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Exploring the Effect of CTE Coursework and Work Experience on Adolescent Career Readiness

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Exploring the Effect of CTE Coursework and Work Experience on Adolescent Career Readiness

A Dissertation

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy
in
Educational Administration

by

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December 2021

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Dedication

I dedicate this dissertation to all who dream and strive for more than the situation that we were born into. May we all discover our professional passion(s) and achieve financial success.

Acknowledgement

Thank you to my chair, Dr. Jeffers, for your knowledge and guidance throughout the program and helping me to strengthen my dissertation. I am also appreciative of my committee members, Dr. Broadhurst and Dr. Belser, for their feedback and providing insight to offer further perspective on my research.

I would also like to acknowledge my extended family, friends, classmates, teachers/professors, mentors, and colleagues. You all have been instrumental to helping me grow personally and professionally. I am grateful for your unwavering support.

I would not have made it to this point without the love and care from my mother, father, and sisters. Early on, you all saw that I was capable of more than my circumstances. You made sure that I understood my value and supported me as I pursued opportunities and experiences that further enriched me.

I would also like to thank my fiancé who has encouraged me even when I wanted to give up. You always ensured that I took time to relax and practice self-care. It has been a sacrifice in so many ways, but you have continued to be there for me throughout this difficult journey.

Lastly, I would like to thank God/Higher Power for giving me the strength to persist through personal and professional challenges and working in my favor to accomplish this final chapter of my educational journey.

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List of Abbreviations

CMI: Career Maturity Inventory

CMI-C: Career Maturity Inventory Form C

CTE: Career and Technical Education

SES: Socioeconomic Status

STEM: Science, Technology, Engineering, and Mathematics

Abstract

Career readiness is an area of youth development that is often overlooked in secondary education. Preparing students for the professional world is especially important for high school students, who upon graduation, will have to decide to pursue postsecondary education or a career. Career and Technical Education (CTE) programs, which involve teaching youth employable knowledge and skills, have been shown to assist students in transitioning more seamlessly from high school to college and careers. Work experiences, such as jobs and internships, have also been found to support adolescent career readiness. Currently, there is not a widely used quantitative measure for assessing career readiness. Through a quasi-experimental design, this study utilized the Career Maturity Inventory Form C (CMI-C) to examine the influence of CTE programming, work experience, and the interaction of these interventions on the career readiness of high school seniors.

Keywords: career readiness, career and technical education, CTE, college readiness, work experience, career maturity, career maturity inventory, CMI, high school seniors, postsecondary transition

CHAPTER 1: INTRODUCTION

Introduction

Since the inception of public education, there has been an ongoing debate about its purpose. From one perspective, it is believed that schooling should provide general knowledge (Dougherty & Lombardi, 2016). This formal education offers students the opportunity to learn and be exposed to an array of academic subjects. On the other hand, education has been viewed as a systematic institution for preparing students for employment (Dougherty & Lombardi, 2016). Whereas general education focuses on the pursuit of knowledge without a specific goal, vocational education emphasizes the need for schooling to teach and train students to enter careers and support the economy. Beyond academic content knowledge, students still require more career-focused knowledge and skills in order to enter future professions (Conley, 2008; Duncheon 2015). However, students cannot be prepared to pursue their career aspirations if they are also not given the opportunity to explore.

To improve educational outcomes, reforms have shifted between the aforementioned viewpoints in structuring schooling for students. Even though there are advantages and disadvantages to both perspectives, general education tends to be more prevalent than vocational education in the current American educational system (Ainsworth & Roscigno, 2005; Rodgers & Boyer, 2006). In the past, White and affluent students have only been able to access general education and pursue college (Harper et al., 2009; Trow, 1992). Conversely, students of color and low-income students have often been restricted to vocational education (Ainsworth & Roscigno, 2005; Rodgers & Boyer, 2006). Due to these racial and socioeconomic limitations to schooling, vocational education has been further stigmatized and devalued as a beneficial pathway to educational and professional advancement.

Background Research on Vocational Education

Reform efforts are frequently implemented to attempt to resolve racial and socioeconomic disparities, but they are not exclusively developed to cater to the needs of students of color and low-income students (Hartney & Flavin, 2014). According to Payne (2008), this issue is further exacerbated by the education system's constant push to continuously create innovative programs and policies. In addition to the need to tailor interventions to disadvantaged communities, Payne (2008) suggests that successful reform efforts require more time to produce positive outcomes. Instead, the same practices of White and affluent students are simply imposed on students of color and low-income students to attempt to reproduce the achievement outcomes of White and affluent students. For this reason, there has been a strong emphasis on "college-for-all" as an opportunity for all students (Hersperger et al., 2013; Imperatore & Hyslop, 2018). The general knowledge of the four-year college has been successful with White and affluent students, so it is perceived as a solution for improving educational outcomes for students of color and low-income students as well. However, there is not a specific strategy for placing students within a college or vocational pathway that individually fits their educational goals. It does not consider if these students are prepared or even interested in pursuing a four-year college degree.

Historically, students of color and low-income students have been limited in their access to higher education, especially four-year colleges, and limited to vocational education due to racist and classist policies and practices (Harper et al., 2009; Trow, 1992). Historically, southern Whites as well as the national economy depended on enslaved field hands and newly freed Black workers for expendable, manual labor (Du Bois, 1935, 2015). As such, White southerners pushed back against Reconstruction policies that permitted Blacks to pursue higher education (Anderson, 1988; DuBois, 1935). White workers often held skilled labor jobs and were involved

in unions that worked with policymakers to keep Black students from skilled labor opportunities (Devore et al., 1991; DuBois, 1935). Because of this barrier, Booker T. Washington viewed industrial training, which White northern philanthropists financed (Watkins, 2001), as the most effective way for Black advancement (Anderson, 1988). While this historic limitation is pivotal for understanding the complexities of vocational education, it does not signify that attending a four-year college is the sole pathway for educational advancement and career attainment. Thus, this study further builds on another tradition within Black intellectual thought (Grant et al., 2015). In addition to Washington, Angela Cooper also advocated for the importance of Black youth to learn vocational education but in tandem with general education so they would be well-rounded and could actualize their full potential (Cooper, 1988). She acknowledged that the Black community should embrace all their talents and interests and not solely limit themselves to solely intellectual or manual pursuits (Cooper, 1988). For instance, a well-rounded Black mechanic should not only be able to work with complex machinery but also understand the concepts of physics that relate to the work. Cooper's perspective demonstrates that there is an underutilized opportunity for general and vocational education to complement each other instead of being in competition.

There are benefits to vocational education for all students, and it has been overlooked to uplift the four-year college pathway (Gutiérrez, 2013). The push for college could be viewed as the reason for the decline of vocational coursework within schools, and it could be argued that this shift has further impeded the educational progress of students of color and low-income students (Eichhorst et al., 2012; Kreisman & Stange, 2019). Furthermore, general education can lead to limited employment opportunities, particularly if students are unprepared or uninterested

(Barnes & Slate, 2013). Because of this, vocational education provides an opportunity to better prepare students for college pathways and discover their interests in various career choices.

Vocational education in the form of career education and guidance is helpful to students for both pursuing higher education and entering careers upon graduating from high school. Nevertheless, it is underutilized in preparing students for the postsecondary transition. As a result, many students decide to attend college without any proper career guidance (Barnes & Slate, 2013; Helwig, 2008; Portfeli & Lee, 2012). Because students may not possess the knowledge and skills to choose a career, career guidance is useful for supporting students in exploring their potential career options (Barnes & Slate, 2013; Helwig, 2008; Portfeli & Lee, 2012). However, the educational system has struggled to develop strategies for providing career guidance and placing students in general and vocational tracks (Oakes, 1983, 1987, 1992).

Preventing biased tracking is a valid concern, but it also limits the educational options for underrepresented students by not also offering the option of vocational education or providing career guidance in general. In addition to academic knowledge, all students need to learn career-focused skills and knowledge to enter future professions (Conley, 2008; Duncheon 2015). These skills are not solely reserved for students who are perceived as lacking the academic potential to pursue a four-year college (Betts, 2011). Students cannot be prepared to pursue their career aspirations without having the opportunity to explore their interests and connect them to potential career pathways (Portfeli & Lee, 2012). Furthermore, possessing a bachelor's degree does not guarantee employment without marketable skills (Nemko, 2008). People can learn marketable skills through nondegree work credentials, such as occupational certifications and licenses (McFarland et al., 2019). Work experience programs, such as internships and

apprenticeships, are similarly beneficial for gaining professional skills (Bridgstock, 2009; Gamboa et al., 2013; Radcliff & Bos, 2013).

Being certified and having specific skills is essential for employment. According to the most recent *Condition of Education*, provided by the National Center of Educational Statistics, people between the ages of 16 and 65, who held certifications and licenses, had higher rates of employment than those who did not, irrespective of college degree attainment (McFarland et al., 2019). Furthermore, there was a higher percentage of individuals who had a nondegree work credential, earning $50,000 or more, than those who did not (McFarland et al., 2019). This data demonstrates that people can pursue lucrative careers without a bachelor's degree. However, if they are interested in a bachelor's degree, professional skills are also important. Similarly, for college seniors, the employment rate and earnings were also higher for individuals with certifications, licenses, and work experiences (McFarland et al., 2019). Thus, this data further emphasizes the need for people to have marketable skills to gain employment and attain a decent salary.

Vocational education in the current form of Career and Technical Education (CTE) programs offers an opportunity for students to learn career-focused skills prior to pursuing higher education or employment (Threeton, 2007). Furthermore, students can become certified in various careers and accumulate less debt than the four-year college pathway (McFarland et al., 2019; Museus et al., 2007). Having less debt is especially important for low-income students, who must be cautious about higher education in that it does not further impede their economic advancement (Radcliff & Bos, 2013). CTE is an underutilized resource that can support students in launching careers in their young adulthood (Threeton, 2007; Phelps & Chan, 2016). There are a number of high-demand, high-wage career fields, which do not require a bachelor's degree

(Nemko, 2008). Conversely, through CTE, students may also earn college credits, which can be applied to a bachelor's degree (Museus et al., 2007; Threeton, 2007). In this way, they can pursue a bachelor's degree, knowing their choice of major. Overall, CTE is useful in equipping students with valuable career skills to assist them in making sound choices about their professional future.

Statement of the Problem

Given that career development can be an overlooked component of education, students are sometimes not exposed to careers while in school (Helwig, 2008; Portfeli & Lee, 2012). Even though White and affluent students do not generally receive career education, they may be exposed to array of options through their family connections (Radcliff & Bos, 2013). Their network may include doctors and lawyers as well as professionals in fields such as, health, engineering, and computer science, which provides them with a range of career ideas. Through these connections, they are often able to access opportunities, such as job shadowing and internships (Radcliff & Bos, 2013). Conversely, students of color and low-income students may be more limited due to the lack of professionals within their own networks, which further impedes their career development (Radcliff & Bos, 2013). Currently, there is not a widely used indicator for assessing the career development needs of students to support their professional growth.

Because of the educational system's focus on general knowledge, there are numerous indicators, such as the SAT and ACT, for preparing students for the academic expectations of college (Camara, 2013; Duncheon, 2015; McMurrer & Frizzell, 2013; Mishkind, 2014). However, there is not a similar indicator for assessing career readiness, which is important for both students entering careers as well as those who are pursuing higher education upon

graduating from high school. In addition to having academic content knowledge, students also need the knowledge and skills to navigate their career development (Clark, 2015). In college, students will be expected to decide on a major, which will ultimately lead to their future career. Conversely, for those who are uninterested in college, they need to have a sense of their own talents and interests in order to choose a career (Barnes & Slate, 2013; Conley, 2008).

Schools heavily focus on college readiness in terms of academic knowledge but place less focus on the career readiness aspect of the postsecondary transition into young adulthood (Barnes & Slate, 2013; Duncheon, 2015). CTE provides an opportunity for students to learn career-focused knowledge and skills while they are in high school (Threeton, 2007; Phelps & Chan, 2016). However, there is not a universal assessment, similar to the SAT and ACT, to measure career readiness so that schools can intervene to support students in their career development (Camara, 2013; Duncheon, 2015; McMurrer & Frizzell, 2013; Mishkind, 2014). Numerous assessments exist to measure adolescent career readiness, but they are minimally utilized in the current educational system (Levinson et al., 1998). In the past, one of the most commonly used assessments for adolescents was the Career Maturity Inventory (CMI) (Crites, 1978). Although numerous career assessments exist, the CMI is one of the few assessments, which is free and focuses solely on an adolescent's attitude and thoughts about making career choices in general (Levinson et al., 1998). Conversely, many career assessments are typically focused on assessing and connecting adolescents to specific occupations (Camara, 2013; McMurrer & Frizzell, 2013). Additionally, the CMI has been empirically researched and revised for decades (Crites, 1978; Crites & Savickas, 1996; Savickas & Porfeli, 2011). The most recent revision, the Career Maturity Inventory Form C (CMI-C), shortened the length of completing it,

which makes it an efficient tool for schools to assess their students' readiness to make career choices (Savickas & Porfeli, 2011).

Purpose of the Study

This study provides a potential tool for schools to utilize in supporting the career development of their students. As of now, schools may provide programming, such as CTE, but they may not be using an instrument to measure the outcome of their vocational efforts. Additionally, many students pursue employment opportunities, such as internships and job shadowing, but schools may lack a tool for evaluating the effectiveness of their programming. By administering a short assessment, such as the CMI-C, schools can gain insight on the career needs of their students. It can help them to identify students who may be struggling in their career readiness so that they can intervene to better prepare them for the postsecondary transition.

For the purpose of this study, the CMI-C was administered to assess the career maturity of high school seniors. Career maturity is a concept that describes the extent to which an individual is able or prepared to make career decisions (Savickas, 2002). It includes four subscales: Concern, Curiosity, Confidence, and Consultation. Collectively, these subscales measure an individual's thoughts and attitudes towards deciding on careers as well as the actual knowledge that individuals possess about careers and planning for them (Savickas & Porfeli, 2011). As there is not a standard definition for career readiness, career maturity was used as the concept for measuring it given that it is connected to career decision-making. To support the value of vocational education, students who have taken CTE coursework as well as students who have had work experience were recruited for the study. Furthermore, students who did not meet these criteria were also included. Therefore, this study explored the influence of vocational

education in the form of CTE as well as work experience on the career readiness of high school seniors.

Rationale of the Study

A review of past research on the CMI has identified various factors that can influence a student's score (Leong & Serafica, 2005; Savickas, 2002). Career programming is a prevalent factor that distinguishes higher scores from lower scores on the CMI (Leong & Serafica, 2005). Studies have shown that students, who score high on the CMI, have participated in a career intervention, which has positively influenced their ability to make career decisions (Leong & Serafica, 2005; Savickas, 2002). Vocational education in the form of CTE is a fairly novel career intervention, and schools are continuing to improve the structure of their CTE programming. Furthermore, many students have work experiences throughout high school, but there is limited research on the impact of these opportunities on students' career development although work experience is often publicized as being important (Bridgstock, 2009; Gamboa et al., 2013; Radcliff & Bos, 2013).

Research Questions

Given the limited amount of research on the effect of CTE and work experience on adolescent career readiness from a quantitative perspective, the following research questions will be explored:

1) Does CTE coursework influence the career readiness of high school seniors?
2) Does work experience influence the career readiness of high school seniors?
3) Does the interaction of CTE coursework and work experience influence the career readiness of high school seniors?

Implications

With these research questions as the focus, the study examined the effect of career interventions, in the form of CTE and work experience, on the overall career readiness of high school seniors. Students who had been exposed to careers were expected to score high on the CMI-C. Exposure may result from participating in CTE courses, having work experience, or having a combination of both. It was hypothesized that students who had both CTE courses and work experience would score highest given that they had participated in the most career interventions. The results of this study may provide schools with an assessment for their career programming. Additionally, it may assist them in intervening and supporting seniors who may be ill prepared to navigate the career process and thus would struggle with pursuing higher education and choosing a major or deciding on a career upon graduating from high school.

Definition of Terms

***High School Senior*:** a high school senior is a student who is finishing their final year of American secondary schooling ("Bridging the Skills Gap", 2019)

***Career*:** Defined as the sequence of or collection of jobs that individuals hold over their lifespan (Patton & McMahon, 2014).

***Career Development*:** An ongoing, lifelong process, involving developmental experiences, which require individuals to learn the knowledge and skills to navigate and manage their work and life roles (Patton & McMahon, 2014).

***Career Maturity*:** the extent to which an individual is able to independently make career-related choices (Super, 1980).

***Career Readiness*:** "the level of 'foundational skills' an individual needs for success in a career pathway or career cluster, coupled with the level of 'career planning skills' needed to advance within a career path or transition to other career paths" (Clark, 2015).

***College Readiness*:** "the level of preparation a student needs in order to enroll and succeed—without remediation—in a credit-bearing general education course at a postsecondary institution that offers a baccalaureate degree or transfer to a baccalaureate program" (Conley, 2008).

***Career and Technical Education (CTE)*:** Refers to courses and programs that prepares students for current and emergent careers; provides opportunities for learning technical and employable skills that may lead to further postsecondary education or training to enter careers upon completion ("Bridging the Skills Gap", 2019).

***CTE Participant*:** Refers to a student who earned at least 1 credit in any CTE course ("Bridging the Skills Gap", 2019).

***CTE Concentrator*:** Refers to a student who earned at least 2 or more credits in a specific program of study, such as Health Science or Business ("Bridging the Skills Gap", 2019).

***Certification*:** "an occupational credential awarded by a certification body—such as a professional association or certifying board—based on an individual demonstrating through an examination process that he or she has acquired the designated knowledge, skills, and abilities to perform a specific job" (McFarland et al., 2019).

***License*:** "an occupational credential awarded by a government agency that constitutes legal authority to do a specific job" (McFarland et al., 2019).

***Work experience programs*:** "include internships, co-ops, practicums, clerkships, externships, residencies, clinical experiences, apprenticeships, and similar programs" (McFarland et al., 2019).

Organization of Dissertation

This dissertation proposal is organized into three chapters. Chapter 1 provides an overview of the research on vocational education along with the study's problem statement, purpose, research questions, limitations, and definition of terms. Chapter 2 consists of a literature view of vocational education, including its history and policies, as well as a detailed overview of the study's theoretical framework. Lastly, Chapter 3 outlines the methodology, describing the study's design.

CHAPTER 2: LITERATURE REVIEW

Introduction

This literature review details the history of vocational education, the construct of career readiness, and the components of Career Construction Theory. The history of vocational education provides contextual information for understanding the diverse perspectives on the value and criticism of vocational education since its inception. Additionally, the section on the construct of career readiness discusses the nuances in how it is defined within education and policymaking. The last section of the literature review describes Career Construction Theory, which provides the key conceptual framework in this study for exploring adolescent career development and assessing their career readiness through the CMI-C.

Although high school students are expected to be able to enter careers upon high school graduation, many students graduate without career-focused knowledge or skills education (Helwig, 2008; Mupinga & O'Connor, 2013; Portfeli & Lee, 2012). Currently, vocational education in the form of CTE provides students with career preparation, but there is no widely used indicator for assessing if students are developmentally career ready (Camara, 2013; Duncheon, 2015; McMurrer & Frizzell, 2013; Mishkind, 2014). Career Construction Theory offers a framework for understanding adolescent career development (Savickas, 2002; Super 1957, 1980). The CMI-C, based on Career Construction Theory, provides an approach for measuring career readiness (Savickas & Porfeli, 2011).

Research has indicated the need for more career programming in all schools (Conley, 2008; Duncheon 2015). Currently, the curriculum of most American secondary schools consists of general education courses (Dougherty & Lombardi, 2016). Minimal focus is placed on the career education and preparation (Helwig, 2008; Mupinga & O'Connor, 2013; Portfeli & Lee,

2012). In the United States, students are often pushed through the educational system and are forced to learn topics throughout their schooling, which make minimal connection between their academic coursework and the work world (Camara, 2013). It is expected that students can further their education and discover potential programs of study upon entering college since career exploration is not a required component of public education (Helwig, 2008; Mupinga & O'Connor, 2013; Portfeli & Lee, 2012).

As a result of these issues, educators and employers have discussed the need to teach skills for the 21st century as a solution (Rotherham & Willingham, 2009). These essential skills include critical thinking, collaboration, problem solving, creativity, and effective communication (Wagner, 2008). Although students may develop competencies in these areas during their education, many schools do not structure their curriculum in a way that directly incorporates the development of 21st century skills (Rotherham & Willingham, 2009). In addition to high schools, colleges also struggle to prepare their own seniors with employable skills (Bridgstock, 2009; Nemko, 2008). High schools often assume that students can explore and decide on career options as well as develop the required skills in college (Helwig, 2008; Mupinga & O'Connor, 2013; Portfeli & Lee, 2012). However, if students are graduating from college with unemployable knowledge and skills, then it is even more important for them to be taught these skills prior to their high school graduation.

Historic Perceptions of Vocational Education

Although vocational education is valuable, it has often been reserved for students of color and low-income students, which has prompted the focus on college readiness to resolve inequities in college access (Wonacott, 2003). In terms of SES, vocational education was viewed as a tool to prepare children of working-class families for manual jobs, such as farmers

(Wonacott, 2003). Early forms of vocational education were developed through the Morrill Acts of 1862 and 1890. These acts established land-grant colleges, which were funded through the sale of land, to integrate classic academics, such as mathematics and languages, with applied courses in agriculture and science (Grubbs, 2020). As a result, higher education became more accessible to working-class communities. These early colleges also created high schools with a focus on vocational education to better prepare students to enter their institutions (Grubbs, 2020). It is important to note that land-grant colleges for Black people were not established until the Morrill Act of 1890 (Grubbs, 2020). Furthermore, in the South, even though these Black institutions were supported by northern White philanthropists, they were severely underfunded and lacked the wide range of industrial training options in comparison to White land-grant colleges (Grubbs, 2020; Watkins, 2001).

The Smith-Hughes Act of 1917 was the first law to provide federal funding for vocational education programs, which was defined as careers that did not require a bachelor's degree (Wonacott, 2003). With the influx of students of color, working class, and immigrant students into the educational system, vocational education provided a strategy to train these students to meet the industrialized needs of the American economy (Wonacott, 2003). For example, vocational education was highly promoted for Black students as the Black community had historically served in manual and subservient roles in the American labor market (Anderson, 1988; Du Bois, 1935). Despite being free from slavery, they were still expected to maintain their lower status in society (Anderson, 1988).

As this study will be conducted in New Orleans schools, it is important to note that there was a struggle to advance educational opportunities in its Black community (Devore et al., 1991). In the early 1900s, there were several elementary schools, but education was ended for

Black children beyond the fifth grade (Devore, 2015). In the elementary schools, students were taught technical skills, such as sewing, cooking, brick laying, and carpentry (Devore et al., 1991). The Black community understood the need for vocational education but also desired schools that taught general academic content, especially on the high school level (Anderson, 1988). Due to the lack of access to public K-12 schools, Black colleges and universities in New Orleans offered elementary and secondary education (Fairclough, 2008). It was not until 1917 that the Orleans Parish School Board opened its first high school for Black students, but it was severely overcrowded (Devore et al., 1991). Furthermore, Black educators, civic organizations, and families in New Orleans wanted Black students to be prepared for post-secondary coursework, which would increase the low number of professionals in fields, such as medicine and law (Anderson, 1998; Fairclough, 2008). However, the local school board refused to provide funding for more schools with general academic curricula (Devore et al., 1991). Furthermore, while the school board funded industrial training programs for Whites, they would not provide funding for vocational education for Black students (Devore et al., 1991). To appease working-class Whites, limits had to be placed on the educational and professional advancement of Black people (Fairclough, 2008).

Tracking

Currently, the aforementioned class and race-based restrictions of education continues in the form of tracking within schools (Wonacott, 2003). It is a common practice for placing students in certain classes based on their ability status (Ainsworth & Roscigno, 2005; Oakes, 1983, 1987, 1992; Wonacott, 2003). In the 19th century, tracking was performed by age or grade level (Wonacott, 2003). Biased tracking emerged as a result of the industrialization of the United States in the 20th century (Wonacott, 2003). It was believed that students of color and low-

income students lacked the acumen to learn general academic content (Wonacott, 2003). In the 1960s, reforms were developed to address tracking issues through the creation of gifted, special, and bilingual education programs (Wonacott, 2003). For this reason, there has been a movement for detracking to ensure all students have access to advanced coursework as well as the choice of pursuing general or vocational education tracks (Ainsworth & Roscigno, 2005; Deil-Amen & DeLuca, 2010; Hallinan 1994; Holm et al., 2013). Currently, if students are perceived as low-achieving due to past academic performance, race, or SES, they are often placed in the lowest track, which prevents students from learning and demonstrating their full academic potential (Ainsworth & Roscigno, 2005; Oakes, 1983, 1987, 1992).

Given the disparities in college attainment among White and affluent as well as students of color and low-income students, there has been a huge push for all students to attend college over the years. The movement for detracking appears to be linked to the "college-for-all shift" in education (Ainsworth & Roscigno, 2005; Deil-Amen & DeLuca, 2010; Hallinan 1994; Holm et al., 2013). Detracking is viewed as a solution for leveling the inequities of students of various race and socioeconomic statuses (Ainsworth & Roscigno, 2005; Oakes, 1983, 1987, 1992). In this way, students can access any course of study and not be limited to a certain track. According to a study by Rui (2009), students experienced better academic performance in mixed-ability groups that included students with various academic capabilities. Low-achieving students were also challenged more academically given that they were being taught alongside high-achieving students (Rui, 2009). Nevertheless, it was also found that high-achieving students may progress more slowly and be given less advanced material due to the presence of low-track students (Rui, 2009). This result demonstrates detracking may not fully consider the needs or interests of all students.

Similar issues have been discovered in previous studies on detracking when it is not implemented with proper teaching strategies and best practices (Rubin, 2008; Rubin & Noguera, 2004). According to Rubin and Noguera (2004), detracking resulted in both academic and social dilemmas when they examined the outcomes of detracking across several studies. Academically, teachers experienced challenges with teaching to mixed-ability groups and struggled to maintain the rigor of their courses without receiving training and guidance on teaching to all levels of learners. From a social standpoint, without assigned seating, students would self-segregate. For example, low-achieving students and high-achieving students would often avoid working with each other. Teachers had to be deliberate in their grouping so that students experienced the benefits of detracking and working with peers with different views and abilities (Rubin & Noguera, 2004). Thus, in relation to this study, detracking may unintentionally produce inequities in learning for all students as well as not encourage students to pursue vocational pathways.

The Value of Career and Technical Education

One of the few initiatives that exists to support vocational pathways is Career and Technical Education (CTE). In 2006, the Carl D. Perkins Career and Technical Education Act was passed to train youth with the necessary skills and knowledge to meet America's job demand in skilled trades (Threeton, 2007). This act emphasized the need to integrate both academics and vocational education into the curricula of schools so that students were adequately prepared for postsecondary education and the work world (Threeton, 2007). CTE involves several career pathways, including computer science, health sciences, and business (Threeton, 2007). According to a recent report by the Department of Education, although many public schools offer CTE coursework, only one-third of students concentrate on a particular

program of study (“Bridging the Gap”, 2019). The most common career clusters included coursework in Science, Technology, Engineering, and Mathematics (STEM) with 35% of students in this concentration as well as Business Management and Administration (11%) and Health Science (11%) (“Bridging the Gap”, 2019).

Through CTE, students can earn industry certifications and postsecondary certificates and degrees to enter the workforce. Students who attend schools with CTE tend to have successful post-secondary outcomes, especially students who are CTE Concentrators. Research shows that CTE helps to reduce high school dropout, increase academic engagement and on-time graduation, and provide employable skills to facilitate the postsecondary transition (Brand et al., 2013; Castellano et al., 2017; Gottfried & Plasman, 2018). Furthermore, CTE concentrators are more likely to complete postsecondary educational credentials within eight years than non-CTE students (“Bridging the Gap”, 2019). Additionally, they have higher rates of employment and median annual earnings than non-CTE students (“Bridging the Gap”, 2019). These positive outcomes demonstrate the benefit of using CTE to support students in being career ready.

Career Academies

Although tracking has been viewed as a negative strategy within schools, there have been positive interventions, which have utilized tracking. Career academies are a successful model of CTE that has been present in secondary schools for several decades. Instead of the traditional class structure, students are tracked or placed in groups with students who share similar career interests (Elliott et al., 2002; Hackmann et al., 2018; Stern et al., 2010). Career Academies provide students the opportunity to explore various programs of study while in high school (Elliott et al., 2002; Lanford & Maruco, 2019; Stern et al., 2010). Students take their required classes, but the teachers find creative ways to integrate career skills into the curricula (Lanford &

Maruco, 2019; Stern et al., 2010). For example, students may take a math course that incorporates business applications for a concentration in Business and Management. Guest speakers from various careers are also invited to the school, so students can engage with professionals in the field (Hackmann et al., 2018; Lanford & Maruco, 2019; Stern et al., 2010). The program is useful for students of color and low-income students, who are able to leverage the career education and resources of career academies (Kemple & Snipes, 2000; Stern et al., 2010; Lanford & Maruco, 2018).

Career academies were originally developed to target students who were vulnerable to drop out of high school (Elliott et al., 2002). It was proposed that the curricula of career academies would keep students engaged given the practical nature of its career-focused curricula (Elliott et al., 2002). Studies have backed the positive outcomes of career academies (Fletcher, 2014; Fletcher et al., 2015; Fletcher & Zirkle, 2011; Hemelt et al., 2019; Kemple & Snipes, 2000; Kemple & Wilner, 2008; Linnehan, 1996). Students who attend them have lower dropout rates and were more engaged in school (Hemelt et al., 2019). Students who are at risk were substantially less likely to dropout from school (Elliott et al., 2002; Kemple & Snipes, 2000). Additionally, career academy students have been found to have higher grade point averages and graduation rates than students who do not attend career academies (Elliott, et al., 2002; Fletcher & Zirkle, 2011; Fletcher, 2014; Fletcher et al., 2015). Lastly, in terms of long-term impact, career academy attendees were shown to have higher job performance and work attendance than non-attendees (Kemple & Wilner, 2008; Linnehan, 1996). Thus, this research demonstrates that CTE in the form of career academies can be impactful in preparing students for the postsecondary transition. Even though tracking is a part of its structure, it is beneficial for meeting the individual career interests of students and developing their career readiness.

College Partnerships and Apprenticeship Programs

While this study focuses on career education within high schools, there are a number of opportunities that exist outside of the school setting. Recently, there has been a growth in community colleges and apprenticeship programs to support high school students in being prepared for careers. For decades, community colleges have served as important institutions for vocational education to pursue technical and skill-based jobs (Grubbs, 2020; Wilson & Lowry, 2017). Recently, due to former President Barack Obama and current President Joe Biden, there has been a resurgence of interest in community colleges for their affordability and opportunity to prepare students for the workforce (Biden, 2020; Hornek et al., 2018; Palmadessa, 2017). For high school students, community colleges offer a unique opportunity for them to pursue higher education through dual enrollment programs, in which students can take college courses, related to their career interests, in addition to their high school coursework (Grubbs, 2020; Mobley et al., 2017; Wilson & Lowry, 2017). This is beneficial for students who do not have access to or attend career academies. Similar to the career academy models, research has shown that students in these programs also have lower rates of high school dropout (Lile et al., 2018). Additionally, they are more likely to enroll in college, possess the knowledge and skills to navigate the college environment, and have a clearer understanding of potential careers (Lile et al., 2018; Lowry & Anderson, 2017; Mobley et al., 2017; Wilson & Lowry, 2017). These positive outcomes have been observed in students of various racial and socioeconomic backgrounds (Lowry & Anderson, 2017; Wilson & Lowry, 2017).

Another work-based learning opportunity for students are apprenticeship programs. They provide an opportunity for students to train and shadow professionals in industries to fully learn the technical skills of their intended career (Mathewson, 2018; Remington, 2019). Many of these

programs also pay students during their apprenticeships (Mathewson, 2018; Remington, 2019). This model has been highly successful in Sweden's VET program and is growing in the U.S. with the number of skilled students who successfully complete programs, such as CareerWise (Reminington, 2019).

Career Readiness vs. College Readiness

Despite the benefits of vocational education, preparing high school students for the work world tends to solely center on enrolling in college. As long as students obtain the required GPA and standardized test score, they are deemed ready for college (Conley, 2008). Furthermore, the assumption is that graduating from college will lead to a career and employment (Roderick et al., 2009; Duncheon, 2015). This belief has been fueled by the "college-for-all" culture that currently exists within the American education system (Barnes & Slate, 2013; Duncheon, 2015). According to this belief, the most valuable educational credential is a bachelor's degree from a four-year college. As such, there has been a heavy emphasis on academic preparation for college but limited career preparation for students (Helwig, 2008; Mupinga & O'Connor, 2013; Portfeli & Lee, 2012). Colleges have also received some criticism given that their graduates may lack employable skills (Bridgstock, 2009; Nemko, 2008). For example, students are often deemed "college ready" if they do not have to take remedial courses upon entering college (Conley, 2008). Most research, as noted above, focuses on college readiness and students' ability to succeed academically in college, which makes the proposed study even more necessary.

The difficulty of preparing high school students for careers is partly caused by the lack of a standardized definition for career readiness (Camara, 2013; Duncheon, 2015; McMurrer & Frizzell, 2013; Mishkind, 2014). While many schools and postsecondary institutions understand the need to ensure students possess the knowledge and skills to enter the work world, they do not

fully recognize the components of the construct of career readiness or the most effective strategies for graduating career-ready students (Camara, 2013; Duncheon, 2015; McMurrer & Frizzell, 2013; Mishkind, 2014). The research on career readiness remains more limited than its college readiness counterpart. However, studies have examined the overall career development of adolescents and explored policies and programs, which assist students in becoming career ready.

Defining College Readiness

While the structure of education and careers continue to change, students may not be taught the knowledge and skills to meet the demand of these changing industries (Camara, 2013; Duncheon, 2015; McMurrer & Frizzell, 2013; Mishkind, 2014). However, many states have attempted to implement policies to address this issue and assist students in developing college and career readiness (Camara, 2013; McMurrer & Frizzell, 2013; Mishkind, 2014; Duncheon, 2015). The educational system has struggled with assisting students in developing college and career readiness because these terms do not have uniform definitions (Conley, 2008; Duncheon, 2015). States may have their own general definition, but there is limited research on the components of college and career readiness (Helwig, 2008; Mupinga & O'Connor, 2013; Portfeli & Lee, 2012). In a study by Mishkind (2014), 33 of 37 states had a combined definition for college and career readiness, but only four states defined the terms separately. Another study by McMurrer and Frizzell (2013) found that only 14 out of 46 states had a statewide definition for career readiness.

Although models of college and career readiness have been strongly suggested based on empirical studies, researchers, educators, and policymakers still do not fully understand the constructs of college and career readiness (Camara, 2013; Duncheon, 2015; McMurrer &

Frizzell, 2013; Mishkind, 2014). The most frequently cited researcher on college readiness is Conley whose research has produced a dynamic construct. According to Conley (2008), it is defined as "the level of preparation a student needs in order to enroll and succeed—without remediation—in a credit-bearing general education course at a postsecondary institution that offers a baccalaureate degree or transfer to a baccalaureate program" (p. 1).

Many high schools are highly dependent on their academic curriculum and providing college-preparatory coursework to support their students. However, in addition to content knowledge, Conley's construct of college readiness includes cognitive strategies, academic behaviors, and contextual skills and knowledge as components (Conley, 2008). Cognitive strategies include skills, such as conducting research and problem solving (Conley, 2008). Academic behaviors consist of time management and study skills while contextual skills consider understanding the admissions process and college culture in general (Conley, 2008). This comprehensive definition of college readiness has been given more consideration as it goes beyond focusing solely on core academic content.

Defining Career Readiness

Although states often define college and career readiness as a combined construct, there has been more focus on preparing students for college and not careers (Mishkind, 2014). Minimal research exists that defines career readiness, but the ACT Inc., one of the leading standardized testing organizations, is actively involved in conducting studies for this construct. According to Clark (2015), career readiness is defined as "the level of 'foundational skills' an individual needs for success in a career pathway or career cluster, coupled with the level of 'career planning skills' needed to advance within a career path or transition to other career paths" (p. 3). Foundational skills include reading, math, problem solving, and communication skills

while career planning skills includes being able to gather information on career opportunities and having the ability to connect one's interest to a career (Clark, 2015). This definition provides additional facets for examining career readiness, but more research needs to be conducted to provide more support for this construct.

Policies on College and Career Readiness

Given that there is not a standardized definition for college and career readiness, states, school districts, and schools all have different policies and standards for the development and implementation of these constructs. The most recent federal policy for education, Every Student Succeeds Act (ESSA), contains provisions that assist schools in fostering college and career readiness initiatives in their programming (Malin et al., 2017). For example, the federal government has set aside funding for state and local educational agencies to provide opportunities for advanced coursework for higher education, such as Advanced Placement (AP) and dual enrollment classes (Malin et al., 2017). This coursework may also include career technical education to offer vocational training to enter the workforce after high school. There is a strong emphasis on providing STEM programming and training and hiring experienced teachers in STEM. Another key provision is the focus on partnerships (Malin et al., 2017). Schools are encouraged to partner with higher education institutions to make the transition to college more seamless. These partnerships can also help schools to better tailor their curriculum and programming to workforce needs.

In addition to the ESSA, the Common Core State Standards were developed to make sure that all students in the United States were being taught core academic content to excel in postsecondary education and vocational opportunities (Meeder & Suddreth, 2012; Rothman, 2012). Although the Common Core outlines knowledge in math, reading, and writing, which

students must master, it does not explicitly address skills beyond academics, such as problem solving and collaboration, which students will need to succeed in college and work environments (Meeder & Suddreth, 2012; Rothman, 2012). The ESSA and the Common Core do not require a specific indicator for measuring the outcomes of college and career readiness programming (Malin et al., 2017; Meeder & Suddreth, 2012; Rothman, 2012). However, schools must decide on one, such as the rate of students entering college, as an accountability measure.

States, school districts, and schools have interpreted the provisions of the ESSA and the standards of the Common Core for policymaking for college and career readiness and measuring the outcomes of their policies (Blume & Zumeta, 2013; Darling-Hammond et al., 2014). Minimal research exists that examines the policies of college and career readiness nationwide, but the most current research focuses on college readiness. In a study by Blume and Zumeta (2013), it was found that state policies on college readiness were commonly linked to the following dimensions: P-20 data, dual enrollment, and advanced coursework offerings. Thus, many states collect data to assess college readiness outcomes and offer opportunities in dual enrollment and advanced coursework in their policies. However, most states do not have a council to oversee curriculum alignment among schools and higher education as well as maintain accountability for college readiness (Blume & Zumeta, 2013). Additionally, they do not have statewide assessments to measure postsecondary placement and preparedness when students are enrolled in college (Blume & Zumeta, 2013). Darling-Hammond et al. (2014) have expanded upon this research and recommended a useful framework for connecting policymaking and measures of accountability in relation to college and career readiness.

Overall, research suggests that states tend to take a generalized approach to college and career readiness in their policymaking and lack a formalized structure for implementing their

policies (Blume & Zumeta, 2013; Darling-Hammond et al., 2014). Although more emphasis has been placed on college readiness instead of career readiness, these constructs require standardized definitions, which are agreed upon across all school districts in the United States (McMurrer & Frizzell, 2013; Mishkind, 2014). The minimal research that exists on college and career readiness appears to be overlooked as states' definitions and policies tend to focus on academic content and do not include important skills, such as critical thinking and being able to effectively choose a college or career based on a student's interest (Clark, 2015; Conley, 2008). While states are driven to increase outcomes to meet the needs of their future job markets, they lack a holistic strategy for policymaking in developing college and career readiness for their students.

Adolescent Career Development

Career development is an essential component of adolescence. Developing a vocational identity can ensure that adolescents are able to explore their career interests and experience career satisfaction in early adulthood. According to Porfeli and Lee (2012), the process for developing a vocational identity is divided into three developmental tasks: career exploration, commitment, and reconsideration. From childhood to adolescence, young people are exposed to careers through various activities and experiences as well as through family connections. This career exploration leads them to the commitment phase and deciding on a suitable career. In today's work world, there is more fluidity in careers than in the past (Porfeli & Lee, 2012). It is more common for individuals to change careers over the course of their lifespan instead of remaining in one career or organization Thus, the reconsideration phase allows adolescents to reassess their careers choices early on or later in life when needed (Porfeli & Lee, 2012).

Nevertheless, students can only re-evaluate their career choices if they have been properly prepared with the strategies to explore and make decisions about careers.

Schools are highly influential in adolescent career development, but students are not supported with career guidance and planning prior to high school graduation. In a study by Rowan-Kenyon et al. (2011), high, middle, and low-resourced schools across five states were examined for their career programming and their effect on students' career aspirations. It was found that high and low-resourced schools provided the least amount of career programming. High-resourced schools focused on motivating students to attend college while low-resourced schools were more concerned with maintaining federal mandates, such as state-wide test scores, for funding. Both school types were unaware of the educational requirements of potential careers whereas middle-resourced schools provided some career programming although it was not significant.

In another study by Helwig (2008), a group of students were followed from second grade until high school. Every two years, they were surveyed on their career aspirations and educational plans. Several of the students were contacted five years later to assess their career development as young adults. In their five-year follow-up after high school, the group expressed discouragement about their career outlook and expressed that their schools did not adequately prepare them for the work world. In addition to these studies, more research has indicated the need for more career programming in all schools (Dougherty & Lombardi, 2016; Perry & Wallace, 2012; Plank et al., 2008).

Measures of Career Readiness

Although CTE has been implemented in many schools in the U.S., there are few indicators for measuring and evaluating the outcomes of this career readiness initiative. Some

states utilize the ACT WorkKeys assessments, which assesses a student's workplace skills in areas such as math and literacy (Lombardi et al., 2013). These skills are heavily focused on academic knowledge though. Alternative assessments, such as the Career Maturity Index (CMI) and Career Development Index (CDI) are empirically supported and are useful measures for measuring nonacademic skills, such as career knowledge and planning (Levinson et al., 1998). States have varied policies when it comes to CTE. Some states understand the benefits of the programming and invest in it, but others focus mainly on the "college for all" culture and the four-year college track (Hersperger et al., 2013; Imperatore & Hyslop, 2018). This lack of a standardized definition and measurement appears to influence the investment and time placed on career programming, such as CTE. Unlike college readiness, there is not a standardized measurement across all states, such as the ACT or SAT, which schools can utilize to inform and assess their career programming. Without a measure, states may continue to overlook the importance of CTE in supporting their students' career readiness and future employment.

Theoretical Framework: Career Construction Theory

For individuals to decide on a career, they must develop and possess the necessary knowledge and skillset to make work choices. Career maturity is defined as the extent to which an individual is able to independently make career-related choices (Savickas, 2002). This involves having a strong sense of self-awareness and possessing the skills of career decision-making, career exploration, and career planning and management.

Career Construction Theory expands and advances Super's (1957) theory of vocational development, which was novel for examining career development across an individual's lifespan. According to Savickas' Career Construction Theory (2002), there are five stages of career development, in which individuals have to complete essential developmental tasks to

move through each stage. These stages range from early childhood to late adulthood when individuals typically retire from work. The theory is composed of five stages: Growth, Exploration, Establishment, Maintenance, and Disengagement. The first stage is Growth, which occurs from birth to the mid-teenage years. During this period, children are slowly developing a self-concept of a suitable career through role-playing and moving from a play to work orientation. The next stage is Exploration, occurring from the mid-teenage years to the early 20s, when individuals are continuing to foster their self-concept. Additionally, they are gradually narrowing down their career choices and establishing a career preference through experiences, such as internships and part-time jobs. Establishment is the next phase, which happens from the mid-20s to mid-40s. During this stage, individuals decide on a career field and work on advancing within it.

The subsequent phase is Maintenance, occurring from the mid-40s to early 60s, when individuals typically reach their career peak. They have made significant advancements and are working on preserving their careers as they compete with younger workers. The last stage of Super's model is Disengagement when individuals are gradually exiting from the work world and entering retirement. They may seek non-occupational experiences for satisfaction and continue to actively participate in society. Individuals reach this stage in their late 60s. Although these stages have been traditionally connected to specific age ranges, people can revert back to earlier stages when they encounter a career issue or change (Super, 1980). Savickas (2002) further expands on Super's original theory of stages by emphasizing that careers are constructed and not merely developed through a sequential maturation process. Individuals develop their careers as they adapt to various experiences and environments.

The Exploration Stage

Super's stages of career development have been underutilized in supporting adolescents with their career exploration and decision making (Savickas, 2002). According to Savickas (2002), the Exploration stage is a crucial opportunity to assist adolescents in developing the career maturity to make the appropriate educational and professional decisions for their future. During the Exploration stage, there are several sub-stages with important developmental tasks that must be accomplished. Adolescents must explore work options and choose preferences. These preferences become a choice when they act upon them. Initially, adolescents are exploring tentative choices based on their interests, needs, and abilities. This exploration happens through experiences such as role-playing, coursework, job shadowing, and volunteer opportunities.

As adolescents make choices, they undergo a crystallization of preferences, and they decide on an array of career choices based on their interests, talents, and needs (Savickas, 2002). Through gathering information about their self-concept in relation to their vocational identity, they are able to make a career decision, which may be influenced through leisure and educational experiences as well as psychometric testing if they attend a school with robust career programming. Once they have explored their choices, they will enter a phase of specification of vocational preference. Their choices of work are often provisional with minimal commitment during this sub-stage, especially for their first job in their early 20s. When they encounter dissatisfying work experiences, they may revert back to the crystallization and specification sub-stages until they discover the best-fit career.

Adolescents are provided with academic coursework and skills but not guidance on exploring their career interests and choices, which makes it difficult for them to successfully complete the Exploration stage (Kosine & Lewis, 1998). Adolescents are often criticized for

lacking career maturity although they are expected to make college and career decision upon graduating from high school. Kosine and Lewis (1998) emphasize the importance of this stage and the need for providing more support for adolescents in CTE programs. There appears to be a focus on skill training but not any prior exploration of students' career choices. It is important for students to participate in career exploration courses and work opportunities so that they can test out various careers (Kosine & Lewis, 1998; Savickas, 2002). However, if their education is solely focused on academic skill development, they will struggle to crystallize and specify on a career that fits them (Kosine & Lewis, 1998; Savickas, 2002).

Career Maturity

The school-to-work transition is a phase that all adolescents encounter upon graduating from high school in deciding to pursue employment, training, or higher education. One of the most important constructs that has been studied in relation to this transition and Career Construction Theory is career maturity, which describes an individual's readiness to grapple with the developmental tasks of their vocational stage (Savickas, 2002; Super, 1953). Career maturity is viewed as having both attitudinal and cognitive dimensions. In terms of attitude, adolescents may have a range of awareness and confidence in deciding on vocational choices (Savickas, 2002). Conversely, the cognitive dimension is related to their competence, including their knowledge, skills, and abilities, for making career decisions (Savickas, 2002).

Career maturity examines an adolescent's ability to effectively explore, make decisions, and plan for careers (Savickas, 2002). Adolescents, who possess high career maturity, are able to deeply explore their career options and ultimately decide on a career (Savickas, 2002). Career maturity is typically measured quantitatively through assessments. For secondary students, research has

shown that career maturity increases from freshman year to senior year, which suggests that it changes over time during adolescence (Savickas, 2002; Super, 1980).

Critiques of Career Maturity

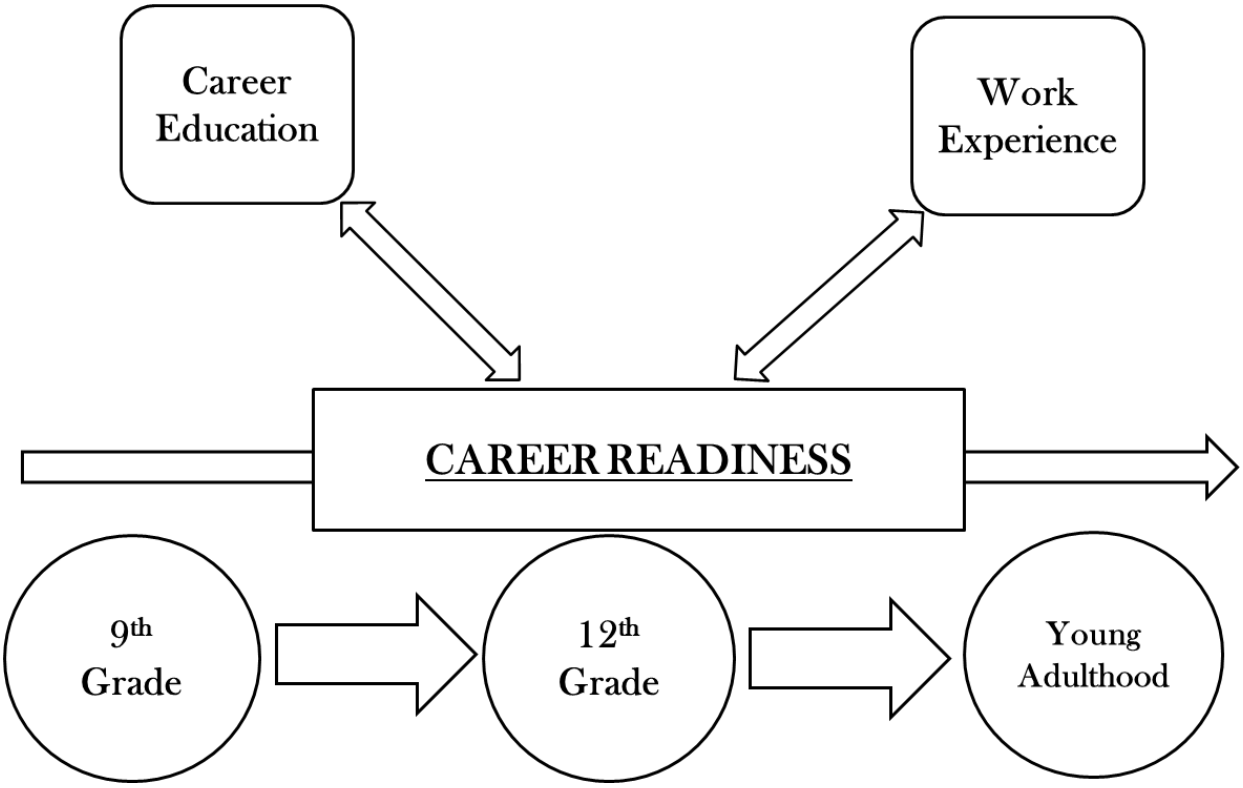
The construct of career maturity has been critiqued as it seems to be most applicable for middle-class, White individuals (Leong & Serafica, 2005; Naidoo, 1998; Watson, 2019). The development model does not specifically take into account the influence of cultural and socioeconomic identities within the career development process (Leong & Serafica, 2005; Naidoo, 1998; Watson, 2019). Few studies have been conducted with students of color and low-income students (Leong & Serafica, 2005; Naidoo, 1998). Most studies have used White, middle-class students as the norm for comparison on assessments of career maturity (Leong & Serafica, 2005; Naidoo, 1998). Another criticism is that the construct of career maturity does not consider non-Western cultures given its emphasis on individual work and accomplishments (Watson, 2019). In collectivist societies, career decisions may often be linked to family obligations and other communal responsibilities, which can prevent an individual for viewing a career choice as an independent decision (Watson, 2019). As a result, adolescents within these cultures may score lower in career maturity due to differences in cultural values (Leong & Serafica, 2005; Naidoo, 1998).

Lastly, while studies have generally examined the influence of contextual factors, such as career programming and work experiences, on career maturity, there does not appear to be any research with robust vocational programs, such as CTE. Thus, despite the theory's limitations, there is a need to assess high school CTE programs and provide more support for students to explore their career choices, as described in the Exploration stage. By conducting more research on students of color and low-income students, the theory can be further refined for these groups

and assist schools in developing their students' career maturity. Figure 1 provides a visual map for the study in exploring the influence of career education in the form of CTE and work experience on the construct of career readiness.

Figure 1

Conceptual Map: Influence of CTE & Work Experience on Career Readiness



Conclusion

This literature review provides essential background information for conceptualizing this study. It describes the historic perceptions of vocational education. Additionally, it includes a detailed description of the construct of career readiness as well as an explanation of Career Construction Theory, which is the underlying theory that supports this study. Previous literature

has outlined the need for an indicator to assess the career readiness of high school seniors, especially those who pursue vocational education. Many schools are implementing vocational education programs in the form of CTE, and it would be useful for them to have an indicator to assess if their programming results in "career ready" students. Given the history of Career Construction Theory, the CMI-C may be an overlooked tool for measuring adolescent career readiness and support the future efforts of schools in improving their CTE programming. This study's methods for assessing the career readiness of high school seniors will be detailed in the subsequent chapter.

CHAPTER 3: METHODOLOGY

Introduction

Career and Technical Education (CTE) has been supported as a strategy to assist students in gaining work knowledge and skills prior to graduating from high school since its inception (Threeton 2007). This programming supports students from sixth to twelfth grade with activities, such as career coursework, internship, job training, college and career counseling, and networking events (Threeton, 2007). Given that CTE programs typically provide a set structure for students to explore careers, it can potentially serve as a beneficial intervention to develop the career readiness of adolescents, which is essential for adolescents to effectively navigate the Exploration Stage of their career development. With increased career exploration, adolescents may be able to transition more seamlessly from high school to post-secondary education and ultimately the work world as a result.

Research Design

A quantitative, quasi-experimental survey design was selected to study the effect of CTE coursework and work experience on the career maturity of recent high school seniors. According to Muijs (2010), the advantage of quasi-experiments over true experiments is that participants can be observed in their natural setting. Given that the research will be conducted with schools, a quasi-experimental design provides a natural setting for students to offer responses within the comfort of their school environment, where they are exposed to career programming. Survey designs are advantageous for studying differences among variables and generalizing findings to real-world settings (Muijs, 2010). Thus, assessing the effect of CTE coursework and work experience on recent high school seniors, through a survey design, offered a comprehensive perspective of exploring the construct of career readiness.

The quasi-experimental design was used to determine if there was a significant influence of CTE coursework on students who were classified as CTE concentrators, CTE participants, and non-CTE students regarding their level of career maturity. Furthermore, the influence of work experience along with the interaction of taking CTE courses and having work experience was also examined. Quasi-experiments require comparison groups, but they must share similar characteristics to experimental groups (Muijs, 2010). In this study, non-CTE students and students without work experience served as comparison groups. One of the disadvantages of quasi-experiments is the threat to internal validity as this design is vulnerable to bias in group composition (Muijs, 2010). Unlike in experimental designs, in which groups are formed to be similar with no pre-existing conditions prior to treatment, quasi-experimental groups may already possess characteristics that may influence the research (Muijs, 2010). As a result, it was important for the researcher to control for factors, such as gender and SES, to minimize any influences, which may impact the study's outcome (Muijs, 2010). It was necessary to make sure that recent high school seniors were similar based on the independent variables of CTE coursework and work experience as well as their demographic backgrounds.

In addition to this threat to internal validity, population-sample differences and artificial research arrangements were also identified as external threats to validity. The study's sample needed to be similar to the population of all high school seniors in order for the results to be generalizable (Muijs, 2010). For this reason, the researcher reached out to various types of schools (public and private) and recruited schools with a mixture of student populations based on gender, race, ethnicity, and SES. Given that career readiness was the focus of the research, it was also important to include schools with robust CTE programs as well as those without CTE programs since CTE is not an educational intervention that occurs in all schools. Furthermore,

due to Covid-19, the survey could not be administered to school in-person, making the study susceptible to artificial research arrangements since students could not take the survey in their physical school settings (Muijs, 2010). To address this threat, the survey was shared through school staff members so that students had a "natural" and "non-artificial" connection for participating in the study.

Due to the difficulty of accessing schools for research as a result of Covid-19, convenience sampling, which is not random, was utilized to recruit students based on the response and availability of participating schools (Muijs, 2010) This sampling strategy is advantageous for being cost-effective and being able to easily access participants, but the disadvantage is that the sample may not fully represent the intended population (Muijs, 2010). The researcher identified schools with a range of characteristics, such as the presence of CTE programming and school type. The researcher made sure that a wide range of schools with varying demographics in terms of school type and student composition were recruited for the study.

Research Questions and Hypotheses

This study focused on three research questions with the following accompanying hypotheses. The research questions and hypotheses guiding the study are below.

1) Does CTE coursework influence the career readiness of high school seniors?

2) Does work experience influence the career readiness of high school seniors?

3) Does the interaction of CTE coursework and work experience influence the career readiness of high school seniors?

- Research Question 1: Does CTE coursework influence the career readiness of high school seniors?

H1: CTE coursework has a significant influence on the career readiness of high school seniors.

H1a: CTE coursework does not have a significant influence on the career readiness of high school seniors.

- Research Question 2: Does work experience influence the career readiness of high school seniors?

  H2: Work experience has a significant influence on the career readiness of high school seniors.

  H2a: Work experience does not have a significant influence on the career readiness of high school seniors.

- Research Question 3: Does the interaction of CTE coursework and work experience influence the career readiness of high school seniors?

  H3: The interaction of CTE coursework and work experience has a significant influence on the career readiness of high school seniors.

  H3a: The interaction of CTE coursework and work experience does not have a significant influence on the career readiness of high school seniors.

Variables

CTE coursework was selected as one independent variable since vocational education has often been utilized to prepare students to enter careers upon high school graduation (Threeton, 2007). Students were grouped as non-CTE students, CTE Participants, and CTE Concentrators as classified by the U.S. Department of Education ("Bridging the Gap", 2019). Non-CTE students

have taken no CTE coursework and CTE participants have taken only 1 course while CTE Concentrators have taken 2 or more courses. Additionally, data on students' work experience was collected to explore its influence as another independent variable. Students were considered to have work experience if they had participated in a job, internship, apprenticeship, or job shadowing. Previous studies have shown that students who work or perform internships are more prepared with career knowledge and skills (Bridgstock, 2009; Gamboa et al., 2013; Lanford & Maruco, 2019; Radcliff & Bos, 2013). Furthermore, research has shown that students score higher on the CMI-C when they are exposed to career interventions, such as CTE and work experiences (Leong & Serafica, 2005; Savickas, 2002). Thus, it was hypothesized that students would score higher in career maturity if they had taken CTE coursework and had work experience. Career readiness served as the dependent variable, using the CMI-C as the assessment tool for measuring it.

Instrumentation

The survey consisted of the Career Maturity Inventory Form C (CMI-C) and a demographic questionnaire. For decades, the Career Maturity Inventory (CMI) has provided an objectively accurate means for examining career maturity during adolescence (Crites, 1978). However, the original CMI was a very lengthy assessment and took over two hours to complete, which led to it being revised as the CMI-R (Savickas, 2002). It was further shortened, combining the attitude and competence scales, to make it even more efficient in its current form as the CMI-C (Savickas & Porfeli, 2011). The CMI-C is available as an open-source assessment for career counseling professionals and educators. Unlike the original CMI, the validity and reliability were not tested during the development of the CMI-C. Given that the items for the CMI-C were selected from the original CMI, it was assumed that the validity and reliability of the CMI-C

would remain the same (Savickas & Porfeli, 2011). In the original CMI, the K-R20 coefficient was .74 for the attitude scale and range from .70-.80 for the Competence scale for examining internal consistency (Hansen, 1974). The external validity was examined for the CMI-C by comparing it to Vocational Identity Scale (VIS), which is similar to the CMI-C, resulting in a coefficient alpha of .79 (Savickas & Porfeli, 2011). Based on these results, the CMI-C demonstrates sufficient reliability and validity to be used in career research with adolescents in addition to adults since the original CMI.

The CMI-C and its earlier versions have been studied and utilized with individuals of various ages, gender, and races/ethnicities. It does have limitations for individuals with disabilities, including intellectual and visually and hearing impaired (Savickas & Porfeli, 2011). However, there has been mixed evidence with further studies (Savickas & Porfeli, 2011). While some research has found similar results across race/ethnic groups, other studies have found it to be biased towards a middle-class, White, Westernized population (Naidoo, 1998; Leong & Serafica, 2005; Watson, 2009). Since the study was conducted in New Orleans, Black students made up a large portion of the participants. Additionally, low-income students made up nearly half of the sample. Thus, given the aforementioned bias with the CMI-C, there was a possibility of this issue impacting the external validity of the research in accurately demonstrating the career readiness of these groups.

According to Savickas and Porfeli (2011), the CMI-C is composed of 24 statements that relates to four subscales: Concern, Curiosity, Confidence, and Consultation. Concern measures the extent to which an individual is preoccupied with making career choices. Curiosity measures the extent of an individual's ability to search for and explore information about careers. Confidence measures the extent to which an individual is secure in making career choices.

Consultation examines the individual's ability to seek help and advice about careers. Participants respond with *Agree* or *Disagree* to each statement. Each statement has a correct response for scoring the CMI-C. Example statements from the CMI-C include "I have so many interests that it is hard to choose just one occupation" and "I'm not going to worry about choosing an occupation until I am out of school." Each subscale has an average or norm score, which was utilized for analyzing the scores for students in the study. Higher scores than the norm indicate that students had sufficient concern, curiosity, and confidence for making career choices and were open to seeking out consultation if needed.

Additionally, the CMI-C provides a Screening Score to assess the overall level of career maturity of students. According to Savickas & Porfeli (2011), a score of 8 or above indicates that students have a high level of career maturity. A score of 4-8 indicates that students may have a broad sense of careers but have not narrowed their choices. A score of 3 or below is concerning in that a students may have very limited or no ability to a make career choice. The Screening Score was the focus of this study in order to explore the influence of CTE coursework, work experience, and their interaction on the career readiness of recent high school seniors.

Lastly, a demographic questionnaire was developed by the researcher to collect information on the independent variables of CTE coursework and work experience as well as background information about the participants. Demographic information, including gender, race, ethnicity, SES based on if they receive free or reduced lunch, and type of school (public or private) was also collected although this information did not serve as a primary variable in the study. For the purpose of this study, students who received free or reduced lunch, were considered low-income. According to the U. S. Department of Agriculture, children in families with income below 130% of the federal poverty level qualify for free lunch while children in

families between 130%-185% of the poverty level qualify for reduced lunch (National School Lunch Program, 2020). This demographic information was collected to further understand the background characteristics of the sample. It was informative in making connections to previous research on the demographics of CTE and non-CTE students, which have found that mainly students of color and low-income students are placed in CTE (Ainsworth & Roscigno, 2005; Deil-Amen & DeLuca, 2010; Holm et al., 2013; Oakes, 1983, 1987, 1992). Additionally, males are often placed in CTE program for certain career fields such as STEM (Leu & Arbeit, 2020; Lufkin et al, 2007; Rodgers & Boyer, 2006).

Participants and Recruitment

Participants of this study consisted of recent high school seniors from the Class of 2021 who were 18 years of age or older. This population was chosen since they had completed all of their coursework, including any programs of study in CTE. Given their age, they were also more likely to have had work experiences to prepare them for graduation. Lastly, this group was in the middle of the Exploration Stage of their career development due to their age, so they were essential for assessing the effect of CTE and work experience on adolescent career readiness. The sample included both students who had taken CTE coursework as well as students who had not taken CTE classes. Non-CTE students and students without work experience served as control groups for comparison purposes. Comparison groups are necessary for quasi-experimental designs (Muijs, 2010). If CTE coursework and work experiences are supposed to prepare students to enter careers, then students should perform higher on the CMI-C, thereby supporting the value of career of such career programming.

After conducting a power analysis with G*Power, a widely used tool for social science research, 107 participants needed to be recruited for the study to observe a medium effect size

from the predictor variables of CTE coursework, work experience, and their interaction (Faul et. al, 2009). 184 students ended up being recruited for the study. 11 students had to be omitted from the study due to incomplete responses. These students were recruited from 7 public schools, 1 private Catholic school, and 1 private independent school that agreed to participate in the study. Due to Covid-19, students were recruited through email communication with schools, and the survey had to be administered virtually. The researcher identified schools that offered robust CTE programming, which was defined as schools with at least 3 programs of study for CTE. These schools were instructed to share the survey via email with their students who took CTE courses as well as non-CTE students within their schools.

In terms of grouping, students were grouped based on their CTE participation: CTE concentrators, CTE participants, and non-CTE students. This groups assisted the researcher in further understanding and exploring the impact of CTE on career readiness. For example, students, who concentrate in a specific program of study in CTE, was hypothesized to score highest on the CMI-C given that they would have the most experience in learning career-focused knowledge and skills due to their concentration. A similar outcome was hypothesized to occur between students with work experience and those without it. In this case, students with work experience would score higher on the CMI-C than those without it because they had not been exposed to the work world. Thus, it was important to recruit a sizeable number of students who met the aforementioned criteria to be able to assess the effect of CTE and work experience on students' level of career readiness. The specific totals for all groups and additional demographic information about the students is provided in Chapter 4.

Procedure

To recruit participating schools and students, schools that offered robust CTE programming and non-CTE schools were identified and contacted. Prior to reaching out to schools, research was conducted on the curricula of several high schools in the Greater New Orleans area, including Metairie and Kenner, to learn more about their course offerings. It was important to make sure that the high schools offered structured CTE courses as well as non-CTE coursework to recruit students with both characteristics.

Once schools were selected for the study, the school counselors at each of these schools received an electronic communication to participate in the study. A copy of the recruitment letter can be found in Appendix A. School counselors served as the point of contact since their roles in schools are typically connected to providing college and career guidance. They were informed of the benefits of having their students take an assessment, such as the CMI-C, so that it could assist them in preparing their students for the postsecondary transition. Since the survey could not be administered in-person, they were also asked to electronically share the survey link with their students through email or alternative communication platform that was used by the school. The counselors were instructed to share the survey only with high school seniors from the Class of 2021 and include both CTE and non-CTE students.

The study's survey was created on Qualtrics.com. As indicated in the survey's consent form (Appendix B), the students' responses were completely anonymous. Additionally, students were able to participate or decline participating in the research. There were also two questions to check for the age of participants within the survey. If students decided to not participate or indicate that they were under 18 years of age, the survey was automatically terminated. A similar check was put in place to ensure that students graduated in 2021. When students selected 2020 as

their graduation year, the survey also terminated. Given that the research had to be conducted remotely, these checks were put in place to recruit the intended sample for the study. Students completed a survey that included both the CMI-C and a questionnaire to collect demographic information. For the demographic questionnaire, students were able to select "Prefer Not to Answer," to respond to questions, which were sensitive to them. On average, students were able to complete the survey in five to ten minutes. For survey research, it is important to keep the survey to a maximum of 30 minutes for optimal completion and engagement, and this survey met this criterion (Muijs, 2010).

As students completed the survey, their responses to the CMI-C, CTE participation, work experience, and demographic information were coded and scored in Qualtrics. Appendix B shows the specific coding in parentheses for the aforementioned factors. No personally identifiable information was be gathered during the data collection process. Qualtrics provided a unique link and participant ID number for all participants that removed any information associated with an email or IP addresses. Qualtrics also includes advanced security and confidentiality through password protection, secure connections, and firewalls. The de-identified results from the CMI-C and demographic questionnaire were inputted in SPSS for analysis and secured on a password-protected computer. The CMI-C scores along with the data from the questionnaire was inputted in SPSS for data analysis. It was important to do early analysis of the data to make sure that the group sizes for each variable were similar in number. This early analysis resulted in the researcher contacting schools to recruit more males for the study.

Data Analysis

The data was analyzed in SPSS Version 27 using multiple linear regression to explore the effect of CTE coursework, work experience, and the interaction on the career readiness of high

school seniors. A regression design is useful for analyzing the effect of two or more predictor variables, which are categorical, on predicting the effect of a continuous dependent variable (Muijs, 2010). According to Laerd Statistics (2015), to analyze data using multiple regression, certain assumptions must be met. For instance, there must be independence of observations in that the residuals are random and do not follow a set pattern. The Durbin-Watson static was analyzed for each multiple regression model to meet this assumption. Another assumption is the presence of a linear relationship between the independent variables and the dependent variable. The studentized residuals and the unstandardized predicted values were placed in a scatter plot to test this assumption. Multicollinearity must also be tested as an assumption. In regression, independent variables must not be highly correlated as it could be difficult to distinguish which variable explains the variance. The Tolerance/VIF collinearity statistics were examined for this assumption. Lastly, there should be no significant outliers, leverage, or influential points which may distort the regression model. The studentized residuals were analyzed for outliers, and the leverage values for any leverage points. Cook's Distance was examined for influential points. All of these assumptions were tested to effectively perform the multiple regression models in this study.

A backward elimination process was utilized to select the variables to enter for the multiple regression models. In this process, all the variables are entered into the model and each one is removed from subsequent models based on significance (Chowdhury & Turin, 2020). One of the advantages of backward elimination is that it examines the predictive value of all variables for the model from the beginning. In this way, only the most salient variables remain at the end of this selection procedure. At the same time, this also presents a disadvantage as variables cannot be re-entered once they are removed with this method (Chowdhury & Turin, 2020).

Nevertheless, the researcher can decide to re-enter variables if they may be important to understanding their study (Chowdhury & Turin, 2020). CTE coursework and its interaction were found to be the most significant predictors from the backward elimination process. Work experience was not a significant predictor, but a multiple regression model was run for this variable given its effect on the interaction with CTE coursework as well as previous research.

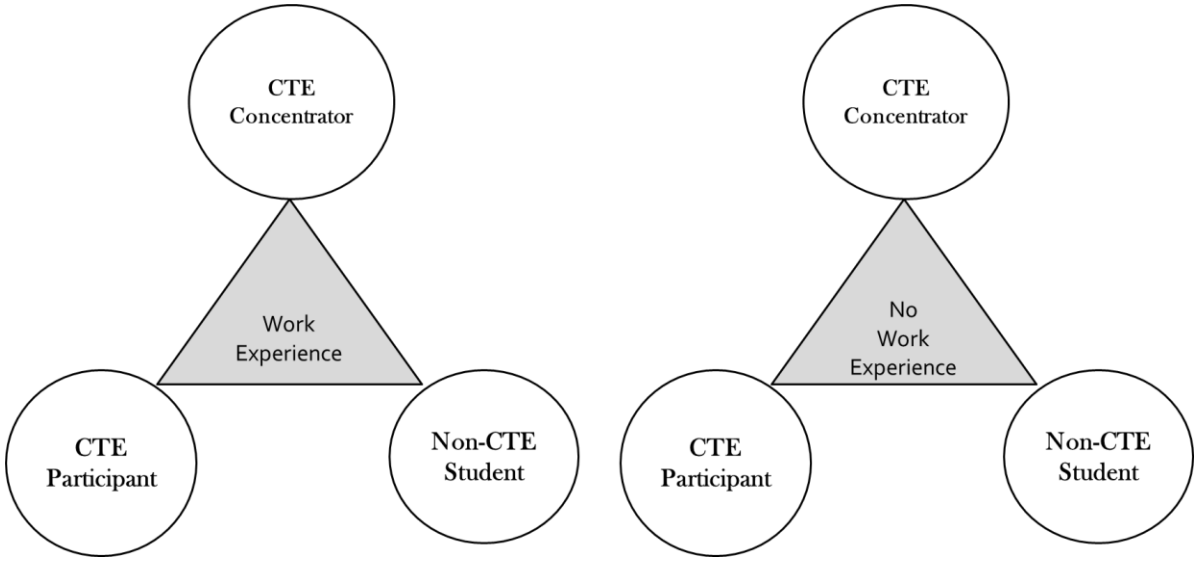
Studies have found that career education and work experiences, such as internships and job shadowing, may influence adolescent career readiness (Leong & Serafica, 2005; Savickas, 2002). Given this background, a regression design was useful in analyzing the effect of the variables of CTE coursework, work experience, and their interaction on predicting the level of career readiness of participants. In this study, CTE coursework and work experience were measured as categorical variables while career readiness, measured using the CMI-C, was a continuous, ratio variable. CTE Participation was coded in the following way: CTE Concentrator (1), CTE Participant (2), and non-CTE Student (3). Conversely, work experience was coded as a Yes (1) or No (2). The CMI-C produced a total score out of 10 for analysis. Although the total score is the focus of this study, the students' scores on the subscales of the CMI-C were also analyzed through descriptive statistics.

In addition to looking at the individual effects of these variables, the interaction between them were also analyzed to obtain an understanding of their collective impact on the students' career readiness overall. Students ended up in the following interaction groups based on their survey responses: CTE Concentrator with work experience, CTE Participant with work experience, Non-CTE student with work experience, CTE Concentrator with no work experience, CTE Participant with no work experience, and Non-CTE student with work

experience. Figure 2 provides a visual representation of the various interactions between CTE coursework and work experience.

Figure 2

Interaction Groups Based on CTE Coursework & Work Experience



Demographic information was also examined through descriptive statistics to explore the background characteristics of the students in terms of gender, race, ethnicity, SES, and type of school. These variables were also added as controls to the multiple regression models to explore the effect of only the variables of CTE coursework, work experience, and their interaction. This demographic information was useful to learn more about who participated in CTE. Table 1 provides a conceptual model of the multiple regression design of the study.

Table 1

Conceptual Model of the Multiple Regression Design of the Study

	CTE Coursework		
	CTE Concentrator (1)	*CTE Participant (2)*	*Non-CTE Student (3)*
Work Experience			
Yes (1)	Mean CMI-C Score	Mean CMI-C Score	Mean CMI-C Score
No (2)	Mean CMI-C Score	Mean CMI-C Score	Mean CMI-C Score

Based on the models of the study, the following regression equations were developed for each research question. The resulting beta coefficient for each equation is shown in Chapter 4.

Research Question 1: *Predicted Career Readiness* = $b_0 + (b_1 \times \text{CTE})$

Research Question 2: *Predicted Career Readiness* = $b_0 + (b_1 \times \text{Work Experience})$

Research Question 3: *Predicted Career Readiness* = $b_0 + (b_1 \times \text{CTE \& Work Experience})$

Ethical Considerations

To conduct the study, the researcher obtained approval from the IRB of the University of New Orleans. Due to the virtual nature of this study as a result of Covid-19, schools and students may have had concerns about confidentiality, especially with providing their demographic information. They may have been apprehensive about sharing personal information about themselves, so demographic questions were developed to not be perceived as intrusive. The "Prefer Not to Answer" option allowed students to choose the information that they were willing to share. In the recruitment email and consent form, approved by the IRB, schools and students were also informed of the procedures that were put in place to maintain their privacy.

Furthermore, schools were informed to not be strategic in selecting students to be a part of the study. For example, schools were instructed to share the survey with all of their high school seniors to ensure that they did not only recruit their most engaged, career-focused students to participate. Choosing this group would not be an accurate representation of their CTE programming and would not show the varied range of career readiness among students overall. Also, it would not benefit the struggling students who may benefit from this intervention. The CMI-C has the potential to help schools identify students who may need more career guidance prior to graduating. However, they would be overlooking these students if they only allowed their "best" students to participate. This would have been an unethical practice for this research as a subgroup of participants would be neglected. Thus, prior to sharing the survey, schools were informed that they must not be selective, and they should make it known that the study is open to all students.

Although schools could benefit from being a part of the study through the evaluation of their CTE programming, they were also informed that the outcome of the study may not produce positive results. It could demonstrate that their programming is not effective in supporting the career readiness of students. Schools needed to understand that the research was exploratory and had the potential to support their programming. However, it should not be assumed that it would produce positive results, which could be immediately used to improve their CTE programming.

Limitations

There are several limitations to the study due to the selected methods and the exploratory nature of the research. For example, CTE and work experience were measured as categorical variables. As a result, the exact amount or dosage of CTE or work experience will not be known from this study. Additionally, there is no standardized curriculum for CTE. Some schools may

have more robust programs that include CTE coursework as well as work experiences, such as internships. This difference may influence the level of career readiness among students who participated. Lastly, career readiness is not a clearly defined construct. This study hypothesizes that career maturity may be a way to define and measure career readiness due to previous research. In spite of these limitations, the study offers an opportunity to explore and learn more about the impact of CTE and work experience on high school seniors as they transition to postsecondary education or careers. Chapter 4 will describe the results from this research study.

Chapter 4: Results

The CMI-C Screening Form (Savickas & Porfeli, 2011) was utilized to assess the influence of CTE participation and work experience on the level of career readiness of recent high school seniors, who graduated in 2021. In addition to the CMI-C students also completed a demographic questionnaire to obtain information on their gender, race, ethnicity, SES, and the type of school that they attended (public, private catholic, or private independent). Descriptive statistics were run to explore the characteristics of the sample. Conversely, multiple regression was used to predict the influence of CTE coursework, work experience, and their interactions on the students' level of career readiness. This chapter provides a description of the results, including the descriptive statistics and the multiple regression tests of the hypotheses.

Descriptive Statistics

The sample consisted of 184 high school students, who graduated in 2021. As displayed in Table 2, students were grouped according to their level of CTE participation as well as their gender, race, ethnicity (Hispanic or non-Hispanic), SES (free or reduced lunch), and the type of school that they attended. The overall sample consisted of 78 (42.4%) CTE Concentrators, 44 (23.9%) CTE participants, and 66 (33.7%) non-CTE students. Of the students who identified their gender, 116 (63%) identified as women, 59 (32.1%) as men, 8 (4.3%) as nonconforming, and 1 (.5%) preferred not to answer. For race, 82 (44.6 %) identified as White, 63 (34.2%) as Black or African-American, 7 (3.8%) as American Indian or Alaskan Native, 31 (16.8 %) as Asian, 18 (9.8 %) as Multiracial, and 5 (2.7%) preferred not to answer. Additionally, 40 (21.7%) identified Hispanic as their ethnicity. 86 (46.7%) students received free or reduced lunch while 93 (50.5%) did not receive it. The majority of students attended public schools with 166 (90.2%) participants while 10 (5.4%) attended a private Catholic school and 8 (4.3%) attended a private

independent school. Furthermore, the overall sample was further grouped by their number of CTE courses that they had taken based on the aforementioned identifiers.

Table 2

Demographics Grouped by CTE

	CTE Concentrator		CTE Participant		Non-CTE Student		Total	
	n	%	*n*	%	*n*	%	*n*	%
All Students	78	42.4	44	23.9	66	33.7	184	100
Gender								
Woman	39	33.6	31	26.7	46	39.7	116	63.0
Man	32	54.2	12	20.3	15	25.4	59	32.1
Non-Conforming	6	75	1	12.5	1	12.5	8	4.3
Prefer Not to Answer	1	100	0	0	0	0	1	.5
Race								
White	34	41.5	17	20.7	31	37.8	82	44.6
Black or African-American	27	42.9	16	25.4	20	31.7	63	34.2
American Indian or Alaskan Native	2	28.6	0	0	5	71.4	7	3.8
Asian	14	45.2	6	19.4	11	35.5	31	16.8
Multiracial	7	38.9	8	44.4	3	16.7	18	9.8
Prefer Not to Answer	1	20.0	3	60.0	1	20.0	5	2.7
Hispanic								
Yes	14	35	16	40	10	25	40	21.7
No	63	44,1	28	19,6	52	36.4	143	77.7
Prefer Not to Answer	1	100	0	0	0	0	1	.5
Free or Reduced Lunch								
Yes	37	43	28	32.6	21	24.4	86	46.7
No	41	44.1	14	15.1	38	40.1	93	50.5
Prefer Not to Answer	0	0	2	40	3	60	5	2.7
Type of School								
Public	74	44.6	41	24.7	51	30.7	166	90.2
Private Catholic	2	20	0	0	8	80	10	5.4
Private Independent	2	25	3	37.5	3	37.5	8	4.3

Tables 3 further examines the number and percentage of CTE Concentrators who graduated with a specific program of study. Of the 78 CTE Concentrators, 42 (53.8%) were enrolled in a specific program of study compared to 36 (46.2%) who were not. Seniors were involved in the following programs of study: Architecture & Construction (4.8%), Arts/A/V Technology/Communications (9.5%), Business Management/ Administration (7.1%), Finance (4.8%), Health Science (33.3%), Information Technology (4.8), Law/Public/Safety/ Corrections/Security (14.3%), Manufacturing, and STEM (19%).

Table 3

Programs of Study Among CTE Concentrators

	Total	
	n	%
Program of Study		
Yes	42	53.8
No	36	46.2
Architecture & Construction	2	4.8
Arts, A/V Technology, and Communications	4	9.5
Business Management and Administration	3	7.1
Finance	2	4.8
Health Science	14	33.3
Information Technology	2	4.8
Law, Public Safety, Corrections, and Security	6	14.3
Manufacturing	1	2.4
STEM	8	19

Table 4 examines the programs of study in terms of gender, specifically for men and women. Non-conforming students were not included in the table due to their small sample size. 19 (24.4%) men pursued a program of study with STEM (n = 7, 16.7%) being the most common concentration. For women (n = 21; 26.9%), Health Science was the most common program of study (n = 12; 28.6%). The numbers and percentages of the other programs of study for men and women are provided below.

Table 4

Programs of Study Grouped by Gender

Gender	Men		Women		Total	
	n	%	*n*	%	*n*	%
Program of Study						
Yes	19	47.5	21	52.5	40	51.3
No	13	41.9	18	58.1	31	47.7
Architecture & Construction	0	0	1	100	1	2.4
Arts, A/V Technology, and Communications	1	25	3	75	4	9.5
Business Management and Administration	2	66.7	1	33.3	3	7.2
Finance	2	100	0	0	2	4.8
Health Science	2	14.3	12	85.7	14	33.4
Information Technology	1	100	0	0	1	2.4
Law, Public Safety, Corrections, and Security	3	50	3	50	6	14.2
Manufacturing	1	100	0	0	1	2.4
STEM	7	87.5	1	12.5	8	19.1

Program of study was further explored based on race. Due to small sample sizes, Asian, American Indian or Alaskan Native, and Multiracial were not represented in the table. 17 (63%) Black students indicated having a program of study, and Health Science (n = 7, 41.2%) was the most common program of study. 22 (64.7%) White students pursued a program of study with STEM as the most common concentration among the group (*n* = 7, 31.8%) as shown in Table 5.

Table 5

Programs of Study Grouped by Race

Race	Black		White		Total	
	n	%	*n*	%	*n*	%
Program of Study						
Yes	17	43.6	22	56.4	39	63.9
No	10	45.5	12	54.5	22	36.1
Architecture & Construction	0	0	2	100	2	3.3
Arts, A/V Technology, and Communications	3	75	1	25	4	6.6
Business Management and Administration	1	33.3	2	66.7	3	4.9
Finance	1	50	1	50	2	3.3
Health Science	7	58.3	5	41.7	12	19.7
Information Technology	0	0	1	100	1	1.6
Law, Public Safety, Corrections, and Security	4	66.7	2	33.3	6	9.8
Manufacturing	0	0	1	100	1	1.6
STEM	1	12.5	7	87.5	8	13.1

Lastly, program of study was examined in terms of SES. 17 (21.8%) free or reduced lunch students pursued a program of study, and Health Science (n = 16, 14.3%) was the most common program of study. 25 (32.1%) non-free or reduced lunch students indicated having a program of study with Health Sciences (*n* = 8, 19%) and STEM (*n* = 6, 14.3%) being the most common concentration.

Table 6

Programs of Study Grouped by SES

Free or Reduced Lunch	Yes		No		Total	
	n	%	*n*	%	*n*	%
Program of Study						
Yes	17	40.5	25	59.5	42	53.8
No	20	55.6	16	44.4	36	46.2
Architecture & Construction	1	50	1	50	1	2.4
Arts, A/V Technology, and Communications	3	75	1	25	4	9.5
Business Management and Administration	0	0	3	100	3	7.1
Finance	1	50	1	50	2	4.8
Health Science	6	75	8	25	14	33.3
Information Technology	1	50	1	50	1	4.8
Law, Public Safety, Corrections, and Security	2	33.3	4	66.7	6	13.3
Manufacturing	1	100	0	0	1	2.4
STEM	2	25	6	75	8	19.1

Table 7 shows the work experience of the sample based on their gender, race, ethnicity (Hispanic or non-Hispanic), SES (free or reduced lunch), and the type of school that they attended. For all students, 125 (67.9%) had work experience, and 59 (32.1%) had no work experience. In terms of gender, 82 (65.6%) women, 36 (28.8%) men, and 7 (5.6%) of non-conforming individuals had work experience. Conversely, 34 (57.6%) women, 23 (39%) men, and 1 (1.7%) non-conforming individual had no work experience. For race, 60 (42.9%) White participants, 40 (28.6%) Black or African-American participants, 3 (2.1%) American Indian or Alaskan Native participants, 20 (14.3%) Asian participants, and 13 (9.3%) Multiracial participants had work experience.

The following numbers were observed for participants with no work experience in terms of race: 22 White (33.3%), 23 (34.8%) Black or African-American, 4 (6.1%) American Indian or Alaskan Native, 11 (16.7%) Asian, and 5 (7.6%) Asian. 11 (18.6%) Hispanic students had work experience while 29 (23.2%) had no work experience. 51 (56%) of free or reduced lunch students had work experience while 35 (39%) had no work experience. Of those who did not receive free or reduced lunch, 70 (40.8%) had work experience and 23 (59.3%) had no work experience. For type of school, 112 (89.6%) public, 7 (5.6%) private Catholic, and 6 (4.8%) private independent school students had work experience while 54 (91.5%) public, 3 (5.1%) private catholic, and 2 (3.4%) private independent school students had no work experience.

Table 7

Demographics Grouped by Work Experience

	Work Experience		No Work Experience		Total	
	n	%	*n*	%	*n*	%
Gender						
Woman	82	70.7	34	29.3	116	63.0
Man	36	61	23	39	59	32.1
Non-Conforming	7	87.5	1	12.5	8	4.3
Prefer Not to Answer	0	0	1	100	1	.5
Race						
White	60	73.2	22	26.8	82	44.6
Black or African-American	40	63.5	23	36.5	63	34.2
American Indian or Alaskan Native	3	42.9	4	57.1	7	3.8
Asian	20	64.5	11	35.5	31	16.8
Multiracial	13	72.2	5	27.8	18	9.8
Prefer Not to Answer	4	80.0	1	20.0	5	2.7
Hispanic						
Yes	11	27.5	29	72.5	40	21.7
No	48	33.6	95	66.4	143	77.7
Prefer Not to Answer	0	0	1	100	1	.5
Free or Reduced Lunch						
Yes	51	59.3	35	40.7	86	46.7
No	70	75.2	23	24.7	93	50.5
Prefer Not to Answer	4	80	1	20	5	2.7
Type of School						
Public	112	67.5	54	32.5	166	90.2
Private Catholic	7	70	3	30	10	5.4
Private Independent	6	75	2	25	8	4.3

125 students participated in the following work experiences (Table 8): 105 (84%) Job, 28 (22.4%) Internship, 5 (4%) Apprenticeship, and 17 (13.6%) Job Shadowing. Students were able to select more than one type of work experience for this survey question. As a result, the total of these percentages exceeds 100.

Table 8

Types of Work Experience Among All Students

	Total	
	n	%
Work Experience		
Yes	125	67.9
No	59	32.1
Job	105	84
Internship	28	22.4
Apprenticeship	5	4
Job Shadowing	17	13.6

Table 9 examines the sample based solely on their CTE participation and work experience. The following numbers and percentages were found: 46 (36.8%) CTE Concentrators with work experience, 32 (54.2%) CTE with no work experience, 35 (28%) CTE Participants with work experience, 9 (15.3%) CTE Participants with no work experience, 44 (35.2%) non-CTE students with work experience, and 18 (30.5%) non-CTE students with no work experience.

Table 9

Demographics Grouped by CTE and Work Experience

	CTE Concentrator		CTE Participant		Non-CTE Student		Total	
	n	%	*n*	%	*n*	%	*n*	%
Work Experience	46	36.8	35	28	44	35.2	125	67.9
No Work Experience	32	54.2	9	15.3	18	30.5	59	32.1

Mean Comparisons

The mean CMI-C Screening Score was also examined based on the demographic information collected from the sample. Table 10 displays the mean scores in terms of CTE participation, gender, race, ethnicity, SES, and type of school. The mean scores for some groups, such as Multiracial CTE Concentrators, is higher than the average for most of the sample due to the small sample size of these groups. The average scores for gender were as follows: Women (M = 4.33, SD = 3.03), Men (M = 5.08, SD = 3.16), and Non-Conforming (M = 6.88, SD = 1.89).

For race, the following results were found: White (M = 4.34, SD = 3.13), Black or African American (M = 5.62, SD = 3.07), American Indian or Alaskan Native (M = 5.29, SD = 3.86), Asian (M = 4.48, SD = 2.89), and Multiracial (M = 5.44, SD = 3.42). For Hispanic individuals, the mean was 4.13 (SD = 2.86). In terms of SES, students who did not receive free or reduced lunch had a higher average score (M = 4.77, SD = 3.17) than those who received it (M = 4.45, SD = 2.93). Private independent school students had the highest mean score (M = 5.88, SD = 4.19) in comparison to private Catholic (M = 5.70, SD = 4.50), and public schools (M = 4.56, SD = 3.03).

Table 10

Mean CMI-C Screening Score Grouped by CTE

	CTE Concentrator		CTE Participant		Non-CTE Student		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
All Students	5.45	2.86	4.66	3.36	3.73	2.86	4.68	3.07
Gender								
Woman	5.49	2.95	4.26	3.05	3.39	2.79	4.33	3.03
Man	5.09	2.89	5.75	4.11	4.53	2.97	5.08	3.16
Non-Conforming	7.33	1.75	4.00	0	7.00	0	6.88	1.89
Prefer Not to Answer	4.00	0	0	0	0	0	4.00	0
Race								
White	5.12	2.97	4.06	3.75	3.65	2.82	4.34	3.13
Black or African-American	5.81	2.97	6.94	2.52	4.30	3.20	5.62	3.07
American Indian or Alaskan Native	8	1.41	0	0	4.20	4.09	5.29	3.86
Asian	5.07	2.62	6.17	3.92	2.82	1.78	4.48	2.89
Multiracial	7.57	2.07	4.13	4.12	4.00	1.00	5.44	3.42
Prefer Not to Answer	2.00	0	2.00	0	3.00	0	2.20	.45
Hispanic								
Yes	4.71	2.90	3.19	2.79	4.8	3.19	4.13	2.86
No	5.67	2.58	5.50	3.42	3.52	2.79	4.85	3.12
Prefer Not to Answer	2.00	0	0	0	0	0	2.00	0
Free or Reduced Lunch								
Yes	5.30	2.79	4.07	3.00	3.48	2.79	4.45	2.93
No	5.59	2.79	5.07	3.67	3.79	3.01	4.77	3.17
Prefer Not to Answer	0	0	10.00	0	4.67	1.53	6.80	3.11
Type of School								
Public	5.32	2.84	4.54	3.29	3.47	2.80	4.56	3.03
Private Catholic	8.00	2.83	0	0	5.13	2.23	5.70	4.50
Private Independent	7.50	3.54	6.33	4.73	4.33	5.13	5.88	4.19

As shown in Table 11, the following mean scores were found for CTE Concentrators based on their program of study: Architecture & Construction (M = 6.00, SD = 2.82), Arts/A/V

Technology/ Communications (*M* = 6.25, *SD* = .98), Business Management/ Administration (*M* = 3.67, *SD* = 2.31), Finance (*M* = 7.5, *SD* = .71), Health Science (*M* = 5.93, *SD* = 3.00), Information Technology (*M* = 8.50, *SD* = .71), Law/Public/Safety/ Corrections/Security (*M* = 8.00, *SD* = 2.19), Manufacturing, and STEM (*M* = 3.00, *SD* = 0).

Table 11

Mean CMI-C Screening Score Grouped by Programs of Study

Baseline characteristic	Total	
	M	*SD*
Program of Study		
Yes	5.98	2.63
No	4.83	3.04
Architecture & Construction	6.00	2.82
Arts, A/V Technology, and Communications	6.25	.98
Business Management and Administration	3.67	2.31
Finance	7.5	.71
Health Science	5.93	3.00
Information Technology	8.50	.71
Law, Public Safety, Corrections, and Security	8.00	2.19
Manufacturing	3.00	0
STEM	4.63	2.33

As displayed in Table 12, the mean CMI-C Screening Score was also examined according to work experience. For the overall sample, students with work experience had the same mean score (*M* = 4.68, *SD* = 3.04) but the standard deviation slightly differed from those with no work experience (*M* = 4.68, *SD* = 3.14). The specific differences among students based

on work experience along with gender, race, ethnicity, SES, and type of school can also be viewed in Table 12.

Table 12

Mean CMI-C Screening Score Grouped by Work Experience

	Work Experience		No Work Experience		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
All Students	4.68	3.04	4.68	3.14	4.68	3.07
Gender						
Woman	4.36	3.14	4.26	3.18	4.33	3.03
Man	5.03	2.98	5.17	3.11	5.08	3.16
Non-Conforming	6.71	1.98	8.00	0	6.88	1.89
Prefer Not to Answer	0	0	4.00	0	4.00	0
Race						
White	4.08	3.10	5.05	3.17	4.34	3.13
Black or African-American	6.3	2.79	4.43	3.22	5.62	3.07
American Indian or Alaskan Native	6.00	3.61	4.75	4.50	5.29	3.86
Asian	4.60	3.17	4.27	2.41	4.83	2.89
Multiracial	5.62	3.33	5.00	4.00	5.44	3.42
Prefer Not to Answer	2.00	0	3.00	0	2.20	.45
Hispanic						
Yes	3.66	2.58	5.36	3.29	4.13	2.86
No	5.02	3.12	4.52	3.11	4.85	3.12
Prefer Not to Answer	2.00	0	0	0	2.00	0
Free or Reduced Lunch						
Yes	4.18	3.00	4.86	2.82	4.45	2.93
No	4.88	3.02	4.48	3.67	4.77	3.17
Prefer Not to Answer	7.75	2.63	3.00	0	6.80	3.11
Type of School						
Public	4.56	2.97	4.57	3.18	4.56	3.03
Private Catholic	5.14	2.41	7.00	2.64	5.70	2.50
Private Independent	6.50	4.72	2.00	1.41	5.88	4.19

The mean score of students according to the type of work experience is shown in Table 13, with the following results: Job (*M* = 4.75, *SD* = 3.12), Internship (*M* = 4.86, *SD* = 2.86), Apprenticeship (*M* = 4.20, *SD* = 4.02), and Job Shadowing (*M* = 5.00, *SD* = 3.12).

Table 13

Mean CMI-C Screening Score Grouped by Types of Work Experience

Baseline characteristic	Total	
	M	*SD*
Work Experience		
Yes	4.68	3.04
No	4.68	3.14
Job	4.75	3.12
Internship	4.86	2.86
Apprenticeship	4.20	4.02
Job Shadowing	5.00	3.12

Furthermore, the mean CMI screening score was compared using only CTE participation and work experience (Table 14). CTE Concentrators with work experience had the highest mean score. The following means and standard deviations were found: CTE Concentrators with work experience (*M* = 5.63, *SD* = 2.74), 32 (54.2%), CTE with no work experience (*M* = 5.19, *SD* = 3.05), CTE Participants with work experience (*M* = 4.31, *SD* = 3.48), CTE Participants with no work experience (*M* = 6.00, *SD* = 3.12), non-CTE students with work experience (*M* = 3.98, *SD* = 2.87), and non-CTE students with no work experience (*M* = 3.11, *SD* = 2.83).

Table 14

Mean CMI-C Screening Score Grouped by CTE and Work Experience

	CTE Concentrator		CTE Participant		Non-CTE Student	
	M	*SD*	*M*	*SD*	*M*	*SD*
Work Experience	5.63	2.74	4.31	3.48	3.98	2.87
No Work Experience	5.19	3.05	6.00	3.12	3.11	2.83

In addition to the screening score, the mean subscale scores were also examined. Table 15 shows the subscale scores related to gender, race, ethnicity, SES, and type of school. When compared to the high school norms for the CMI, the numbers are below average for the CMI for some of the subscales with the expected mean results being the following: Concern (M = 4.6, SD = 1.4), Curiosity (M = 2.72, SD = 1.97), Confidence (M = 2.56, SD = 1.97), and Consultation (M = 4.94, SD = 1.7). For this study's sample, the Curiosity (M = 2.83, SD = 1.96) was the only subscale that met the expected average while the other subscales were below the mean with the following results: Concern (M = 3.98, SD = 1.34), Confidence (M = 2.37, SD = 1.85), and Consultation (M = 3.19, SD = 1.66).

Table 15

Mean CMI-C Subscale Scores Grouped by Demographics

Baseline characteristic	Concern		Curiosity		Confidence		Consultation	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
All Students	3.98	1.34	2.83	1.96	2.37	1.85	3.19	1.66
Gender								
Woman	3.92	1.35	2.67	1.86	2.11	1.85	3.31	1.75
Man	4.05	1.39	3.08	2.14	2.68	2.68	3.10	1.53
Non-Conforming	4.38	.74	3.38	2.13	1.83	3.88	2.00	.76
Prefer Not to Answer	3.00	0	2.00	0	2.00	0	4.00	0
Race								
White	3.88	1.36	2.59	1.98	2.26	1.78	3.35	1.60
Black or African-American	4.37	1.17	3.26	1.98	2.79	1.92	3.16	1.73
American Indian or Alaskan Native	3.71	1.38	2.86	2.79	3.29	1.98	2.86	2.73
Asian	4.29	1.16	2.77	1.80	2.42	1.89	3.35	1.78
Multiracial	3.44	1.76	3.11	2.19	3.33	1.94	2.78	1.70
Prefer Not to Answer	3.40	1.14	1.60	.89	.20	.45	2.60	1.82
Hispanic								
Yes	3.38	1.55	2.73	2.05	2.03	1.79	2.80	1.42
No	4.15	1.23	2.87	1.95	2.48	1.86	3.31	1.72
Prefer Not to Answer	3.00	0	1.00	0	0	0	2.00	0
Free or Reduced Lunch								
Yes	3.63	1.43	2.69	1.88	2.28	1.79	2.91	1.57
No	4.25	1.19	2.84	2.00	2.44	1.85	3.45	1.72
Prefer Not to Answer	5.00	.71	5.20	1.30	2.60	3.13	3.20	1.79
Type of School								
Public	3.90	1.32	2.72	1.93	2.33	1.79	3.25	1.66
Private Catholic	5.00	1.05	4.00	2.05	2.40	1.90	3.30	1.83
Private Independent	3.98	1.60	2.83	2.20	2.37	2.90	3.19	1.00

As displayed in Table 16, the subscale scores were also explored based on CTE coursework and work experience with all scores being below the norm expected for the CMI-C

except for in the following results: CTE Concentrators with Curiosity (*M* = 3.23, *SD* = 1.93), Work Experience with Curiosity (*M* = 2.90, *SD* = 2.01), CTE Concentrator with Confidence (*M* = 2.69, *SD* = 1.73), and No Work Experience with Confidence (*M* = 2.63, *SD* = 1.75).

Table 16

Mean CMI-C Subscale Scores Grouped by CTE and Work Experience

	Concern		**Curiosity**		**Confidence**		**Consultation**	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
All Students	3.98	1.34	2.83	1.96	2.37	1.85	3.19	1.66
CTE Concentrator	4.23	1.23	3.23	1.93	2.69	1.73	3.05	1.78
CTE Participant	3.50	1.55	2.64	1.95	2.48	2.04	3.25	1.40
Non-CTE Student	4.00	1.24	2.47	1.76	1.89	1.78	3.32	1.76
Work Experience	4.00	1.45	2.90	2.01	2.25	1.89	3.27	1.63
No Work Experience	3.99	1.07	2.68	1.86	2.63	1.75	3.02	1.74

Inferential Statistics

Research Question 1

Does CTE coursework influence the career readiness of high school seniors?

A multiple regression was run to examine the influence of CTE coursework on students' career readiness, using the CMI-C Screening Score. Students were classified as CTE Concentrators, CTE Participants, or non-CTE students for CTE coursework. Non-CTE students served as the baseline group for comparison in the model. Gender, race, ethnicity, SES, and type of school were also input into the model as controls. The multiple regression model significantly predicted career readiness, $F(2, 181) = 32.393$, $p < .05$, adj. $R^2 = .05$. Only CTE Concentrators were statistically significantly to the prediction, $p < .05$, explaining 6% of the variance and indicating a low effect size. When controlling for all other variables, being a CTE Concentrator

resulted in 1.72 unit of change on the students' CMI scores. Regression coefficients and standard errors can be found in Table 17.

Although it was a low effect, this result does indicate that CTE influences career readiness. Prior research with the CMI recommended that students be exposed to career education in order to support the growth of their career maturity. CTE appears to be a form of career education that further assists students in being more career ready given that CTE Concentrators scored 1.72 points higher on the CMI-C than non-CTE students. The result for CTE participants was not significant, which may demonstrate that taking one course is not sufficient enough for influencing a student's level of career readiness.

Table 17

Multiple Regression Model for CTE

Interaction	B	95% CI		SEB	β	R^2	ΔR^2
		LL	*UL*				
Model**						.06	.05
Constant [a]	3.73	2.98	4.48	.38			
CTE1[b]	.93	-.23	2.10	.59	.13		
CTE2 [c]	1.72	.719	2.73	.51	.28*		

** p<.05*

[a] Constant = 0 CTE Courses. [b] CTE1 = 1 CTE Course. [c] CTE2 = 2 or more CTE Courses

***Dependent Variable = CMI Screening Score*

Research Question 2

Does work experience influence the career readiness of high school seniors?

A multiple regression was also run to examine the influence of work experience on career readiness, using the CMI-Screening Score. Students were classified and coded as having work experience and not having work experience. The students with no work experience served as the comparison group for the model. As previously conducted, the demographic variables were also incorporated in the model to control for their influence. The multiple regression model was not statistically significant, $F(1, 182) = 0$, $p < .01$, adj. $R^2 = 0$. Regression coefficients and standard errors can be found in Table 18.

While research had supported that work experiences may also influence students' scores on the CMI-C, the result was not significant in this study. As described in Table 8, the majority of the sample had jobs as work experience. Given that the sample was high school seniors, many of them may not have worked jobs that were specifically related to their career interest given their age, minimal education, and experience. Other students indicated having internships, apprenticeships, and job shadowing, and they often pursue these types of work experiences to gain practical experience in a career. These types of work experience may have yielded significant results if they were the focus of the study.

Table 18

Multiple Regression Model for Work Experience

Interaction	B	95% CI		SEB	β	R^2	ΔR^2
		LL	*UL*				
Model**						0	0
Constant [a]	4.68	3.89	5.47	.40			
Work Experience	0	-.96	.96	.49	0		

[a] *Constant = No Work Experience*
***Dependent Variable = CMI Screening Score*

Research Question 3

Does CTE coursework and work experience influence the career readiness of high school seniors?

Lastly, a multiple regression was run to examine the influence of the interaction of CTE participation and work experience on career readiness, using the CMI-Screening Score. The groups were as follows: non-CTE student with no work experience, Non-CTE student with work experience, CTE Participant with no work experience, CTE Participant with work experience, CTE Concentrator with no work experience, and CTE Concentrator with work experience. Non-CTE students with no work experience served as the baseline group for comparisons. Gender, race, ethnicity, SES, and type of school served as control variables to minimize their effect, if any, on the model. The multiple regression model was statistically significant, $F(5, 178) = 3.06$, $p < .05$, adj. $R^2 = .08$. This model explained 8% of the variance, indicating a low effect. CTE participants with no work experience. CTE Concentrators with no work experience, and CTE Concentrators with work experience significantly contributed to the model, $p < .05$. When controlling for all other variables, being a CTE participants with no work experience resulted in

2.89 change on the students' CMI scores while CTE Concentrators with no work experience and CTE Concentrator with work experience resulted in 2.08 and 2.58 unit of change respectively. Regression coefficients and standard errors can be found in Table 19.

The result of CTE Participants with no work experience was abnormally high due to the small sample size. Work experience does not affect an adolescent's level of career readiness, but it does appear to have some influence when combined with CTE. CTE Concentrators who had work experience scored 2.58 points higher on the CMI-C than non-CTE students with no work experience. This score is nearly one point higher than the influence of only CTE as detailed in Table 17. This result supports the research on career education and work experience as being important for supporting students in being career ready. It may suggest that the combination of these two interventions is most effective in developing career readiness.

Table 19

Multiple Regression Model for CTE and Work Experience

Interaction	B	95% CI		SEB	β	R^2	ΔR^2
		LL	*UL*				
Model*						.08	.05
Constant	3.11	1.72	4.50	.70			
CTE0_WE1 [a]	.87	-.78	2.51	.84	.12		
CTE1_WE0 [a]	2.89	.49	5.29	1.22	.20*		
CTE1_WE1 [b]	1.20	-.50	2.91	.87	.15		
CTE2_WE0 [d]	2.08	.34	3.8	.88	.26*		
CTE2_WE1 [e]	2.52	.88	4.16	.83	.36*		

** p<.05*

[a] CTE0_WE1 = 0 CTE Courses, Work Experience. [b] CTE1_WE0 = 1 CTE Course, Work Experience. [c] CTE1_WE1 = 1 CTE Course, Work Experience. [d] CTE2_WE0 = 2 or more CTE Courses, Work Experience. [e] CTE2_WE1 = 2 or more CTE Courses, Work Experience.

***Dependent Variable = CMI Screening Score*

Conclusion

Overall, the results demonstrate that CTE has a small effect on adolescent career readiness as measured by the CMI-C. The effect increases slightly when students have also participated in a work experience, such as a job or internship. However, work experience does not influence career readiness as a single predictor. In the following chapter, these results will be further discussed in detail along with their implications.

Chapter 5: Discussion

Although there are specific strategies and indicators for preparing students for college, there are limited measures for career readiness. Currently, indicators, such as the SAT and ACT, are valued since high scores on these assessments provide college access (Camara, 2013; Duncheon, 2015). However, there is not a similar indicator for career readiness that is widely used in schools (McMurrer & Frizzell, 2013; Mishkind, 2014). This research was conducted to explore the potential of a quantitative measure to specifically assess career readiness. This chapter provides a comprehensive discussion of the results of this study. It examines the influence of CTE coursework, work experience, and their interaction on the career readiness of high school seniors. This chapter will include an interpretation of the findings, limitations, implications for policy and practice, and recommendations for future research.

Findings

In examining the sample of this study, it is important to note that the average score for all students as a group was lower than the expected mean for both the screening score and subscales of the CMI-C. This indicates that the average senior from this study may not be ready to make a career choice. For the subscale scores, they held low levels of concern, curiosity, confidence, and consultation. This suggests that they were concerned about their future and curious about a broad range of careers. They had not narrowed their career interests due to their limited knowledge. As a result, they were not confident about making a career choice and require more guidance to explore their career interests. This result was observed for all students regardless of their CTE coursework, work experience, race, gender, ethnicity, SES, and the type of school that they attended. Due to the study being conducted in New Orleans schools, with its large Black student population, there was a concern that the CMI-C may not accurately assess this group's career

readiness. Some studies have identified bias with the instrument as it has often been utilized with White students (Naidoo, 1998; Leong & Serafica, 2005; Watson, 2009). Similarly, this bias has also been connected to SES since studies have mainly consisted of middle-class students. Additionally, both Black and low-income students have been limited in accessing educational opportunities in the past (Ainsworth & Roscigno, 2005; Oakes, 1983, 1987, 1992; Wonacott, 2003). Because of this historic limitation and biased sampling with the CMI-C, there was the potential for both groups to perform lower on the CMI-C than White students and students who were not low-income. However, all students' score were fairly similar. They all ended up performing lower than the expected norm for the subscale scores, and no group met the minimum score for being career ready on the CMI-C. Given the results, the participants in this study would struggle in completing the Exploration Stage of their career development and would need additional career interventions to support their career readiness, especially for their postsecondary transition.

The majority of the sample included public school students with very few private Catholic and private independent school students, so this study is limited in understanding the career readiness of students in private school settings. As outlined in Chapter 4, some groups met the expected mean, but others did not for the subscale scores, and none met the minimum score to be deemed career ready. Savickas and Porfeli (2011) stated that men tend to score higher on the CMI-C than women, which also occurred in the study although it was a small difference. Even though there was double the number of men as women in this study, there were distinct gender differences in the programs of study of both groups. For example, only 1 woman pursued STEM as a program of study in comparison to 7 men. Conversely, 12 women were focused on Health Sciences and only 2 men. Health sciences consists of careers, such as nursing, which is a

career path that is predominantly women. Previous research demonstrated that gender disparities exist in CTE programs, and these disparities were also observed in this study (Leu & Arbeit, 2020; Lufkin et al, 2007; Rodgers & Boyer, 2006).

In terms of race, White and Black students were the largest groups in the sample and performed highest on the CMI-C among all races although the sample sizes were much smaller for other racial groups. For SES, nearly 50% of students received free or reduced lunch in comparison to those who did not. The mean CMI-C screening score were nearly equal as well, and both groups were not career ready on average. This result demonstrates that the CMI-C may not be more biased toward White students and students who are not low-income and that more studies should explore using it with students of various racial and socioeconomic backgrounds. Similar to gender, both race and SES also revealed disparities related to program of study. White students and non-free or reduced lunch students made up the majority in STEM programs. Black students and those, who received free or reduced lunch, had few students with STEM concentrations. Health Sciences was the most common concentration for both groups. Historically, low-income and Black students, specifically in New Orleans, have been limited to manual labor (Wonacott, 2003). However, this result demonstrates that these groups are pursuing other career industries. Nevertheless, the study shows that Black and low-income students remain underrepresented in STEM programs as indicated in past research (Deil-Amen & DeLuca, 2010; Holm et al., 2013; Leu & Arbeit, 2020).

The results of this study suggest that the CMI-C could be useful for schools in measuring students' thoughts and attitudes about making career choices. The small effect may have been result of the overall lack of career readiness among the sample. In this study, it was found that students who had taken 2 or more CTE courses scored higher on the CMI-C than students who

took only 1 course or no courses. The regression model was not significant for students who only had 1 course though, which suggests that students need to take several CTE courses to demonstrate higher levels of career readiness. These results align with the research on adolescent career readiness that emphasizes the importance of career education in developing more career ready students (Barnes & Slate, 2013; Helwig, 2008; Kosine & Lewis, 1998; Portfeli & Lee, 2012).

However, in examining work experience, the regression model was not significant. Most students participated in jobs as a work experience while few had internships, apprenticeships, or job shadowing experiences. Internships, apprenticeships, and job shadowing are typically work experiences that support students in gaining the technical education and skills for a specific career (Bridgstock, 2009; Gamboa et al., 2013; McFarland et al., 2019; Radcliff & Bos, 2013). With the students in this study mostly having jobs, they may not have worked in an industry related to a potential career interest. This may explain the nonsignificant results for work experience. Based on the results of this study, although many students possessed a job, it was not a work experience, which prepared them to be career ready.

Another significant factor from the interactional model was CTE participants with no work experience. This result may have occurred due to the positive skew of the small sample size (n = 9). This factor had the smallest sample size in comparison to the other pairs, so it unknown if this result would occur with a larger sample for this group. More students with this characteristic would need to be recruited to further examine this outcome as this interaction was not supported by the literature. CTE initiatives, such as career academies, often incorporate work experiences into their programming (Hackmann et. 2018; Lanford & Maruco, 2018, 2019). This provides students with practical career exposure beyond their coursework. Past research suggests

that work experiences, such as internships and apprenticeship, can be helpful in building career skills (Bridgstock, 2009; Gamboa et al., 2013; McFarland et al., 2019; Radcliff & Bos, 2013). Additionally, the CMI-C recommends career education to support student in being career ready (Kosine & Lewis, 1998; Savickas, 2002). Thus, the significant results of CTE Concentrators with work experience and those with no experience are expected based on the current research.

Limitations

Gender and other demographics

In this study, women comprised the majority of the sample. In recruiting schools, the researcher encouraged them to share the study with men. The number of men increased with more outreach, but it still did not outpace the participation of women. The researcher had not anticipated this challenge, and it was further complicated by the restrictions of the Covid-19 pandemic as recruitment could only be conducted remotely. Due to the lower number of men, the grouping of students by gender and CTE participation for men was small. Unlike women, the mean CMI Screening Score may not fully demonstrate the range in means that could occur with a larger sample of men. With women, the mean CMI Screening Score increased from non-CTE students to CTE Concentrators. There was a one-point difference among each group with CTE Concentrators having the highest score as expected based on the researcher's hypothesis. However, for men as well as non-conforming students, the mean CMI scores did not exhibit the same trend and varied due to CTE group sizes not being equivalent to each other. Thus, in regard to gender, this study is limited in its application to men and non-conforming individuals. Similarly, the sample sizes were small for racial groups except for White and Black students. The sample for men, non-conforming individuals, and other racial groups would need to be

increased in order to analyze the influence of CTE and work experience more fully on these groups.

Impact of Covid-19

Another limitation of the study is that it was conducted during the Covid-19, which restricted recruitment efforts for the research. Due to the pandemic, recruitment had to be conducted remotely, and it was challenging to coordinate with schools since they were not engaging with their students in-person. The researcher had to compete with the virtual responsibilities of both staff and students who had heavy workloads throughout the pandemic.

In addition to the study's recruitment, Covid-19 drastically impacted learning for all students, especially students of color and low-income students (Bacher-Hicks et al., 2021; Kuhfield et al., 2020). This is the result of many factors, such as students lacking technology for distance learning, teachers unprepared and untrained to fully teach content online, and the ability of diverse learners to grasp concepts remotely (Bacher-Hicks et al., 2021; Darling-Hammond & Hyler, 2020; Kuhfield et al., 2020; Reimers, 2022). As a result of the aforementioned factors, many students struggled and continue to experience challenges with distance learning as the pandemic is ongoing. Given the current state of education due to Covid-19, many students in this study probably experienced similar challenges.

Specifically, research on the impact of Covid-19 on CTE programming is limited. However, a study by Gordon and Xing (2020) found that it was more difficult for students to learn knowledge and have work-based learning experiences, especially since many industry partners ended or suspended opportunities, such as internships, during the pandemic. CTE educators also struggled to teach students technical skills within a remote environment (Gordon & Xing, 2020). Therefore, similar to general education challenges, the pandemic may have

further limited the amount of learning that students received in their CTE programs. As a result, the collected data from this study may not fully reflect the influence of CTE on students' level of career readiness. Due to limited career education and work experiences, the CMI-C scores of students in this study may be lower in comparison to normal circumstances.

Dosage and Quality

Lastly, related to the previous challenge, another limitation of this study is that CTE programming and work experience were analyzed as categorical variables. Currently, there is no specific number of courses for CTE or hours for internship that is widely used across all high schools. Thus, the study was more focused on exploring if there was any possibility of an influence of CTE coursework or work experience on students' career readiness. CTE coursework as well as the interaction of CTE and work experience were found to significantly impact students' career readiness, resulting in a higher score on the CMI-C than non-CTE students. However, the exact dosage of CTE coursework or work experience that positively influences career readiness is unknown. This study is limited in providing a specific number of CTE courses or number of hours that may be required to influence a student's level of career readiness.

Furthermore, this study did not examine the quality of CTE coursework or work experiences. It is possible that some schools have more robust programs for preparing students for CTE career pathways. These students may also be exposed to work-based learning opportunities that closely align with their career interests and offer specific technical skills. Research has shown that robust CTE programs provide students with both thorough knowledge and practical experience through internships for their desired career path (Hackman et. 2018; Lanford & Maruco, 2018, 2019). As a result, students who attended such programs, may perform

higher on the CMI-C and thus be deemed more career ready if the pandemic was not still ongoing.

Recommendations

Exploration Stage

The Exploration Stage is an important component of individual's career development as this stage is when a person will ultimately choose their first career as a young adult. Past research has indicated that career education and work experiences help adolescents to develop their career maturity, thereby supporting them to score higher on the CMI-C. This study expands on this research by utilizing a specific intervention in education, CTE. Additionally, the study also showed that it is important for students to take more than one CTE course for career education to be influential based on the results. Furthermore, while work experience was significant in the study, it was significant in the interaction with CTE. Thus, work experience may further support students' growth in career readiness, but CTE is essential for providing the educational foundation for guiding students to make a career choice.

In spite of having to learn remotely due to the pandemic, CTE Concentrators still scored higher than most groups in the study although they did not meet the minimum score of being career ready for the CMI-C. Even in a virtual environment, career education in the form of CTE can still be informative in developing the career readiness of students. While the researcher did not examine the strategies that schools used in their CTE programs, there is an opportunity to learn more about how schools were able to transform their programming into being remote and educate their students on careers. The work world has shifted to offering more remote job opportunities. In some ways, CTE Concentrators may be more prepared to work remotely since they had to adjust and experience career education and possibly even work experiences in an

online environment. More studies would need to be conducted to further examine how to develop CTE and work experiences for a remote setting. Identifying effective strategies may support students in making a career choice and successfully completing the Exploration Stage.

Lastly, although research with the CMI-C has mainly included White, middle-income students, this study was conducted with students from diverse backgrounds. Women outnumbered men in the sample. Also, there was a sizeable number of Black and low-income students. Men scored slightly higher than women, but this group was also a much smaller sample size. With more participants, men's mean score may have been lower or nearly equal in comparison to women. In examining the means for all students based on their demographics, there were no large disparities in that one group scored significantly higher than another one. The main differences were among groups based on the influence of CTE. This demonstrates that CTE may be a helpful intervention in supporting all students in being career ready, regardless of their gender, race, or SES. Given that there was no apparent bias in instrumentation with this study, the CMI-C may be useful in accurately assessing the career readiness of diverse students, including Black and low-income students who have been underrepresented in research with the CMI-C.

Future Directions

Despite the limitations of the study, the results provide some ideas for future directions in exploring adolescent career readiness. Regarding CTE, equity has become an important concept for preparing students for careers. One of the limitations of the CMI-C is that the research is limited on its usage with students of color and low-income students (Leong & Serafica, 2005; Naidoo, 1998; Watson, 2019). Over 50% of the students in this study were students of color, and nearly 50% of all students received free or reduced lunch. The average CMI-C score was fairly

similar amongst all racial and socioeconomic groups. Black students had the highest mean score in the study's sample. By increasing the usage of the CMI-C, researchers can further understand if there are other limitations in using it with students of various racial and socioeconomic backgrounds. For gender, this study only had a small number of non-forming individuals. More research needs to be conducted on using the CMI-C with non-conforming and other LGBTQ+ individuals.

Another future direction should examine the quality and dosage of CTE and work experience. Many studies recommend careers education and employment opportunities, such as internships and jobs, as being beneficial for preparing youth for careers (Hackmann et. 2018; Lanford & Maruco, 2018, 2019). However, few studies have considered the quality and dosage of both CTE coursework and work experience and their impact on adolescent career readiness from a quantitative perspective. Future research should look into exploring the characteristics of robust, effective CTE programs. Additionally, they should explore work experience to discover the factors, which make work-based learning opportunities valuable in preparing students to be career ready.

Additionally, while this research was focused on CTE in schools, other vocational education opportunities in the form of apprenticeships and college partnerships also exist to support students in preparing for careers (Lowry & Thomas-Anderson, 2017; Lile et al., 2018; Lowry & Thomas-Anderson, 2017; Remington, 2019; Wilson & Lowry, 2017). However, research is even more limited than CTE in regard to quantitatively assessing the career readiness of students who participate in these programs. It is also important to examine these initiatives that occur outside of the typical school setting since many students do not attend career academies, or their respective schools may not incorporate career education within their

curriculum. As a result, some students may seek out enrichment program through alternative programs, such as college partnerships and apprenticeships. It would be beneficial to understand how these programs serve students in being career ready, especially for those who attend schools with limited or no CTE programming.

Implications for Policy

Based on the results of the study, there are important implications for policy. In regard to the ESSA and Common Core, it establishes a framework to encourage schools to strengthen their college and career readiness programming. Many schools have built programs that prepare students for attending college and potentially entering careers, but they may utilize minimal data that specifically relates to career readiness. School districts use data, such as ACT and SAT scores and college acceptances (Camara 2013; Duncheon, 2015). However, this data does not necessarily indicate if students are career ready. One of the few indicators that is widely used by some school districts is the ACT Workkeys assessment (Lombardi et al., 2013). However, it is similar to the ACT in that it measures students' reading, writing, and math abilities to enter careers. The CMI-C provides data for specifically assessing the attitudes and thoughts of students in making career choices. If federal and local policies continue to push for improving college and career readiness, other assessments need to be considered that extend beyond assessing traditional academic knowledge that aligns with college readiness.

Overall, more indicators need to be developed and utilized that specifically measure career readiness. Furthermore, federal and local policies should encourage schools to collect data on the number of work-based learning opportunities that students are exposed to and participate in. Policymakers should also consider investing in more college partnerships and apprenticeship programs that are effective in preparing students for careers. Many students attend schools with

limited CTE offerings, so alternative programs may be able to support high schools that lack the resources for CTE. In policymaking, the term college and career should not be utilized if the focus is solely on the college component.

Implications for Practice

In terms of practice, this study recommends the usage of the CMI-C in the work of school counseling and guiding students on deciding on college and careers. The assessment is not time-consuming. In this study, most students completed the assessment within 5-10 minutes. The CMI-C provides support for both individual and group interventions. Through the screening form, schools and school districts can gauge the effectiveness of their CTE programming for all students or specific groups. As CTE Concentrators scored higher on the CMI-C, this pattern should be the outcome for students when compared to non-CTE students. If students are scoring lower despite taking 2 of more CTE courses, schools may need to examine their CTE curriculum and consider other career interventions to ensure students are continuously growing in their career readiness.

Additionally, collecting demographic on the student population can support schools in identifying issues of inequity within their programs. For example, students of color and low-income students should have compatible scores on the CMI-C as their White and affluent counterparts if their CTE coursework is similar. Any discrepancies may suggest the need to explore the factors for the disparities and develop interventions to resolve them. Additionally, there should be equitable enrollment of students across all types of career fields, especially underrepresented fields such as STEM. For individual students, the CMI-C provides even more detailed information about specific areas that a student may lack career readiness, such as confidence, based on the subscale scores. This provides an opportunity for school staff to

collaborate and intervene to support individual students in learning skills and gaining the confidence for their desired careers.

By regularly administering, the CMI-C, in the same way as the SAT and ACT, schools can monitor the progress of their students' career readiness over the years and be able to intervene both on an individual and group level as needed. Incorporating a demographic questionnaire, as the researcher did in this study, would be a beneficial practice for gaining a comprehensive view of their students' career needs. Ideally, as students take more CTE courses and gain work experience throughout high school, they should increase their career readiness as indicated by higher scores on the CMI-C for the interaction of CTE and work experience. Through this intervention, schools could be more effective in supporting their students' career readiness for pursuing higher education and careers. As a result, their students would be more prepared to successfully navigate and eventually complete the Exploration Stage of their career development.

Conclusion

Across the United States, many school districts are growing their CTE programs and extending their focus beyond traditional academic content. With employers requiring more specific, technical skills from high school and even college graduates, it is necessary that CTE programs are further developed to ensure high school students are prepared for their potential career interests. Assessments, such as the CMI-C, may serve as a tool for evaluating if schools are producing students who are career ready as well as be useful in analyzing the effectiveness of CTE programming overall. The CMI-C along with a demographic questionnaire may help schools to improve on creating more equitable outcomes for their CTE initiatives that is inclusive of students of various social identities, such as gender, race, and SES. This strategy may lead to

more students of diverse backgrounds being taught vocational knowledge and skills in high school so that they are more prepared to make career choices during their postsecondary transition.

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Appendix A

Research Recruitment Letter

Dear [*insert name*],

My name is Albion Sumrell. I am a doctoral student in the Educational Leadership program. I am working under Dr. Elizabeth Jeffers, at the University of New Orleans. I would like to invite your school and students to be involved in my **study about the readiness of high school seniors to make career choices**. I am recruiting seniors (18 years or older). Parental consent is not needed. **Seniors, who are under 18 years of age, cannot participate.**

My study consists of a short, anonymous survey, which is fully voluntary. There will be no compensation or direct benefit to your school or students for your involvement. *However, you will be supporting our efforts to understand the career readiness needs of high school seniors. As a result of the study, programming can be developed to better assist them with making career choices after high school.*

Remember, this is fully voluntary. Your students can choose to be in the study or not. I would highly appreciate your involvement. **If you would like to be in the study or have any questions, please contact me at asumrell@uno.edu or Dr. Elizabeth Jeffers at ekjeffe1@uno.edu.** Thank you very much.

Sincerely,
Albion Sumrell
Doctoral Student

Appendix B

Research Participant Consent Form and Survey

Career Readiness Survey:
Class of 2021
High School Seniors

I. Purpose of the Research Study

Albion Sumrell is a doctoral student in the Educational Leadership program at the University of New Orleans. He is working under Dr. Elizabeth Jeffers. You are invited to be involved in this research study. The study's purpose is to explore the readiness of **recent high school seniors from the Class of 2021 (18 years of older)** to make career choices.

II. What you will be asked to do

If you decide to be in this study, you will complete a survey. It includes questions about your education, work experience, and thoughts about making career choices. It may take 5-10 minutes to complete the survey.

III. Risks

There are minimal risks. Your involvement is voluntary.

IV. Benefits

There is no benefit for your involvement in this study. You will be assisting the researchers in understanding the career readiness of high school seniors.

V. Confidentiality

The survey will be hosted on Qualtrics.com. Qualtrics provides a unique link and ID number. It removes all personal information. Qualtrics offers advanced security and confidentiality for results. It does not track your IP address or email address. Your responses cannot be identified. All data will be kept anonymous. It will only be reported as combined results and never as individual ones. No personal information will be recorded as part of the survey. The data will be captured into a spreadsheet and analyzed in SPSS. It will be secured on a password-protected computer.

VI. Compensation
There is no compensation for this research study.

VII. Voluntary Nature of this Research
This research study is voluntary. You can decide to not participate or decline to answer any questions. Your involvement will not affect your grades or any benefits from your school. **You can withdraw at any time.**

VIII. Contact Information
If you have any questions or concerns, you may email me at asumrell@uno.edu **or Dr. Elizabeth Jeffers at** ekjeffe1@uno.edu**. If you feel you have been placed at risk, contact Dr. Roberto Refinetti at the University of New Orleans by phone (504) 280-7481 or by e-mail at** rrefinet@uno.edu **or** unoirb@uno.edu**.**

Page Break

Q2 By being involved in this survey, you agree to provide the most honest responses. Your answers will be kept anonymous. Your involvement is voluntary, and you can choose to end the survey at any time. By choosing "YES," you agree to participate in the study.

- ○ YES, I agree to participate in this study. (1)
- ○ NO, I don't agree to participate in this study. (2)

Skip To: End of Survey If Q2 != YES, I agree to participate in this study.

Page Break

Q3 Are you 18 years of age or older?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Q3 != Yes

Q4 What year did you graduate high school?

- ○ 2020 (1)
- ○ 2021 (2)

Page Break

Q5 **Directions:** *Below, you will find statements about choosing the kind of job or work that you will probably do when you finish school*. **Read each statement**. If you agree or mostly agree with it, then select **AGREE**. If you disagree or mostly disagree with it, then select **DISAGREE.**

Q6 There is no point in deciding on a job when the future is so uncertain.

- ○ Agree (1)
- ○ Disagree (2)

Q7 I know very little about the requirements of jobs.

- ○ Agree (1)
- ○ Disagree (2)

Q8 I have so many interests that it is hard to choose just one occupation.

- ○ Agree (1)
- ○ Disagree (2)

Q9 Choosing a job is something that you do on your own.

- Agree (1)
- Disagree (2)

Q10 I can’t seem to become very concerned about my future occupation.

- Agree (1)
- Disagree (2)

Q11 I don’t know how to go about getting into the kind of work I want to do.

- Agree (1)
- Disagree (2)

Q12 Everyone seems to tell me something different; as a result, I don’t know what kind of work to choose.

- Agree (1)
- Disagree (2)

Q13 If you have doubts about what you want to do, ask your parents or friends for advice.

- Agree (1)
- Disagree (2)

Page Break

Q14 **Directions:** *Below, you will find statements about choosing the kind of job or work that you will probably do when you finish school*. **Read each statement**. If you agree or mostly agree with it, then select **AGREE**. If you disagree or mostly disagree with it, then select **DISAGREE.**

Q15 I seldom think about the job that I want to enter.

- Agree (1)
- Disagree (2)

Q16 I am having difficulty in preparing myself for the work that I want to do.

- Agree (1)
- Disagree (2)

Q17 I keep changing my occupational choice.

- Agree (1)
- Disagree (2)

Q18 When it comes to choosing a career, I will ask other people to help me.

- Agree (1)
- Disagree (2)

Q19 I'm not going to worry about choosing an occupation until I am out of school.

- Agree (1)
- Disagree (2)

Q20 I don't know what courses I should take in school.

- Agree (1)
- Disagree (2)

Q21 I often daydream about what I want to be, but I really have not chosen an occupation yet.

- Agree (1)
- Disagree (2)

Q22 I will choose my career without paying attention to the feelings of other people.

- Agree (1)
- Disagree (2)

Page Break

Q23 **Directions:** *Below, you will find statements about choosing the kind of job or work that you will probably do when you finish school*. **Read each statement**. If you agree or mostly agree with it, then select **AGREE**. If you disagree or mostly disagree with it, then select **DISAGREE.**

Q24 As far as choosing an occupation is concerned, something will come along sooner or later.

- Agree (1)
- Disagree (2)

Q25 I don’t know whether my occupational plans are realistic.

- Agree (1)
- Disagree (2)

Q26 There are so many things to consider in choosing an occupation, it is hard to make a decision.

- Agree (1)
- Disagree (2)

Q27 It is important to consult close friends and get their ideas before making an occupational choice.

- Agree (1)
- Disagree (2)

Q28 I really can’t find any work that has much appeal to me.

- Agree (1)
- Disagree (2)

Q29 I keep wondering how I can reconcile the kind of person I am with the kind of person I want to be in my occupation.

- Agree (1)
- Disagree (2)

Q30 I can’t understand how some people can be so certain about what they want to do.

- Agree (1)
- Disagree (2)

Q31 In making career choices, one should pay attention to the thoughts and feelings of family members.

- Agree (1)
- Disagree (2)

Page Break

Q32 Are you 18 years of age or older?

- Yes (1)
- No (2)

Skip To: End of Survey If Q32 != Yes

Q33 What year did you graduate high school?

- 2020 (1)
- 2021 (2)

Q34 Please respond to the following demographic questions. Select the response that applies to your background.

Q35 To which gender do you most identify with?

- Woman (1)
- Man (2)
- Transgender Woman (3)
- Transgender Man (4)
- Non-Conforming (5)
- Prefer Not to Answer (6)

Q36 Are you Hispanic, Latino, or Spanish origin?

- No (1)
- Yes (2)
- Prefer Not to Answer (3)

Q37 What is your race? **(Select all that apply)**

- ☐ Black or African-American (1)
- ☐ American Indian or Alaska Native (2)
- ☐ Asian (3)
- ☐ Multi-racial (4)
- ☐ White (5)
- ☐ Prefer Not to Answer (6)

Q38 Did you receive free or reduced lunch in high school?

- ○ No (1)
- ○ Yes (2)
- ○ Prefer Not to Answer (3)

Q39 What type of school did you attend?

- ○ Public School (1)
- ○ Private Catholic School (2)
- ○ Private Independent School (3)

Q40 How many Career and Technical Education (CTE) courses have you taken?

(CTE courses are classes that prepare students with the technical knowledge and skills

to enter specific careers upon graduating from high school.
For example, you may have taken a class in Computer Science/Coding/Graphic Design, Engineering, Business/Marketing, Construction, Health Sciences...)

- 0 Courses (1)
- 1 Course (2)
- 2 Courses or more (3)

Skip To: Q41 If Q40 = 2 Courses or more
Skip To: Q43 If Q40 = 0 Courses
Skip To: Q43 If Q40 = 1 Course

Q41 You indicated that you have taken 2 or more CTE courses. Are you focusing on a specific career program of study?

- Yes (1)
- No (2)

Skip To: Q43 If Q41 != Yes

Q42 Please select the field that most aligns with your career program of study based on the following career clusters.

- ○ Agriculture, Food, and Natural Resources (1)
- ○ Architecture and Construction (2)
- ○ Arts, A/V Technology, and Communications (3)
- ○ Business Management and Administration (4)
- ○ Education and Training (5)
- ○ Finance (6)
- ○ Government and Public Administration (7)
- ○ Health Science (8)
- ○ Human Services (9)
- ○ Information Technology (10)
- ○ Law, Public Safety, Corrections, and Security (11)
- ○ Manufacturing (12)
- ○ Marketing (13)
- ○ Science, Technology, Engineering, and Mathematics (STEM) (14)
- ○ Transportation, Distribution, and Logistics (15)

Q43 Have you had any of the following work experiences: Job, Internship, Apprenticeship, or Job Shadowing?

- ○ Yes (1)
- ○ No (2)

Skip To: Q44 If Q43 = Yes

Q44 What type of work experience have you had? (Select all that apply.)

- ☐ Job (1)
- ☐ Internship (2)
- ☐ Apprenticeship (3)
- ☐ Job Shadowing (4)

End of Block: Default Question Block

Vita

The author was born in New Orleans, Louisiana. As an educator, he is dedicated to developing effective practices for guiding youth and adults towards lucrative post-secondary career opportunities. His research interests include career readiness, college access and alternative postsecondary opportunities, and youth/community development. He obtained a Bachelor of Arts Degree in Psychology and French Studies from Emory University in 2013. Additionally, he received a Master of Arts and Master of Education in Psychological Counseling with a concentration in School Counseling. He joined the University of New Orleans in 2017 to pursue his Ph.D. in Educational Administration.