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College Readiness in Career and Technical Education Instruction During the Pandemic

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
2024

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MA, Central Michigan University, 2008

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Project Study Submitted in Partial Fulfillment

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Doctor of Education

Curriculum, Instruction, and Assessment

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Abstract

College and career readiness (CCR) has become a priority in national education policy, leading to changes to CCR standards, practices, and measurements. In response to the COVID pandemic, school closings altered student engagement in career and technical education (CTE) courses. CTE teachers played a crucial role in providing CCR support to students by looking for ways to better align curriculum and engagement for successful transitions from high school to college. The purpose of this basic qualitative study was to examine how teachers' implementation of college and career instruction in CTE courses was influenced by the pandemic. Conley's college readiness framework and the CTE Curriculum component were used as the conceptual framework for this study. The research questions for the study address opportunities, challenges, and other factors that influenced program delivery during the pandemic. Data were compiled using semi-structured interviews with 12 CTE teachers. The data analysis for the project study consisted of five parts. The analysis resulted in the identification of four key themes for each research question, highlighting participants' perceptions of a critical need for the school district to implement a comprehensive curriculum that facilitates a smoother transition for students during their postsecondary transition. The implication for positive social change was highlighting high school teachers' curriculum training and support for CTE courses in times of educational crisis so that students could be CCRs in the classroom. This research may lead to better methods for schools and districts to incorporate professional development opportunities to develop new skills and better understand a cycle of rapid, unexpected shifts in education.

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Dedication

I would like to dedicate this dissertation to my family, I now know more than anything how much you have my back. Thank you for teaching me the importance of education, how hard work pays off, and to never give up. I appreciate all you have done and all the sacrifices you have made over the years. To my mom, Veronica Jackson, who was always there with support and guidance. My friends were there to offer prayers, advice, a listening ear, or help me work through my thoughts. I appreciate you all for that.

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Section 1: The Problem

The Local Problem

Teaching different pedagogy strategies to students in a high school setting has been evolving rapidly in terms of teaching approaches, which has resulted in improved high school and college readiness skills for students completing high school. These pedagogy strategies have enhanced teaching capability of teachers and led to teachers being able to implement high-quality science, technology, engineering, and math (STEM) education for students. High school teachers have implemented career and technical education (CTE) and STEM education to prepare students for work after they complete high school or to enter postsecondary education (Lee et al., 2020). STEM integration and classroom engagement are primary approaches for students to be prepared to enter the workforce or enter colleges or universities. Gottfried et al. (2020) reported CTE courses are designed to reinforce traditional academic STEM content and motivate students' interests in STEM. STEM education involves 21st century skills that are needed for critical thinking, including creativity, collaboration, and communication skills, which prepare students for future career opportunities after they complete high school (Lee et al., 2020).

CTE concentrations in STEM and STEM-related career clusters represent one-third of all high school CTE concentrations (Sintema, 2020). CTE is a proven entry point to introduce STEM competencies and skills for traditionally underserved students in Baltimore, Maryland schools. When students are engaged in learning, this can increase their attention and motivate them to progress in their education.

The Smith-Hughes Act, adopted in 1917, formerly known as the National Vocational Education Act, involved sending federal aid to states to promote precollegiate vocational education in agricultural, industrial, and home economics trades. The act was replaced by the Vocational Education Act of 1963. After the United States passed the Smith-Hughes Act of 1917, CTE became part of education reform for students in high school. The term CTE emerged in the 1980s, eventually replacing vocational education as the preferred generic term for programs that build job skills through academic instruction and technical training (Hyland, 2019).

The Carl D. Perkins Vocational Education Act was signed into law to increase the opportunities for students who needed more vocational education skills (Hyland, 2019). The Carl D. Perkins Vocational and Applied Technology Act Amendment of 1990 (Perkins IV) was a funding source that was granted to states and discretionary agencies to improve secondary and postsecondary CTE programs across the nation. Perkins IV emphasized aligning hands-on and job-related skills with academically challenging coursework in high school. It was designed to contribute to academic knowledge, higher-order reasoning and problem-solving skills, technical skills, and occupation-specific skills. The act aimed to align application of career-related skills with academic coursework in high school (Gottfried & Plasman, 2018). The advantage that Perkins V had over Perkins IV is that "the shift in responsibility for determining program performance objectives was given to each state instead of the US Department of Education" (Gottfried & Plasman, 2018, p. 3).

Whereas in the past many vocational education programs were more hands-on, these programs did not necessarily involve career pathways, industry standards, internships, work-related learning, and professional advisory groups (Plasman et al., 2017). CTE programs at the high school level are implemented using standards and used for responding to the new global economy and connect students to learning (Kaden, 2020). CTE is designed to "engage students, create meaningful ways for students to develop skills and learn content, and get students thinking about their long-term career path and educational needs" (Kaden, 2020, p. 2).

The COVID 19 virus brought about notable changes in terms of ways high school teachers implemented CTE skills to students. This was due to school districts canceling in-person classes and online learning which made it almost impossible to use hands-on learning opportunities for high school students in CTE programs. In spring 2020, most hands-on activities were canceled due to COVID-19 virus restrictions, and proximity limitations were implemented in several school districts. Some in person classes for high school students were offered on a limited basis during the 2020–21 school year. The COVID-19 pandemic led to disruptions involving learning and achievement throughout the United States and the world, which affected 1.6 billion learners in more than 200 countries (Kaden, 2020). This redesign of instruction for all students in K-12 settings throughout the United States and many countries meant secondary school students in public and private schools ended the academic year without taking required assessments such as end-of-term tests, the American College Test (ACT), Scholastic Aptitude Test (SAT), and advanced placement exams (Beason-Abmayr et al., 2021). These tests were

used to measure academic progress of all students in high school and serve as pathways to postsecondary education (Beason-Abmayr et al., 2021).

Cassel (2021) noted all students in high school need high-quality education, and they need to be able to make connections between their education and career and life paths after completing high school. Some programs suspended end-of-course online testing for 2020, while other programs could not change their delivery model in the immediate future via remote proctoring. Other CTE programs include online assessments which require students to have computers and internet access to take exams. Technical skills assessments are used to measure students' understanding of content as they exit programs, and they help teachers evaluate programs to strategically make changes for improvement based on overall program goals and objectives (Pokhrel & Chhetri, 2021).

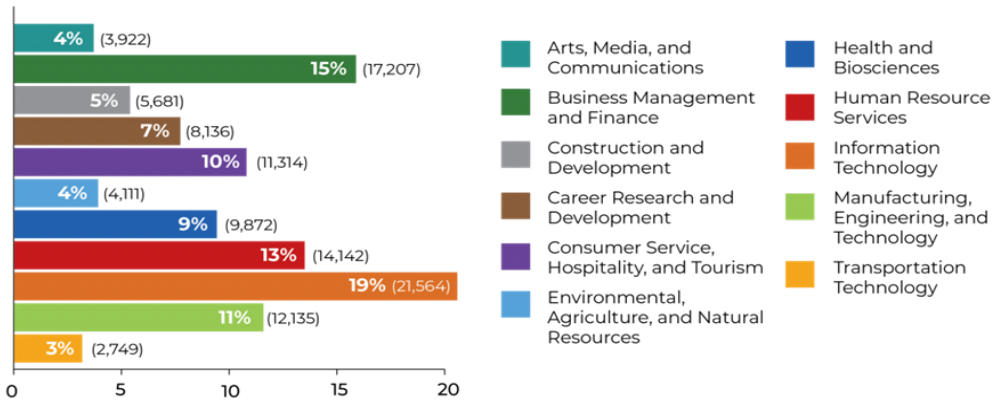
Social distancing and restrictive movement policies have significantly changed traditional strategies and educational practices that teachers used in the past to provide instruction and strategies to students at the high school level. Many students were affected emotionally due to the pandemic. The pandemic caused CTE teachers to rethink how such courses were delivered to students to provide them with quality instruction and prepare them for CCR skills and of state standards. Every Student Succeeds Act (ESSA) provided support for CTE programs and integrating academic standards into CTE curriculum and high school courses. The ESSA gave control to states regarding their common core state standards (CCSS) integration, ensuring state academic standards would align with colleges. Maryland College and Career-Ready Standards (MDCCRS) are created through a state-level initiative and developed in collaboration with all

stakeholders within Maryland. MDCCRS is based on CCSS that outlines what students should know and be able to do by the end of each grade level to prepare students for life after high school.

Maryland provides standards and strategies for teachers to implement programs, including regularly exposing students in early grades to meaningful and well-paying careers and career counseling. According to the Maryland Department of Education (MSDE, 2020), this curriculum is used for high school students to attain college and career-ready status at the end of 10th grade, and they are allowed to choose an international baccalaureate (IB), AP, Cambridge diploma program, early college, or rigorous technical education pathway that leads to industry-recognized credentials and high-paying jobs. Also, in Maryland school districts, there are currently 46 MSDE-approved high school CTE programs in 11 career clusters in a total of 259 schools. 40.42% of high school students in Maryland are currently enrolled in CTE programs (MSDE, 2020; see Figure 1).

Figure 1

Maryland State Department of Education CTE Student Enrollment by Cluster



Admission requirements for students entering colleges or universities throughout the United States vary from one institution to another and depend on their mission and purpose of the institution. In Maryland, college and university admission requirements require applicants to have completed at least a standard core high school curriculum and take basic college entrance exams such as the ACT or other exams required by colleges or universities. CCRS and the College Completion Act (CCA) of 2013 require all students in high school to meet or exceed basic requirements to enter postsecondary education institutions with at least minimum entrance requirements.

To prepare students for the 21st century global economy and emerging STEM careers, Maryland redesigned its CTE programs to be receptive to shifts in the economic workforce and integration of STEM employment, even on military bases (MSDE, 2020). After the Department of Defense announced a plan to restructure its bases through workforce development to increase operational readiness and facilitate new ways of doing business, the Base Realignment and Closure (BRAC) Act was introduced and projected to bring tens of thousands of STEM-dependent jobs to Maryland (MSDE, 2020). The act focused on attracting high school students to programs like nursing, pre-engineering, manufacturing, biomedical sciences, technologies, and homeland security through STEM and CTE cluster programs. This shift to a more student-centered, inclusive, and respectful school culture was necessary to acknowledge the many and varied talents students bring to school. This leads to more engagement, better attendance, more confidence, and higher graduation rates, especially for students living in areas with concentrated poverty (MSDE, 2020). When students are enrolled in at least one CTE

class, the risk of students dropping out of high school decreases. These opportunities create new pathways for students, helping to mitigate effects of economic segregation and social, racial, and economic injustice in urban and rural communities.

Rationale

According to Tadesse and Muluye (2020), in March 2020, the COVID-19 outbreak spread throughout the United States and other countries, which caused schools districts worldwide to change ways they delivered education to students (Sintema, 2020). During the COVID-19 pandemic, many educational leaders had to think of other strategies to provide learning opportunities. Pandemic pedagogy has been highlighted by educational institutions, educational technology companies, publications, and social media groups worldwide. Anderson et al. (2021) reported demands of the pandemic on teachers and students reshaped how classes and instruction were delivered to all students in the United Stated and worldwide. The COVID-19 pandemic represented an opportunity for one of the largest shifts in comprehending pedagogy.

Duncheon and Munoz (2019) noted classroom management, engagement lesson planning, classroom management, grading assignments, and preparing students for college has always been the responsibility of teachers. The COVID-19 pandemic slowed down the momentum of learning and engagement for all students throughout the United States, including Maryland. Teachers developed lessons they thought would be temporary but soon became norms of classroom instruction. As time passed, fewer students were logging into online platforms, internet connection lacked in some areas, and student engagement was low, which resulted in students not completing assignments.

Historically, college readiness has been measured by coursework in high school, college entrance exam scores, and course seat time (Conley, 2011; Mokher, 2020). Being college-ready means ensuring students take rigorous courses and meet specific metrics on standardized tests (Conley, 2010). Conley (2010) noted these serves as poor indicators of postsecondary preparation because they do not align with college curriculum and instruction. Students must demonstrate time management, effective study skills, and persistence (Conley, 2014; 2017). Contextual skills such as how to navigate college choice, admissions, and financial aid and knowledge are necessary to navigate institutional systems during the first year.

Evidence of the Problem at the Local Level

Before the pandemic, teachers were able to teach and plan for college-readiness instruction in CTE classrooms. High school teachers reported providing fewer students with CCR support 1 year into the COVID-19 pandemic. CTE students get hands-on experience via state-of-the-art labs and simulated environments, learn, build connections with industry professionals, and gain access to work-based learning experiences (Stone III, 2017). Once instruction went online the focus moved away from CCR instruction to support students by focusing on core content courses such as English, mathematics, social studies, and science, and not placing an equal emphasis on CTE instructional practices. Since the COVID-19 pandemic, CTE teachers have been facing challenges in terms of implementing relevant curricula for CCR instructional practice in CTE classrooms. Regardless of the instructional model, learners may benefit from instructor efforts to build positive classroom cultures that acknowledge their socioemotional needs and

provide personalized instructional pedagogies (Baillieul & Crowder, 2021). When classrooms establish cultures that are safe and promote ownership for learning, students can share ideas, become curious and passionate, and help each other.

Although prior studies have addressed efficacy of CTE courses on high school student outcomes, there is little research on challenges of hands-on applications and experience-heavy courses which shifted to hybrid or virtual classrooms due to the COVID-19 pandemic, and how this affected students' CCR skills. High school teachers were not able to provide CCR support to students in their classes during the first year of the pandemic to the same degree as they did before the pandemic. Thus, many students may have missed essential support (Mulhern, 2020). Since the COVID-19 pandemic, some CTE teachers faced challenges in terms of implementing relevant curricula for CCR instruction in CTE courses. The decision to cease in-person classes and other activities in March of 2020 and remain virtual through the end of the academic year and then going to blended learning methods caused major changes in the CTE program delivery format even with some schools in the district offering paper packets to address internet access and technology and equipment challenges. One CTE lead teacher stated these shifts made it difficult for teachers and programs to plan for instruction, which resulted in some program enrichment being dropped to focus on more core course learning objectives. The COVID pandemic made it challenging to deliver quality instruction for students to master content.

Through STEM integration and classroom engagement in CTE pathways, educators have changed primary approaches involving pedagogy. Since the pandemic,

CTE professionals have faced challenges in terms of delivery of CCR instruction, motivating and engaging learners, and providing hands-on learning and lab hours. In January 2021, CTE instruction consisted of blended, virtual, remote and hybrid learning. Many CTE programs continue to offer in-person learning to best enable students to develop and practice their skills in authentic environments. However, teachers were not able to provide college readiness support to students in their classes during the first year of the pandemic to the same degree as they did before the pandemic, and there were declines in college enrollment (Gurantz & Wielga, 2021; National Student Clearinghouse Research Center, 2021). Most information has been based on CTE courses at the college level, while many reports on secondary levels focus on teachers' attitudes and the challenges they face. High school teachers reported during the COVID-19 pandemic they had to adapt to new methods of teaching, deficiency of structure and routines, dropped student enrollment rates, problematic networks and internet use, low interest in parent collaboration, and symptoms of anxiety.

Evidence of the Problem from the Professional Literature

According to the National Center for Education Statistics (NCES, 2020a), CTE programs provided coursework for 14 million students in 26,000 public high schools, 10,000 private secondary schools, and 1,200 two-year community and technical colleges throughout the United States. There were 165,248 participants in CTE in Maryland, 27,922 secondary CTE concentrators in Maryland; 54% of secondary CTE participants were male and 46% were female. According to the U.S. DOE (2021), the top four career clusters among secondary CTE concentrators were STEM, information technology,

business management and administration, and education and training. All aspects of public education were affected by the COVID-19 crisis. Teachers needed to be prepared for remote learning and uncertain about access to curriculum and funding. CTE administrators were concerned with enrollment decreases and reported challenges with hands-on activities and labs as well as work-based learning.

Purpose of the Study

The purpose of this basic qualitative study was to examine how teachers' implementation of CCR in CTE courses was influenced by the COVID-19 pandemic. My goal was to prepare more students for postsecondary success. Scholarly perspectives vary regarding what constitutes readiness, and less is known about perceptions of secondary educators who are tasked with preparing college-ready students. Academic performance of students is likely to drop for classes in terms of both year-end and internal examinations due to reduced contact hours for learners and lack of consultation with teachers when facing difficulties in terms of learning and understanding (Sintema, 2020).

Definitions of Terms

The following of key concepts were used throughout the study:

College and Career Readiness (CCR): Skills and knowledge that students need to be successful in postsecondary education or training that leads to sustainable careers. According to Conley (2012), students "can qualify for and succeed in entry-level, credit-bearing college courses without needing remedial or developmental coursework" (p. 1).

College and Career Readiness Standards (CCRS): Standards to prepare students for careers after completing high school to prepare them for postsecondary education (MSDE, 2018).

Common Core State Standards (CCSS): Standards that students should know before completing high school. The state of Maryland provides all teachers with a set of common core standards that guide teachers in terms of what students should know and be able to accomplish at different points in school (MSDE, 2009).

Coronavirus (COVID-19): An infectious disease caused by a virus that spread throughout the world. It is an "acute respiratory illness in humans caused by a coronavirus, capable of producing severe symptoms and, in some cases, death, especially in older people and those with underlying health conditions" (CDC, 2020, p. 2).

Career and Technical Education (CTE): Programs that provide students with academic knowledge along with technical skills to prepare them for the workforce after high school. CTE programs are designed to provide all students in high school with opportunities to earn different ready certificates, acquire college credit, and gain work experience before completing high school (ACTE, 2022).

Every Student Succeeds Act (ESSA): The main purpose of the ESSA was to provide equal education opportunities for all public-school students in the United States. The ESSA was implemented during the Obama administration in 2015, which replaced the No Child Left Behind Act of 2001 for all public-school districts (Brennan, 2017).

Institute of Higher Education (IHE): College or university that is designed to provide different career paths for students after completing high school (Rudolph, 2021).

K-12: Abbreviations that stand for the educational range from kindergarten to 12th grade for students in school districts in the United States.

Maryland State Department of Education (MSDE): The statewide department that develops and implements policies for educational programs and provide oversight for all educational needs for from pre-kindergarten through high school as well as develop and implement standards and policies for education programs (MSDE, 2022).

Technical Skills Assessments (TSAs): All school districts in the state of Maryland provide end-of-course assessments that are designed to document and certify student attainment of industry-validated knowledge and skills for the workplace. TSAs are implemented through an online testing application that leads to college credit.

Significance of the Study

For this quantitative study, I collected data from high school CTE teachers. All participants were active high school CTE teachers who taught at a school that had CTE courses. Participants were aware of CCR standards for CTE. They were selected based on their ability to provide information that was essential to the study. All participants were required to have taught CTE during the COVID-19 pandemic. Participants who were willing to contribute to the study signed consent forms which included the purpose of the study, rights of participants, and a detailed description of the study. There were 15 participants who were vetted, and 12 participants consented to participate in this study. All participants gave their consent to be interviewed and recorded. They had no affiliation with my direct place of employment.

Conley proposed a CCR framework predicated on the contextual nature of college success by stressing the importance of students' cognitive capabilities and behavioral attributes as well as increasing strategies that support CCR in CTE classrooms during the pandemic. Other college readiness measurements include class rank, GPA, coursework, and ACT/SAT test scores. The most common indicators for CCR within CTE in almost 40 states are advanced coursework, industry credentials, number of CTE courses, and work-based learning.

Even though researchers have discussed the importance of promoting and developing CCR throughout secondary educational settings and actions to shift practices and assessments, understanding of CCR is sporadic and should be addressed. The state report card breaks down CCR indicators in terms of either single measure or subcomponents as well as demographic factors.

Social change may happen when policymakers and educational leaders recognize the value of CTE and provide more opportunities to tap into students' unique skills, interests, and aspirations. Education is a major factor in terms of creating social change by creating atmospheres that encourage students to explore ideas through experimentation, critical thinking, and self-reliance. CTE is a change agent within education because it enables students to create, collaborate, and reflect. Findings may encourage districts to provide students with a rigorous academic curriculum that integrates academic and career skills, incorporates applied learning in all disciplines, and prepares them for high school graduation and career entry.

Research Questions

The following two research questions were used to address the problem and purpose of this study:

RQ1: What are secondary teachers' perspectives and experiences with implementing college and career readiness programs and curricula during the pandemic?

RQ2: What opportunities, challenges, and other factors influence CTE learning during the pandemic?

Review of the Literature

I focused on facets of CTE instruction and CCR. The review of literature was centered on the pandemic's influence on secondary CTE program delivery, in addition to opportunities and challenges that influenced instruction in CTE courses during the pandemic. Studies in the literature review were searched using the following databases: ERIC, JSTOR, EBSCOhost, and SAGE Journals. I also used Google and Google Scholar. I refined my research by using the following terms: *college readiness*, *college preparedness*, *pandemic and CTE instruction*, *college readiness framework*, *David Conley*, *college*, *career programs*, *ADVID*, *CTE teacher*, *cognitive strategies*, *content knowledge*, *secondary education*, *pandemic education*, *distance learning*, and *remote learning*. All sources in this study were peer-reviewed and published between 2020 and 2024. I focused specifically on college and career readiness in CTE, CTE instruction and the pandemic, pandemic pedagogy, and student engagement.

Conceptual Framework

The conceptual framework was Conley's college readiness framework which involves the idea that students should graduate from high school with the knowledge and skills necessary to successfully pursue post-secondary options. According to Conley (2014), facets of college readiness are cognitive strategies, content knowledge, academic behaviors, and contextual skills and knowledge (Roberts & Grant, 2021). In 2018, Maryland ranked third among the top states for public high schools. However, by 2020, Maryland was ranked fifth. The road from high school to college was complicated by COVID-19, along with the decline of student performing standards. When using Conley's multi-dimensional model as a CCR measurement for students being college career readiness, fewer students are truly ready for college than when judged by the current conventional measures like courses and grades. The foundation measurements of incoming students being college ready are cognitive and metacognitive skills developed in high school. These skills include analysis, interpretation, precision, accuracy, problem-solving, and reasoning.

Conley (2017) defined readiness as, "a function of the ability to continue to learn beyond high school, and particularly in postsecondary courses relevant to student's goals and interests, as represented by their choice of major or certificate program" (p. 9). College-ready students should be able to comprehend basic academic knowledge and convey intellectual growth because of courses.

CCR in CTE

CTE involves understanding expectations, content knowledge, and cognitive strategies that are needed to achieve success in college courses. The college readiness framework consists of both academic and nonacademic factors and is used for a more comprehensive look at what it means to be college ready. Academic factors include GPA, class rank, and college admission exam scores. These nonacademic factors include student motivation, engagement, academic self-discipline, and even family dynamics (Morningstar et al., 2017). TSAs are industry-certified assessments for CTE courses that are used for college credits and end of course testing. TSAs in Maryland are used to evaluate program effectiveness and how they prepare students for college and careers. CTE training and industry certifications in high school can improve college readiness, earnings, and employment outcomes for students interested in STEM fields.

Perkins V requires each state to develop a 4-year plan for CTE. In Maryland, the Division of Career and College Readiness collaborated with stakeholders to revise their vision for CTE and develop the Maryland CTE Four-Year State Plan. The Maryland CTE Four-Year State Plan was intended to guide the strategic direction for CTE in the state and was approved by the U.S. Department of Education in April 2020.

CCRS establishes the contextual nature of college success by stressing the importance of students' cognitive capabilities and behavioral attributes (Conley, 2017). In this study, I sought to recognize how teachers' implementation of CCR instruction in CTE courses was influenced by the pandemic using Conley's college readiness framework. Industries experiencing the most growth are those which require

postsecondary education (Deutsch, 2019). Industries that once relied on manual labor are becoming more technical (Eckelkamp, 2018). Conventional blue-collar jobs are declining (Baker & Buffie, 2017). CTE curriculum and college readiness standards are aligned to provide a clear structure and goals that support postsecondary education.

Hughes et al. (2021) stated all educational platforms were affected by the COVID-19 pandemic in the United States. CTE programs in particular faced significant challenges given the hands-on and team-based nature of CTE courses. The term emergency remote teaching was introduced during spring 2020 to describe what was occurring in education, rather than online learning. Hodges et al. (2020) described emergency remote teaching as temporary access to instruction and instructional support in a manner that is quick to set up and reliably available during an emergency or crisis.

CTE Instruction and the Pandemic

Teaching CTE curricula in virtual environments was a necessity due to the COVID-19 pandemic. Most educators, business leaders, researchers, students, and parents that quality CTE instruction has fallen behind, especially as in terms of the future of work and U.S. economy during the pandemic. Since the pandemic, CTE professionals have faced challenges in terms of delivering CCR instruction, motivating and engaging learners, and providing hands-on learning and lab hours (Beason-Abmayr et al., 2021). Students are emotionally distracted and experienced mental anguish due to the pandemic (Spitzer et al., 2021). CTE programs are now driven by standards to respond to the new global economy, as well as connect students to their learning. CTE curriculum is designed to engage students, create meaningful ways for students to develop skills and

learn content, and get students thinking about their long-term career paths and educational needs in secondary institutions. Another result of the pandemic was that TSAs, and standardized exams were cancelled (Kuhfeld et al., 2020; Wyse et al., 2020). Through the Perkins Act, one CTE goal is to promote the development of services and activities that integrate rigorous and challenging academic and CTE. Integrating math and other core subjects like reading, writing, and science throughout the CTE curriculum helps students become comfortable with CTE content.

For students to gain necessary skills in their CTE courses, some CTE content teachers use free non-school related programs. When teachers use supportive programs while maintaining some continuity, it allows students to make connections involving content. In some CTE courses, there are some curricula-prescribed competencies involving content that requires hands-on making and doing. Due to the pandemic, some equipment could not be shared, and access to certain equipment and materials became difficult. As a result of the pandemic, educators and institutions had identified differences between online and emergency remote learning. Hodges et al. (2020) claimed emergency remote learning was a curricular shift in instructional delivery due to crisis circumstances. The shift from in-person direct instruction to virtual learning was necessary during the pandemic. Traditional online learning programs are structured, and teachers are trained to deliver information with various online platforms.

Even though researchers have discussed the importance of promoting and developing CCR throughout secondary educational settings, actions to shift practices, assessments, and focus to a broader understanding of CCR are sporadic and should be

addressed (Tucker & Hughes, 2020). Although prior studies have addressed efficacy of CTE courses on high school student outcomes, there is insufficient information regarding what happened when hands-on equipment and experience-heavy courses became hybrid or virtual due to the COVID-19 pandemic and students' college career readiness levels.

Pandemic Pedagogy

During the pandemic, the importance of political and economic collaboration within instructional structures and methods of delivery were highlighted. Some students did not have the skills they needed to be successful after high school. Challenges involving transferring skills across different media also caused students to become disengaged during learning and eventually drop out of school (Buchholz et al., 2020). These actions have placed U.S. students at a disadvantage by not having adequate skills for pursuing postsecondary options. Since the COVID-19 pandemic, teachers have been facing challenges with implementing relevant curricula for CCR instructional practice in CTE classrooms.

Even before the pandemic, e-learning tools played a crucial role in education. Throughout the pandemic, these tools were helpful to student learning during closure of universities and schools (Subedi et al., 2020). Different subjects and age groups require different approaches to online learning (Doucet et al., 2020). Online learning changed how some students with physical challenges participated in learning in virtual environments (Basilaia & Kvavadze, 2020). High schools play a crucial role in helping students plan for and transition to postsecondary education and career pathways. Before the pandemic, pedagogy for many educators was initially designed in terms of face-to-

face interactions. Developing an online curriculum was daunting for educators due to shortness of available time.

Pandemic pedagogy involves approaches that are employed in instructional environments to foster learning in the context of serious health crises. It is a useful barometer of how education stakeholders in education weather pandemics.

In the spring of 2020 a plan to address the strategies for student and faculty support was based on the argument about the needs for transitioning to emergency remote teaching for all stakeholders (Johnson et al., 2020), yet it was unclear what teachers desired to change and how they wanted to adapt their instruction given that the return to school in fall 2020 varied (e.g., online, hybrid, fully face-to-face) depending on school context. Identifying the pedagogical supports that educators needed for online instruction remained a critical importance as those perceptions would guide professional development (PD) offerings post pandemic (Johnson et al., 2020). More specifically, we could explore the various pedagogies and technologies utilized during the emergency remote teaching time to identify best practices as we considered the future of teaching and learning.

As educational stakeholders prepare more students for postsecondary success, the concept of college readiness has gained national attention. Scholarly perspectives vary regarding what constitutes readiness, but even less is known about the perceptions of secondary educators tasked with preparing college-ready students during crises.

Student Engagement

Learning in school requires active engagement, student engagement is an important aspect for all students. Demonstrating curiosity and interest allows students to express their passion for the content being taught. Career and Technical Education (CTE) programs offer students a multitude of unique skills, structures, and habits that support student success by increasing student engagement (Venkatraman et al., 2018). In addition to this self-interest aspect, CTE may also inspire students to attend college more frequently because their educational engagement increases after participating in CTE.

Since the pandemic, CTE professionals have faced challenges with motivating and engaging learners, as well as providing hands-on learning and lab hours (Beason-Abmayr et al., 2021). Students are emotionally distracted and encounter mental anguish due to the pandemic, which prohibits CTE teachers from providing work-based learning experiences, hands-on activities, and preparation for industry certifications (Spitzer et al., 2021; Dougherty, et al., 2022). As a result of this COVID-19 disruption, student opportunities for work-based learning and completion of hours required for professional certification reduced severely.

At one-point teachers were able to teach and plan for college readiness instruction in the CTE classrooms but once instruction became inconsistent, the focus moved away from college readiness instruction to help students catch up on key skills which could affect students' preparation for college. Differences in access to support in high school contribute to significant variations in student access to postsecondary opportunities (de Brey et al., 2021). As educational stakeholders strive to prepare more

students for postsecondary success, the construction of college readiness has gained national attention. Scholarly perspectives vary regarding what constitutes readiness, but even less is known about the perceptions of secondary educators tasked with preparing college-ready students. States and districts across the United States have put a lot of energy into various college and career readiness initiatives, often with an emphasis on preparing students for postsecondary education that will, in turn, help them succeed in the labor market. (Mokher et al., 2018). Adding to the complexity of continued online and blended K-12 teaching due to COVID-19, teachers, and students are operating in a time of crisis and trauma. Donham et al. (2022) denoted that the pandemic continued to influence change, there and there was an increase in uncertainty with student engagement in higher educational institutions. This awareness allows us to reflect on the lessons learned during ERT and identify pedagogical approaches that kept trauma in mind while increasing all dimensions of student engagement.

In this review of literature, I focused on the challenges teachers are facing in implementing college readiness instructional practices because of the pandemic using the career college readiness (CCR) conceptual framework of Conley's (2008; 2014; 2017). Even though there is much talk about the importance of promoting and developing CCR throughout the secondary educational setting, actions to shift practices, assessments, and focus to a broader understanding of CCR are sporadic and should be addressed (Tucker & Hughes, 2020). College and career readiness (CCR) programs throughout the states have many attributes in common, most of which are the educators who advocate for their programs to both students and colleagues.

In a qualitative study conducted in Massachusetts researchers examined the impact that COVID-19-induced school closures and if it was a disruptive influence on students who were invested in CTE programming before the COVID-19 school closures (Hamilton et al., 2020). During the initial disruption of COVID -19, over half of the teachers of secondary students in Grades 6 through 12 reported they were unable to engage with their students. Cavanagh, S. R. (2019) argued in the fields of science, technology, engineering, and mathematics (STEM), student engagement is important for learning. Student engagement affects student achievement, which could help to close the learning gaps of the COVID -19 Pandemic. Student engagement is supported during in-person learning but is important to understand the whole student. Affective engagement is one's emotional state linked to task investment. Cognitive engagement refers to the student's efforts aimed at mastering the core concepts and competencies in a course, and it conveys deep processing of information, critical understanding, and the ability to apply new knowledge to solve challenging problems.

There is little peer-reviewed research on student engagement at the secondary level during the pandemic, however, many colleges and universities show a decrease in student engagement when they transitioned their face-to-face courses to emergency remote online courses during the spring of 2020. The student response to subsequent changes from pandemic college closure protocols, especially in the community college sector, is concerning. Community college enrollments across the country were down 9.5% in the fall of 2020, the largest enrollment decline among all sectors of institutions of higher education (National Student Clearinghouse Research Center, 2020). According to

a study done by Roman et al., (2022) COVID-19 conditions adversely influenced teacher awareness when it came to the critical impact of trauma on student engagement. Other identified challenges with e-learning are accessibility, affordability, flexibility, learning pedagogy, life-long learning, and educational policy (Murgatrotd, 2020). Many times, there have been substantial issues with reliable Internet connection and access to digital devices. While, in some situations, economically underserved children are unable to afford online learning devices, online education poses a risk of exposure to increased screen time for the learner. Therefore, it has become essential for students to engage in offline activities and self-exploratory learning. There are practical issues around physical workspaces conducive to diverse ways of learning. Even Frick (2020) noted that bonds are formed between teachers and students in the educational process, which are the "most important relationship in education systems that must be nurtured". Therefore, teachers must be attentive to the characteristics of trauma with student engagement so that other areas of engagement do not suffer when traumatic events take place. For example, if teachers emphasize cognitive and social dimensions of engagement (e.g., developing critical thinking skills through peer interactions), but students are absent from class (a behavioral engagement indicator) because they feel overwhelmed (an affective disengagement indicator), then the affective needs of those particular students should be prioritized. These studies showed significantly greater decreases in three of the four engagement components: skills engagement, participation engagement, and performance engagement. The decreases in motivation and self-regulation occurred in part because the historic pandemic event made it more difficult to focus on studies and because students'

home environments were not conducive to self-regulated learning. (Crespín-Trujillo & Hora, 2021) indicated because of the beginning of the pandemic, much of the focus and press around the impacts on higher education has been centered on institutional action and student responses to the disruptions that COVID-19 wreaked on the college experience. One can assume that this is true for the secondary level based on how the sudden changes in instructional dynamics affected students of all levels while the pandemic unfolded. Following the lead of some colleges and universities, our district planned for every student to have a laptop and supplied wireless hotspots for students without a reliable internet connection at home to access their course materials online during the pandemic.

Implications

During the COVID-19 pandemic, CTE classrooms, which traditionally specialize in the skilled trades, applied sciences, modern technologies, and career preparation, were not immune to drastic changes, as these courses primarily lean on a hands-on curriculum and key cognitive strategies and content knowledge that encompasses a wide range of activities that teachers had to develop in blended CTE instructional delivery models (Beason-Abmayr et al., 2021). One implication for project direction was to create a professional learning committee to evaluate the technology-based tools and instructional strategies that were successful at schools and create a written plan on how districts can integrate resources into CTE programs. The findings in this study could help districts collaborate across secondary and postsecondary levels and with industry partners to

integrate technology-based tools, related instructional strategies, and diverse delivery models in ways that are appropriate for each CTE program area and learner level.

Another implication for this project is a written plan outlining Maryland's CCRS and how to incorporate these standards into the vast CTE courses. The CCRS ensures the student can use cogent reasoning and evidence-collection skills that are essential for success in college, career, and life. Students need to be ready to enter postsecondary education and research has found that fewer students are truly ready for post-secondary options when measured in contradiction to the college career readiness multidimensional model (Conley, 2017). These standards can also lay out a vision of what it means to be a literate person who is prepared for success in the 21st century.

Another direction for this project is to reorganize how high school teachers received curriculum training and support for career technical courses in the time of educational crisis for students to be college-career ready. Through professional development or workshop, knowledge learned can be presented to industry leaders, teachers, counselors, district personnel, and educational policymakers. Using the conceptual framework to assist in understanding the complex process of preparing students to be college and career ready in the 21st century. Students' developmental processes, motivation, interests, aspirations, socioeconomic status, and support systems are contributing factors influencing the direction they take to become college and career ready; ready to be successful in the world. The last implication is developed self-directed learning, in which students' complete knowledge-based modules at their own pace, and

schedule time in a stationary or mobile lab for hands-on practice or use classroom time for more collaborative work.

According to Caldwell et al. (2021), colleges addressed student readiness differently depending on the perspectives of staff/faculty, administration, and student awareness and understanding of how the university system and school culture work. Making college-ready student requires secondary students to cultivate a sense of belonging as a critical context for navigating the social, academic, and cultural changes they experience.

Summary

As education enters a new phase after the COVID-19 pandemic, it has presented major challenges involving CTE CCR instruction. CTE professionals can highlight knowledge, skills, and dispositions of learners who are prepared for postsecondary success. This can guide educators' efforts to identify which students are on track to succeed. Studies like this are necessary to prevent future threats. It is critical to understand and explain how educational programs, opportunities, and experiences changed during the pandemic and how it differed from normal processes.

Section 2 includes information about the research method. I address the research design, data collection method, analysis, limitations, and results. Additionally, I discuss findings and project goals.

Section 2: The Methodology

Research Design and Approach

In this section, I discuss the research design and methodology. According to Schoch (2020), case studies are in-depth investigations of one particular individual, group, time, or event. They incorporate qualitative and quantitative research tools to investigate underlying principles of an occurrence within real-life contexts. Mehrad and Zangeneh (2019) argued quantitative research involves understanding causal or correlational relationships between two or more variables by testing hypotheses, whereas qualitative research involves understanding phenomena in real-world contexts by quantifying data through interviews and observations. The qualitative research method was valuable for describing complex phenomena, tracking unique or unexpected events, and understanding of experiences and perspectives of participants (Jamali, 2018). My research approach within this qualitative study was the basic qualitative research approach. Qualitative research involves focusing on events and outcomes of those events according to perspectives of those who are involved. I did not use interpretative phenomenological analysis (IPA) because I did not look at lived experiences of participants but rather their perspectives on how their implementation of CCR in CTE courses was influenced by the pandemic. I also did not use the ethnographic approach, which involves collection and analysis of data about cultural groups, since I did not immerse myself in the culture as an active participant. Based on existing literature, the best approach was to conduct basic qualitative research.

There were two research questions for this study. Data were collected through semi-structured interviews with participants to better understand the topic under study. Qualitative research involves collecting and analyzing nonnumerical data to understand concepts, opinions, and experiences. It can be used to gather in-depth insights regarding a problem or generate innovative ideas for research. I chose the qualitative approach because I focused on answers given by respondents in real time, generating valuable conversation regarding a subject that was not possible with a structured survey. I considered using a focus group as a data collection tool for my study. According to Busetto et al (2020), interviews produce more details than focus groups, and lead to more insights in terms of thoughts, feelings, and worldviews. Regarding using interviews, focus groups can also provide vast amounts of data (Adler et al., 2019). According to Roberts (2020), qualitative interviewing is used to reconstruct events that researchers never experienced to explain, better understand, and explore opinions, behaviors, and experiences. I chose interviews to ensure participants had individual voices and were influenced by discussions with other CTE teachers. Focus groups do not provide as much time as interviews when trying to seek the maximum amount of information about a specific issue. I took into consideration nonverbal cues, reactions, and emotional responses to gather rich information and draw more detailed conclusions.

Participants

For this quantitative study, I collected data from high school CTE teachers. All participants were active high school CTE teachers who taught at a school that had CTE courses. Participants were aware of CCR standards for CTE. They were selected based on

their ability to provide information that was essential to the study. All participants were required to have taught CTE during the COVID-19 pandemic. Participants who were willing to contribute to the study signed consent forms which included the purpose of the study, rights of participants, and a detailed description of the study. There were 15 participants who were vetted, and 12 participants consented to participate in this study. All participants gave their consent to be interviewed and recorded. They had no affiliation with my direct place of employment.

Research questions involved teachers' perceptions and experiences; therefore, it was important to seek out individuals who had exposure to teaching secondary CTE courses before and during the pandemic. Samples in qualitative research tend to be small to support depth of case-oriented analysis that is fundamental to this mode of inquiry (Patton, 2015; Suri, 2011). The sampling strategy for this study was purposeful sampling. Palinkas et al. (2015) noted purposeful sampling is widely used in qualitative research for identification and selection of information-rich cases related to a phenomenon of interest. According to Patton (2015), there are no rules for sample size in qualitative inquiries. I recruited 12 teachers to participate in this study.

Participants were CTE teachers from the district who were contacted through their school email addresses and invited to participate in the study. To gain access to participants, I first identified a gatekeeper at the research site. Gatekeepers are crucial facilitators for accessing participants. After getting approval from the IRB, I communicated with CTE directors to compile an email distribution list of CTE teachers

who were aware of CCR standards for CTE. I sent out emails to all CTE teachers with an introduction, information about the purpose of the study, and consent forms.

Once the CTE teachers have shared their interest in participating in the study, I replied with an explanation of the purpose, explaining the participants' rights, confidentiality, and the consent form that must be signed by all participants. The consent form is crucial in research as it ensures individuals have an informed choice about whether to participate in a research study (Barber, 2021). I also provided the participant with details on the study, how the information would be used, and the rights of the participant. Any CTE teacher who was willing to take part in the study remained confidential to protect their privacy. To safeguard all information and the protection of each participant any data collected was stored in a locked file cabinet, and any transcripts were in a password-protected computer.

Data Collection

Qualitative data describes qualities or characteristics. It is collected using questionnaires, interviews, or observations, and frequently appears in narrative form (RVITCH & Caarl, 2019). The data may be in the form of descriptive words that can be examined for patterns or meaning, sometimes using coding (Ravitch & Carl, 2019). Data were compiled using semi-structured interviews with 12 CTE teachers. I conducted a one-on-one interview with open-ended questions. Collecting data through interviews with participants is a characteristic of qualitative studies. Interviews give the most direct and straightforward approach to gathering detailed and rich data regarding a particular phenomenon (Rubin & Rubin, 2012; Barrett & Twycross, 2018). Preliminary data was

collected using a questionnaire; however, the interviews were the main data collection tool. The interview questions were aligned with the following research questions:

RQ1: What are the secondary teachers' perspectives and experiences implementing college and career readiness programs and curricula during the pandemic?

RQ2: What opportunities, challenges, and other factors influence CTE learning during the pandemic?

As the data collector, the selection of instruments that were used to collect data was a crucial step in the research process for the validity and reliability of the collected data and the potential comparability with data from previous investigations (FitzPatrick, 2019). I used the interview guide to conduct semi-structured interviews through a digital platform that can be recorded for data analysis later. To confirm the stability and accuracy of the data, the interviewer frames the questions correctly and documents them accordingly using the interview protocol created. According to (Rubin & Rubin, 2012; Roberts, 2020) the value of the data collected during a qualitative interview depends on the competence of the researcher and the strength of the interview questions. Therefore, by enhancing the reliability of interview protocols, researchers can increase the quality of data they obtain from research interviews, your protocol can be viewed as a guide for the interview. The interview protocol included introducing myself, reviewing documents, asking consistent questions that align with research questions, giving participants a chance to ask questions, and providing a timeline. At present, other remote and video-conferencing technologies can replace the actual face-to-face interview (Gray et al, 2020) for this study the interviews were audio or video recorded using the

recorder app on my phone or any of the video communication platforms available for the interviewee (i.e... Zoom, Google Meets, Team, Slack, or Skype). During the interview, I also took notes in case of malfunctions and time limitations.

Due to the nature of the study, I created my interview questions based on the CTE teachers' awareness of CCR standards and student engagement during the pandemic. The interview questions are designed to support the two main research questions (Appendix B). Data was collected through the interview process with a flexible sample size of twelve participants. The number of interviews should allow for saturation of data. The researcher gathered data from varies types of CTE teachers to allow for multiple perspectives for consideration while collecting the data for the study. The interviews consisted of five open -ended questions with additional investigational questions that are scripted on the interview protocol (Appendix B).

Once the CTE teachers have been identified for the study, I connected with them by means of email. I interviewed participants using the digital communication platform to ensure comfort and consistency within the process for the participants. My main goal was to gain information from the participants as it relates to the research topic. Before the pandemic, collecting data for research was easily done through a face-to-face interview, however, post COVID more data collection for qualitative research has been conducted by using telephone or mobile phone to conduct interviews, as well as by using videoconferencing (Moises Jr, 2020). By using video conferencing for the interview process the results should contribute to a better understanding of the events through the participants' experience.

Once the participants have been selected for the study, I contacted them to schedule an interview that is most convenient for each participant. The interviews were 60 minutes in length and were video recorded to ensure all information was captured and can be transcribed. Prior to the start of interviews, I gathered the consent forms from the participants, to ensure that all participants were aware of their rights within the study. The interviews followed the interview protocol (Appendix B). Each interview started with the introduction, purpose of study, and review of participants rights. After the introductory information has concluded the interview with the five questions and the investigative questions that relate back to the main research questions. Throughout the interviews, data was collected on the interview protocol, I also kept a log for reflections and tracked the concepts. While it is true that the proliferation of new video conferencing tools offers unique data generation opportunities for qualitative researchers (Gray et al, 2020), it should also be noted that it is more cost-efficient and easier to organize. After I collected my data, I familiarized myself with the data, transcribed and then organized it using Word and Excel Microsoft programs. To keep the information organized I numbered each interview and placed written information in folders and transcribed data in folders on the computer. Based on the amount of data gathered I assigned preliminary codes to the data to describe the content. After which I searched for patterns or themes in my codes across the different interviews. This allowed me the opportunity to review, define and name themes to produce my findings.

The role of the researcher in qualitative research is to attempt to access the thoughts and feelings of study participants (Williams & Moser, 2019) which involves

asking people to communicate personal information, which can be a challenging task. My role as the researcher is to communicate my research findings, to collaborate with others where appropriate and to transfer and exploit knowledge for the benefit of my employer, the district, and the field of education. I consider this study a pathway for other educators to develop and gain an understanding of how teachers' implementation of college and career instruction in CTE courses was influenced by the pandemic. I have no connections or personal relationships with any of the participants. The researcher of this study is a current educational leader in the CTE field at a high school. As a CTE educator my main objective is to) provide my students with the academic and technical skills, knowledge, and training necessary to succeed in future careers and develop skills they used in their post-secondary endeavors. The results of the data for this basic qualitative research study came directly from the responses from the interviews conducted.

Data Analysis Results

The data analysis for the project study consisted of five parts. The first part was the preparation and organization of data, this included printing out my transcripts, gathering notes, documents, and other materials used during the interviews. This included marking the source, any demographics collected, or any additional information that helped to analyze the data. After I organized the data, I reviewed and explored the data. This means that I read the data, to gather a sense of what it contains. Using my reflective journal for my thoughts, ideas, or any questions. The next step was to create initial codes, using highlighters, notes in the margins, or anything else that helps me to connect with my data. Next, I reviewed the codes and revised or combined them into themes. This step

allowed me to identify recurring themes, language, opinions, and beliefs from the participants. Finally, I identified the main and secondary themes from the data analysis and presented themes in a cohesive manner that best tells the story of my data.

To understand the quality, trustworthiness, and credibility of qualitative research you must understand the concept of validity. Validity refers to the way that the researchers can affirm that their findings are faithful to the participants' experience. According to Ravitch and Carl (2019) the emphasis on the objective of truth can lead to some researchers using the term trustworthiness and others may use the terms quality or rigor. The one thing that remains consistent is that these words evoke the importance of ensuring credibility and rigor in a qualitative study. To be accepted as trustworthy, qualitative researchers must demonstrate that data analysis has been conducted in a precise, consistent, and exhaustive manner through recording, systematizing, and disclosing the methods of analysis with enough detail to enable the reader to determine whether the process is credible (Nowell & et.al., (2017). The credibility of the research is based on the consistency of the data collected. The consistency of the data was determined by the amount of time I spent conducting the interviews. I conducted twelve interviews, each taking 1 hour, this gave me 720 hours of interactions with participants. A total of 720 hours was allowed to conduct the interviews and did not include the time spent conducting member checks. After conducting member checks, I reviewed the data, transcripts, and themes accordingly and then shared the initial findings with the participants to ensure that the information is accurate and clear. Data source triangulation involves the collection of data from diverse types of people, including individuals,

groups, families, and communities, to gain multiple perspectives and validation of data. In this case by including the director of CTE and a resource teacher in the study as data sources, I was able to increase the credibility and validity of research findings. The usage of triangulation permits the researcher to make every effort to distinguish true information. The researcher conducted a literature review to familiarize herself with the content of the phenomenon under investigation and collect data by means of interviews to get in-depth information.

Contingent upon any discrepancies with the data, participants were contacted for follow-up interview questions for clarity on findings. If any discrepancies are found within the data, I requested assistance from a peer to reexam other data sources to find resolutions. This may be the case of data collection bias based on complicated questions during a semi-structured interview. If the data was unable to be fixed, to be fair and transparent, both perspectives were included in the findings. It was important for researchers to remain objective while conducting a study, bias impacts the validity and reliability of a researcher's findings, leading to delusion of data. To prevent bias, I interpreted the data in a way that supported the research questions and analyzed all data, even if it does not seem useful. By framing questions using certain strategies, taking notes about the tones and facial expression of an interviewee's responses, and most importantly I reflected about my own point of view as a CTE teacher.

Limitations

In qualitative research the data collection process can present certain limitations since the data are based on the responses from conversations between participants and the

researcher. These conversations can influence the interviewee to give certain responses based on the presence of the researcher (Creswell & Creswell, 2017). A basic qualitative design can present limitations in the number of participants the research can speak to in a limited amount of time. The absence of systematic procedures for a basic qualitative design is something that some researchers acknowledged as a concern due to an absence of guidelines for methodology (Yazan (2015). This study is limited to one high school in a northern eastern state. This research study was limited to a small sample size of twelve high school teachers; therefore, the study had limited transferability to other settings. I provided the reader with a clear description of the context of the study to assist in the application of results to similar contexts.

Summary

The purpose of this study was to examine how teachers' implementation of college and career instruction in CTE courses was influenced by the pandemic. There were two research questions based on the purpose of the research. The data was collected through semi-structured interviews with multiple participants to better understand the implementation of college and career instruction in CTE courses that were influenced by the pandemic. Section two provided a description of the research design, and the research findings selected for this study. This section included a description of the participants for this study, the selection process, the number of participants, the procedures for gathering access to the participants, the methods for establishing a working relationship with the participants, and the measures for the protection of the participants. This section also included a description of the data collection process, the role of the researcher, and the

limitations of this study. The methodology contained an overview of the research design and approach that was used in this study stating why the approach is appropriate to address the problem. The findings in this study could help districts collaborate across secondary and postsecondary levels and with industry partners to integrate technology-based tools, related instructional strategies, and diverse delivery models in ways that are appropriate for each CTE program area and learner level.

Discussion of Findings

Before the pandemic teachers were able to teach and plan for college-readiness instruction in career and technical education (CTE) classrooms. High school teachers reported providing fewer students with college and career readiness support one year into the coronavirus disease 2019 (COVID-19) pandemic. CTE students get hands-on experience in industry state-of-the-art labs and simulated environments, learn, build connections with industry professionals, and gain access to work-based learning experiences in their CTE pathway of choice (Stone III, 2017). Once instruction went online, hybrid, and then back in the classrooms full-time, the focus moved away from college readiness instruction to support students by focusing on core content courses such as English, mathematics, social studies, and science, and not placing an equal emphasis on career and technical education instructional practices. Since the COVID- 19 pandemic, career and technical teachers have been facing challenges in implementing relevant curricula for college-readiness instructional practice in career and technical education classrooms. Regardless of the instructional model chosen, learners can benefit from instructor efforts to build a positive classroom culture that acknowledges their

social-emotional needs and provides, as much as possible, personalized instructional pedagogy (Baillieul & Crowder, 2021). When a classroom has established a culture that is safe and promotes ownership for learning, students are able to share ideas, become curious, passionate and help each other.

The purpose of this study was to examine how teachers' implementation of college and career instruction in CTE courses was influenced by the pandemic. There were two research questions based on the purpose of the research. The data were collected through semi-structured interviews with multiple participants to better understand the implementation of college and career instruction in CTE courses that were influenced by the pandemic. Qualitative research involves collecting and analyzing non-numerical data to understand concepts, opinions, or experiences. It can be used to gather in-depth insights into a problem or generate innovative ideas for research. I chose the qualitative approach because as the researcher, I had an opportunity to follow up on answers given by respondents in real-time, generating valuable conversation around a subject that is not possible with a structured survey.

The concept that supports this study is based on Conley's (2008; 2010; 2017) college readiness framework which focuses on the idea that students should graduate from high school with the knowledge and skills necessary to successfully pursue post-secondary options. David Conley (2014) clarified college readiness with four key facets that express college readiness through additional concepts rather than academics, the broader, more comprehensive conception of college readiness, one built on four facets: cognitive strategies (activities that develop students to be flexible learners), content

knowledge (increasing the foundational knowledge of content), academic behaviors (goal setting and self-awareness), and contextual skills and knowledge (transitioning to postsecondary options) (Roberts & Grant, 2021). In 2018, U.S. News & World Reported a state-by-state comparison that placed Maryland among the top states for its public high schools, ranking third. However, by 2020, Maryland ranks fifth overall in the best public-school systems in the country, according to the same study. The road from high school to college was undoubtedly complicated by COVID-19, along with the decline of student performing to standards, there was a drop in Maryland schools' ranking. When using Conley's multi-dimensional model as a CCR measurement for students being college career readiness, fewer students are truly ready for college than when judged by the current conventional measures like courses and grades. The foundation measurements of incoming students being college ready are cognitive and metacognitive skills developed in high school. These skills include analysis, interpretation, precision, accuracy, problem-solving, and reasoning.

For this quantitative study, the participants consisted of twelve secondary career technical teachers. I collected data from interviewing high school CTE teachers. The participants needed to be active high school career technical education teachers who teach in a school that has clusters of CTE courses. The teachers must have an awareness of college and career readiness standards for CTE. The participants were selected based on their ability to provide information essential to the study. Participants who were willing to contribute to the study signed a consent form which included the purpose of the study, the rights of the participants, and a detailed description of the study. All

participants had to give consent to be interviewed and recorded for this study. The participants involved in the study did not have any affiliation with my direct place of employment.

Coding and Theme Outcomes

The data was coded, and fifty codes were identified as important to this study. The codes were then reduced to eight categories and eight themes that provided clarity to the study research problem. There were four themes extracted from research question one on secondary teachers' perspectives and experiences implementing college and career readiness programs and curricula during the pandemic. These include (a) experiences transitioning to online classes, (b) skills gaps in learning, (c) motivation vs. the lack of motivation, and (d) zoom and google classroom. There were four themes extracted from research question two on the secondary teachers' perspectives on opportunities, challenges, and other factors that influence CTE learning during the pandemic. These include (a) lack of support for post-secondary transition, (b) lack of hands-on experiences, (c) funding and resources, and (d) professional development needed on CCR indicators implementation.

RQ1

All the teachers in the interviews were able to provide adequate responses on different challenges they faced during and after the COVID-19 pandemic. The secondary teachers were asked to explain the challenges that remain for them after COVID-19 pandemic. Several of the teachers noted that many of their students have skill gaps in learning due to having their instruction delivered online at their home. Several of the

secondary teachers noted that the level of motivation displayed by the students was different before the COVID-19 pandemic and after the COVID-19 pandemic. All the secondary teachers used Zoom and Google classroom as platforms to provide instruction to the students in their online classroom on CTE content.

Participants were asked to explain the challenges they faced during the COVID-19 pandemic and some challenges that remain for them after the COVID-19 pandemic. All the teachers in the interviews were able to provide adequate responses on different challenges they faced during and after the COVID-19 pandemic.

T1 explained:

> The challenges I have faced during the pandemic dealt with the engagement of students during class time. Because this was virtual, I had a tough time keeping students engaged while they were at home. T2 noted, one challenge I faced during the pandemic was keeping my kids engaged in instruction. They were comfortably at home and not engaged in class. I lost over half of my 10th grade class because most of them simply stopped coming to virtual classes and/or refused to turn in work.

T3 reported:

> The main challenge was modifying the curriculum to match the new format. BCPS provided much of it, but we as teachers still had to adapt a lot of the resources. To help with language barriers, I spent a substantial portion of that time trying to contact various universities around the world to acquire Spanish, Arabic, Mandarin, Hindi, Urdu resources.

T4 noted:

> Keeping the students' attention, managing my peace of mind and my household. I also changed schools, so having a connection with the students that I have never met. Whereas T5 reported, the most challenging task for me as a teacher transitioning to online classes was keeping students on task and engaged in classroom work all day.

T6 explained:

> Teaching remote learning presented a very steep learning curve for me as a teacher. Lessons were written to be lab based where students should have had materials to explore had to be quickly adapted. Teaching in a low-income area, few students had access to the necessary technology or a reliable internet connection, creating a digital divide not only between them and other classmates but also between other schools. We had to find solutions to ensure that all students could participate in online classes, which sometimes involved going to the school on our own time to make classroom resource bags with the supplies that they may need and providing them to our students with a drive by pick up system. Maintaining my student engagement in a virtual environment proved challenging.

T7 reported, “I feel that the number one challenge during the pandemic was getting students to transition to online classes. Several of them felt that it was a vacation time for them, or they had to take care of other family members while attending classes.”

T9 noted:

> One of the main challenges that I experienced was the child's home environment. I had kids taking care of grandparents, preparing family meals, taking care of younger siblings, and sharing computers to attend classes. This made it hard for some kids to be on time or to stay focused. Other challenges included conducting labs, providing models for class discussion, and conducting assessments.

T10 reported, “Attendance, equitable access to technology, and maintaining student engagement.” T11 stated, “Many students seem to have gotten into unbelievably unpleasant habits regarding education. They seem not to take education as seriously and staying home is not a big deal.”

T12 reported:

> The sense of entitlement these kids have is unbelievable. I think that because of COVID, and the grading situation, students feel like school does not hold the same level of importance as it once did – remember during covid grades were pass/fail. So, I see a lot of students with the same mentality. That we are supposed to just allow them to do nothing or minimum work. They are still not engaged as they were before the pandemic- so engagement, entitlement and then the fact that they do have the core foundation like for the math, writing, and grammar. You would be shocked to know that I have 10th graders that cannot multiply or divide.

Participants were asked to explain the challenges that remain for them after COVID-19 pandemic. Several of the teachers noted that many of their students have skill gaps in learning due to having their instruction delivered online at their home. T1 noted, “The challenges that remain seem to be on the level of their anxiety. They have a lot of

anxiety with being in the classroom and group projects seem exceedingly difficult to facilitate." T8 reported, "I see that several of my students have lost some of the learning and skills. It was hard trying to teach career readiness skills to some students due to the lack of engagement by some of them." T3 explained, "Transitioning back to in-person teaching while under a profound level of pressure to decentralize the teaching focus away from the teacher to put the onus onto the students. There were gaps in the students' learning skills." Also, T1 reported, "I feel the level of student engagement before COVID was relatively high but after COVID student engagement was very low it was very difficult to get students to participate due to their anxiety with being in a classroom and with some students was the fear of getting sick again." T5 noted, "Students really have gaps in their learning, and somewhat think that they will pass with minimal effort."

T9 noted:

> I mean home life is always going to be a factor in education but at least now the kids have a chance to get away from it during the day. One other challenge that remains is the skills gap in mathematics. Due to the fact the kids had completely different experiences during Covid, they all received various levels of instruction. One other challenge that remains is attendance, they do not like to come to school, which affects their learning new skills. Some students really got used to the format of virtual assigning and submission of assignments. As a result, some kids do not see the value of being in the classroom to complete work. This has resulted in poor attendance rates across the board.

T10 reported, “A significant learning gap remains. Students are at least 3 years behind. There is also an increased level of apathy. Students do not care if they pass or fail.”

T11 noted, “That is still a struggle. Students are slowly becoming more engaged. Electronics (phones) have become a major issue. I think that during the pandemic phones were an escape and students are more interested in the stimulus provided by the phone than by traditional educational strategies.”

Participants noted that the level of motivation displayed by the students was different before the COVID-19 pandemic and after the COVID-19 pandemic. Several of the secondary teachers reported that many of their students had an elevated level of motivation in face-to-face classes before the pandemic but after returning to in person classes, they seem to have lost their high motivation for learning.

T2 reported:

> Whereas student engagement may have been an issue Pre COVID-19, Post quarantine student engagement is a major issue because it seems like the students are less motivated as we transition back to in person classes. These kids find it much harder to keep engaged. They are far more attached to their electronic devices and the gaping hole in their knowledge means that you must remediate more, which breaks engagement.

T6 stated:

> Traditional classrooms provided student and teachers face-to-face interaction, allowing for direct communication, immediate feedback, and real-time

> collaboration. Students were physically present in the classroom, facilitating a more immediate connection with me and their peers. I was not only able to answer the questions that they asked directly but I could watch their body language and facial expressions. This enabled me to adjust my teaching/reteaching as needed. Students followed a structured daily routine, attending school in person, participating in extracurricular activities, and interacting with classmates during breaks and activities. It seems like they are less engaged and less motivated since they attended school in an online setting.

T7 noted, “I feel that many students are less focused on other thing than focusing on schoolwork and completing their classroom assignments on time in the classroom.” T8 said, “Many of the students in my class seem to be less motivated since coming back to all day school with respect to completing different classroom activities. It seems like they are having a challenging time comprehending the classroom assignments and instruction.”

T9 reported:

> Student engagement varied before COVID-19 but was mostly positive. Honestly, the biggest issue before COVID was student phone use distracted them from lessons. After COVID-19 kids had to learn how to engage in a classroom setting again with various other students, and an actual live teacher. They are easily distracted now. In addition, student motivation is at an all-time low. This is a generation of kids that has seen the achievement bar lowered for their continued

> matriculation. Regardless of personal mastery students are still being promoted, which is feeding academic lethargy.

T10 reported:

> My students were self-motivated over achievers that were on honor roll every quarter. Post pandemic most students are failing their courses. About a third of my first-year students have failed at least three courses. To me, I feel that they are not motivated the way they were before the pandemic.

T11 noted, “I feel that the students are less engaged in the classroom assignment and seem like they are less motivated to try their best-in-class assignments.”

T12 stated:

> Pre Covid my students were energized, they may not have known the answer, but they would try to figure it out, the communication was better. I can also say that the phones are a major issue. They are attached to the students. You would think that because they can maneuver around a phone, they should be able to use a computer “honestly a phone is a minicomputer so “why not.” But they do not, so they lack the technological skills that you would assume they would know because they are a tech group of people.

Participants noted they used Zoom and Google classroom as platforms to provide instruction to the students in their online classroom. The secondary teachers reported that some challenges were that many students had trouble connecting to these platforms. To deliver CTE content.

T1 stated:

The main distance learning methods I used during COVID was the structure of the classroom lessons the classroom lesson structure was very useful because it helped me to follow a plan while we were virtual, and students became very familiar with this method because most of the teachers used the same method which was either Zoom or Google Classroom.

T2 noted:

I used Zoom for online instruction. I taught at my home, sitting at my kitchen table with a dry erase board just like I would have done in class. Unfortunately, when the county decided that we had to follow a "set curriculum" I had to abandon what I had been successfully doing. When we first went to the virtual classroom, we did not skip a beat! I kept teaching the same content I had been teaching before the quarantine. This was easier for me and my kids because we are a 1-to-1 school. I used Ed puzzle and video recordings of my lessons to facilitate a pseudo flipped classroom. We were given a choice to use Zoom or Google Classroom as an online platform and I used both at times.

T3 stated:

There was an attempt to have synchronous teaching paired with asynchronous activities. Almost none of the students logged in during class and almost none of the students did the asynchronous activities, but there was almost nothing we could do to hold them accountable for their lack of effort. Many of these activities did not work well using Google Classroom and Zoom but I did the best that I

could do with the equipment that all teachers were given to provide instruction to the students during the pandemic.

T4 explained:

> During the pandemic, it was hard teaching the CTE lessons due to the lack of hands-on instruction. We used Zoom and Google Classroom as platforms to provide instruction to all students in the classroom. It was incredibly challenging because many students were late logging on to the classroom or trying to sleep during instruction.

T5 noted:

> As secondary teachers we used several demonstrations for activities using Google Classroom. We also made modifications to hands-on activities using household materials. We even sent home kits with rulers and some building materials.

T6 reported:

> There were many that I used including incorporated virtual labs and simulations to replicate hands-on experiences. These online tools allowed students to practice skills in a virtual environment, this included material science labs, and electrical properties labs. Used a series of video lectures and demonstrations to teach specific skills or concepts. These videos served as a substitute for in-person demonstrations and allowed students to access instructional content at their own pace. Collaboration tools, such as video conferencing platforms and online discussion forums, were used to foster interaction among students and between students and instructors. These tools supported group projects and discussions. To

> provide real-world perspectives, my school brought in guest speakers from industry professionals. Used virtual industry tours (google) and online presentations to help students connect with professionals and gain insights into the field.

T7 stated:

> The school district allowed all teachers to use Google Classroom and Zoom platforms to provide instruction for students. The instructors do not have the training to deal with high school student mentality. Students do not seem to advocate for themselves. Students are on cell phones instead of listening to lectures. Students do not have or do not use good note taking strategies.

RQ2

Participants reported that the school district needs a plan to support students during post-secondary transition. Also, the teachers noted that the school district should provide training for teachers on strategies to support students for post-secondary transition after they complete high school. Several of the secondary teachers noted that the school district should provide more experiences for students in the school to career programs due to the lack of hands-on experiences. Several of the secondary teachers noted that the school district should provide more funding and resources to me the diverse demands of the need of the school to career program. The secondary teachers noted that the school district should provide professional development opportunities for educators to enhance their understanding of CCR indicators and effective strategies for preparing students for college and careers.

Participants reported that the school district needs a plan to support students during post-secondary transition. Also, the teachers noted that the school district should provide training for teachers on strategies to support students for post-secondary transition after they complete high school. For example, T5 stated, “I feel that the school administration should partner with different businesses and colleges to support more students’ activities so that students can either transition to work or be ready to transition to post-secondary education institutions.

T7 noted:

> I believe there are several barriers. Support from postsecondary instructors in the form of coaching classes and improved teaching strategies could help. High schools could prepare students for postsecondary instruction by incorporating some of the postsecondary grading and expectations in high school. This includes holding students accountable for actions and lack of actions. Parents need to be part of the solution as well. Students need to commit to the learning process. That means interacting with learning content and not with their cell phone.

T4 stated:

> In my opinion, support has decreased since the beginning of COVID during the beginning of COVID it was a post-secondary transitions changes were supported by administrations, and we had a lot of support, but it started to dwindle and now I believe that administrative support is at a low since the beginning of COVID.

T9 said:

> I know that there have not been as many annual FAFSA nights and college fairs since the pandemic. I know that these have been important programs for the families to use in their post-secondary transitions. Whereas, T10 noted, Although the county has made a significant investment into CTE programs, make families aware is still a significant obstacle.

T11 reported:

> There has been little transition provided. I was tasked with writing the virtual learning lessons for Homeland Security with basic guidance. The transition back to the classroom was just as basic. I think this was by necessity, not choice. The pandemic was an anomaly that began quickly.

T12 reported:

> The post-secondary transitional support that I saw during covid was more social emotional learning. This was not just geared toward students with disabilities (SWD) but the whole student body. I also noticed that the guidance department was not focusing on students attending college or career but more about family engagement and social needs.

T6 noted:

> Students need soft skills along with career readiness, CTE programs and transition support systems placed increased emphasis on developing skills such as communication, adaptability, and problem-solving, which are crucial for success in postsecondary education and the workforce.

Participants noted that the school district should provide more experiences for students in the school to career programs due to the lack of hands-on experiences. The teachers note that the students should have more work-based experiences such as internships and apprenticeship experiences. For example, T6 noted, “Work-based learning experiences, such as internships and apprenticeships, may have been lost during the pandemic. This lack of internships can impact students' ability to gain practical, hands-on experience and build connections with employers.” T10 reported, “I feel that as career teachers, we should build a connection with different employers in the school district so the students can have more hands-on experiences with the employers.” Also, T11 noted, “I believe that as career teachers, we need to provide more one-on-one instruction to some students especially students such as having learning problems or who need more hands-on experiences for these students.”

In addition, T12 stated, “The student lost a lot of instruction time and hands-on learning during the pandemic; therefore, I feel the school districts should provide training on strategies teachers can use to give students more hands-on experiences.” T1 reported, “I feel that teachers need to provide more work-based experiences such as internships and apprenticeship experiences for students.” T2 stated, “The students in the school to career programs should be provided a mixture of general instruction but also some hands-on learning new skills in the classroom. Hands-on learning can come in the form of different projects to build things or to solve different problems.” Finally, T4 noted, “I feel that a lot of students I teach in the school to career programs learn the materials faster when teachers provide more examples and hands-on instruction to them.

Participants noted that the school district should provide more funding and resources to me the diverse demands of the need of the school to career program. For example, T4 reported:

> In my opinion the type of resources principals and teachers report by help address those barriers were giving the students more time being more patient with students understanding what the students had to go through with overcoming the post COVID challenges also they have given us more strategies that we can use in the classroom which is helped a lot SEL strategies have helped us relate more to the

T5 noted, “I feel that the state and the school district should put more funding toward the school to career programs in the school district to expand the number of students we serve each year. This is because we lost so much with respect to students learning and achievement due to the pandemic.” T1 stated, “I feel that the school district should provide more funding and resources toward mentorship for some students who learn better by performing certain task or on the job training and learning new skills.” Also, T7 stated, “We lost so much instructional time and resources during the pandemic for both teacher training and student learning and achievement. Therefore, providing more resources can aid the teachers to expand their instruction with more technology for the classroom.”

Iin addition, T8 noted, “I feel that the school district should set aside more funding for teacher training and professional development of up-to-date instructional strategies to meet the needs of all students especially students with special needs who will

enter the workforce after completing high school." Also, T9 reported, "I realize that there is a knowledge gap for some students after the pandemic, so we need more funding and resources to remedial classes and after school program to help these students." Finally, T10 explained, "I feel that the school district needs to implement more after school and summer school remediation classes to help the students to receive instruction in the learning gaps they presently have due to attending online classes during the pandemic."

Participants noted that the school district should provide professional development opportunities for educators to enhance their understanding of CCR indicators and effective strategies for preparing students for college and careers. The secondary teachers also stated that the individual school should do more to involve parents and the community in the CCR.

T3 reported:

> I feel that as teachers we need better metrics to be developed to analyze where and how money is being spent in the school district. For example, if we are providing many of the family support that would otherwise be provided directly by the State or county, our budget will inflate, and our per-pupil spending will increase but our outcomes will not. Therefore, we need more professional development and training to achieve these goals.

T4 stated:

> I believe we need to focus more on careers outside of college some students may not want to go to college I believe every high school is attempting to make all students go to college but some students for some reasons or for personal reasons

> may not want to go to college because they may not have funding or they have to enter the workforce sooner than they want to so as an educational system we have to also offer them an opportunity to make a living if they decide not to go to college.

T5 noted, “I feel that all teachers need more professional development and training on the proper implementation of the CCR standards and indicators in order to help students to be workforce ready or college ready after completing high school.” T7 reported, “My understanding is that the blueprint will guide school districts in accountability of CCR indicators. Currently, my district is moving towards district wide assessments to be given at strategic times during the school year. Data will be used to plan for future instruction.”

T9 noted:

> I believe our state lacks partnerships with local workforce development and private industries. I believe that this could be accomplished through partnerships on the county level. By looking at each individual area we can establish specific workforce development needs and implement them through the corresponding educational district. This would provide local companies with access to a pipeline of qualified candidates to hire upon graduation.

Also, T10 reported, “I feel that due to the pandemic, indicators will lag for several years. They should consider staggered goals.”

T6 reported:

Implement indicators that allow for early identification of students who may need additional support in preparing for college and career pathways. Early intervention strategies can help address gaps in skills and knowledge before graduation. Support and promote individualized learning pathways that cater to students' diverse interests, aptitudes, and career goals. Recognize that a one-size-fits-all approach may not be effective in preparing students for varied postsecondary opportunities. Engage parents, families, and the community in the CCR process. Communication and collaboration with these stakeholders can contribute to a supportive environment for students as they explore and pursue postsecondary options. Provide professional development opportunities for educators to enhance their understanding of CCR indicators and effective strategies for preparing students for college and careers.

Discrepant Cases

As a qualitative researcher, one must take a close look at the negative cases in their research study (Ravitch & Carl, 2015). Discrepant data provides an alternative explanation on the emerging themes or categories. Discrepant case analysis is an important part of qualitative research (Hanson, 2017). Discrepant case analysis includes reviewing and searching for data that might provide a contradiction to the themes or patterns observed by the research in the findings in a research study. I coded the data and analyzed it to determine whether the data accurately reflected the perspectives and perceptions of the participants for this study. It was important to conduct this process and look for alterative and misrepresentations of the data (Ravitch & Carl, 2015). During the

data collection and analysis, I did not find any discrepant cases. Also, all the participants for this study provided their unique and valuable data which led to answering the research questions.

Data Validation

In a qualitative research study, an important part was to memorize research bias and enhance the quality of the data collection process; therefore, it was important to conduct triangulation of the data from the participants. This included using multiple sources of data collection with a qualitative study. Fusch and Fusch (2018) reported that triangulation in a qualitative research study can add more credibility to the study and the data being collected by the researcher. All the data in this research study were verified for accuracy through conducting member checking of the transcribed interview data. The interview was sent back to each participant to check the data for accuracy. The participants took one week to return the data back to the researcher. Also, I conducted debriefing sessions with each of the participants. I provide each of the participants with my name and contact information to ask any additional questions about the research study. In addition, Merriam, and Tisdall (2016) suggested that member checking is a crucial step in qualitative to validate the research findings in a study. The participants indicated no changes were required to the transcribed interview data.

Project Description

The Maryland Blueprint's College and Career Readiness (CCR) Pathways (2020), is a document provided to all classroom teachers at the high school level in the state of Maryland which provides standards and strategies for teachers to implement programs

such as the internationally benchmarked curriculum, including regularly exposing students in the early grades to meaningful and well-paying careers and career counseling. According to the Maryland Department of Education (2020), this curriculum is used to allow high school students to attain college and career-ready status at the end of 10th grade and they are allowed to choose an IB, AP, Cambridge diploma program, early college, and/or a rigorous technical education pathway that leads to industry-recognized credentials and high-paying jobs. Also, in Maryland school districts, there are currently 46 MSDE-approved high school CTE programs in eleven career clusters in a total of 259 schools. 40.42% of the student population in Maryland is currently enrolled in CTE programs (Maryland Department of Education, 2020).

To prepare students for the 21st Century's global economy and emerging STEM careers, Maryland redesigned its CTE programs to be receptive to the shift in the economic workforce and the integration of STEM employment even on military bases (Maryland Department of Education, 2020). With the Department of Defense announcing a plan to restructure its bases through workforce development to increase operational readiness and facilitate new ways of doing business, the Base Realignment and Closure (BRAC) was introduced and projected to bring tens of thousands of STEM-dependent jobs to Maryland (Maryland Department of Education, 2020). These efforts focused on attracting high school students to programs like Nursing, Pre-engineering, Manufacturing Biomedical Sciences, Technologies, and Homeland Security through STEM and CTE cluster programs. This shift to a more student-centered, inclusive, and respectful school culture acknowledges the many and varied talents students bring to school. Creating more

engagement, better attendance, more confidence, and higher graduation rates, especially for students living in areas of concentrated poverty (Maryland Department of Education, 2020). According to the Association for Career & Technical Education (2020), when students are enrolled in at least one CTE class the risk of students dropping out of high school decreases. These opportunities create new pathways for students, helping them to mitigate the effects of economic segregation and social, racial, and economic injustice in urban and rural communities. With a commitment to CTE, the Blueprint once again underlines its focus on equity (Association for Career & Technical Education (2020).

Before the pandemic teachers were able to teach and plan for college-readiness instruction in career and technical education classrooms. High school teachers reported providing fewer students with college and career readiness support one year into the coronavirus disease 2019 (COVID-19) pandemic. CTE students get hands-on experience in industry state-of-the-art labs and simulated environments, learn, build connections with industry professionals, and gain access to work-based learning experiences in their CTE pathway of choice (Stone III, 2017). Once instruction went online, hybrid, and then back in the classrooms full-time, the focus moved away from college readiness instruction to support students by focusing on core content courses such as English, mathematics, social studies, and science, and not placing an equal emphasis on career and technical education instructional practices. Since the COVID-19 pandemic, career and technical teachers have been facing challenges in implementing relevant curricula for college-readiness instructional practice in career and technical education classrooms. Regardless of the instructional model chosen, learners can benefit from instructor efforts to build a positive

classroom culture that acknowledges their social-emotional needs and provides, as much as possible, personalized instructional pedagogy (Baillieul & Crowder, 2021). When a classroom has established a culture that is safe and promotes ownership for learning students can share ideas, become curious, passionate, and help each other.

Conclusion

The purpose of this study was to examine how teachers' implementation of CCR instruction in CTE courses was influenced by the pandemic. There were two research questions. Data were collected through semi-structured interviews with participants to understand the topic. I used the qualitative research method to collect and analyze nonnumerical data and understand concepts, opinions, and experiences. followed up on answers by participants in real-time, generating valuable conversations that are not possible with structured surveys.

Four themes were extracted from RQ1. These were experiences transitioning to online classes, skills gaps in learning, motivation versus lack of motivation, and Zoom and Google classrooms. Four themes were extracted from RQ2, which were lack of support for postsecondary transition, lack of hands-on experiences, funding and resources, and professional development on CCR indicators implementation.

Participants were asked to explain challenges that remained for them after COVID-19 pandemic. They noted many of their students had skill gaps in learning due to online instruction. Several noted students' motivation levels were different before and after the COVID-19 pandemic. All participants used Zoom and Google classroom as platforms to provide instruction to students.

Results also showed participants reported the school district needs a plan to support students during postsecondary transition. Also, the school district should provide training for teachers regarding strategies to support students for postsecondary transition after they complete high school. Several participants noted the school district should provide more career programs due to lack of hands-on experiences. They noted the school district should provide more funding and resources to meet diverse demands of the school. They also noted the school district should provide professional development opportunities for educators to enhance their understanding of CCR indicators and effective CCR strategies for preparing students.

There have been overwhelming challenges for teachers, school districts, and educational policymakers regarding the COVID-19 pandemic. The purpose of this basic qualitative study was to examine how teachers' implementation of CCR instruction in CTE courses was influenced by the pandemic. CTE can have a significant role in the economic recovery and development of the post-pandemic workforce. This not only includes providing education, training, and reskilling opportunities that youth and adults may need for high-wage, high-skill, and in-demand occupations and industries, but also helping learners develop technical, employability, and academic skills that are important for increasingly technology-focused workplaces. Findings may encourage districts to provide students with a rigorous academic curriculum that integrates academic and career skills, incorporates applied learning in all disciplines, and prepares them for high school graduation and career entry.

Section 3: The Project

Before the pandemic, teachers were able to teach and plan for college-readiness instruction in CTE classrooms. High school teachers reported providing fewer students with college and career readiness support 1 year into the COVID-19 pandemic. CTE students get hands-on experience in industry state-of-the-art labs and simulated environments, learn, build connections with industry professionals, and access work-based learning experiences. Once instruction went online, the focus moved away from college readiness instruction to support students by focusing on core content courses such as English, mathematics, social studies, and science, and not placing an equal emphasis on CTE instructional practices. Since the COVID-19 pandemic, CTE teachers have faced challenges with implementing relevant curricula for CCR practice in CTE classrooms. Regardless of the instructional model, learners may benefit from instructor efforts to build positive classroom cultures that acknowledge their socioemotional needs and provide personalized instructional pedagogy. When classrooms establish cultures that are safe and promote ownership for learning, students can share ideas, become curious, and help each other.

The purpose of this basic qualitative study was to examine how teachers' implementation of CCR in CTE courses was influenced by the COVID-19 pandemic. My goal was to prepare more students for postsecondary success. Based on findings from this case study, I developed professional development training to address the needs of teachers. Development of the project was based on themes which emerged from the data analysis process: experiences transitioning to online classes, skills gaps in learning,

motivation versus lack of motivation, Zoom and Google classrooms, lack of support for postsecondary transition, lack of hands-on experiences, funding and resources, and professional development for CCR.

The project was developed to provide research-based strategies for properly implementing CTE state standards at the high school level. Strategies can assist high school CTE teachers to increase their knowledge and skills involving implementation of CTE CCR skills. In addition, the sessions can help teachers become more knowledgeable in terms of monitoring the progress of students and making data-based instructional decisions about students' progress in their classrooms.

Rationale

College readiness has been measured in terms of high school coursework and college entrance exam scores. Students must demonstrate academic self-management behaviors involving time management, effective study skills, and persistence as well as contextual skills such as navigating college admissions, and financial aid during the first year.

Review of the Literature

Scholarly perspectives vary regarding what constitutes readiness, as well as secondary educators' perceptions of college-readiness. Academic performance of students is likely to drop in terms of year-end and internal examinations due to reduced contact hours for learners and lack of consultation with teachers (Sintema, 2020).

Strategy for Searching Literature

Topics in the literature review emerged from themes in Section 2. The literature review highlighted the need for more PD and training on research-based intervention strategies to properly implement CCR in CTE courses. I searched for relevant information for this literature review that was published between 2020 and 2024 and focused on peer-reviewed and full text sources. I used the following databases: ERIC, SAGE Journals, EBSCOhost, and ProQuest. Search terms were *motivation*, *Zoom and Google classroom*, *support for transition*, *online education*, *postsecondary transition*, *professional development*, *hands-on activities*, *career readiness skill*, *virtual learning environments*, *problems with online learning and implementation*, *online education*, and *COVID 19 pandemic*.

PD

There is a need for ongoing (PD to make sure high school teachers received curriculum training and support for CTE courses during educational crises for students to be college and career-ready (Caldwell et al., 2021). Through PD, knowledge can be presented to industry leaders, teachers, counselors, district personnel, and educational policymakers. Students' developmental processes, motivation, interests, aspirations, socioeconomic status, and support systems influence the direction they take to become college and career ready. Students' complete knowledge-based modules at their own pace, and schedule time in stationary or mobile labs for hands-on practice or use classroom time for more collaborative work.

Making college-ready students requires them to cultivate a sense of belonging as critical for navigating social, academic, and cultural changes they experience.

According to Braggs et al. (2021), professional development for career and job readiness skills implementation helped educators apply theoretical concepts, to hands-on applications within the classroom, and experts in the field are required to train educators. In addition, Braggs et al. (2021) noted that providing workshops increase teachers' knowledge, as opposed to the one-time trainings, which do not provide the depth of understanding, or the implementation of practice needed to collect, analyze, and use student data to guide instruction. In addition, change agents are the classroom teachers that ignite student learning in the classroom and create the foundation for school-wide success or failure of providing career readiness skills to high school students (Braggs et al., 2021).

Researchers suggested that school districts should provide teachers with long term support using PD when implementing the career and college readiness model in their school (Powell & Bodur, 2019). The PD that the teachers receive should reflect the problem-solving approach and sharing ideas through collaboration with other teachers. Powell and Bodur (2019) reported that that many teachers have a change in their attitudes when certain knowledge is presented to them about the benefits of teaching and learning. These types of efforts can be done using PD to have a positive effect on students learning and outcomes. The results of the study found that there was a statistically significant difference with teachers who receive ongoing PD with the focus on helping students to make progress in their classrooms.

Virtual Larning Environments in Schools

Virtual schools in the K-12 setting are considered format in schools but without the need for a certain school physical building due to all students attend cases from different areas and locations such as their home or other locations around their school district with an online management system (Maas et al., 2020). Many states in the United States offer virtual schools for their students especially during and after the COVID 19 pandemic (Maas et al., 2020). Researchers noted that since 2014, several states in the United States require students to complete an online class before they graduate from high school, and this has been reviewed by several school districts in the 21st century (MAAS et al., 2020).

Researchers reported that school districts are providing virtual learning instruction to their students by offering internal virtual programs such as purchased from companies and from other virtual organizations (Maas et al., 2020; MacIntyre et al., 2020). Virtual schools in the United States (e.g., public, private, and charter schools) serve about 18% of 18% of the K-12 population in general (MacIntyre et al., 2020). Virtual classrooms have exploded in enrollment and have increased to millions of students across the United States. MacIntyre et al. (2020) reported that school districts across the United States have switch to virtual learning due to the COVID-19 virus. Several school districts in the United had to switch to online learning to complete the school year. The researcher noted that during the COVID-19 pandemic, school districts and teachers face many challenges, such as stress due to trying to switch from face-to-face to 100% online for all students in many school districts (Maas et al., 2020; MacIntyre et al., 2020).

For school districts and teachers to be successful in implementing virtual learners through the Internet and different devices, it is important for traditional classroom teachers to learn to meet the needs of diverse learning students, especially students with diverse needs in the classroom (MacIntyre et al., 2020). Also, classroom teachers must transform their teaching pedagogy to fit instruction for the online environment to increase student's achievement (Morgan, 2015). Further, several teaching preparations have begun to train teachers on strategies they will need to provide instruction to students in an online environment. However, this training has not been done to meet the rate of the growing need for teachers to instruct students in K-12 using virtual teaching platforms (Morgan, 2015).

Harris-Packet and Segol (2015) conducted a study to examine online instruction in 10 states across the United States on the effectiveness of virtual instruction on student's achievement for K-12 students in reading and mathematics skills. The researchers used public data from the United States Department of education to conduct the study. This study's results indicated that many online students performed better than students in traditional settings. Harris-Packet and Segol (2015) also noted that administrators at the district and state level have realized that the greatest potential to increase learning with virtual and blended programs depends on states and school districts willing to transform their educational system to meet the needs of online learners and to use competency-based approaches with students learning and achievement for its students (Harris-Packet & Sego, 2015).

Concerns with Using Virtual Learning in Schools

Although technology has made advancement in school across the United States, there are some concerns about the pedagogical methods used with VLE in the classroom especially during and after the COVID 19 pandemic (Maas & Hughes, 2020). Some critics revealed that many classrooms in several school districts should be more technologically advanced with using VLE and resources in the classroom. Also, many parents and students cannot afford the technology expense that comes alone with the use of VLE. In addition, many school districts do not take advances of the tools available to them in delivering VLE in a systemic way for the learning needs of students in their school districts (Maas & Hughes, 2020; Shaheen et al., 2019).

Concerning the use of VLE, many administrators need to gain adequate knowledge with respect to using technology in the classroom (Shaheen et al., 2019). School administrators are usually responsible for developing and designing the technology plan that the school will use, but much limited knowledge concerning using technology in the classroom. Mahoney and Khwaja. (2016) noted that this lack of knowledge by school administrators can result in school getting subpar technology resources for students in their school. Mahoney and Khwaja. also reported that school administrators ask questions concerning the advancement of technology and to learn about the current trends in technology to address the diverse needs of all students in the school.

Another reason that many schools across the United States do not take advantage of technological advancements is that many of the teachers in the school are not

adequately trained to use the technology equipment (Francom, 2020; Shaheen et al., 2019). Researchers noted that there is a need for more school districts to provide more on going professional and training on the use of technology in the classroom (Francom, 2020). In addition, many times, students are more advanced in technology than their teacher and this can cause problems for teachers in the classroom. To reduce this problem for teachers, some technology software companies are partnering with school districts to provide professional development and training for teachers in school districts to develop the necessary technology skill to deliver VLE software for students in their classrooms (Francom, 2020; Shaheen et al., 2019).

There is a concern of quality with online education in public schools (Hamutoglu, et al., 2020). Many states in the United States have started closely monitoring the quality of learning that is taking place in virtual schools (Francom, 2020). This was true during the Covid pandemic when all schools had to transition from face-to-face classes to total online classes. This transition was done with little or no technology training on teaching classes in an online setting for all students (Francom, 2020). Some critics of VLE question the quality of education that students are receiving in an online format. In addition, some critics noted that when online learning first became popular in the K-12 setting, it was utilized by mostly home-school students (Francom, 2020; Mahoney & Khwaja, 2016).

Some researchers noted that not all students are fully prepared to be educated through virtual education (Francom, 2020; Mahoney & Khwaja, 2016). VLE education may create some challenges and barriers for traditional students and schools. Francom

(2020) studied the choices, perceptions, and traits in an online charter school. The authors surveyed some 1,500 charter school students statewide in one state in the United States on their perceptions of online discussions. The authors found that some 44% of the charter school students surveyed did not find online discissions beneficial in learning in their online environment. The authors found that students who were successful with being educated in an online environment were highly motivated, goal oriented, and enjoyed interacting with certain groups in the online environment in the classroom. Also, the findings from the study noted that the students with learning needs in the online environment did not receive accommodations and were unsuccessful in their learning in the online setting. Also, these students were unsuccessful in the classroom and lacked motivation, goal oriented, and disliked interacting with groups in the online classroom. The authors noted that many students often find that learning in online classrooms requires students to be more active and need to participate more at a higher level of self-regulation in online setting than in traditional classroom (Kim et al., 2012).

Motivating Students to Develop CCR in CTE

Defining a college-ready student in CTE is a student's ability to understand the expectations, the content knowledge that is presented, and the cognitive strategies needed to achieve success in a college course. The concept of the college readiness framework is a multidimensional idea that consists of both academic and nonacademic factors across the four constructs and presents a more comprehensive look at what it means to be college ready. The academic factors can include the student's grade point average, class rank, as well as college admission exam scores. These nonacademic factors can consist of

student motivation, engagement, academic self-discipline, and even family dynamics (Morningstar et al., 2017). The Technical Skill Assessments (TSA) are industry-certified assessments for CTE courses often used for college credits and end-of-course testing. The TSAs in Maryland are used to evaluate the program's effectiveness and how they will prepare students for college and careers. Prior research demonstrated that CTE training and industry certifications in high school can improve college readiness, earnings and employment outcomes for students interested in STEM fields. While others agree that CTE provides the link between the labor market and the need for young people to be prepared for the workforce or to continue to post-secondary educational opportunities.

Effects of the COVID-19 Pandemic on Academic Achievement

Analyses of student test scores have repeatedly shown severe declines in academic achievement. For example, the most recent scores on the National Assessment of Educational Progress long-term trend test saw declines for 13-year-olds between the 2019-20 school year and the 2022-23 school year.

As we move into this post-COVID-19 era of education, it is important to remember that some students are still struggling to catch up academically, emotionally, mentally, and socially from the pandemic. Every student in the U.S. faced school disruption that resulted in learning loss during the pandemic, resulting in not just lower average testing, but also loss of executive-functioning skills that are traditionally taught in school through schedules and scaffolding. For some, their brains physically changed during the pandemic, making it hard to regulate emotions or behavior. For others, the detachment from peers at this critical stage of development (where adolescents value peer

responses over most others) affected their social development. As we continue to work with adolescents who were affected by the pandemic, it is important to have grace and patience and seek appropriate interventions for academic, executive functioning, and mental health challenges to set your student up for success. The reports of learning loss were expected, but the results are still staggering. A new analysis by the National Assessment of Educational Progress (NEAP) found that the average student lost more than half a school year of learning in math and a quarter of a school year in reading, and the outcomes are even more grim for students of color and low-income students. These drops are statistically larger than students who faced classroom interruption from natural disasters like Hurricane Katrina evacuees.

While U.S. students face an uphill battle in recouping losses in learning, a 2022 study from the Annenberg Institute at Brown University brought some hope. The ground cannot be made up solely in the classroom, as teachers cannot expect to cover 150% of content over the course of several years. However, other interventions have been positive, with one-on-one tutoring having the biggest positive effect on reversing the pandemic academic drops.

Lack of Hands-on Experiences

Cassel (2021) noted that all students in high school need a high-quality education, and they need to be able to make connections between their education and career and life path after completing high school. Some CTE programs were also affected by this, as they prepared to take Technical Skills Assessment (TSA), some programs suspended End-of-Course online testing for SY 2020, while others stated that certain programs

could not change their delivery model in the immediate future or offer remote proctoring. Other CTE programs offer assessments online which require students to have computer and internet access to take the exam. Technical skills assessments provide the data that measures a student's understanding of the content as they exit the program, and help teachers evaluate their program to strategically make changes for improvement based on overall program goals and objectives (Pokhrel and Chhetri, 2021).

Social distancing and restrictive movement have brought many changes in the lives of students at the high school level in their everyday lives (Pokhrel and Chhetri, 2021). Social distancing and restrictive movement policies have significantly changed many traditional strategies and educational practices that teachers used in the past to provide instruction and strategies to students at the high school level (Pokhrel and Chhetri, 2021). Many students were affected emotionally and encountered mental anguish due to the COVID 19 pandemic. The limitations of teachers being able to properly implement different research-based strategies and the use of hand-on earning prohibited CTE teachers to provide "work-based learning experiences, hands-on activities, and preparing students for industry certifications" (Spitzer et.al, 2021. P. 2).

Project Description

The findings from the data analysis of the interviews Section 2 showed the need for more professional development and training on strategies to properly implement career and college readiness skills to high schools as required by the state standards. Data analysis in part 2 of this project study suggested that was a gap in some teachers understanding regarding the fidelity implementation of the required career and college

state standards at the high school level in order to determine teachers' implementation of career and college instruction in CTE courses can be influenced by the COVID 19 pandemic and improvements as the school move forward after the COVID 19 pandemic. Also, there is a need to access what program resources are needed to conduct the assessments for these students. Based on the analysis of the findings, there should be more professional development and training at the local school for teachers on the strengths and weaknesses of the career and college readiness state standards and strategies on their proper implementation at the high school level. The project should be delivered several times during the school academic year for several evenings or on the teachers' professional development working days. In the recommendations for evidence-based practices, I will provide research-based instructional strategies for teachers and resources that the teachers can use to implement the College and career readiness framework model at the local school level. The project was created due to transitioning to remote learning with the closure of schools and the shift to remote learning, CTE courses had to adapt to online platforms. This transition posed challenges as certain hands-on skills and practical experiences are difficult to replicate in a virtual environment. CTE instructors had to modify their curriculum to suit online learning, focusing on theoretical aspects of the subjects and exploring alternative methods to deliver hands-on learning experiences. This involved incorporating virtual simulations, online labs, and interactive modules.

One aspect of college and career readiness is building professional networks. Due to the pandemic, students had limited opportunities for networking, industry visits, job

shadowing, and internships, which could have an impact on their readiness for the workforce. Despite the challenges, the pandemic also provided opportunities for students to develop skills like self-discipline, time management, and adaptability qualities valued in both college and career settings. Remote learning required students to take more responsibility for their education and develop independent learning skills. The shift to online learning emphasized the importance of digital literacy skills. Students had to become proficient in using digital tools, communication platforms, and online collaboration tools, which are increasingly essential in today's workforce.

Many schools and institutions continued to provide career exploration opportunities virtually, including guest speaker sessions, webinars, and virtual career fairs. Career counselors also offered virtual support and guidance to help students navigate their college and career options. It is important to note that the impact of the pandemic on college and career readiness in CTE courses can vary across institutions and regions. Schools and educational organizations have made efforts to address these challenges by incorporating hybrid learning models, providing additional resources, and offering career development support. As the situation evolves, it is crucial to continue assessing and adapting strategies to ensure students receive the necessary skills and support to succeed in their chosen careers.

The PD will focus on understanding the career and college readiness state standards that should be implemented for the local schools using professional development and training in the areas of the importance of using the state standards for CTE, viral learning environments, strategies for students to overcome technology issues,

and using hands on strategies for CTE. The PD will occur during the local school faculty meeting in September, October, and November 2024. I will split the PD into two sections and present the materials at the grade-level meetings with the high school and high school teachers. The PD information on college readiness strategies will be presented using a slideshow (see Appendix B) using the training of career and college readiness modules created by the Maryland State Department of Education Office of Career and College Readiness. This education office is designed to help school districts implement different state standards. The program also provides resources that help teachers at local schools to provide research-based practices in the implementation of strategies for career and technical education. The online training materials will be completed by the teachers during their grade level meeting so they can discuss how the training materials can be applied at different high school grade levels at the local school. I believe that the PD training on career and college readiness strategies will benefit the K–2 teachers in helping them to better understand how to implement the college and career readiness model at the local school with fidelity.

Resources and Supports Needed for the Project

The two resources needed to effectively implement the CTE modules at the research site are administrative support and teacher buy-in and support to increase their knowledge on implementing the state CTE standards. I will also need positive and strong leadership from the administration at the school district and the local school level if the programs are to be successful at the local school. Researchers noted that strong leadership is important if a program initiative is going to work successfully at a school district

(March et al., 2019). The school principal has a strong influence on whether the CTE model works at the school and how teachers react and implement the CTE standards at the local school as mandated by the state education agency. March et al. (2019) reported that the two main forces that must take place to enhance change in the school district is administrative support from the school district level and the support received from the local school building principal which can enhance teacher buy-in for increasing their knowledge and skills on the CTE standards.

Some other resources needed for the project include a room to hold the meeting and computer and projector equipment to present the presentation, internet connection, a computer laptop for the teachers to complete the online modules, and project evaluation assessments. The PD will need to be in a room large enough so that the teachers can share their experiences learned from the presentation with other teachers at the presentation. Also, as a facilitator of the PD training, I will make sure that the room is ready for the PD training and all equipment is working properly for the PD training sessions.

There are no financial resources needed for the PD training because all the equipment and the location of the PD training sessions will take place at the local schools where the teachers already work. I received support from the administration and teachers who feel that more knowledge is needed on CTE standards implementation using PD training sessions. I have already discussed the findings from the project study and they both support the project being implemented and the timeline at the school during the months of September, October, and November 2014. faculty meetings. Also, I will provide additional training to the teachers at their grade level meeting during the months

of September, October, and November 2024. In addition, the school technology coordinator will provide support and make sure I have enough computer laptops for the online modules that the teachers will complete.

Project Evaluation Plan

It is important to have an evaluation plan for the PD project being implemented to the high school teachers to determine the effectiveness of the PD plan and to determine the quality of the PD plan for positive social change and the intended audiences. The evaluation process is done to determine the strengths and weakness of the plan and guide reform efforts by the researcher and other stakeholders (Boice et al., 2021). Boice et al. (2021) reported that evaluations are done with PD to measure the program activities' goals and objectives and to determine the knowledge level of the participants in terms of their beliefs and attitudes towards the PD plan activities presented to them. This PD module is presented to career and college readiness teachers to increase their knowledge and skills in using different strategies to help students in their program become college students and develop technical skills to prepare for the workforce after completing high school.

This PD project will be evaluated using formative evaluation methods with the participants. Formative evaluation will be used to evaluate participants' current knowledge and allow them to provide feedback on the activities presented to them during the learning sessions (Buelin et al., 2019). The goal of the PD sessions is to improve the implementation of career and college instruction in CTE courses that can be influenced by the COVID 19 pandemic and improvements as the school moves forward after the

COVID 19 pandemic. resources are assessed. The formative evaluation document will contain five open-ended questions presented to participants at the end of each PD session to allow the participants to provide formative feedback on the sessions and to make suggestions for future training sessions. In addition, I will conduct informal assessment during the sessions to ensure that all participants are actively engaged in the PD sessions and participating in the session activities to better understand the CTE state standards used in their classroom with students.

Project Implementation and Timeline

The project's expected implementation dates for the PD and training sessions are for the 2024-2025 school year. Also, the project is ready to be implemented pending approval from different stakeholders' approvals. The project study findings will first be presented to the local administration and the local schools' leadership teams. This will provide the leadership teams and the administration an overview and rationale for the project being presented to the career and college readiness teachers to further their knowledge and skill on the use of different research-based strategies on career and college readiness skills modules to increase students learning and achievement in their classroom. Upon approval to present the training material modules, I will meet with the local school team members to present the timeline and schedule for the PD training sessions and to provide them with the training materials so they can review them before the PD training takes place with the high school teachers. In addition, I will meet with the technology person at the local school to obtain all the equipment necessary for the PD training sessions, which will take place in September, October, and November 2024. The

professional development program consists of 20 hours of training, carefully distributed across several types of meetings. This includes three faculty meetings, each lasting 2.5 hours, totaling 7.5 hours. Additionally, there are five grade-level/content (departmental) meetings, each 2 hours in duration, contributing 10 hours to the overall total. Finally, five evaluation sessions, each lasting 30 minutes, add another 2.5 hours. The program will conclude with career and college readiness teachers completing an evaluation form, providing feedback on the professional development training sessions. In sum, these activities provide a total of 20 hours of professional development, all scheduled within the academic school year.

Conclusions

In Section 3, I presented a description of the research project that emerged from this project study. The goal of the PD and training session was to improve implementation of state standards high school teachers used to provide CCR skills to high school students at the local school. PD training on research-based intervention strategies to properly implement CCR instruction in CTE courses was influenced by the COVID-19 pandemic and improvements as schools move forward after the pandemic.

Also, I provided a review of literature that supported the conclusions of this project study. I described resources to implement the project study. Also, I provided an implementation timeline for the study and responsibilities of persons responsible for project implementation. Finally, I described the implications for social change.

In Section 4, I describe the project's strengths and limitations, present alternative solutions to the local problem, and provide perspectives regarding the doctoral project

study process. In addition, I provide reflections and a discussion of the importance of the project study. Also, I will discuss what I learned as a scholar practitioner and project developer through this process.

Section 4: Reflections and Conclusions

In Section 4, I present my reflections on findings from this study. Included in this section are the project's strengths, limitations, and recommendations for alternative solutions to the local problem. I also discuss scholarship, project development, evaluation, and implications for leadership and social change. In addition, I reflect on the importance of work, implications, applications, and directions for future research, followed by a conclusion.

Project Strengths and Limitations

Strengths

There have been overwhelming challenges for teachers, school districts, and educational policymakers regarding the COVID-19 pandemic and how learning shifted during and after the pandemic. The purpose of this basic qualitative study was to examine how teachers' implementation of CCR instruction in CTE courses was influenced by the pandemic. CTE can have a significant role to play in economic recovery and development of the post-pandemic workforce. This includes providing education, training, and reskilling opportunities that youth and adults need for high-wage, high-skill, and in-demand occupations and industries. Also, there is a need for teachers to help learners develop technical, employability, and academic skills that are important for increasingly technology-focused workplaces. College readiness measurements are based on class rank, GPA, coursework, and ACT/SAT test scores. The most common CCR indicators used in 40 states are advanced coursework, industry credentials, number of CTE courses, and work-based learning.

Given the importance of CTE and urgency of expanding research, it is important to understand the framework to serve as the foundation for future research in this field and introduce more consistent operational concepts. Even though researchers have discussed the importance of promoting and developing CCR throughout the secondary educational setting, the focus on a broader understanding of CCR is sporadic and should be addressed.

Social change may happen when policymakers and educational leaders recognize the value of CTE and provide more opportunities to tap into students' unique skills, interests, and aspirations. Education is a major factor in terms of creating social change by creating atmospheres that encourage students to explore ideas through experimentation, critical thinking, and self-reliance. CTE enables students to create, collaborate, and reflect.

Limitations

In qualitative research, the data collection process can present certain limitations since data are based on conversations between participants and researchers. These conversations can influence participants to give certain responses based on expectations of researchers (Creswell & Creswell, 2017). This study was delimited to one high school in Maryland. I focused on 12 high school teachers; therefore, the study had limited transferability to other settings. I provided clear descriptions of the context of the study to assist in replicability of results.

Recommendations for Alternative Approaches

Since the COVID-19 pandemic, CTE teachers have faced challenges with implementing relevant curricula for CCR instructional practice in CTE classrooms. Regardless of the instructional model, learners may benefit from instructor efforts build positive classroom cultures that acknowledge their socioemotional needs and provide personalized instructional pedagogy. When classrooms establish cultures that are safe and promote ownership for learning, students can share ideas, become curious and passionate, and help each other.

The conceptual framework was Conley's college readiness framework which involves the idea that students should graduate from high school with knowledge and skills that are necessary to successfully pursue postsecondary options. Conley (2014) four key facets of CCR are cognitive strategies, content knowledge, academic behaviors, and contextual skills and knowledge.

Maryland ranked third in the country for public high schools. However, by 2020, Maryland was ranked fifth. These skills include analysis, interpretation, precision, accuracy, problem-solving, and reasoning.

Scholarship, Project Development and Evaluation, Leadership and Change

Lam (2017) noted that a scholarship element is when a person sets out to increase their knowledge and skills to learn more about a subject. The personnel use their knowledge and skill to develop detailed thoughts on the matter under consideration through university learning and achievement. I have learned valuable information through research through scholarship while progressing through the program from the beginning to the end of the end with completing different research project and course

work as required to complete the university program. I have gained much knowledge and skills through the university training me through increasing my scholarship skills here at Walden University. For example, one of the first concepts I learned at Walden University is that doctoral experience would take a lot of work to complete the degree successfully. Throughout my doctoral journey, I have come to understand that the experience is both challenging and transformative, yet attainable through diligent effort and perseverance. Over the course of the year, my research and writing skills have significantly advanced, reflecting the constructive feedback received from peers and faculty members. Furthermore, I have diligently applied the guidance provided by my committee members in the development of this project study. This research is designed to serve as a resource for educators, aiming to enhance their ability to support students' academic progress within their respective school programs.

Developing this project study on examining how teachers' implementation of college and career instruction in CTE courses was influenced by the pandemic provided me a chance to grow as a scholar researcher and practitioner in the field of education. My research and writing skills have improved over time and throughout my doctoral program from the beginning to the end of the program. I have learned to apply different writing and research methods in the program which helped me to decide on a research design which was qualitative method due to wanting to get the general perspectives of the teachers who implemented the state standards for career and college readiness skills in the school curriculum. In addition, I learned how to make several decisions and solve issues through the data collection and data analysis process in completing my project

study. Also, I learned the importance of applying ethical practices throughout the project study research process to ensure that the project study implemented the procedure in a way to protect the rights of human subjects who were participants in the project study. In addition, I learned over time in the program to see out the advice and leadership of the dissertation project chair and the committee and make the necessary changes to the project study from the beginning to the end of the project.

Project Development

Researchers such as Renzulli et al. (2021) reported that it is important that one apply the learning and skills they achieve from research by making connection with students they provide instruction with helping them to apply the learning to real world situations. As a high school teacher in the CTE programs and candidate at Walden University to receive a doctorate in education, I wanted to conduct research on a topic that I saw was a great need in my school district. Also, I wanted to research a topic that high school teachers could use that would influence instructional practice in advancing the knowledge and skills they could use to increase academic achievement of students they provide instruction. As a CTE high school teacher, I saw the effects of changing the way we provided instruction to high school students and the lack of hands-on instruction before and after the COVIID 19 pandemic. This led me to the idea of helping high schools see the need to use the state standards and provide more research-based instruction to students in the CTE program to make advancements in their academic achievement. In addition, I also saw that many teachers in the CTE program needed more professional development and training on different strategies they could use to help

students to be career and college ready after completing their programs at the high school level.

The first step in the project study process was to complete a literature search to determine the need for such project study on CTE and the research site. Next, the project study progressed to the researcher developing the research design which was qualitative due to wanting the obtain the participants views on the effects that the COVID 19 pandemic has on their need to make changes in the way they provided instruction to students in the CTE program. Also, a major step was to see what the high school teachers were doing going forward after the COVID 19 pandemic. After developing the research questions, I conducted interview with 12 participants who was currenting in the CTE program at the research site on their perceptions of using the state standards in providing instruction to students at the research site to students in the program. Many of the teachers felt that they needed more professional development and training on research-based intervention strategies to use to help students in the CTE program to advance their achievement in career and college readiness skills. The findings from the project study with the teachers led to the development of PD for the high school teachers in the CTE program. I wanted to provide high school teachers in the CTE program guidance in the form of training sessions several times a year that could enhance their knowledge and skills to ensure consistency in the implementation of the CTE program at the local high school.

Project Evaluation

The evaluation for this PD project will be done using formative evaluation methods with the participants. Formative evaluation will be used to evaluate the current knowledge of participants and allow them to provide feedback on the activities presented to them during the learning sessions (Buelin et al., 2019). The goal of the PD sessions is to improve the implementation of career and college instruction in CTE courses that can be influenced by the COVID 19 pandemic and improvements as the school moves forward after the COVID 19 pandemic. resources are assessed. The formative evaluation document will contain six open ended questions presented to participants at the end of each PD session to give the participants the opportunity to provide formative feedback on the sessions and to make suggestions for future training sessions. In addition, I will conduct informal assessment during the sessions to make sure that all participants are actively engaged in the PD sessions and participating in the session activities to acquire a greater understanding of the CTE state standards used in their classroom with students.

Leadership and Social Change

This project has potential for leadership and positive social change because in our global society human interaction and relationships allow us to transform our society through our diverse cultures. Social change allows us to evaluate our misconceptions, biases, and prejudgments on the rights and wrongs of society. Social change may happen when policymakers and educational leaders recognize the value of CTE and provide more opportunities to tap into every student's unique skill, interests, and aspirations. John Dewey said, "Education is not a preparation for life but is life itself." Education is a

major factor in creating social change by creating an atmosphere that encourages students to explore ideas through experimentation, critical thinking, and self-reliance. CTE is a change agent within education, it enables students to create, collaborate and reflect. Findings may encourage districts to provide all pupils with a rigorous academic curriculum that integrates academic and career skills, incorporates applied learning in all disciplines, and prepares all pupils for high school graduation and career entry.

The results of the interviews also showed that several of the secondary teachers reported that the school district needs a plan to support students during post-secondary transition. Also, the teachers noted that the school district should provide training for teachers on strategies to support students for post-secondary transition after they complete high school. Several of the secondary teachers noted that the school district should provide more experiences for students in the school to career programs due to the lack of hands-on experiences. Several of the secondary teachers noted that the school district should provide more funding and resources to me the diverse demands of the need of the school to career program. The secondary teachers noted that the school district should provide professional development opportunities for educators to enhance their understanding of CCR indicators and effective strategies for preparing students for college and careers.

Reflection on Importance of the Work

There have been overwhelming challenges for teachers, school districts, and educational policymakers regarding the COVID-19 pandemic and how learning shifted. The purpose of this basic qualitative study was to examine how teachers' implementation

of college and career instruction in CTE courses was influenced by the pandemic. CTE can have a significant role to play in the economic recovery and development of the post-pandemic workforce. This not only includes providing the education, training, and reskilling opportunities that youth and adults may need for high-wage, high-skill, and in-demand occupations and industries, but also helping learners develop the technical, employability, and academic skills that are important for increasingly technology-focused workplaces.

The PD training may help teachers to implement CTE state standards in their high school classrooms to help students to make adequate academic achievement for students. Professional development and training could help high school teachers to better understand the CTE state standards to make different adjustments in their implementation of the standards in providing instruction to students in the CTE program at the high school level. Findings may encourage districts to provide all pupils with a rigorous academic curriculum that integrates academic and career skills, incorporates applied learning in all disciplines, and prepares all pupils for high school graduation and career entry.

Implications, Applications, and Directions for Future Research

The purpose of this basic qualitative study was to examine how teachers' implementation of career and college instruction in CTE courses can be influenced by the COVID 19 pandemic. As educational stakeholders, the goal was to prepare more students for postsecondary success, and the construct of college readiness has gained national attention. Based on the findings from this case study, I developed some professional development training to address the needs of teachers in helping students to achieve

positive outcomes at the research site. The development of the project was based on the themes emerged from the data analysis process.

The project was developed to provide research-based strategies on the process and methods of properly implementing CTE state standards in high school career and college readiness skill at the high school level. The strategies presented in the PD sessions can assist the high school CTE teachers to increase their knowledge and skill in the implementation of CTE career and college readiness skills. In addition, the PD sessions can help teachers become more knowledgeable on monitoring the progress of students and providing teachers with information to make data-based instructional decisions about students' progress in their classroom.

Directions for future research could come from providing high school teachers who teach in the CTE program PD at the research site but other high school teachers throughout the school district to increase their knowledge and skills. Also, PD could be implemented to middle school teachers on pre academic skills so they can be provided career and college readiness at an early age throughout the school district on CTE skills. I plan to coordinate the implementation of the professional development and training with administrators in all schools in the district to share the findings from this project study results. This can provide them with information and the opportunity to schedule more PD and training on CTE skills with other schools in the school district. Also, the findings could be shared with the two-year college system so they can see the need to provide more PD and training on CTE skills for students in the 2-year college system. All of this can be done with the goal of providing high school teachers in the CTE program more

knowledge and skills to advance the academic achievement of the students they teach at the high school level.

Conclusion

The purpose of this study was to examine how teachers' implementation of college and career instruction in CTE courses was influenced by the pandemic. There were two research questions based on the purpose of the research. The data were collected through semi-structured interviews with multiple participants to better understand the implementation of college and career instruction in CTE courses that were influenced by the pandemic. Qualitative research involves collecting and analyzing non-numerical data to understand concepts, opinions, or experiences. It can be used to gather in-depth insights into a problem or generate innovative ideas for research. I chose the qualitative approach because as the researcher, I had an opportunity to follow up on answers given by respondents in real-time, generating valuable conversation around a subject that is not possible with a structured survey.

This project study provided future learning opportunities through PD and training several times a year for high school teachers who teach in the CTE program a chance to advance their learning to help their student to become career and college ready. Also, I was able to provide a self-reflection on the project study to be able to understand the importance of the CTE skills on students' academic achievement and positive social change.

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Appendix A: The Project

Career and College Readiness Intervention (RTI) Workshop

The findings from the data analysis of the interviews Section 2 showed the need for more PM training sessions in college and career readiness skills for high school teachers. The Maryland Blueprint's College and Career Readiness (CCR) Pathways (2020), is a document provided to all classroom teachers at the high school level in the state of Maryland which provides standards and strategies for teachers to implement programs such as the internationally benchmarked curriculum, including regularly exposing students in the early grades to meaningful and well-paying careers and career counseling. According to the Maryland Department of Education (2020), this curriculum is used to allow high school students to attain college and career-ready status at the end of 10th grade and they are allowed to choose an IB, AP, Cambridge diploma program, early college, and/or a rigorous technical education pathway that leads to industry-recognized credentials and high-paying jobs. Also, in Maryland school districts, there are currently 46 MSDE-approved high school CTE programs in eleven career clusters in a total of 259 schools. 40.42% of the student population in Maryland is currently enrolled in CTE programs (Maryland Department of Education, 2020).

The findings from the data analysis of the interviews Section 2 showed the need for more professional development and training on strategies to properly implement career and college readiness skills to high schools as required by the state standards. Data analysis in part 2 of this project study suggested that was a gap in some teachers understanding regarding the fidelity implementation of the required career and college

state standards at the high school level in order to determine teachers' implementation of career and college instruction in CTE courses can be influenced by the COVID 19 pandemic and improvements as the school move forward after the COVID 19 pandemic. Also, there is a need to access what program resources are needed to conduct the assessments for these students. Based on the analysis of the findings, there should be more professional development and training at the local school for teachers on the strengths and weaknesses of the career and college readiness state standards and strategies on their proper implementation at the high school level. The project should be delivered several times during the school academic year for several evenings or on the teachers' professional development working days. In the recommendations for evidence-based practices, I will provide research-based instructional strategies for teachers and resources that the teachers can use to implement the College and career readiness framework model at the local school level. The project was created due to transitioning to remote learning with the closure of schools and the shift to remote learning, CTE courses had to adapt to online platforms. This transition posed challenges as certain hands-on skills and practical experiences are difficult to replicate in a virtual environment. CTE instructors had to modify their curriculum to suit online learning, focusing on theoretical aspects of the subjects and exploring alternative methods to deliver hands-on learning experiences. This involved incorporating virtual simulations, online labs, and interactive modules.

One aspect of college and career readiness is building professional networks. Due to the pandemic, students had limited opportunities for networking, industry visits, job

shadowing, and internships, which could have an impact on their readiness for the workforce. Despite the challenges, the pandemic also provided opportunities for students to develop skills like self-discipline, time management, and adaptability qualities valued in both college and career settings. Remote learning required students to take more responsibility for their education and develop independent learning skills. The shift to online learning emphasized the importance of digital literacy skills. Students had to become proficient in using digital tools, communication platforms, and online collaboration tools, which are increasingly essential in today's workforce.

Many schools and institutions continued to provide career exploration opportunities virtually, including guest speaker sessions, webinars, and virtual career fairs. Career counselors also offered virtual support and guidance to help students navigate their college and career options. It is important to note that the impact of the pandemic on college and career readiness in CTE courses can vary across institutions and regions. Schools and educational organizations have made efforts to address these challenges by incorporating hybrid learning models, providing additional resources, and offering career development support. As the situation evolves, it is crucial to continue assessing and adapting strategies to ensure students receive the necessary skills and support to succeed in their chosen careers.

The PD will focus on understanding the career and college readiness state standards that should be implemented for the local schools using professional development and training in the areas of the importance of using the state standards for CTE, viral learning environments, strategies for students to overcome technology issues,

and using hands on strategies for CTE. The PD will take place during the local school faculty meeting in September, October, and November 2024. I will split the PD into two sections and present the materials at the grade level meetings with the high school the high school teachers. The PD information on ca college readiness strategies will be presented using slideshow presentation (see Appendix B) using career and college readiness modules training created by the Maryland State Department of Education Office of Career and College Readiness. This education office is designed to help school districts with the implementation of different state standards. The program also provides resources that help teachers at local schools to provide research-based practices in the implementation of strategies for career and technical education. The online training materials will be completed by the teachers during their grade level meeting so they can discuss how the training materials can be applied at different high school grade levels at the local school. I believe that the PD training on career and college readiness strategies will benefit the K–2 teachers in helping them to better understand how to implement the college and career readiness model at the local school with fidelity.

The two resources needed to effectively implement the CTE modules at the research site are administrative support and teacher buy-in and support to increase their knowledge on implementing the state CTE standards. I will also need positive and strong leadership from the administration at the school district and the local school level if the programs are to be successful at the local school. Researchers noted that strong leadership is important if a program initiative is going to work successfully at a school district (March et al., 2019). The school principal has a strong influence on whether the CTE

model works at the school and how teachers react and implement the CTE standards at the local school as mandated by the state education agency. March et al. (2019) reported that the two main forces that must take place to enhance change in the school district is administrative support from the school district level and the support received from the local school building principal which can enhance teacher buy-in for increasing their knowledge and skills on the CTE standards.

Some other resources needed for the project include a room to hold the meeting and computer and projector equipment to present the presentation, internet connection, a computer laptop for the teachers to complete the online modules, and project evaluation assessments. The PD will need to be in a room large enough so that the teachers can share their experiences learned from the presentation with other teachers at the presentation. Also, as a facilitator of the PD training, I will make sure that the room is ready for the PD training and all equipment is working properly for the PD training sessions.

There are no financial resources needed for the PD training because all the equipment and the location of the PD training sessions will take place at the local schools where the teachers already work. I received support from the administration and teachers who feel that more knowledge is needed on CTE standards implementation using PD training sessions. I have already discussed the findings from the project study and they both support the project being implemented and the timeline at the school during the months of September, October, and November 2014. faculty meetings. Also, I will provide additional training to the teachers at their grade level meeting during the months of September, October, and November 2024. In addition, the school technology

coordinator will provide support and make sure I have enough computer laptops for the online modules that the teachers will complete.

The project expected implementation dates for the PD and training sessions are for 2024-2025 school year. Also, the project is ready to be implemented pending approval from different stakeholders' approvals. The project study findings will first be presented to the local administration and the local schools' leadership teams. This will provide the leadership teams and the administration an overview and rationale for the project being presented to the career and college readiness teachers to further their knowledge and skill on the use of different research-based strategies on career and college readiness skills modules to increase students learning and achievement in their classroom. Upon approval to present the training material modules, I will meet with the local school team members to present the timeline and schedule for the PD training sessions and to provide them with the training materials so they can review before the PD training take place with the high school teachers. In addition, I will also meet with the technology person at the local school to obtain all the necessary equipment necessary for the PD training sessions which will take place in the months of September, October, and November 2024. The training will consist of a total of 20 hours, including three faculty meetings, each lasting 2.5 hours, totaling 7.5 hours and five departmental meetings, each 2 hours long, contributing 10 hours to the total. There will also be five evaluation sessions, each lasting 30 minutes, adding another 2.5 hours. Combined, these sessions provide a total of 20 hours of professional development. The PD training session will end with the career and college readiness teachers completing an evaluation form where they

will have the opportunity to address any concerns or issues with the PD training sessions presented to them.

It is important to have an evaluation plan for the PD project being implemented to the high school teachers to determine the effectiveness of the PD plan and to determine the quality of the PD plan for positive social change and for the intended audiences. The evaluation process is done to determine the strengths and weakness of the plan and guide reform efforts by the researcher and other stakeholders (Boice et al., 2021). Boice et al. (2021) reported that evaluations are done with PD is to measure the program activities goals and objectives to determine the knowledge level of the participants in terms of their beliefs and attitudes towards the PD plan activities presented to them. This PD modules are presented to the career and college readiness teachers to increase their knowledge and skill of using different strategies to help students in their program to become college and technical skills to be ready for the workforce after completing high school.

The evaluation for this PD project will be done using formative evaluation methods with the participants. Formative evaluation will be used to evaluate the current knowledge of participants and allow them to provide feedback on the activities presented to them during the learning sessions (Buelin et al., 2019). The goal of the PD sessions is to improve the implementation of career and college instruction in CTE courses that can be influenced by the COVID 19 pandemic and improvements as the school moves forward after the COVID 19 pandemic. resources are assessed. The formative evaluation document will contain six open ended questions presented to participants at the end of each PD session to give the participants the opportunity to provide formative feedback on

the sessions and to make suggestions for future training sessions. In addition, I will conduct informal assessment during the sessions to make sure that all participants are actively engaged in the PD sessions and participating in the session activities to acquire a greater understanding of the CTE state standards used in their classroom with students.

Project Social Change

This project has potential for leadership and positive social change because in our global society human interaction and relationships allow us to transform our society through our diverse cultures. Social change allows us to evaluate our misconceptions, biases, and prejudgments on the rights and wrongs of society. Social change may happen when policymakers and educational leaders recognize the value of CTE and provide more opportunities to tap into every student's unique skill, interests, and aspirations. John Dewey said, "Education is not a preparation for life but is life itself." Education is a major factor in creating social change by creating an atmosphere that encourages students to explore ideas through experimentation, critical thinking, and self-reliance. CTE is a change agent within education, it enables students to create, collaborate and reflect. Findings may encourage districts to provide all pupils with a rigorous academic curriculum that integrates academic and career skills, incorporates applied learning in all disciplines, and prepares all pupils for high school graduation and career entry.

The results of the interviews also showed that several of the secondary teachers reported that the school district needs a plan to support students during post-secondary transition. Also, the teachers noted that the school district should provide training for teachers on strategies to support students for post-secondary transition after they

complete high school. Several of the secondary teachers noted that the school district should provide more experiences for students in the school to career programs due to the lack of hands-on experiences. Several of the secondary teachers noted that the school district should provide more funding and resources to me the diverse demands of the need of the school to career program. The secondary teachers noted that the school district should provide professional development opportunities for educators to enhance their understanding of CCR indicators and effective strategies for preparing students for college and careers.

Part 2

Training materials for the Professional Development Workshop

The Professional Development (PD) training sessions are scheduled to occur over the course of three months: September, October, and November 2024. The training will be integrated into three faculty meetings with high school teachers, each session lasting for two and a half hours, totaling seven and a half hours of initial training. Additionally, the overall time allocated for these sessions will range between 10 to 15 hours, incorporating targeted training sessions focused on grade-level and content-specific needs. To ensure the effectiveness of the PD training sessions and to foster continuous improvement, a comprehensive evaluation process will be implemented. Upon the conclusion of the final training session, each high school teacher will be required to complete a detailed evaluation form. This form will include both structured and open-ended questions, allowing participants to provide specific feedback on the content, delivery, and relevance of the training. This evaluation process is designed to ensure that

the PD training sessions are not only effective in the short term but also contribute to long-term professional growth and development for all participants.

The training materials needed for the PD will include a PowerPoint slide presentation for all three training sessions. The title of the slide presentation is Career and College Readiness Interventions which is based on the Maryland Blueprint College and Carer Readiness Pathways. The Maryland Blueprint's College and Career Readiness (CCR) Pathways (2020), is a document provided to all classroom teachers at the high school level in the state of Maryland which provides standards and strategies for teachers to implement programs such as the internationally benchmarked curriculum, including regularly exposing students in the early grades to meaningful and well-paying careers and career counseling.

The following are the training materials needed for the project PD presentation:

- Laptop computers for participants
- Wireless Internet access
- Power cords for laptops and charging capabilities.
- Presenter’s laptop computer with Microsoft PowerPoint 2010 or higher capabilities
- PowerPoint slide presentation for all sessions
- Access to the Center website
- Access to the school district’s shared OneDrive for the participants to retrieve documentation and forms.
- Pens and post it note pads.

- A copy of the session evaluation for each teacher to complete
- Printed agenda for each of the three sessions for participants
- Printed handouts of PowerPoint presentation for all sessions for the participants

Agenda

The PD will take place during the monthly faculty meetings for September, October, and November 2024

Professional Development Session 1 Agenda (2.5-Hours)

3:00-3:15	Welcome, Outline the training and PD learning objectives
3:15-4:00	CTE/Purpose/ Benefits PowerPoint
4:05-4:30	Discussion of Maryland Blueprint's College and Career Readiness Pathways
4:30-5:00	Instruction overview and strategies
5:00-5:15	Discussion on the importance of using the CTE strategies
5:15-5:30	Review/Closure/Reflection: Evaluation

Professional Development Session 2 Agenda (2.5-Hours)

3:00-3:15	Welcome, Outline the training and PD learning objectives
3:15-4:00	Importance of using CTE strategies Monitoring Student Progress Benefits
4:05-4:30	Effects of COVID on students learning and achievement
4:30-5:00	Discussion with teachers using technology to teach the CTE learning objectives
5:00-5:15	Teachers' views on the use of technology in the classroom
5:15-5:30	Review/Closure/Reflection: Evaluation

Professional Development Session 3 Agenda (2.5 Hours)

3:00-3:15	Welcome, Outline the training and PD learning objectives
3:15-4:00	Hands on learning
4:00-4:30	Group activity on using hands on learning (CTE)
4:30-5:00	Resources in teaching CTE strategies in the classroom
5:00-5:15	Collaboration strategies
5:15-5:30	Review/Closure/Reflection: Evaluation

Professional Development Mini Session Grade Level/Content Specific Sessions (2 Hours/each)

Session 1: Effects of COVID 19 Pandemic on student learning and achievement
Session 2: Strategies to overcome gaps in learning by students
Session 3: Importance of hands-on learning
Session 4: The use of technology in the classroom
Session 5: Resources for CTE
(Review/ Closure/Reflection: Evaluation) **30 minutes – each session**

Evaluation Plan

The evaluation of the professional development (PD) training sessions will focus on the effectiveness of the PD sessions to increase high school teachers in the CTE program knowledge and skills Carer and college readiness skills in to increase academic achievement. The evaluation of this project will be formative and summative. Informal evaluations can be conducted by assessing participants' knowledge and engagement, as well as their collaborative and reflective responses during the professional development (PD) training sessions. The formative evaluation for this PD project will be completed when the high school teachers provide feedback after completing each PD session. An exit evaluation will consist of three open-ended questions administered to the teachers after the training sessions and will serve as formative evaluation feedback from the participants to improve future training sessions. The data from these pre and post

evaluation tools can be used by the local school administrators to monitor the high school teacher's knowledge, skills, and understanding the importance of implementing the CTE standards in their lesson to students. At the end of the PD workshops, the participants will complete a summative evaluation of the project in the form of a questionnaire. The questionnaire will be used to capture the teachers' perceptions and experience of the influence that the PD session had on instructional practices. The findings from both the exit evaluation from each session and the questionnaire will be used to enhance the project for future training sessions on providing teachers with information and training on the implementation of RTI at the local school.

Part 3

Professional Development Questionnaire

The purpose of this evaluation is to acquire participant feedback about your participation in the Career and College Readiness strategies professional development training sessions to inform future PD workshops.

INSTRUCTIONS: Please complete the following open-ended questions concerning your thoughts on the materials presented in this workshop session:

1. How did the materials presented in this workshop session align with your expectations and needs? Can you provide specific examples?
2. In what ways did the content of the materials contribute to your understanding of the workshop topic? Are there any areas that were particularly effective or challenging?

3. What aspects of the materials presented did you find most engaging or useful, and why?
4. How could the materials be improved to better support the learning and application of the workshop content?
5. Were there any gaps or additional topics you feel should have been included in the materials? How would addressing these gaps enhance the overall workshop experience?

Appendix B: Interview Questions

Welcome and thank you for your participation today. My name is Kenyetta Kendrick, and I am a doctoral student at Walden University conducting my Dissertation Study in partial fulfillment of the requirements for the degree of Doctor of Education. This interview will take about 60 minutes and will include five questions regarding your experiences as a CTE teacher during the COVID-19 pandemic and your role in providing college and career readiness support to students by looking for ways to better align curriculum and engagement for a successful transition from high school to college. I would like your permission to record this interview, so I can accurately document the information you convey. If at any time during the interview you wish to discontinue the use of the recorder or the interview itself, please feel free to let me know. All your responses are confidential. Your responses will remain confidential and will be used to develop a better understanding of how you and your peers view your life satisfaction and what might influence it.

The purpose of this basic qualitative study is to examine how teachers' implementation of college and career instruction in CTE courses was influenced by the pandemic. At this time, I would like to remind you of your written consent to participate in this study. I am the responsible investigator, specifying your participation in the research project: College Readiness in Career Technical Education Instruction During the Pandemic.

Thank you.

Do you have any questions or concerns before we begin? Then with your permission we will begin the interview.

Start Time: _____

Stop Time: _____

Record ID: _____

1. What were the challenges you faced during the COVID-19 pandemic?
    a. What challenges remain?
    b. What was the level of student engagement? Pre vs Post COVID-19
2. What distance learning methods were used during the COVID-19 pandemic to deliver CTE content?
    a. How have supports for postsecondary transitions changed since the beginning of the COVID-19 pandemic?
    b. Have your students received support for post-secondary transitions?
    c. What were the perceived barriers to support for postsecondary transitions?
3. What are your views on long-term inequities that will result from COVID-19 challenges?
4. What leadership and instructional changes have you implemented post COVID-19?

   a. What types of resources did principals and teachers report might help address those barriers?

5. Are you aware of the college-and career-ready indicators?
   a. How is Maryland using these indicators in their state reporting and accountability systems?
   b. What do states need to consider as they work to build a more comprehensive set of CCR indicators into their reporting and accountability systems to promote and validate college and career readiness?