen in Table 42, all respondents agreed that a perception of vocational tracking of underrepresented students may act a barrier to Early College High Schools providing robust vocational programming.

Table 42

Agreement/Disagreement with Barrier 3*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.00

*Barrier 3: A perception that vocational training targets (tracks) students who are underrepresented in post-secondary education (rural, low-income, minority, etc.).

Barrier 4: School counselors and administrators have a strong preference for traditional academic transfer programs.

As shown in Table 43, the majority of respondents (87.50%) believed that school counselors and administrators may present a barrier to robust access to vocational programming based on their strong preference for traditional academics.

Table 43

Agreement/Disagreement with Barrier 4*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	7	87.50
Disagree	1	12.50

*Barrier 4: School counselors and administrators have a strong preference for traditional academic transfer programs.

Barrier 5: A perception exists that vocational programs are for students with lower abilities or students with special needs.

All panel respondents agreed that a perception about the students who vocational programming was designed to serve might present a barrier to robust implementation, as indicated in Table 44.

Table 44

Agreement/Disagreement with Barrier 5*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.00

*Barrier 5: A perception that vocational programs are for students with lower abilities or students with special needs.

Barrier 6: Parents, teachers, and other adults' perception that workforce programming is inferior limits their willingness to advise students to consider vocational careers.

Based on Round 2 feedback, this statement was rewritten to specify which adults might hold negative perceptions. All panelists agreed with the revised statement that parents, teachers, and other adults holding negative perceptions might act as a barrier to robust vocational programming in ECHS (Table 45).

Table 45

Agreement/Disagreement with Barrier 6*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.00

*Barrier 6: Parents, teachers, and other adults' perception that workforce programming is inferior limits their willingness to advise students to consider vocational careers.

Barrier 7: Public and policy maker expectations that all high school students, no matter their post-graduation plans, should have a traditional "college preparatory" curriculum.

The majority of respondents believed that the expectation of the public and policy makers is that all high school students should complete a traditional college preparatory curriculum. The notion that the expectation might act as a barrier to implementing vocational programs in ECHS was shared by the majority of participants (87.50%).

Results can be seen in Table 46.

Table 46

Agreement/Disagreement with Barrier 7*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	7	87.50
Disagree	1	12.50

*Barrier 7: Public and policy maker expectations that all high school students, no matter their post-graduation plans, should have a traditional "college preparatory" curriculum.

Barrier 8: The Recommended High School degree plan (4 by 4) requirements too narrowly define what courses count for mathematics, science, language arts and social studies.

All panelists (Table 47) agreed that the Recommended High School degree plan does not offer enough flexibility in what courses count for credit towards *the 4 by 4 degree plan*. A slight rewording of this statement from Round 2 increased the agreement level from 67% to 100%.

Table 47

Agreement/Disagreement with Barrier 8*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.00

*Barrier 8: The Recommended High School degree plan (4x4) requirements too narrowly define what courses count for mathematics, science, language arts and social studies.

Barrier 9: A “one size fits all” (one track to graduation) mentality exists in high school programs.

Barrier 9 was reworded based on feedback from Round 2 and agreement was increased from 56% to 75%. In the feedback section, one panelist who disagreed with the statement noted that she now agreed with the statement. Results are shown in Table 48.

Table 48

Agreement/Disagreement with Barrier 9*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	6	75.00
Disagree	2	25.00

*Barrier 9: A “one size fits all” (one track to graduation) mentality exists in high school programs.

Barrier 10: Students and their parents should have the opportunity to choose a career track in school after 8th grade.

The majority (87.50%) of the panel agreed that students, with the aid of their parents, should be allowed to select career and educational tracks (Table 49). The feedback indicated that the dissenter and one of the panelists in agreement were concerned that the students have the ability to change their minds and the flexibility to pursue additional education programs.

Table 49

Agreement/Disagreement with Barrier 10*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	7	87.50
Disagree	1	12.50

*Barrier 10: Students and their parents should have the opportunity to choose a career track in school after 8th grade.

Barrier 11: ECHS allows opportunity for students to explore vocational programs available at colleges.

Barrier 11 was characterized as the “non-barrier” barrier suggesting that the current model adequately served the student’s vocational interest. As shown in Table 50, the majority (67.50%) agreed that ECHS would allow students to explore vocational opportunities. The feedback indicated the dissenters were focusing on “robust access” to vocational programming, which would include depth and breadth of access that they believed to be lacking at most, if not all, ECHS.

Table 50

Agreement/Disagreement with Barrier 11*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	5	67.50
Disagree	3	32.50

*Barrier 11: ECHS allows opportunity for students to explore vocational programs available at colleges.

Barrier 12: Vocational education and Career Tracks bring up issues of equity.

Barrier 12 addressed the issue that vocational education might bring about less equity. The entire panel agreed that the vocational education program might face a barrier based on equity (Table 51). Interestingly, the feedback on this and other barriers was extremely negative on the term *vocational* and exposed a marked preference for the term *career and technology*. One panelist described the word vocational as “tainted.” Another panelist stated the preferred nomenclature was “career.” Throughout the three rounds of the survey process, multiple panelists expressed dislike or distaste for the term *vocational*.

Table 51

Agreement/Disagreement with Barrier 12*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	8	100.00
Disagree	0	0.00

*Barrier 12: Vocational education and Career Tracks bring up issues of equity.

Barrier 13: In high school, core classes (mathematics, science, language arts, and social studies) should be geared toward a student's career choice.

Round 2 Barrier 18 was reworded to formulate Round 3 Barrier 13. The rewording did improve consensus, with the majority (67.50%) agreeing that the core curriculum should be geared towards a student's career choice. The feedback indicated that the barrier would be that core courses lack the flexibility to serve vocational interests. The feedback was negative towards the wording of this statement. Results are summarized in Table 52.

Table 52

Agreement/Disagreement with Barrier 13*, Round 3, n = 8		
Agreement Level	Frequency	Percentage
Agree	5	67.50
Disagree	3	32.50

*Barrier 13: In high school, CORE classes (mathematics, science, language arts, and social studies) should be geared toward a student's career choice.

Summary

The Delphi results were used to formulate the roles and barriers for the *Career and Technical Questionnaire* (CTQ). The CTQ was initially read for grammatical consistency and to ensure each statement addressed only one issue (e.g., vocational programs are perceived as less prestigious and lower paying was split into two barriers). The CTQ was pilot-tested twice and results were used to finalize the survey instrument. The Delphi resulted in the following roles and barriers used in the CTQ:

Roles

- Role 1: Early College High Schools (ECHS) are designed to increase the number of students completing bachelor's degrees.
- Role 2: Early College High Schools should serve diverse student populations with multiple career path options.
- Role 3: The Texas high school attrition rate illuminates the need for diverse curricula, including academic and career-technical programs.
- Role 4: An important function of public education is to prepare students for entry into the labor market.
- Role 5: A "one size fits all" requirement for graduation exists in the design of the Texas High School Curricula.
- Role 6: The goal of having all high school students pursue a college preparatory program does not reflect the needs of the actual labor market in Texas.
- Role 7: Students who do not intend to pursue or are unable to pursue a post-secondary education are underserved by most Texas public high schools.
- Role 8: A student completing the high school college preparatory track is adequately prepared to enter the existing labor market.

Barriers

- Barrier 1: Parents perceive that workforce or vocational/career and technical programs are inferior to traditional academic transfer programs.
- Barrier 2: An increase in the availability of vocational/career and technical programs could lead to more inequity in the public education system.

- Barrier 3: The term Vocational Education has a negative connotation and should be replaced with Career and Technical Education.
- Barrier 4: Vocational careers are viewed as low paying compared to professional careers.
- Barrier 5: Vocational careers are viewed as less prestigious compared to professional careers.
- Barrier 6: Early College High Schools require a student's program of study to have a pathway to a 4 year college degree, limiting some career and technical program options.
- Barrier 7: Existing high school vocational programs are oriented toward students with special needs.
- Barrier 8: Existing high school vocational programs are oriented toward students with low abilities.
- Barrier 9: Policy makers believe that all high school students should have a traditional "College Preparatory" curriculum.
- Barrier 10: The Texas Recommended High School degree plan (4 by 4) is a barrier to offering robust vocational programs in ECHS.
- Barrier 11: Vocational/Career and Technical training tracks students who are underrepresented in post-secondary education.
- Barrier 12: Accountability testing of core subjects (mathematics, science, language arts and social studies) limits the ability of schools to offer a wide variety of vocational options.

Barrier 13: The Texas Recommended High School Plan (4 by 4) does not allow enough flexibility in which courses count for the core subjects (mathematics, science, language arts and social studies).

Barrier 14: High school counselors have a strong preference for traditional academic transfer programs when advising students.

Barrier 15: School administrators have a strong preference for traditional academic transfer programs when advising students.

The CTQ (Appendix 3) was formatted as a three-part survey questionnaire. Parts I and II included the barriers and roles, respectively, and a 4-point Likert-type scaling (4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree) was employed to measure the levels of agreement/disagreement. Part III was designed to gather demographic data to describe the sample.

Quantitative Design

The quantitative component of the study was descriptive in nature. Descriptive research may employ either qualitative, quantitative or both types of research questions. The descriptive study attempts to answer questions about the state of the object under study. Descriptive research involves gathering data that describe events and then organizing, tabulating, depicting, and describing the data collection (Glass & Hopkins, 1984).

Subject Selection

The potential participants for the study were recruited from the ECHS, as of summer 2011, and included 1) principals or instructional leaders, 2) guidance counselors, 3) school district career and technology representatives, and 4) college representatives associated with ECHS. The non-probability sample consisted of 154 educators who were invited to participate in the study by completing the online version of the CTQ.

Data Collection

The data collection began on November 1, 2011. A letter was sent to all 154 potential participants, informing them of the purpose of the study and the online survey questionnaire. The link to the online survey was emailed to all. Two follow-up emails were sent to non-respondents. The data collection ended on November 30, 2011. Forty-eight educators completed the CTQ.

Data Analysis

The quantitative data were exported into the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were employed to summarize and organize the data. Specifically, frequency and percentage distributions were used to summarize the data. Mean scores were used to rank the levels of agreements/disagreements with the roles of vocational training and the barriers to offering robust vocational training programs in ECHS.

Protection of Human Subjects

Permission to conduct the study was obtained from the Institutional Review Board at Texas A&M University (Appendix 4). The participants for the qualitative and quantitative components of the study signed consent forms (Appendix 4)

Chapter 4

Results

The primary purpose of the study was twofold: 1) to document the role of vocational training programs in Early College High Schools (ECHS) and 2) to identify the barriers which may hinder the implementation of robust vocational training programs in ECHS. A Delphi study was conducted to collect and analyze the qualitative data which were used to develop the *Career and Technical Questionnaire* (CTQ) to collect the quantitative data.

A Profile of Subjects

Forty-eight educators participated in the quantitative component of the study by completing the CTQ electronically. The average age was 47.00 years (SD = 9.90). The majority of the respondents were female (54.54%). The ethnic breakdown of the participants was Anglo (66.70%), Hispanic (26.20%), Black (4.80%), and other (2.4%); there were 6 (12.50%) missing cases. The majority of the respondents had master's degrees (72.70%), followed by doctoral degrees (20.50%), and bachelor's degrees (6.80%). The participants were asked to report their position/job title. "Other" was the response reported by the majority of the respondents (52.30%), which could have been due to defunding of "Tech Prep" positions in colleges and school districts as part of federal budget cutbacks. This funding cutback shifted "Tech Prep" responsibilities to a variety of titles in colleges and school districts. The participants' median years in the current position was 4.00, and a typical ECHS had been in operation for 4.00 years. A profile of subjects is presented in Tables 53 and 54.

Table 53

A Profile of Subjects, Categorical Variables, n = 48

Variables	Frequency	Percentage
Gender		
Male	20	41.67
Female	24	50.00
Missing	4	8.33
Ethnicity		
Black	2	4.17
Hispanic	11	22.91
White	28	58.33
Other	1	2.08
Missing	6	12.50
Education		
Bachelors	3	6.25
Masters	32	66.67
Doctorate	9	18.75
Missing	4	8.33
Current Assignment		
Principal	6	12.50
Counselor	9	18.75
District Tech Prep	1	2.08
College Workforce	2	4.17
Teacher	3	6.25
Other	23	47.91
Missing	4	8.33

Table 54

A Profile of Subjects, Continuous Variables, n = 48

Characteristic	Mean	Median	Mode	SD	Skew Coefficient
Age	46.88	47.00	38.00	9.90	0.14
Years in Position	6.35	4.00	3.00	8.42	3.39
Years ECHS Operation	4.19	4.00	3.00	2.00	0.28

Roles

The respondents were provided with the eight roles of vocational training programs in ECHS and asked to indicate their level of agreement/disagreement with each. The roles had been identified by the members of the Delphi panel.

Role 1: Early College High Schools (ECHS) are designed to increase the number of students completing bachelor's degrees.

The overwhelming majority of the respondents (85.40%) either strongly agreed (43.70%) or agreed (41.70%) that the role of ECHS was to increase the number of students completing secondary education with a pathway designed to culminate in a bachelor's degree. Results are summarized in Table 55.

Table 55

Agreement/Disagreement with Role 1*, n = 48		
Agreement/Disagreement Level	Frequency	Percentage
Strongly Agree	21	43.70
Agree	20	41.70
Disagree	6	12.50
Strongly disagree	1	2.10

*Role 1: Early College High Schools (ECHS) are designed to increase the number of students completing bachelor's degrees.

Role 2: Early College High Schools should serve diverse student populations with multiple career path options.

As shown in Table 56, the overwhelming majority of the respondents (95.80%) either strongly agreed (58.30%) or agreed (37.50%) that ECHS should serve diverse student populations with multiple career path options. Two participants strongly disagreed with the role.

Table 56

Agreement/Disagreement with Role 2*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	28	58.30
Agree	18	37.50
Strongly disagree	2	4.20
Disagree	0	0.00

*Role 2: Early College High Schools should serve diverse student populations with multiple career path options.

Role 3: The Texas high school attrition rate illuminates the need for diverse curricula, including academic and career-technical programs.

The high school dropout rate in Texas is estimated to be close to 30% (IDRA, 2010). The overwhelming majority of the participants (89.55%) either strongly agreed (64.55%) or agreed (25.00%) that offering more diverse curricular paths, including career-technical programs, might be beneficial. Results are summarized in Table 57.

Table 57

Agreement/Disagreement with Role 3*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	31	64.55
Agree	12	25.00
Disagree	2	4.20
Strongly disagree	3	6.25

*Role 3: The Texas high school attrition rate illuminates the need for diverse curricula, including academic and career-technical programs.

Role 4: An important function of public education is to prepare students for entry into the labor market.

In the Delphi study, the panel believed that an important function of public education, specifically at the high school level, was to prepare students for entry into the labor market or for further training at colleges and universities. As shown in Table 58, the overwhelming majority of the participants (93.70%) either strongly agreed (52.10%) or agreed (41.60%) with the role.

Table 58

Agreement/Disagreement with Role 4*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	25	52.10
Agree	20	41.60
Disagree	2	4.20
Strongly disagree	1	2.10

*Role 4: An important function of public education is to prepare students for entry into the labor market.

Role 5: A “one size fits all” requirement for graduation exists in the design of the Texas High School Curricula.

Susan Combs’ research on the disparity between labor market jobs and the types of graduates produced in Texas formed the theoretical foundation for the study. Her report used the term “one size fits all” to describe the graduation requirements in Texas. The majority of the participants (62.50%) either strongly agreed (18.75%) or agreed (43.75%) with the “one size fits all” characterization of the high school curricula in Texas. However, as shown in Table 59, a large group of participants dissented from the characterization.

Table 59

Agreement/Disagreement with Role 5*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	9	18.75
Agree	21	43.75
Disagree	15	31.25
Strongly disagree	2	4.17
No Response	1	2.08

*Role 5: A “one size fits all” requirement for graduation exists in the design of the Texas High School Curricula.

Role 6: The goal of having all high school students pursue a college preparatory program does not reflect the needs of the actual labor market in Texas.

Role 6 had to do with Combs’ notion that a disconnect exists between the labor market in Texas and the educational pipeline. Role 6 was similar in content to Role 5 but enjoyed a higher level of agreement. The majority of the respondents (70.84%) either strongly agreed (29.17%) or agreed (41.67%) with the role. Results are shown in Table 60.

Table 60

Agreement/Disagreement with Role 6*, n = 48

Agreement Level	Frequency	Percentage
Strongly Agree	14	29.17
Agree	20	41.67
Disagree	9	18.75
Strongly disagree	3	6.25
No Response	2	4.16

*Role 6: The goal of having all high school students pursue a college preparatory program does not reflect the needs of the actual labor market in Texas.

Role 7: Students who do not intend to pursue or are unable to pursue a post-secondary education are underserved by most Texas public high schools.

Role 7 followed the same vein of Combs' research that educational opportunities are not tied with Texas labor market realities. The overwhelming majority of the participants (81.97%) either strongly agreed (27.08%) or agreed (54.17%) that students not pursuing post-secondary education are underserved by most Texas public high schools. Results are summarized in Table 61.

Table 61

Agreement/Disagreement with Role 7*, n = 48

Agreement Level	Frequency	Percentage
Strongly Agree	13	27.08
Agree	26	54.17
Disagree	7	14.58
Strongly disagree	1	2.08
No Response	1	2.08

*Role 7: Students who do not intend to pursue or are unable to pursue a post-secondary education are underserved by most Texas public high schools.

Role 8: A student completing the high school college preparatory track is adequately prepared to enter the existing labor market.

Role 8 was the counter to the idea that the college preparatory track in some ways interferes with students being prepared to enter the labor market. The majority of the participants (70.83%) either strongly disagreed (14.58%) or disagreed (56.25%) that students were adequately prepared upon high school graduation to enter the Texas labor market. Results are shown in Table 62.

Table 62

Agreement/Disagreement with Role 8*, n = 48

Agreement Level	Frequency	Percentage
Strongly Agree	1	2.08
Agree	12	25.00
Disagree	27	56.25
Strongly disagree	7	14.58
No Response	1	2.08

*Role 8: A student completing the high school college preparatory track is adequately prepared to enter the existing labor market.

On the basis of mean agreement/disagreement level, the Roles were ranked. As can be seen in Table 63, Role 2, *Early College High Schools should serve diverse student populations with multiple career path options*, enjoyed the highest level of agreement (3.50 out of 4.00). Role 8, *A student completing the high school college preparatory track is adequately prepared to enter the existing labor market*, received the lowest level of agreement (2.15 out of 4.00).

Table 63

 Ranking of Roles on the Basis of Agreement/Disagreement Level

Roles*	Mean Agreement/Disagreement Level**
Role 2	3.50
Role 3	3.48
Role 4	3.44
Role 1	3.27
Role 7	3.09
Role 6	2.98
Role 5	2.79
Role 8	2.15

*Roles:

Role 1: Early College High Schools (ECHS) are designed to increase the number of students completing bachelor's degrees.

Role 2: Early College High Schools should serve diverse student populations with multiple career path options.

Role 3: The Texas high school attrition rate illuminates the need for diverse curricula, including academic and career-technical programs.

Role 4: An important function of public education is to prepare students for entry into the labor market.

Role 5: A "one size fits all" requirement for graduation exists in the design of the Texas High School Curricula.

Role 6: The goal of having all high school students pursue a college preparatory program does not reflect the needs of the actual labor market in Texas.

Role 7: Students who do not intend to pursue or are unable to pursue a post-secondary education are underserved by most Texas public high schools.

Role 8: A student completing the high school college preparatory track is adequately prepared to enter the existing labor market.

** 4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree

Barriers

The respondents were provided with the 15 barriers which may hinder the implementation of robust vocational training programs in ECHS. The barriers had been identified by the members of the Delphi panel.

Barrier 1: Parents perceive that workforce or vocational/career-technical programs are inferior to traditional academic transfer programs.

The majority of the participants (72.91%) either strongly agreed (18.75%) or agreed (54.16%) that workforce or vocational careers are inferior to traditional academic transfer programs. Results are summarized in Table 64.

Table 64

Agreement/Disagreement with Barrier 1*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	9	18.75
Agree	26	54.16
Disagree	8	16.67
Strongly disagree	1	2.08
No Response	4	8.33

*Barrier 1: Parents perceive that workforce or vocational/career-technical programs are inferior to traditional academic transfer programs.

Barrier 2: An increase in the availability of vocational/career and technical programs could lead to more inequity in the public education system.

The likelihood of a threat to equity between ethnic and socio-economic groups of students was thought to be a potential barrier to ECHS implementing robust vocational programs. The majority of the participants (70.86%) either strongly disagreed (29.19%)

or disagreed (41.67%) that increased availability of vocational training might lead to more inequity within the public educational system. Results are summarized in Table 65.

Table 65

Agreement/Disagreement with Barrier 2*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	2	4.17
Agree	8	16.67
Disagree	20	41.67
Strongly disagree	14	29.19
No Response	4	8.33

* Barrier 2: An increase in the availability of vocational/ career and technical programs could lead to more inequity in the public education system.

Barrier 3: The term Vocational Education has a negative connotation and should be replaced with Career and Technical Education.

Repeated comments from the Delphi panel indicated that the term “vocational” in and of itself was a barrier and implied a negative connotation. The overwhelming majority of the participants (87.50%) either strongly agreed (47.91%) or agreed (39.58%) that the term Vocational Education should be replaced. Results are summarized in Table 66.

Table 66

Agreement/Disagreement with Barrier 3*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	23	47.92
Agree	19	39.58
Disagree	1	2.08
Strongly disagree	1	2.08
No Response	4	8.33

* Barrier 3: The term Vocational Education has a negative connotation and should be replaced with Career and Technical Education.

Barrier 4: Vocational careers are viewed as low paying compared to professional careers.

The majority of the participants (68.75%) either strongly agreed (16.67%) or agreed (52.08%) that vocational careers are viewed as low paying when compared to professional careers. Results are summarized in Table 67.

Table 67

Agreement/Disagreement with Barrier 4*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	8	16.67
Agree	25	52.08
Disagree	9	18.75
Strongly disagree	2	4.17
No Response	4	8.33

* Barrier 4: Vocational careers are viewed as low paying compared to professional careers.

Barrier 5: Vocational careers are viewed as less prestigious compared to professional careers.

The overwhelming majority of the participants (85.42%) either strongly agreed (25.00%) or agreed (60.42%) that vocational careers are viewed as less prestigious when compared to professional careers. Results are summarized in Table 68.

Table 68

Agreement/Disagreement with Barrier 5*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	12	25.00
Agree	29	60.42
Disagree	2	4.17
Strongly disagree	1	2.08
No Response	4	8.33

* Barrier 5: Vocational careers are viewed as less prestigious compared to professional careers.

Barrier 6: Early College High Schools require a student's program of study to have a pathway to a 4 year college degree, limiting some career and technical program options.

The majority of the participants (62.50%) either strongly agreed (14.58%) or agreed (47.92%) that ECHS require that student's program of study have a pathway to a 4-year college degree, limiting some career and technical program options. Results are summarized in Table 69.

Table 69

Agreement/Disagreement with Barrier 6*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	7	14.58
Agree	23	47.92
Disagree	12	25.00
Strongly disagree	2	4.17
No Response	4	8.33

* Barrier 6: Early College High Schools require a student's program of study to have a pathway to a 4 year college degree, limiting some career and technical program options.

Barrier 7: Existing high school vocational programs are oriented toward students with special needs.

The majority of the participants (77.08%) either strongly disagreed (12.50%) or disagreed (64.58%) that vocational programs are oriented towards students with special needs.

Results are summarized in Table 70.

Table 70

Agreement/Disagreement with Barrier 7*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	1	2.08
Agree	6	12.50
Disagree	31	64.58
Strongly disagree	6	12.50
No Response	4	8.33

* Barrier 7: Existing high school vocational programs are oriented toward students with special needs.

Barrier 8: Existing high school vocational programs are oriented toward students with low abilities.

The majority of the participants (70.84%) either strongly disagreed (16.67%) or disagreed (54.17%) that vocational programs are oriented towards students with low abilities.

Results are summarized in Table 71.

Table 71

Agreement/Disagreement with Barrier 8*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	2	4.17
Agree	8	16.67
Disagree	26	54.17
Strongly disagree	8	16.67
No Response	4	8.33

* Barrier 8: Existing high school vocational programs are oriented toward students with low abilities.

Barrier 9: Policy makers believe that all high school students should have a traditional "College Preparatory" curriculum.

The majority of the participants (83.33%) either strongly agreed (12.50%) or agreed (70.83%) that a goal of policy makers is that all high school students have a college preparatory curriculum. Results are summarized in Table 72.

Table 72

Agreement/Disagreement with Barrier 9*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	6	12.50
Agree	34	70.83
Disagree	3	6.30
Strongly disagree	1	2.08
No Response	4	8.33

* Barrier 9: Policy makers believe that all high school students should have a traditional "College Preparatory" curriculum.

Barrier 10: The Texas Recommended High School degree plan (4 by 4) is a barrier to offering robust vocational programs in ECHS.

The slight majority of the survey participants (56.25%) either strongly agreed (12.50%) or agreed (43.75%) that the Texas Recommended High School degree plan (4 by 4) was a barrier to robust vocational programs in ECHS. Results are summarized in Table 73.

Table 73

Agreement/Disagreement with Barrier 10*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	6	12.50
Agree	21	43.75
Disagree	12	25.00
Strongly disagree	4	8.33
No Response	5	10.42

* Barrier 10: The Texas Recommended High School degree plan (4 by 4) is a barrier to offering robust vocational programs in ECHS.

Barrier 11: Vocational/Career and Technical training tracks students who are underrepresented in post-secondary education.

The participants were divided on whether vocational training tracks students who are underrepresented in post-secondary education with no decisive majority. Twenty-three of the participants (47.91%) either strongly agreed (4.17%) or agreed (43.75%) and 20 of the participants (41.67%) either strongly disagreed (4.17%) or disagreed (37.50%).

Results are summarized in Table 74.

Table 74

Agreement/Disagreement with Barrier 11*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	2	4.17
Agree	21	43.75
Disagree	18	37.50
Strongly disagree	2	4.17
No Response	5	10.42

* Barrier 11: Vocational/Career and Technical training tracks students who are underrepresented in post-secondary education.

Barrier 12: Accountability testing of core subjects (mathematics, science, language arts and social studies) limits the ability of schools to offer a wide variety of vocational options.

The majority of the participants (60.42%) either strongly agreed (18.75%) or agreed (41.67%) that testing or accountability may limit the ability of schools to offer a wide range of vocational programs. Results are summarized in Table 75.

Table 75

Agreement/Disagreement with Barrier 12*, n = 48

Agreement Level	Frequency	Percentage
Strongly Agree	9	18.75
Agree	20	41.67
Disagree	14	29.17
Strongly Disagree	0	0.00
No Response	5	10.42

* Barrier 12: Accountability testing of core subjects (mathematics, science, language arts and social studies) limits the ability of schools to offer a wide variety of vocational options.

Barrier 13: The Texas Recommended High School Plan (4 by 4) does not allow enough flexibility in which courses count for the core subjects (mathematics, science, language arts and social studies).

The majority of the participants (62.50%) either strongly agreed (18.75%) or agreed (43.75%) that the recommended degree plan limits flexibility in what constitutes core course work for the degree plan. Results are summarized in Table 76.

Table 76

Agreement/Disagreement with Barrier 13*, n = 48

Agreement Level	Frequency	Percentage
Strongly Agree	9	18.75
Agree	21	43.75
Disagree	12	25.00
Strongly disagree	0	0.00
No Response	6	12.50

* Barrier 13: The Texas Recommended High School Plan (4 by 4) does not allow enough flexibility in which courses count for the core subjects (mathematics, science, language arts and social studies).

Barrier 14: High school counselors have a strong preference for traditional academic transfer programs when advising students.

The majority of the participants (68.75%) either strongly agreed (29.17%) or agreed (39.58%) that high school counselors have a strong preference for recommending traditional academic tracks when advising students. Results are summarized in Table 77.

Table 77

Agreement/Disagreement with Barrier 14*, N = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	14	29.17
Agree	19	39.58
Disagree	9	18.75
Strongly disagree	1	2.08
No Response	5	10.42

* Barrier 14: High school counselors have a strong preference for traditional academic transfer programs when advising students.

Barrier 15: School administrators have a strong preference for traditional academic transfer programs when advising students.

The majority of the participants (70.83%) either strongly agreed (22.91%) or agreed (47.92%) that school administrators have a strong preference for traditional academic transfer programs when advising students. Results are summarized in Table 78.

Table 78

Agreement/Disagreement with Barrier 15*, n = 48		
Agreement Level	Frequency	Percentage
Strongly Agree	11	22.91
Agree	23	47.92
Disagree	9	18.75
Strongly disagree	0	0.00
No Response	5	10.42

* Barrier 15: School administrators have a strong preference for traditional academic transfer programs when advising students.

On the basis of mean agreement/disagreement level, the barriers were ranked from the highest to lowest. As can be seen in Table 79, Barrier 3: *The term Vocational Education has a negative connotation and should be replaced with Career and Technical Education*, had the highest level of agreement (3.45 out of 4.00), which coincided with the Delphi panel's consensus. Barrier 2: *An increase in the availability of vocational/career and technical programs could lead to more inequity in the public education system* received the lowest level of agreement (1.95 out of 4.00).

Table 79

Ranking of Barrier on the Basis of Agreement/Disagreement Level

Barriers*	Mean Agreement/Disagreement Level**
Barrier 3	3.45
Barrier 5	3.18
Barrier 14	3.07
Barrier 15	3.05
Barrier 9	3.02
Barrier 1	2.98
Barrier 13	2.93
Barrier 4	2.89
Barrier 12	2.88
Barrier 6	2.80
Barrier 10	2.67
Barrier 11	2.53
Barrier 7	2.05
Barrier 2	1.95

*Barriers:

Barrier 1: Parents perceive that workforce or vocational/career-technical programs are inferior to traditional academic transfer programs.

Barrier 2: An increase in the availability of vocational/career and technical programs could lead to more inequity in the public education system.

Barrier 3: The term Vocational Education has a negative connotation and should be replaced with Career and Technical Education.

Barrier 4: Vocational careers are viewed as low paying compared to professional careers.

Barrier 5: Vocational careers are viewed as less prestigious compared to professional careers.

Barrier 6: Early College High Schools require a student's program of study to have a pathway to a 4 year college degree, limiting some career and technical program options.

Barrier 7: Existing high school vocational programs are oriented toward students with special needs.

Barrier 8: Existing high school vocational programs are oriented toward students with low abilities.

Barrier 9: Policy makers believe that all high school students should have a traditional "College Preparatory" curriculum.

Barrier 10: The Texas Recommended High School degree plan (4 by 4) is a barrier to offering robust vocational programs in ECHS.

Barrier 11: Vocational/Career and Technical training tracks students who are underrepresented in post-secondary education.

Barrier 12: Accountability testing of core subjects (mathematics, science, language and social studies) limits the ability of schools to offer a wide variety of vocational options.

Barrier 13: The Texas Recommended High School Plan (4 by 4) does not allow enough flexibility in which courses count for the core subjects (mathematics, science, language and social studies).

Barrier 14: High school counselors have a strong preference for traditional academic transfer programs when advising students.

Barrier 15: School administrators have a strong preference for traditional academic transfer programs when advising students.

** 4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree

Chapter 5

Summary, Conclusions, Discussion, Implications, and Recommendations for Further Research

With the current budget crisis in Texas and the nation, it is imperative to get the most bangs for the buck in providing educational opportunities for our K-12 students. A Texas dropout rate hovering around 30% for the past 30 years (IDRA, 2011) indicates the need for almost one third of students to be ready to enter the labor market with high school skills or less. Large scale research, both nationally (Barton, 1991) and specific to Texas (Combs, 2008), demonstrates that the students entering the workforce immediately after high school are ill prepared to take advantage of the available jobs.

With a state economy that is booming in some skilled sectors and hurting in other industries, the role of career training in high schools must be considered. Combs (2008) advocated that the emergence of Early College High Schools (ECHS) is an ideal opportunity to gain a synergistic effect by merging the high school education with the workforce education found in the state's 50 community college systems. Combs (2008) further pointed out that barriers exist that must be identified and removed in order to enjoy the potential benefits of such educational merging.

The study was designed to determine whether practitioners in the field of ECHS education agreed with Combs' assertion that a role existed for career and technology training in ECHS. The second research goal of the study was to have practitioners identify potential barriers to robust implementation of career and technical training in ECHS. The study followed a mixed methods model to first create the Career and

Technology Questionnaire (CTQ) through the use of a qualitative method (Delphi), followed by administering the survey to a group of practitioners involved in ECHS at the school, district, and college level.

Summary

The purpose of the study was 1) to document the role of vocational training programs in ECHS and 2) to identify the barriers which may hinder the implementation of robust vocational training programs in Texas ECHS. A wide body of research supports the benefit of career training in high school education in general. Further research indicates that students who receive 12 hours of college credit during high school are more likely to graduate from high school, potentially helping with the intractable Texas dropout rate (Texas Early College High School Initiative, 2008). A review of the available data indicates that Combs' assertion that a mismatch exists between the number of students trained in a variety of disciplines and the actual job market requirements is correct. This is confirmed by a number of sources including the U. S. Department of Labor Statistics (2010) and Combs Analysis of the Texas Workforce Commission Data (Combs, 2010). Moreover, the professions with chronic shortfalls are generally STEM (Science, Technology, Engineering and Mathematics) careers, with skilled professions (Career and Technical) making up a large portion of the job openings. A number of researchers have looked at the lack of career training in high schools in general, but there was a lack available research that looked specifically at ECHS in Texas or nationally.

Combs and other researchers identified preliminary barriers to implementing robust career and technology in high schools. The preliminary barriers were used to start a discussion with experts in the field in the form of a Delphi panel. The Delphi panel met

online through a moderator who sent out the opening statements, collated and summarized the feedback, and returned to the panel for further discussion. The Delphi technique was iterative in nature and was designed to work towards group consensus. The statements with the majority of panel support were used to develop the CTQ instrument. The CTQ instrument was administered in the quantitative portion of the study.

Conclusions

The researcher had hypothesized that in the context of ECHS, specific roles for vocational training programs as well as barriers which may hinder the implementation of such programs existed. On the basis of qualitative results, which were derived from a three-round Delphi study, it is concluded that the hypothesis is tenable, as eight roles and fifteen barriers were identified. On the basis of quantitative results, it is concluded that the practitioners involved in ECHS tend to agree with the roles and barriers.

Discussion

Both the qualitative and quantitative results showed that the use of the term “vocational” is a hindrance. Most of the respondents believed that the term vocational was tainted, or negatively associated. The preferred nomenclature in Texas and among respondents was career and technical. Although national and international research studies indicate vocational as a phrase is a valid term, in Texas, career and technical is preferred; thus, the preferred term is used in the remainder of the document.

The two phases of the study identified 8 roles or reasons that ECHS were a good fit for career and technical training programs. The Delphi participants agreed on 15 potential barriers which enjoyed varying degrees of support from the CTQ participants.

The quantitative and qualitative feedback was illustrative of the diversity of opinions regarding barriers and problems in the implementation of career programs.

Roles

Both the qualitative (Delphi) and quantitative (CTQ) respondents agreed that career and technology could play an important role in early college high schools. The Delphi panel identified eight roles (reasons) that career and technology is an appropriate fit for ECHS. The reasons identified by the Delphi panel for the need to have alternative paths to graduation were similar to the research done by Combs (2008), Barton (1991), and Culpepper (2000).

The Delphi panelists reported that in Texas, the traditional high school programs leave a portion of the student population underserved. The consequences of underserving students were reflected in the high dropout rate of 30% (IDRA, 2010); employers reporting high school graduates enter the labor market without sufficient job skills; chronic skilled labor openings in the state, and the number of college graduates who are underemployed (Combs, 2008).

The panelists agreed on eight general statements that indicated the need for career and technology to play a role in ECHS: 1) By design, ECHS are to increase the number of students completing bachelor's degree; 2) ECHS should serve diverse student populations with multiple career path options; 3) high attrition rates in Texas indicate the need for diverse curricula, including academic and career-technical programs; 4) public education should prepare students for entry into the labor market; 5) a "one size fits all" design exists in the Texas high school curriculum; 6) a college preparatory program does not meet the needs of the actual labor market in Texas; 7) students who do not pursue

post-secondary education are underserved by most Texas public high schools; and 8) the majority of both respondents agreed that a student completing the high school college preparatory track is not adequately prepared to enter the existing labor market.

In the three rounds of the Delphi study, the legislative intent and purpose of the ECHS were debated. The legislative intent of the statute authorizing the formation of ECHS (TEC 29.908.) appears to indicate a marked preference for college track programs that result in the awarding of a bachelor's degree. The Delphi study feedback indicated that a pathway toward a bachelor's degree did not preclude CTE as an option for students. As one panelist pointed out, a number of universities in Texas provide a BAS (Bachelors of Applied Science) degree. Any program of study that awards an Associates of Applied Science could lead to a BAS degree.

Barriers

The qualitative portion of the study identified 15 potential barriers to robust career and technical training in ECHS. To start the Delphi discussion, the panel received five statements from four categories that might present barriers to robust implementation of career and technical training in ECHS. The categories were as follows: 1) accountability and testing, 2) negative perception of career and technical training, 3) the recommended degree plan of the 4 by 4, and 4) regulatory issues. After completing the Delphi and creating the CTQ, the 15 identified barriers tended to be the expansions of the four original research barriers. The barriers that made it to group consensus can be categorized under the same four broad headings that were initially identified (Table 79). As shown in Table 79, the negative perception of the career and technical fields and the regulatory climate are perceived as the areas with the most identified barriers. An

identified barrier may have more than one classification, such as in the case of Barrier 15: *School administrators have a strong preference for traditional academic transfer programs when advising students.*

A principal may personally like career programs but view the regulatory environment as limiting his/her ability to advise students into the programs. On the other hand, a principal may personally feel career programs are inferior avenues for students. In either case, an administrator's willingness to recommend career and technical training is a barrier, but one is a regulatory hurdle and the other a case of negative perception. For that reason, some barriers appear in Table 80 under two or more categories.

Table 80

Categories of Barriers* based on Initial Delphi Questionnaire

Accountability and Testing	Negative Perception of Career and Technical Training	The Recommended Degree Plan (The 4 by 4)	Regulatory issues
Barrier 12	Barrier 1 Barrier 3 Barrier 4 Barrier 5 Barrier 7 Barrier 8 Barrier 14 Barrier 15	Barrier 10 Barrier 13	Barrier 2 Barrier 9 Barrier 6 Barrier 11 Barrier 14 Barrier 15

* Barriers:

Barrier 1: Parents perceive that workforce or vocational/career and technical program are inferior to traditional academic transfer programs.

Barrier 2: An increase in the availability of vocational/career and technical programs could lead to more inequity in the public education system.

Barrier 3: The term Vocational Education has a negative connotation and should be replaced with Career and Technical Education.

Barrier 4: Vocational careers are viewed as low paying compared to professional careers.

Barrier 5: Vocational careers are viewed as less prestigious compared to professional careers.

Barrier 6: Early College High Schools require a student's program of study to have a pathway to a 4 year college degree, limiting some career and technical program options.

Barrier 7: Existing high school vocational programs are oriented toward students with special needs.

Barrier 8: Existing high school vocational programs are oriented toward students with low abilities.

Barrier 9: Policy makers believe that all high school students should have a traditional "College Preparatory" curriculum.

Barrier 10: The Texas Recommended High School degree plan (4 by 4) is a barrier to offering robust vocational programs in ECHS.

Barrier 11: Vocational/Career and Technical training tracks students who are underrepresented in post-secondary education.

Barrier 12: Accountability testing of core subjects (mathematics, science, language arts and social studies) limits the ability of schools to offer a wide variety of vocational options.

Barrier 13: The Texas Recommended High School Plan (4 by 4) does not allow enough flexibility in which courses count for the core subjects (mathematics, science, language arts and social studies).

Barrier 14: High school counselors have a strong preference for traditional academic transfer programs when advising students.

Barrier 15: School administrators have a strong preference for traditional academic transfer programs when advising students.

Accountability and Testing

Accountability and testing were identified in the literature by the panel and confirmed by the CTQ survey participants. Barrier 12 was the only barrier that addressed the accountability issue. The mean agreement of 2.88 on a 1.00 to 4.00 scale as well as 60.42% agreement indicates that accountability and testing could be a potential barrier to Career and Technical training in ECHS.

Negative Perception of Career and Technical Training

By far, the single biggest barrier to career and technical training is identified to be the negative perception various groups hold regarding it as an educational option. Combs (2008) had found students to be lacking awareness of career and technology options. The CTQ survey results suggested that groups of adults (parents, legislatures, regulatory staff, school administrators and counselors) may hold negative perceptions of career and technology, making them reluctant to advise students towards career and technical training.

The catch all term of “vocational” was found to be a negatively associated term by both the Delphi study and the CTQ survey. On a 1.00 to 4.00 scale, the CTQ survey results showed a 3.45 mean level of agreement that vocational should be replaced with career and technology. The vast majority of participants were in agreement (87.50%).

The survey results found the career and technical training suffered from being viewed as a low paying and less prestigious option. The Delphi panelists agreed that the perception existed but suggested that it might be inaccurate. The level of prestige and pay between career and technically-trained students and students who achieve bachelor’s degrees or beyond generally does favor those with the more advanced degree (U. S.

B.L.S., 2010). A terminal degree in medicine (e.g., physician) is generally more prestigious than a technically-trained medical professional (e.g., registered nurse). Doctors are paid better and may enjoy a higher professional status than do nurses. However, if the fields of study are crossed, the status and pay levels between technical degree and advanced degree become less absolute. For example, an elementary teacher with a master's degree or even a doctorate, working in a public school, is less likely to be financially compensated as well as an RN, welder, or a plumber (TWF, 2010). The prestige between these careers is debatable.

The negative association and the lack of awareness of career and technical training are arguably the biggest barrier to the increase offerings at ECHS. The negative perceptions partially feed the issue of regulatory barriers. As long as groups of people (e.g., legislatures, regulatory agency staff, parents, and school staff) hold negative perceptions, the regulatory climate and subsequent barriers are not likely to be addressed.

The Recommended Degree Plan

The Recommended Degree Plan (the 4 by 4), a product of legislative and regulation, merits its own category. The 4 by 4 narrowly defines which classes can be used for mathematics, sciences, language arts, and social sciences degree requirements. These classes generally preclude applied courses that are typically found in career and technology programs.

Both Barrier 10 and Barrier 13 had a majority of the CTQ respondents agree that the Recommended Degree Plan created a barrier. However, they agreed more strongly that a lack of flexibility in the degree plan (62.50%) was a problem than the 4 by 4 in and of itself (56.25%). This mirrors what state board of education member said in calling for

more flexibility in the curriculum to include career and technology options (Texas Superintendents, 2010).

In the study's review of the literature, it was found that high school counselors are required to promote the academic transfer program to students (Younts, 2008). This was confirmed by the state regulatory panelist in the Round 2 of the Delphi, who cited legislation and guidelines that required counselors to develop a pathway to a 4-year degree as part of ECHS degree plans. The majority of the CTQ participants (68.75%) agreed this could be a barrier by either strongly agreeing (29.17%) or agreeing (39.58%).

Regulatory Issues Creating Barriers

What is the purpose of secondary education in Texas? Although it was not a specific research question or an area under study, the Delphi panel seemed to be at odds with the role of education as it pertains to future employability. In the Delphi panel discussion, the role or purpose of education in relationship to future employment was unclear. Panelists' perceptions and perspectives appeared to be colored by their employment. At the community college level, career and technical (workforce) programs are strictly tied to job market forces. The study's panelists indicated that programs of study are opened, reworked or closed based on local market forces and business advisory councils. Members of the panel representing career and technology or community colleges appeared to advocate that the primary role of secondary education is to prepare students for work. Those employed in schools and members of educational advocacy groups tended to agree that job preparation was an important, if not the primary, role of secondary education.

The majority of the CTQ respondents (70.84%) either strongly agreed (29.17%)

or agreed (41.67%) that the college preparatory track does not reflect the actual labor market. In the Delphi panelists' responses, it was pointed out that high school dropouts (30%) and those that do not attend post-secondary education (20%) are being underserved by the college preparatory track because they are exiting high school without marketable skills (A Nation Accountable, 2008).

The members representing state regulatory bodies, however, did not agree the role of education was to be responsive to the labor markets. Much of what the regulatory members posted about the role of education had to do with the need for equity. The focus on equity was increasing the actual numbers of underrepresented populations achieving goals such as a bachelor's degree. A state regulator cited research indicating that underrepresented students with career and technical training were likely to seek employment rather than attend colleges and/or universities.

Interestingly, the two barriers that dealt with equity enjoyed the least levels of support among CTQ survey participants. Barrier 2: *An increase in the availability of vocational/career and technical programs could lead to more inequity in the public education system*, on a 1.00 to 4.00 scaling, achieved a mean agreement rate of 1.94, and the majority of the participants (70.86%) did not agree that CT would cause inequity. Barrier 11: *Vocational/Career and Technical training tracks students who are underrepresented in post-secondary education*, had a mean agreement of 2.53 on a 1.00 to 4.00 scale, and 47.91% agreeing that underrepresented groups might be tracked by career and technical programs.

Regarding the "one size fits all" track to graduation debate, the trend in Texas is to raise the educational standards for all students. The trend has resulted in what has

become known as one track to graduation. Students in high schools are required to take college prep curriculum irrespective of their eventual career choices. Combs (2008) categorized the “one size fits all” approach to graduation as problematic. In the second round of the Delphi, the terminology seemed to hit a nerve among panel participants who represented state educational regulatory agencies. While none of the panelist who worked for state regulatory agencies agreed with Combs, the majority (55.56%) found her characterization to be correct. The majority of the CTE participants (62.50%) either strongly agreed (18.75%) or agreed (43.75%) with the “one size fits all” characterization of the high school curricula in Texas.

The most interesting finding in the Delphi portion of the study was the perception gap between those that worked in a regulatory capacity and everyone else on the panel. In the Delphi portion of the study, it was interesting to note that when disagreement occurred, it generally broke into two groups, participants who worked in state regulatory capacity and everyone else. In several questions in Rounds 1 and 2, the state regulators were at odds with the other panelists.

On issues such as the value of accountability testing; the potential threat of career tracking; the merit of having all students enrolled in college preparatory curriculum; the need to increase the number of students receiving bachelor’s degrees, the panelists broke into two factions. Largely the splits went 6/3, 5/3 or 5/4 with the regulators in agreement with each other. In the contentious statements, the three state agency people tended to agree or disagree in unison.

The second interesting area is the consensus that problems exist in the educational system that may be addressed by the application of career and technology to the ECHS.

The potential is largely untapped by the existing models. From the CTQ survey, two additional ECHS were named to add to the one identified as serving career and technology programs. But that brings the total to less than 10% of the existing ECHS that serve career and technical programming.

Implications

The study confirmed that there is a role for career and technology training in ECHS. The ability to merge the training for job skills available at the 50 state community college districts, with the secondary programs in their service area, may be a practical strategy to address a host of concerns in the state including the high school dropout rate, underemployment, and the unmet need for skilled workers in the workforce. Barriers exist that prevent the potential of career and technical programs from being fully realized in the ECHS.

Career and technical programs may benefit from an image update. The negative perception of career and technical training must be overcome with the realities that exist in the state. Many of the best paying career opportunities in the state are available through career and technical programs. Chronic shortfalls in Texas in a variety of fields including nursing, medical technician, welders, machinists, and computer technicians will remain unfilled until Texas starts educating students to fill these jobs.

The lack of agreement on the role of secondary education was alarming. What is the role of secondary education in the state of Texas? Is it to prepare students to enter the workforce; to prepare the students for further training; or to promote citizenship? Or as the regulatory panelists appeared to believe, is the role of secondary education to promote equity? The regulatory agency panelists were more likely to view equity as a concern

than did any other panelists. The perception of inequity is not viewed as much of a concern among practitioners as it is among regulators. The focus on the issue of equity may be causing a kind of reverse inequity by itself. Irrespective of gender, ethnicity, or economic status, students who would thrive in career fields do not have access to the required training when they need it the most, which is prior to entering the job market. Overall, the career and technical programs do have an important role in our educational system; the question is how to go about implementing them robustly in ECHS?

Changing 4 by 4 degree plan requirements to allow applied mathematics and science options to count towards the degree plan is a potential strategy. The partnership between community colleges and high schools must be strengthened, and steps must be taken to allow flexibility in awarding degrees. Changing the structure so that community colleges may award high school diplomas to students who spend their junior and senior years at the college to complete a career and technical program is another practical option.

Recommendations for Further Research

The study confirmed what the previous researchers had identified regarding the barriers that exist to fully implementing career and technology in ECHS. The study did not identify ways to overcome these barriers or make any determination why the barriers existed, and/or the legitimacy of the identified barriers; all should be addressed in future studies.

The study unearthed a perception gap within the education field. Practitioners and advocacy members in education tended to perceive that the role of education is to prepare students for eventual role as workers. The study participants, who were employed by state regulatory agencies, at least in part, viewed the role of education as a

social equalizer. Clarity of purpose will help the secondary institutions do a better job in serving their students. In the feedback, study participants indicated high schools existed to have students pass the accountability test, to equalize opportunities, to prepare people for college, and/or to prepare students for future assignments. There is no agreement on the role of secondary high school education, which should be investigated.

The 'one size fits all' method to graduation is a barrier and a problem in Texas. The method is designed to raise the educational attainment of all students in Texas. However, it may actually limit the opportunities for the students it is designed to serve because the students are not told of other options such as career and technology. Research is needed to determine how competing goals of serving students, promoting equity, and attaining economic sustainability may be aligned to better serve the public.

Final Remarks

Although the study focused on Susan Combs' research and reports, it must be noted that she had utilized various state and federal governmental sources (e.g., Texas Workforce Commission, The US Bureau of Labor Statistics) to compile the reports. In conducting the Delphi study, several trends were observed. For example, in Round 1 and Round 2, the panelists that worked in a regulatory capacity tended to agree/disagree in unison. On contentious matters, such as the effect of accountability, the need for more legislative action, and the "one size" or one track to graduation question, the agreement/disagreement was split between the regulators and non-regulators. The second trend noted in the feedback from the panelists was disagreement on the role of secondary high school; the panelists split with the majority supporting the idea that secondary education was to prepare students for work and/or further education. A minority view

was that an important role of education was to bring about equity of outcomes, which also felt that CAT education must be used to track underrepresented students.

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APPENDIX 1

Round 1, Round 2 and Round 3 Panelist Feedbacks

The unedited transcripts were color coded
to assist with organizing the comments.

Appendix 1 - Unedited transcript of Round 1 Delphi Panelist Feedback

Identified Barriers to or Perceive Role of Vocational Education in Early College High Schools	Agree Disagree	Feedback on the Identified Barrier
<p>the accountability movement which results in teachers focusing extensively on subjects tested causing “[o]ther subjects and development processes, such as career awareness...[to be] minimized, or even abandoned...”</p>	Agree	<p>When students do not master the TAKS, they are pulled from the career and technical courses to schedule students into remediation or tutorial courses.</p> <p>At the middle school level, the students have many requirements that do not allow career awareness courses to fit into the schedule.</p>
	Agree	<p>This is driving the focus of education in Texas in many schools. Educational leaders are under immense pressure to perform and this flows down to teachers.</p>
	Firmly agree	<p>Additionally since the test is for “minimal” skills it does not even project an attitude of achievement for any level of education or training.</p>
	Disagree	<p>Career and technical coursework, especially as offered through dual credit, seem to keep the focus squarely on the CTE subject. Generally, however, a focus on developing skills that are routinely tested for accountability within CTE coursework cannot be but a good thing. To be successful, students pursuing CTE need the same core skills (cross-disciplinary, reading, writing, math) needed by students pursuing an academic track.</p>
	Agree	<p>My agreement reflects comments I have heard from high school teachers.</p>
	Agree	<p>Focus is on teaching the test and we focus on those tests that evaluate school performance, reading, math, etc. No focus on the value of vocational education skills since they don’t test across the entire student population</p>
	Disagree	<p>I am disagree to neutral on this because I think that when good teaching is occurring,</p>

	<p style="text-align: center;">Agree</p> <p style="text-align: center;">Disagree</p>	<p>students learn skills and build capacity that translates into being able to pass tests. However, an unintended consequence of high-stakes testing, particularly for teachers that are newer or less skilled, is to teach to the test. However, I do not think that this would be a reason not to include career and technical education in an ECHS.</p> <p style="color: orange;">Due to the focus on accountability and "college readiness", workforce skills and education have been virtually abandoned in the public school system. This is leaving out a population of students who will not attend college and may not pursue any post-secondary education.</p>
<p>a perception that workforce programming is degrading</p>	<p style="text-align: center;">Agree</p> <p style="text-align: center;">Agree</p> <p style="text-align: center;">Agree</p> <p style="text-align: center;">Agree</p>	<p>The middle class population grew-up with families working in the trades. This population grew up thinking that their children would do better than them and thus would not have to work at a trade. Their children would be educated and work in an office where they would not get their hands dirty. The idea that education is espousing the idea that their children will be involved in learning how to be a part of the workforce is perceived as degrading and appropriate only for students who have no desire to excel in academics. Basically, the trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional, i.e. lawyer, doctor, etc..</p> <p style="color: blue;">This can be changed with the right approach and promotion of certain values, i.e. working with your hands is not demeaning, learning how to answer the telephone is not demeaning. We can't all be bosses from the very beginning. There has to be an apprenticeship/training.</p> <p style="color: green;">Higher ed degree plans are the only programs given praise or respect. "Lesser program" and training are ignored.</p> <p style="color: red;">Only marginally an "agree." One problem</p>

		<p>is that workforce development is targeted often to students who are underrepresented in postsecondary (rural, low-income, minority, etc.); also, since CTE certificates and associate degrees only VERY RARELY form part of a pathway to the baccalaureate, students who pursue these paths are often tracked away from 4+ year degrees. Workforce programming thus both image-wise and in reality does not translate into higher degree attainment, so in some sense is “degrading.”</p> <p>My agreement reflects interactions with high school counselors and others who lean strongly toward traditional academic transfer</p> <p>I have heard mention of a “real college degree” meaning four years and not vocational training. Good luck when someone needs an electrician or a mechanic!</p> <p>There are examples of CTE courses in ECHS both in Texas and in other states across the country (North Carolina for example). ECHS was originally designed to raise expectations for students who have not historically had access to college – many of these students were tracked into CTE courses by teachers and administrators who assumed that they were not capable of going to a four-year college. There are many studies that show that students with equal test scores end up in very different courses and the divide is usually along racial and socioeconomic lines. In other words, they have the ability but not the opportunity.</p> <p>The Texas High School Project and the College and Career Readiness Standards Process and Achieve Texas are all intently focused on college AND career readiness. However, the goal is to provide students with access to courses that result in a living wage and whenever possible courses that have pathways into four-year degrees. In the three organizations or processes listed above</p>
	Agree	
	Agree	
	Disagree	

	<p>Agree</p> <p>Disagree</p>	<p>(THSP, Readiness Standards, and Achieve Texas) there is a recognition that CTE courses can and should be rigorous and connected to postsecondary opportunities (which are defined as 2-year, 4-year, and certificate programs).</p> <p>However, the “go-to” thinking for individuals who are not familiar with the nuances of Early College High School and the way in which it is supposed to provide access to opportunity is to implement CTE courses without connecting them to viable career and academic pathways. In other words, it is not the perception that these courses are degrading, but the fact that in order to implement them well, a mind shift is required by both districts and their higher education partners.</p> <p>I have had several surrounding school districts tell me that "workforce" education is viewed as a lower-track and reserved only for those who show a very low academic aptitude.</p>
<p>public and policy maker expectations that all students, no matter their post-graduation plans, should have a “college preparatory” curriculum.</p>	<p>agree</p> <p>Agree</p>	<p>The State thinks that by legislating that all students must perform well, that it will happen. Some of these students have true learning disabilities that need to be addressed. It is unlikely that all students will be able to perform at the same level. Schools are penalized if all students in special education do not master the TAKS.</p> <p>There is no such concept that one size fits all or that a college preparatory plan is for all students. Students need to take CTE courses that will allow students opportunities throughout the community. this provides an analysis of the reading level of a variety of textbooks. Noteworthy that some that are used in CTE courses have a very, very high difficulty scale.</p> <p>The State got this wrong in promoting the new 4x4 standards. We’ve created the impression that you’ll have to go to college to succeed. Postsecondary education and</p>

		<p>training is what should be pushed.</p> <p>The expectation ignores the reality that 30% of the students are not being served by the current system. – See IDRA report on dropout rates. The Gates wants over 60% of students to become 4+ year college graduates, when the reality in the state is less than 30% of the jobs require Bachelor’s degrees. The high paying technical skilled jobs are the ones not being filled.</p> <p>unpublished) Survey of CTE instructors at Texas IHEs, shows that CTE programs/coursework require comparable levels of preparation (i.e. college preparatory). See, too, MetaMetrics Lexile Text Measurement and Analysis Report, August 2008</p> <p>http://www.theceb.state.tx.us/index.cfm?objectid=31B8BC2A-FCBA-23A7-35A1DB771335FC07&flushcache=1&showdraft=1</p> <p>If there were a weaker agreement, I would choose that rather than disagree, actually. I see a current trend toward policymaker support for workforce (vocational) training related to economy issues</p> <p>Elitist attitude</p> <p>Much of what I wrote in the cell above applies to this – college is being much more broadly defined to included completion of Associate’s degrees and certificates.</p> <p>There are examples of CTE courses in ECHS both in Texas and in other states across the country (North Carolina for example). ECHS was originally designed to raise expectations for students who have not historically had access to college – many of these students were tracked into CTE courses by teachers and administrators who assumed that they were not capable of going to a four-year college. There are many studies that show that students with equal test scores end up in</p>
	Agree	
	Agree	
	Disagree	
	Agee	
	Agree	

	<p style="text-align: center;">Agree</p> <p style="text-align: center;">Disagree</p>	<p>very different courses and the divide is usually along racial and socioeconomic lines. In other words, they have the ability but not the opportunity.</p> <p>The Texas High School Project and the College and Career Readiness Standards Process and Achieve Texas are all intently focused on college AND career readiness. However, the goal is to provide students with access to courses that result in a living wage and whenever possible courses that have pathways into four-year degrees. In the three organizations or processes listed above (THSP, Readiness Standards, and Achieve Texas) there is recognition that CTE courses can and should be rigorous and connected to postsecondary opportunities (which are defined as 2-year, 4-year, and certificate programs).</p> <p>However, the “go-to” thinking for individuals who are not familiar with the nuances of Early College High School and the way in which it is supposed to provide access to opportunity is to implement CTE courses without connecting them to viable career and academic pathways. In other words, it is not the perception that these courses are degrading, but the fact that in order to implement them well, a mind shift is required by both districts and their higher education partners.</p> <p>Again, all students will not go to college. It may be due to academic ability, financial resources, family circumstances or other environmental factors. Workforce and/or tech skills would be useful is helping non-college bound students be successful in the laabor market</p>
the recommended degree plan 4by4	Disagree	Students should be provided a quality education, however, not all students need to take 4 years of math and science. Because students have to take additional 4 th year core academic courses, there is no room in the schedule for students to take career and technical courses. The CTE courses allow students to explore different areas of interest

		<p>that might encourage them to pursue postsecondary education to pursue a career after high school. Some students drop out because they do not see the relevance of the courses to their lives.</p>
	Agree	<p>This is forcing schools to reduce certain class offering that don't count towards the recommended or distinguished program (diploma)</p>
	Agree	<p>Students actually say that they have a "four year" degree because they've attended college for four years.</p>
	Agree	<p>See above comment. Important to maintain the 4x4 for adequate preparation for CTE or academic postsecondary education. unpublished) Survey of CTE instructors at Texas IHEs, shows that CTE programs/coursework require comparable levels of preparation (i.e. college preparatory). See, too, MetaMetrics Lexile Text Measurement and Analysis Report, August 2008</p>
	Agree	<p>http://www.theccb.state.tx.us/index.cfm?objectid=31B8BC2A-FCBA-23A7-35A1DB771335FC07&flushcache=1&showdraft=1</p>
	Agree	
	Agree	<p>Based on anecdotes from school districts, but not my own experience, I understand that it is difficult for schools to balance the requirements of 4x4 with CTE courses.</p>
	Agree	<p>This option should be available for college-bound students, but other, more flexible options should be offered to those who choose to pursue alternate paths.</p>
	Agree	
perception that the role of ECHS is to serve students interested in	Agree	<p>Postsecondary education takes many forms. It does not have to have a university degree</p>

<p>university degrees.</p>		<p>attached. Students can pursue other degrees or certification that will allow them to have different exit points, after 18 months, 2 years, 4 years, etc.</p> <p>Is we wanted to create a different impression then ECHS have to be created with that option from the very beginning.</p> <p>What will society turn into if all students end up with a Bachelor's degree, whether suited to their talents and dreams or not?</p> <p>Sort of agree. One of the missions of ECHS is to track underrepresented students into degree pathways.</p> <p>Focus almost entirely on academics, not vocational.</p> <p>I am disagreeing with this for two reasons – the way that it is written, particularly the words “perception” and “students interested in university degrees” seems to miss the point of ECHS.</p> <p>Early College High School is designed to provide students with 60 college credit hours or an associate's degree – the program is fundamentally designed to provide students with college credit with the specific intent of helping them earn enough college credits so that they will continue on to complete a 4-year degree ... so it is not just a perception that this program is focused on four-year degrees – it is by design of the Gates Foundation and in the definition created by the Texas Legislature in TEC 29.908.</p> <p>In addition, the goal is to serve students who would not otherwise consider attending college – so the statement that Early College is only for students who are “interested in university degrees” fails to recognize that the stated purpose of the program is to engage and serve students who would not otherwise consider attending college.</p>
	Agree	
	Firmly agree	
	Agree	
	Agree	
	Agree	
	Disagree	

	<p style="color: green;">Agree</p> <p style="color: blue;">Disagree</p>	<p style="color: green;">All of this being said, there is room for CTE to be included in ECHS. It is occurring at Hidalgo, Panola, and Roscoe in Texas as well as in North Carolina. However, because ECHS is designed to open up opportunities to go to a 4-year college, it is very important that the college-culture in an ECHS be front and center and that the CTE components do not become the end goal – this would be counter to the definition from the Gates Foundation, the Texas Legislature, and the TEA.</p> <p style="color: orange;">Most of the research that I have seen to date implies that ECHS are college preparatory in nature. I think that they have multiple roles to play, and that the perception could be changed</p>
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Additional Comments from Round 1

1. Lack of teachers Are their staff with the skills necessary to teach certain disciplines
2. Size of district Small isd's/schools probably need to team with other isd's to be of sufficient size to offer a good program
3. There is no respect or recognition given to the professions represented by the vocational programs. The attitude is that they are for students who “can’t” get a Bachelor’s degree without any thought that they might prefer to choose a vocational trade!
4. How do the current policies affect and influence the 1/3 of our population that do not graduate? How many would have stayed in school and graduated with some sort of vocational option?
5. CTE brings up issues of equity

6. In the end this is the biggest issue for CTE education (with or without the ECHS model). As mentioned above, there are few if any pathways to the BA for CTE students, which means students who select the CTE track are effectively barred from the earning of a higher degree, which has real implications. Students who select a CTE pathway in HS typically are not getting the kind of preparation that would be needed for postsecondary degrees. To earn a Level 2 certificate, however, the student MUST test college ready. This is very difficult to do, if the student has not had a college-prep curriculum. This means students who are not “college-ready,” will top out at a Level-1 certificate.
7. Perception that students in high school are not ready for college work and students of mixed ages in the same classroom do not work well together
8. Perception that students in high school need a general education and are not mature enough to select a major (vocational or academic track) at a young age. Get them a general education when young and let them choose their track later.
9. Parents preference that their little geniuses all obtain four-year degrees
10. Perception that if students start the program in high school there is no money or help for them to finish out the program once they leave the high school
11. Pegging students that are “gifted” as academic and students less gifted (but very hard workers) as vocational, i.e., unable to do academic college work, especially in high school

Delphi Round 2 – Unedited Feedback from Panelists

Delphi Round 2 – Barriers and Role of Vocational Educational in ECHS		
Modified or Additional Barriers to or Perceive Role of Vocational Education in Early College High Schools	Agreed Disagree	Feedback on the Identified Barrier
The accountability movement which results in schools focusing extensively on subjects which are tested causing “[o]ther subjects and development processes, such as career awareness...[to be] minimized, or even abandoned...”	Agreement	The accountability system is designed to reward or “punish” schools and school systems by the performance of students on a minimum standard test. If the student does not master the test, the student is pulled from elective classes, i.e. CTE classes and placed in a TAKS remediation class. This action impedes the student from participating in a coherent sequence of CTE courses that would allow the student to explore career options and skills.
	Agreement	Unless schools that are great at the provision of a great vocational education curriculum are rewarded for doing so via the state accountability standards, this will continue to be minimized. What I am suggesting is perhaps incorporating a vocational educational component so that schools that are also strong in this area, are rewarded/recognized in some manner. I am not advocating more testing, but perhaps that is the only choice.
	Agreement	We no longer educate children to learn we teach them how to take tests and write to a prompt.
	Disagree- ment	Career and technical coursework, especially as offered through dual credit, seem to keep the focus squarely on the CTE subject. Generally, however, a focus on developing skills that are routinely tested for accountability within CTE coursework cannot be but a good thing. To be successful, students pursuing CTE need the same core skills (cross-disciplinary, reading, writing, math) needed by students pursuing an academic track.
	Agree	Some of the changes to Programs of Study, beginning this year, may be helpful to vocational education. It will take some time to know. I do not know all the specifics, but at least one district in the region surveyed career/tech instructors regarding an alignment of their location and curriculum with academic support instructors, the goal of which was to

	<p>Agree</p> <p>Disagree</p> <p>Agree</p>	<p>provide career-specific writing, math, reading opportunities. The career/tech instructors were not in favor of the change, concerned that they would lose program identity.</p> <p>We are teaching the test. Focusing narrowly. Accountability to testing agencies rather than society. Ignoring equally valid career choices such as vocational/technical.</p> <p>First, if an Early College High School is implemented according to the required design elements, it should focus on teaching and learning and specifically the Common Instructional Framework – which is designed to be used in all classrooms regardless of subject area - rather than “teaching to the test.”</p> <p>Second, there are Early College High Schools currently in operation that use Career and Technical Courses to provide flexibility that is not always available in standard courses.</p> <p>I can see how and why others would agree that accountability can be a barrier because it IS a barrier in education. However, the goal of Early College High School is to teach and learn in a new and different way – it is a high school redesign model. If Early Colleges implement the Common Instructional Framework and build a college-going-culture, then it should not matter what courses they are teaching – it should all be focused on getting students ready for life after high school.</p>
<p>adult perception that workforce programming is degrading that limits their willingness to advise students to consider vocational careers.</p>	<p>Agreement</p> <p>Agreement</p>	<p>Many adults (parents) want their children to improve their quality of life and to earn more money than themselves. Many adults (parents) equate a better-paying, high prestige job with an indoor setting. The attitude is that if a person dirties their hands, the job is inferior to one where the person reports to work in a suit and tie. Therefore, many adults are hesitant to place students in CTE classes that are considered trades.</p> <p>We need to do a better job of showing how success in the classroom can lead to success in the workplace as well as college. We have had “a white collar is better” mentality for that last 30 years or so. If fact with the rise in technology, that has become even more of the norm. We don’t often celebrate the success and competence of the blue color worker. Business awards typically don’ focus on such skills. So we have to start</p>

	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p>	<p>someplace in recognizing the skills and competence of the American worker.</p> <p>I believe it is a misperception considering my friends with vocational nursing degrees making twice what my masters in teaching makes.</p> <p>Only marginally an “agree.” One problem is that workforce development is targeted often to students who are underrepresented in postsecondary (rural, low-income, minority, etc.); also, since CTE certificates and associate degrees only VERY RARELY form part of a pathway to the baccalaureate, students who pursue these paths are often tracked away from 4+ year degrees. Workforce programming thus both image-wise and in reality does not translate into higher degree attainment, so in some sense is “degrading.”</p> <p>I wouldn’t use the term, degrading, but I believe many school counselors/teachers/other adults devalue those programs, as compared to more “academic” pursuits, when influencing students.</p> <p>Blue collar workers are often seen as second class citizens. Most citizens are blue collar workers.</p> <p>Negative perceptions of workforce programming exist in education, but this has not stopped Early College High Schools in Texas from developing rigorous, college-connected CTE courses and strands within their schools. In fact, those that are doing this well have become models for other schools. Therefore, I do not agree that this is a barrier to including vocational education in ECHS.</p>
<p>Public and policy maker expectations that all high students, no matter their post-graduation plans, should have a traditional “college preparatory” curriculum.</p>	<p>Agreement</p>	<p>Current research and attitudes support the idea that “all” students, no matter their academic status or interests, will benefit from taking college preparatory courses. Students that have been identified as needing “special education” are also being challenged and expected to master the knowledge and skills at grade level. While this philosophy is noteworthy and noble, the reality is that there is not a “one-size fits all” solution to education. Consideration to offering options that can be customized to “fit” a student’s needs, learning style, and interests should be considered and recognized as worthy alternatives to college preparatory for all.</p>

	Agreement	We are measuring ourselves against the rest of the world in the area when we should also be measuring ourselves against each other. The question is not how many more college graduates do we need by the year 2020 its how skilled jobs need to be filled in the year 2020 and what skills will those jobs require.
	Agreement	I think this goes back to the high stakes testing issue. If we can't test everyone on the same body of knowledge how can we quantify it? If we cannot quantify it how are we accountable?
	Agreement	CTE programs/coursework require comparable levels of preparation (i.e. require college preparation). The misperception that exists is that CTE programs do <i>not</i> require rigorous preparation across the foundation area.
	Agree	
	Agree	
	Disagree	<p>I continue to disagree, at least from the perspective of TEA and the Texas High School Project because our stated goal is college AND career readiness. The intent is to provide students with options so that they can choose whether or not they go to college, rather than having the decision made for them:</p> <ol style="list-style-type: none"> 1. by a school administrator who thinks they are not college material or 2. based on the fact that they do not have the academic preparation or skills that will allow them to matriculate to postsecondary and be successful. I think this applies to certifications as well as degrees because if you do not take either the "college preparatory" curriculum or a well-designed CTE strand that aligns to a college major or degree, then it is MUCH more difficult to attend either a two-year or a four-year college.
The recommended degree plan (4by4)	Agreement	Again, the students are being forced to take additional academic courses to enhance their college preparatory credentials. While this is a worthwhile pursuit and while many students will benefit, the 4X4 proposal is not for "all students". These additional required courses will impede students from enrolling in CTE classes that will enhance their ability to make informed decisions about career choices.
	Agreement	

	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Again, we limited the different paths that can lead to success because we limited the definition of what it means to be minimally successful.</p> <p>It is more than recommended, students are not even informed of other choices until they have failed. The problem is not with students taking math, science, history ect... The problem is there is no option for applied.</p> <p>Important to maintain the 4x4 for adequate preparation for CTE or academic postsecondary education.</p> <p>Assumes 4 years higher education</p> <p>It is difficult to balance 4x4 with CTE courses</p> <p>This can be overwhelming and burdensome for some students...especially those with more kinesthetic and tactile learning styles.</p>
<p>The role of ECHS by legislative intent and original program guidelines is to enable students to earn 60 hours or Associates while working towards a Bachelors Degree.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agreement</p> <p>Agreement</p> <p>Don't Know</p> <p>Disagree or no opinion</p> <p>Disagree</p>	<p>The intent of ECHS is noble and intended to place students on a fast track to receiving a college degree. However, courses that allow students to explore career options are critical. Space in the student's schedule for career exploration courses.</p> <p>That may be a problem if a student would be better off with a level one certificate. I think the Colleges even offer work ready programming that only lasts one semester like truck driving or lab technician.</p> <p>One of the missions of ECHS is to track underrepresented students into degree pathways.</p> <p>I don't specifically know the legislative intent and original program guidelines, but if they were as described in column 1, I would agree</p> <p>Don't know what the intent was</p> <p>This is not a barrier – it is the design of the program. If the Gates Foundation had designed ECHS to expand CTE offerings, it would have been introduced to the state that way. However, it was specifically researched and designed with the intention of increasing college readiness and access by providing either an associate's</p>

		<p>or 60 college credit hours toward a baccalaureate.</p> <p>This is THE defined goal of ECHS – so keeping this in mind, the question becomes – what alignments exist between high school CTE courses and associate’s degrees and bachelor’s degrees?</p> <p>In the United States, there is not a close alignment between high school and college. ECHS is attempting to bridge the divide, but it was not specifically intended to also figure out how to align high school CTE courses with college pathways. That is not to say that it cannot happen. Instead, it is to point out that the way in which the program has been developed is in an attempt to address P-16 issues such as: college knowledge for students, expanding dual credit, and building deep partnerships between districts and colleges.</p> <p>Because the schools scale up on year at a time in order to allow both the college and the district to identify and address the issues that arise each year, it has taken four years for schools to uncover the full scale of concerns involved in merging two systems that were not designed to work together. Along the way, both TEA and the Coordinating Board have had to figure out how to develop policies that accommodate the schools.</p> <p>I think this is important to understand when trying to identify the barriers to vocational education.</p>
<p>Legislation is needed to create a vocational equivalent of an ECHS with flexibility in required curriculum.</p>	<p>Agree</p> <p>Disagreement</p> <p>Agreement</p> <p>NOOOOO!</p> <p>Maybe</p> <p>Disagreement</p>	<p>CTE has worked long and hard to be accepted as a legitimate part of the comprehensive educational system. If CTE was segregated as a special school, it would send the message that CTE has to be separated from the regular curriculum.</p> <p>It this could be done without legislation or without the participation of the Higher Education Coordinating Board, that would also be preferable.</p> <p>I think schools overall need more flexibility to work with the students they serve. More legislation is what has gotten us into this problem</p> <p>Again, any vocational tracking would have to be pretty strategic and include adequate “college prep,” so as not to track students out of the 4-yr degree pipeline.</p> <p>I would prefer it if changes could occur with</p>

	<p>Disagree</p> <p>Disagree</p> <p>Agree</p>	<p>review/restructure of current legislation. I don't know the original legislation well enough to know if this is a possibility.</p> <p>We need less legislative interference in our schools and more responsible local control to more quickly respond to local needs.</p> <p>I went back and forth and back and forth on this – the question I pose back to you – is what is your goal?</p> <ol style="list-style-type: none"> 1. Are you trying to infuse CTE into Early College? 2. Is ECHS a model of P-16 partnership or state support for an innovative program? 3. Is the goal to be more flexible with dual credit offerings and/or 4x4 curriculum so that it better accommodates CTE? 4. Is the goal to receive a lift on dual credit restrictions? <p>I ask all of these questions because without a deeper understanding of what the goal is, I can't agree that we need legislation to create a "vocational equivalent of ECHS" ... depending upon the goal, we may not need legislation – we may need to change rules at one of the agencies.</p> <p>However, if the goal is to make Early Colleges that are vocational, then we are talking about making changes to the design of the ECHS program, which is research-based.</p> <p>If we just want to infuse CTE into Early Colleges, then this is already happening, which means that it is incumbent on the college and the school district to develop a partnership that encompasses CTE as well as standard dual credit.</p>
<p>An unintended consequence of accountability and/or high stakes testing is not serving the needs of a portion of the population of students who will not attend college and may not pursue any post-secondary education</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Disagree-</p>	<p>If students are tracked to early in the process of deciding whether they are on a college versus other post secondary track, they will loose interest and perhaps drop out of school.</p> <p>High stakes does not serve the students. We have moved towards education being about serving the tests so students are no longer the center of what we do.</p> <p>High stakes testing has a lot of unpleasant</p>

	<p>ment</p> <p>Disagree- ment</p> <p>Agree</p> <p>No Response</p> <p>Strongly Agree</p>	<p>consequences, but this is not one of them. Again, research/data indicates that students who are to succeed in CTE pathways NEED a rigorous foundation.</p> <p>Students who choose not to attend college should still meet objectives of high school graduation.</p> <p>We test academically and that's it.</p> <p>I don't understand what this statement means – the way that it is written is confusing to me.</p> <p>I think what it is trying to say is that because of high stakes testing and accountability, a portion of students will not pursue any post-secondary education.</p>
<p>Vocational education and Career Tracks bring up issues of equity.</p>	<p>Agreement</p> <p>Agreement</p> <p>Disagree</p> <p>Agreement</p> <p>No opinion</p> <p>True</p> <p>Agree</p>	<p>That is true if school personnel assume that students that are not academically gifted or interested in academics should be the only students “tracked” into vocational education.</p> <p>When was the last voc ed fair versus college fair that your students attended.</p> <p>I think vocational education is a scapegoat for equity issues. At one time students were probably inappropriately tracked into vocational courses due to ethnicity, gender and/or economic status. Now we are doing the same inappropriate tracking by forcing all students into a 4 year college track to ensure we do not discriminate against anyone. Isn't that in and of itself just a form of discrimination?</p> <p>Because the structure of CTE in the state (and nationally, too) does not allow students to easily transition into 4-yr degrees, which by most counts are a requirement for social/political/economic success.</p> <p>The statement needs further clarification before agreement/disagreement.</p> <p>Lower income people get shuffled to vocational/technical and perpetuate the images of society when truly it should be a skills choice rather than a socioeconomic or gender choice.</p> <p>There is a longstanding perception, and reality in some places, that CTE is a tool for tracking.</p>

	Disagree	<p>If four-year colleges would develop programs such as Engineering and Architecture or even Drama (Stage and Lighting Design) that began as pathways in high school, then this perception may not exist.</p> <p>However, this requires P-16 partnership and it could be done outside of ECHS.</p> <p>This is a common argument among policy makers, but educational equity is generally defined as the right of all students to have equal access to classes, facilities, and educational programs no matter what their national origin, race, gender, sexual orientation, disabilities, first language, or other distinguishing characteristic...not that they must all pursue one generalized path. Differentiation of opportunity should include vocational/career learning options.</p>
<p>“Accountability” has become the primary mission of schools limiting the opportunity for students to experience vocational programming which is not tested.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Don't Know</p> <p>No opinion</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p>	<p>Current law and rules leaves schools and districts with few other choices</p> <p>See above for comments on high stakes testing. If CTE coursework would sufficiently cover the required TEKS to be tested, this might provide a loophole that does not limit student access to a rigorous foundation..</p> <p>This is the first time I've heard the message in this way.</p> <p>By legislation unfortunately</p> <p>I disagree because I don't think it's the fact that CTE courses are not tested – there are many untested subjects in K-12 ... sure, accountability is the primary mission of some schools, but the issues that it raises affect much more than CTE courses.</p>
<p>Vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p>	<p>Take a survey of 6-12 graders where they get to choose what they want to be when they grow up. I doubt the majority would choose occupations in the voc ed. Area.</p>

	<p>Sometimes</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Unfortunately that view is often very incorrect.</p> <p>Snobbery in society</p> <p>See statements above about high school to college pathways – part of this is public perception ... so it may be a matter of marketing – plumbers, welders, and air condition repairmen make good money, but the jobs that most high school students are aware of are teacher, doctor, and lawyer.</p> <p>The reality is that many people – parents, students, and community members – don’t know or understand what levels of education are required for different jobs or what level of pay is associated with the jobs.</p> <p>This is the prevailing view, however, the majority of my high school classmates who pursued vocational careers are making much more money than I am...having pursued the collegiate track.</p>
<p>Perception that vocational training targets (tracks) students who are underrepresented in postsecondary education (rural, low-income, minority, etc.)</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Sometimes</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Is there data to supports this view?</p> <p>I agree this is the perception, I do not agree this is the reality. I believe we are discriminating in reverse by not letting students know about skilled professions as an option.</p> <p>Not sure if CTE “targets” such students, but such students are heavily represented in CTE and ARE “tracked” out of 4-yr pathways (CTE pathways typically end at the associates and do not transfer or articulate to a BA...)</p> <p>This is a frequent example cited at Columbia, but as long as programs are offered to all students then equitable opportunity is insured.</p>
<p>School counselors and administrators have a strong preference for traditional academic transfer programs.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p>	<p>Is easier, if they have the time, to work with students who are a “supposed” college track.</p> <p>I think they are afraid to steer anyone towards anything but a 4 year college degree..</p>

	<p>Don'tknow</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Mostly Agree</p>	<p>Certainly my experience.</p> <p>I am repeating my statement above, but making an addition to it:</p> <p>The reality is that many people – parents, students, and community members – don't know or understand what levels of education are required for different jobs or what level of pay is associated with the jobs.</p> <p>College buys access to a network of people and opportunities. However, one's level of success in this network is not guaranteed and it can depend heavily on the knowledge and connections that we start out with.</p> <p>Do you think that if high school counselors were aware of programs at community colleges or four-year colleges that resulted in a good-paying job or additional opportunities, they would steer students away from them? I don't think so – the academic transfer pathway is what is most familiar and “safe” to most people.</p>
<p>A perception that vocational programs are for students with lower abilities or students with special needs.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Agree?</p> <p>Agree</p> <p>Agree</p>	<p>Is there data that supports this view?</p> <p>The special education are the only students that can take some of the vocational classes at the high schools and junior highs that I am aware of .</p> <p>Shouldn't be, but yes, perhaps. One suspects some policy makers think it is for students who are not as academically prepared since arguments are put forward that such students don't need to be as sophisticated in the foundation disciplines... (e.g. don't take 4x4, because the students don't need to be well versed in science, math, writing, etc...)</p> <p>My experience also. If they can't do math the we stick them in vocational/technical (where by the way they must do math)</p>

	<p>Agree</p> <p>Agree/ Disagree</p>	<p>The seemingly prevailing view is agreement, but technology is shifting the outlook</p>
<p>Mistaken belief that one size fits all (one track to graduation) or that a college preparatory plan is for all students.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>No Response</p> <p>Disagree- ment</p> <p>Agree</p> <p>No Reply</p> <p>Agree</p>	<p>As I mentioned above voc ed fairs versus college fairs are very unlikely.</p> <p>It would be hard to agree with the statement above and not disagree with this one.</p> <p>See my statements above – there appears to be a lack of P-16 partnership that provides extended opportunities for CTE courses beyond high school.</p> <p>If they exist, these are not opportunities that are familiar to most. As a result, they may not seem viable or reliable.</p> <p>This is a HUGE issue...we know that students have different aptitudes, abilities, likes and dislikes (proven by clinical psychologists and behaviorists time and time again), yet we insist on putting them all on the same path.</p>
<p>The high dropout rate indicates the need for diverse paths to graduation including more vocational.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Research has shown that a majority of students learn by participating in “hand-on” instructional activities. CTE laboratories are ideal for addressing this learning style.</p> <p>That’s a give.</p> <p>With the caveat that core competencies need to be taught within and through CTE content</p> <p>Students lack stimulation in their areas of interest which are not necessarily those areas of interest of legislators (many of whom do not have college degrees in Texas)</p> <p>A diversified workforce is essential to the economic growth of the US and should be mirrored in the US education system.</p>

<p>The desire for all students to have a college preparatory program does not reflect the actual labor market that students in need of skills will be entering.</p>	<p>Agreement</p> <p>Agreement</p> <p>Agree</p> <p>Disagree-ment</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>There has to be a balance between acquiring a comprehensive knowledge base and transferring knowledge to solve problems and finding answers to new situations.</p> <p>The skills gap data and other data from the Texas Workforce Commission likely support this view.</p> <p>I read something by Susan Combs that indicated we are producing too many Bachelors and not enough Applied Associates</p> <p>Students need to read, write, etc...</p> <p>Agree – but most parents and students want to grow up to be doctors and lawyers, even if their school does not offer what they need to get there ... so this becomes a workforce issue as well as an education issue.</p> <p>It may not reflect the labor market, but how many kids say they want to be plumbers ... even though it is a skilled job that pays well?</p> <p>A diversified workforce is essential to the economic growth of the US and should be mirrored in the US education system.</p>
<p>Vocational students need the same college preparatory skills as students entering traditional transfer programs.</p>	<p>Agreement</p> <p>Disagree-ment</p> <p>Disagree-ment</p> <p>Don't understand this statement</p>	<p>College preparatory skills do not have to overshadow all other learning. Taking additional higher level courses is not a predictor that students will excel in college.</p> <p>What does the prospective employer say they need/</p> <p>I think everyone up to eighth grade needs a solid foundational skills education: Reading, Writing and Arithmetic. In grades 6th and 7th career and college exploration ought to be a part of the programming. By 8th grade students should pick their path- Not that they cannot change – but pick their path and take appropriate coursework towards their future career.</p>

	<p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Disagree</p>	<p>Prepare the student from the beginning with a completely integrated program. The right kind of math for the vocation or academic track. The right kind of science, etc</p> <p>It depends on how you define college preparatory skills – do you mean working in groups, managing time, and asking questions when you don't understand – if so, yes.</p> <p>Or do you mean, listening to lectures that may be boring or a repeat of information that you have already read; signing up for college courses using an online registration system; and talking your way into sections of classes that are full? Maybe – if you plan to go into community college or a four-year college.</p> <p>A strong foundation is essential, but there is a point where college prep discourages some students who may be better suited for other learning opportunities</p>
The trend of policy makers is turning towards support for vocational programming and training.	<p>Agreement</p> <p>Disagree-ment</p> <p>Disagree-ment</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Agree/Disagree</p>	<p>There is a trend, however, the system that is in place still supports the heavy core academic schedules so that vocational training classes cannot fit into a student's schedule.</p> <p>I am not sure we can call it a trend yet.</p> <p>I know people are recognizing the need but I do not see any trend away from one size 4by4 programs.</p> <p>But applications that do not address the rigor/preparation question, nor the lack of academic pathways post certificate or AAS.</p> <p>Because of economic drivers.</p> <p>I certainly have not seen it.</p> <p>In some areas, this is the case...but there is a long way to go!</p>
ECHS allows opportunity for students	Agreement	This is the ideal situation.

<p>to explore vocational programs available at colleges.</p>	<p>Disagree-ment</p> <p>Don't Know</p> <p>Agree</p> <p>Agree</p> <p>Agree or unsure</p> <p>Agree</p> <p>Agree/Disagree</p>	<p>If true, that is not my perception.</p> <p>It depends on the courses offered to the ECHS students. I suspect most will be put right back in academics.</p> <p>It depends on what the structure is of the ECHS... College Prep schools do not explore vocational opportunities, but health/science and tech academies do a better job.</p>
<p>The 4x4 requirements too narrowly defines what courses count for math, science, English and Social Sciences.</p>	<p>Agreement</p> <p>Agree</p> <p>Agree</p> <p>Maybe</p> <p>No opinion</p> <p>Disagree</p> <p>Agree</p> <p>Agree</p>	<p>4X4 also greatly limits the CTE course choices students can enroll in.</p> <p>Again, would depend on the content/skills delivered. If the curriculum is applicable, then, yes, I agree.</p> <p>I don't have enough facts about this statement to give an informed opinion</p> <p>The true 4X4 assumes a four-year degree. Therefore, math, science, English and social sciences are fairly standard everywhere. I don't believe the definition is narrow for the 4x4. But add the vocational to the equation (which this question does not) and then I agree.</p>
<p>Perception that students in high school need a general education and are not mature enough to select a major (vocational or academic track) at a young age.</p>	<p>Agreement</p> <p>Disagree-ment</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p>	<p>Balance is required. General education should not obliterate vocational education and vice/versa.</p> <p>Exploration of choices needs to start no later than 6th grade</p> <p>I agree the perception might be there, I do not agree it is a reality.</p> <p>Define young age please</p>

<p>Perception that students in high school are not ready for college work and are not ready for career training.</p>	<p>Agreement</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Disagree</p> <p>Agree (some-what)</p> <p>Disagree</p> <p>Disagree</p>	<p>Students in high school are academically prepared, however, they may not be developmentally ready to handle total autonomy in their career training. Students needs guidance and counseling throughout the career training period.</p> <p>We've been running kids, young adults out of the workplace for decades. That backwards. If we want you change this perception we need for employers to reach out and be more inviting.</p> <p>I agree and I agree. There is a perception and it has a basis in fact. I do not believe that dual credit when offered on the high school campuses is as rigorous as college work. Of course in college we always knew who to take for an easy A.</p> <p>Perception exists that they are not necessarily as mature as traditional college students. However, they may be ready for training that they do not realize is career training.</p> <p>The perception exists, but it depends on who you ask. A supportive college professor from an ECHS will tell you that the ECHS students set a high bar for their community college counterparts. A naysayer will tell you how they act immature. A high school counselor who has not been exposed to ECHS may tell you that some students are college material while others are not.</p> <p>ECHS is designed to provide students who would not otherwise consider attending college with an opportunity to gain access and exposure to a college-going culture while in high school. If you think about the implications of this statement, the reality is that they are not going to be 100% ready to choose a job or their college major – but then again, how many 18-24 year-olds are actually prepared for this.</p>
<p>The roll of high schools is to prepare students for post-secondary education.</p>	<p>Agreement</p> <p>Disagreement</p> <p>Disagreement</p>	<p>High schools tend to go overboard in preparing students for post-secondary education. Colleg students are poised and ready to receive instruction, while a high school and other activities..</p>

	<p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Agree</p>	<p>To prepare students for whatever their next choice is, vocational, technical, or nothing.</p> <p>This is the perception and barrier...high schools should not only provide skills for post-secondary education, but should provide opportunities for students to enter the workforce upon graduation if needed.</p>
<p>The roll of high schools is to prepare students for careers and or post-secondary education.</p>	<p>Agreement</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p>	<p>A balance of both—prepare students for careers and post-secondary education- is necessary.</p> <p>The skills needed by the one are mirrored by the other</p> <p>Is the statement just above and this one intended to be mutually exclusive?</p> <p>Whether it be academic or vocational</p> <p>This is the perception and barrier...high schools should not only provide skills for post-secondary education, but should provide opportunities for students to enter the workforce upon graduation if needed.</p>
<p>ECHS provide students with a wide range of options to investigate Vocational programs.</p>	<p>Agreement</p> <p>Disagree-ment</p> <p>Disagree-ment</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Not Answered</p> <p>Not Answered</p>	<p>This can only happen if students are given proper guidance and counseling.</p> <p>ECHS seems to me right now to be limited.</p> <p>Depends on the structure of the school</p>
<p>Associates degrees and technical certificates that can articulate through to a four-year</p>	<p>Agreement</p>	<p>Any course of study with several exit points is preferred to</p>

degree are heavily preferred in order to maximize student opportunity for further educational attainment.	Disagree- ment	It depends on the student's career path and the needs of prospective employees. There should always be continuous training but that can take many forms.
	Agree	This question is unclear are you asking if ECHS prefer those types of degrees the answer is yes. By nature and legislative intent ECHS are geared towards preparing students for 60 hours towards a Bachelors
	Not Answered	
	Agree	I don't know if they yet do in all cases, but they should.
	Disagree- ment	Articulating is not always easy and choices are limited at four-year universities. If they were preferred this would not be the case. Students should not have to explain what the letters on their diplomas stand for, i.e. B.A.A.S.
Not Answered		
Agreed		

Additional Comments

1. Over - packed schedules do not contribute to scheduling CTE classes.
2. I think the biggest barrier we have in education is the legislative micromanagement of education and their consuming desire for "accountability" which makes them feel good but does nothing to enhance education.
3. Parents desire to raise a brain surgeon in every house.
4. Lack of knowledge/interest by students of just what options are available. At a young age (freshman) they really don't care. They take classes their friends take.
5. Society's acceptance on procrastination in choosing a career track compared to Europe and Asia where students know by the equivalent of our freshman year and are already in full training for something. We don't expect people to be productive until they are at least 25. That is not true elsewhere.

Round 3 Unedited Panelist Feedback

Delphi Round 3 – Barriers and Role of Vocational Educational in ECHS – Used to develop preliminary CTQ Survey - Missing 1 Panelist		
Modified or Additional Barriers to or Perceive Role of Vocational Education in Early College High Schools	Agree/ Disagree	Feedback on the Identified Barrier
The recommended degree plan (4by4) may be a barrier to vocational programs	Agree Agree Agree Disagree Agree Agree Agree	The student does not have enough space in the school schedule to accommodate the CTE courses. Also, if a student does not master the TAKS test, he/she is enrolled in a TAKS remediation course which also limits the options for taking a CTE course. The recommended degree plan (4by4) may be a barrier to vocational programs
Vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional.	Agree Agree Agree Agree Agree	The country started as an agrarian society and then moved towards the industrial revolution. As the country moved towards a more technology oriented workplace, blue-collar occupations were perceived as less prestigious than a desk job.

<p>A perception exists that vocational training targets (tracks) students who are underrepresented in postsecondary education (rural, low-income, minority, etc.)</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>The paradigm persists that in order to be successful; everyone needs to go to a 4-year university.</p> <p>A perception exists that vocational training targets (tracks) students who are underrepresented in postsecondary education (rural, low-income, minority, etc.)</p> <p>I have this perception. Might be useful to ask folks if folks have the perception as well as (or versus) if there exists this perception...</p>
<p>School counselors and administrators have a strong preference for traditional academic transfer programs.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>See statement above.</p> <p>School counselors and administrators prefer to direct students toward have a strong preference for traditional academic transfer programs</p> <p>Again, might be useful to has (Note ask?) if the person being surveyed has a strong preference for traditional transfer programs, as re above comment</p>
<p>The high dropout rate indicates the need for diverse paths to graduation including more vocational.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Research indicates that a large percentage of students learn best by participating in “hands-on activities”. Another key factor is relevance of the subject matter to the student’s life. CTE provides students with many opportunities to experience both of these factors. Many students are bored and disillusioned with school and thus the drop-out rate is escalating.</p> <p>The high dropout rate indicates the need for diverse paths to graduation including more vocational tracks.</p> <p>Not just more vocational, though. Rather more vocational that transitions better into postsecondary options, rather than limiting the options of the student pursuing the track (CTE students get “tracked out” of higher education, because of a lack of higher credentialing, e.g. AAS, BAS, etc.)</p>

<p>A perception exists that vocational programs are for students with lower abilities or students with special needs.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Another misconception exists that if the job involves physical labor, the work is considered demeaning and not prestigious. CTE courses demand that student’s problem solve and formulate creative solutions to problems.</p> <p>A perception exists that vocational programs are for students with lower abilities or students with special needs. <i>(Note- possible means existing programs)</i></p>
<p>Parents, teachers and other adults perception that workforce programming is inferior limiting their willingness to advise students to consider vocational careers.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>See statement above.</p> <p>Parents, teachers and other adults perception believe that workforce programming is inferior limiting their willingness to advise students to consider vocational careers.</p> <p>See comment above about the surveyed person’s perception. Also, grammar error in the statement (perception could be changed to “perceive”, which would fix it)</p>
<p>Public and policy maker expectations that all high students, no matter their post-graduation plans, should have a traditional “college preparatory” curriculum.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>One-sided graduation plans do not fit all students. Students need to have flexibility as they think about “what they want to be when they grow up”? the drop-out rate speaks to the fact that many students are bored with the current regimented curriculum.</p> <p>Note typo—high SCHOOL students</p>
<p>The desire for all students to have a college preparatory program does not reflect the actual labor market that students in need of skills will be entering.</p>	<p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Administrators, legislators and the community-at-large should be aware of labor market trends which in some cases make a university education unnecessary for everyone.</p>

<p>The role of high school is to prepare students for entry into the labor market.</p>	<p>Agree</p> <p>Agree</p> <p>?</p> <p>Disagree</p> <p>Agree/Disagree</p> <p>Agree</p> <p>Agree</p>	<p>Entry into the labor market at different exit points. Exit the labor market directly out of high school, postsecondary, or 4 year baccalaureate program. Parents and educators forget that the premise of students receiving an education is for them to someday earn a living and become productive citizens.</p> <p>Should the reader assume the meaning to be that the only or major role is entry into the job market. It might be difficult to agree/disagree without some qualifier.</p> <p>There should be basic skills and a direct path to additional workforce training (at the very least)</p>
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<p>The Recommended High School degree plan (4x4) requirements too narrowly defines what courses count for math, science, English and Social Sciences.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree, with noted caveat</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>More applied courses that utilize contextual learning strategies should be on the list of core course offerings.</p> <p>The Recommended High School degree plan (4x4) requirements too narrowly define what courses count for math, science, English and Social Sciences.</p> <p>Additional Courses should count as part of the foundation, but only if the courses satisfy the required TEKS/CCRS</p>
<p>Accountability issues distract from vocational programming since only CORE courses are tested.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree, with noted caveat</p>	<p>“What is tested is inspected.” CTE has the Performance Based Monitoring Assessment System (PBMAS) which evaluates the CTE program based on how well students, enrolled in CTE courses, perform on the TAKS.</p> <p>Accountability issues distract from vocational programming since only CORE courses are tested. Measurements of performance should incorporate vocational programming.</p> <p>Accountability issues overwhelm most other important educational interests.</p>

	<p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Again Learning styles and aptitudes come into play here</p>
<p>A one size fits all (one track to graduation) mentality exists in high school programs.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>See previous statement from above.</p> <p>THIS makes me NUTS!!!</p>
<p>Students and their parents should have the opportunity to choose a career track in school after 8th grade.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree, with caveats</p> <p>Agree</p> <p>Agree</p>	<p>School of Choice (academies, school within a school, magnet programs, etc)</p> <p>Students and their parents should have the opportunity to choose a career track in school after in middle school 8th grade.</p> <p>I understood that parents/student input was encouraged. That is incorrect???</p> <p>“career tracks” should not preclude adequate postsecondary preparation. If career preparation is adequately rigorous, it should meet college readiness standards (the two are not mutually exclusive, despite beliefs to the contrary).</p> <p>Having taught 8th grade, I can confirm that students know their paths by that age</p>
<p>ECHS allows opportunity for students to explore vocational programs available at colleges.</p>	<p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Students at ECHS identify a career pathway and enroll in electives that will provide them a sequence of courses to explore vocational programs.</p> <p>Awesome opportunities for all types of learners.</p>
<p>The portion of the population of students who will not attend college and may not pursue any post-secondary education is underserved by high schools.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p>	<p>Equal importance should be given to postsecondary credentials (certification, associate’s degree, baccalaureate, or advanced degrees)</p> <p>I would change “will not attend college” to “may not attend college”—the “will” is a little</p>

	<p>Strongly Agree</p> <p>Agree</p> <p>Agree</p>	<p>presumptive</p>
<p>The role of ECHS by legislative intent and original program guidelines is to enable students to earn 60 hours or Associates while working towards a Bachelors Degree.</p>	<p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>No Response</p> <p>Agree</p> <p>Agree</p>	<p>Students who earn the first 60 hours will still have options to pursue certificate or associate programs.</p> <p>The role and guidelines I viewed describe it as Associates OR up to 2 years credit toward a Bachelor's Degree.</p>
<p>Vocational education and Career Tracks bring up issues of equity.</p>	<p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Agree</p> <p>Disagree</p> <p>Agree</p> <p>Agree</p>	<p>Society still perceives CTE courses as tracking and offered to students who are at-risk, are in special education, or are economically disadvantaged.</p> <p>Vocational education and Career Tracks bring up issues of equity.</p> <p>I think this question needs to be rephrased or deleted. It's such a big topic I think its hard to quantify in this short statement.</p> <p>Unfortunately!</p> <p>As long as counseling and support services are provided this is not an issue.</p>
<p>In high school, CORE classes (math, science, English, civics) should be geared toward a student's career choice.</p>	<p>Disagree</p> <p>Agree</p> <p>Disagree</p> <p>Disagree with caveat</p>	<p>There are many career choices and students can change their mind all the time, however, applied academics could be geared towards a variety of careers not just one. This would give students an opportunity to apply knowledge to different real-world scenarios.</p> <p>As many of the CORE classes as practicable should include application in the student's career choice.</p> <p>I would say "may be" geared.</p>

	Agree Agree Agree	I wrote a paper on this at Columbia, I will try to send it soon.
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APPENDIX 2
Round 2 and Round 3
Delphi Feedback Returned to Panel

First Round Panel Participant Responses – Level of Agreement

Identified Barriers to or Perceive Role of Vocational Education in Early College High Schools	Agreement/ Disagreement with the identified barrier.
the accountability movement which results in teachers focusing extensively on subjects tested causing “[o]ther subjects and development processes, such as career awareness...[to be] minimized, or even abandoned...”	75% agree 25% disagree
a perception that workforce programming is degrading	88% agree 12% disagree
public and policy maker expectations that all students, no matter their post-graduation plans, should have a “college preparatory” curriculum.	88% agree 12% disagree
the recommended degree plan 4by4	88% agree 12% disagree
Perception that the role of ECHS is to serve students interested in university degrees.	88% agree 12% disagree

Second Round Panel Participants¹ Responses – Level of Agreement

Modified or Additional Barriers to or Perceive Role of Vocational Education in Early College High Schools	Agreement/ Disagreement with the identified barrier.
The accountability movement which results in schools focusing extensively on subjects which are tested causing “[o]ther subjects and development processes, such as career awareness...[to be] minimized, or even abandoned...”	67% agree
a perception that workforce programming is degrading	78% agree
Public and policy maker expectations that all high students, no matter their post-graduation plans, should have a “college preparatory” curriculum.	78% agree
The recommended degree plan (4by4)	89% agree
The role of ECHS by legislative intent and original program guidelines is to enable students to earn 60 hours or Associates while working towards a Bachelor’s Degree.	56% agree
Legislation is needed to create a vocational equivalent of an ECHS with flexibility in required curriculum.	22% agree
An unintended consequence of accountability and/or high stakes testing is not serving the needs of a portion of the population of students who will not attend college and may not pursue any post-secondary education	56% agree
Vocational education and Career Tracks bring up issues of equity.	56% agree
“Accountability” has become the primary mission of schools limiting the opportunity for students to experience vocational programming which is not tested.	56% agree
Vocational trades are viewed as low paying, less prestigious occupations than pursuing a career as a professional.	89% agree
Perception that vocational training targets (tracks) students who are underrepresented in postsecondary education (rural, low-income, minority, etc.)	89% agree
School counselors and administrators have a strong preference for traditional academic transfer programs.	78% agree
A perception that vocational programs are for students with lower abilities or students with special needs.	78% agree
Mistaken belief that one size fits all (one track to graduation) or that a college preparatory plan is for all students.	56% agree
The high dropout rate indicates the need for diverse paths to graduation including more vocational.	89% agree
The desire for all students to have a college preparatory program does not reflect the actual labor market that students in need of skills will be entering.	78% agree
Vocational students need the same college preparatory skills as students entering traditional transfer programs.	33% agree
The trend of policy makers is turning towards support for vocational programming and training.	44% agree
ECHS allows opportunity for students to explore vocational programs available at colleges.	67% agree
The 4x4 requirements too narrowly defines what courses count for math, science, English and Social Sciences.	56% agree
Perception that students in high school need a general education and are not mature enough to select a major (vocational or academic track) at a young age.	56% agree
Perception that students in high school are not ready for college work and are not ready for career training.	56% agree
The roll of high schools is to prepare students for post-secondary education.	78% agree
The roll of high schools is to prepare students for careers and or post-secondary education.	56% agree

¹ 12/6/2010 panelist 9 was replaced due after repeated attempts at contact were unanswered.

APPENDIX 3
CTQ Instrument

Role of Career and Technical Training in Early College High Schools

Consent Form

The Role of Vocational Technical Training in Texas Early College High Schools: A Mixed Methods Inquiry

You are being asked to participate in an online survey to identify the barriers which may hinder the implementation of robust vocational training programs in early college high schools and to document the role of vocational training programs in Early College High Schools (ECHS) in Texas. The study will be conducted electronically. Your consent is required.

Please read the following. If you have any questions, please contact the research investigator, Elizabeth Simonson, by either e-mail at simonson@coastalbend.edu or telephone at 361-215-8450.

Confidentiality: I understand that the identity of the respondents and individual responses will remain confidential. If the results are published or presented at a scientific meeting, the identity of the participants will not be disclosed.

Compensation: I understand that participation in the study will not cost me anything and that I will not receive any money for my participation.

Risks and Benefits: I understand that there is no physical risk to participate in the study and that there is not any direct benefit to me individually; however, my participation may benefit development of Texas Early College High Schools.

Right to Withdraw: I understand that I am free to withdraw my consent and stop participating in the study at any time without penalty or loss of benefits for which I may be entitled.

Voluntary Consent: I certify that I have been informed about the study's purpose, procedures, possible risks and benefits. Additionally, I know that if I have any questions about my rights as a research participant, I can contact Erin Sherman, Compliance Officer, at Texas A& M University, Corpus Christi at (361) 825-2497.

By continuing with this survey I indicate my consent to participate.

The Role of Vocational/ Career and Technical Programs in ECHS

1. Early College High Schools (ECHS) are designed to increase the numbers of students completing bachelor's degrees.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Early College High School should serve diverse student populations with multiple career path options.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. The Texas high school attrition rate illuminates the need for diverse curricula, including academic and career-technical programs.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate you level of agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Role of Career and Technical Training in Early College High Schools

4. An important function of public education is to prepare students for entry into the labor market.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. A "one size fits all" requirement for graduation exists in the design of the Texas high school curricula.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. The goal of having all high school students pursue a college preparatory program does not reflect the needs of the actual labor market in Texas.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Students who do not intend to pursue or are unable to pursue a post-secondary education are underserved by most Texas public high schools.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. A student completing the high school college preparatory track is adequately prepared to enter the existing labor market.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Potential Barriers to Vocational/ Career and Technical Programs in ECHS

9. Parents perceive that workforce or vocational\career-technical programs are inferior to traditional academic transfer programs.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. An increase in the availability of vocational/ career and technical programs could lead to more inequity in the public education system.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Role of Career and Technical Training in Early College High Schools

11. The term Vocational Education has a negative connotation and should be replaced with Career and Technical Education.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Vocational careers are viewed as low paying compared to professional careers.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Vocational careers are viewed as less prestigious compared to professional careers.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Early College High Schools require a student's program of study to have a pathway to a 4 year college degree, limiting some career and technical program options.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Existing high school vocational programs are oriented toward students with special needs.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Existing high school vocational programs are oriented toward students with low abilities.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Policy makers believe that all high school students should have a traditional "College Preparatory" curriculum.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. The Texas Recommended High School degree plan (4 by 4) is a barrier to offering robust vocational programs in ECHS.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Role of Career and Technical Training in Early College High Schools

19. Vocational\ Career and Technical training tracks students who are underrepresented in post secondary education.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Accountability testing of CORE subjects (Math, Science, Language and Social Studies) limits the ability of schools to offer a wide variety of vocational options.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. The Texas Recommended High School Plan (4 by 4) does not allow enough flexibility in which courses count for the CORE subjects (Math, Science, Language and Social Studies).

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. High school counselors have a strong preference for traditional academic transfer programs when advising students.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. School administrators have a strong preference for traditional academic transfer programs when advising students.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Please indicate your level of agreement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Demographic Characteristics

24. Current Position/ Job Title

- Principal
- Counselor
- District Tech Prep Coordinator
- College Workforce Program Division Chair
- Teacher
- Other

Role of Career and Technical Training in Early College High Schools

25. Number of years ECHS in operation?

26. Length of time in current job assignment?

27. On a scale of 0-10 with 0 being none and 10 being all or best possible, rate your ECHS's availability of career and technical programming.

28. Gender

 Male Female

29. Race/Ethnicity

 Anglo Asian Black Hispanic Other

30. Your Age

31. Highest Educational Level Completed

 Vocational Training Applied Associates Associates of Arts & Science Bachelors Masters Doctorate Post-Doctoral Studies

32. Do you have any vocational training or experience?

 Yes No

33. Your best estimate on the percentage of high school drops-outs in Texas.

requiring a 4-year Bachelors level or higher degree.

35. Any comments about the role of, or barrier to Vocational Programming in Early College High Schools?

5

6

Appendix 4
IRB Approval
Informed Consent Forms

Texas A&M University-Corpus Christi

Compliance Office

6300 Ocean Drive, Unit 5844, Corpus Christi, Texas 78412-5844 361-825-2177 Fax 361-825-2755

November 25, 2009

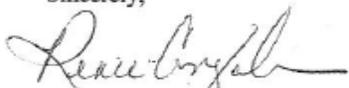
Ms. Elizabeth E. Simonson
300 Jones Rd.
Dinero, TX 78368

Dear Ms. Simonson,

I have reviewed your IRB application for your research project entitled "The Role of Vocational Technical Training in Texas Early College High Schools: A Mixed Methods Inquiry" (#132-09). The project is consistent with Category 7.1.2(2) and is hereby deemed as Exempt. You are authorized to begin this project as outlined in your application.

If you have any questions, please do not hesitate to contact me at 825-2497.

Sincerely,



Renee K. Gonzales
Research Compliance Officer
Texas A&M University-Corpus Christi
6300 Ocean Dr. Unit 5844
Corpus Christi, TX 78412
Tel: (361)825-2497
Renee.gonzales@tamucc.edu

Delphi Consent E-mail Text

Dear panel participants. There were problems identified with the consent form probably due to different versions of word. The solution my advisor gave me it to just ask participants to reply to the consent form if they are willing to participate in the study. Please reply yes, if you are willing to participate. If someone else in your organization has agreed to participate, please send me the contact information. Thank you~ Becky Simonson

CONSENT FORM

The Role of Vocational Technical Training in Texas Early College High Schools: A Mixed Methods Inquiry

You are invited to participate in a Delphi study which will be conducted to collect data that will be used to develop a survey questionnaire to identify the barriers which may hinder the implementation of robust vocational training programs in early college high schools and to document the roles of vocational training programs in Early College High Schools (ECHS) in Texas. The study will be conducted electronically. Your consent is required. Please read the following. If you have any questions, please contact the principal investigator, Elizabeth Simonson, by either email at simonson@coastalbend.edu or telephone at 361-215-8450.

CTQ Consent Form Text

The Role of Vocational Technical Training in Texas Early College High Schools: A Mixed Methods Inquiry

You are being asked to participate in an online survey to identify the barriers which may hinder the implementation of robust vocational training programs in early college high schools and to document the role of vocational training programs in Early College High Schools (ECHS) in Texas. The study will be conducted electronically. Your consent is required.

Please read the following. If you have any questions, please contact the research investigator, Elizabeth Simonson, by either e-mail at simonson@coastalbend.edu or telephone at 361-215-8450.

Confidentiality: I understand that the identity of the respondents and individual responses will remain confidential. If the results are published or presented at a scientific meeting, the identity of the participants will not be disclosed.

Compensation: I understand that participation in the study will not cost me anything and that I will not receive any money for my participation.

Risks and Benefits: I understand that there is no physical risk to participate in the study and that there is not any direct benefit to me individually; however, my participation may benefit development of Texas Early College High Schools.

Right to Withdraw: I understand that I am free to withdraw my consent and stop participating in the study at any time without penalty or loss of benefits for which I may be entitled.

Voluntary Consent: I certify that I have been informed about the study's purpose, procedures, possible risks and benefits. Additionally, I know that if I have any questions about my rights as a research participant, I can contact Erin Sherman, Compliance Officer, at Texas A& M University, Corpus Christi at (361) 825-2497.

By continuing with this survey I indicate my consent to participate.