PERCEIVED INFLUENCE OF CAREER AND TECHNICAL STUDENT ORGANIZATIONS ON POSTSECONDARY CHOICES

By

Deborah K. Marshall

Bachelor of Science in Business from Longwood College (1986)
Master of Education in Secondary – Business Education from Old Dominion University (1992)

A DISSERTATION

Presented to the Affiliated Faculty of
The College of Graduate and Professional Studies
at the University of New England

Submitted in Partial Fulfillment of Requirements
For the Degree of Doctor of Education

It was presented on
09/11/2023
and reviewed by:

Debra Welkley, Ed.D., Lead Advisor
University of New England

Evelyn Thomas, Ed.D., Secondary Advisor
University of New England

Doctor of Education Final Dissertation Approval Form

This Dissertation was reviewed and approved by:

Lead Advisor Signature: _____Debra L. Welkley_____

Lead Advisor (print name): __Debra L. Welkley_____

Secondary Advisor Signature: Evelyn J. Thomas_____

Secondary Advisor (print name): __Evelyn J. Thomas_____

Date: _**October 13, 2023**__

PERCEIVED CAREER AND TECHNICAL STUDENT ORGANIZATION'S INFLUENCE ON POSTSECONDARY CHOICES

ABSTRACT

The purpose of this basic qualitative research study was to explore the perceptions of former career and technical student organization (CTSO) members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. The research question that guided this qualitative study was:

> How do former participants in CTSOs describe the student organization's influence on their postsecondary choices?

Thirteen former CTSO members participated in this study through semistructured individual interviews. Four themes emerged from the data: (a) use of soft skills, (b) engagement with others, (c) participation in conferences, and (d) leadership preparation. Through data analysis, the themes indicated that former CTSO members believed that involvement in their CTSO influenced their postsecondary choice and their overall experience as a member was positive. Implications of this study include (a) that participation in a CTSO has a positive influence on members; (b) the more a member participates in a CTSO, the more benefits they receive; and (c) CTSOs create a "safe place" for students to share challenges, to learn from mentors, and to learn about community resources. From the findings, two areas for further study are (a) that a broader study should include former members of any high school student organization, not just those specific to former members of a high school CTSO and (b) that a broader study should include former CTSO members from more than one high school.

Keywords: Career and Technical Student Organization (CTSO), Career and Technical Education (CTE), Postsecondary

DEDICATION

This dissertation is dedicated to my parents, David and Maude Marshall, for their support, flexibility, and encouragement and my village of teachers who influenced me from Kindergarten onward: Mrs. Wanda Zink, Mrs. Agnes Anderson, and Mrs. Nancy Small who introduced me to the world of career and technical student organizations.

ACKNOWLEDGEMENTS

I could write another manuscript just for those who have assisted me with the completion of my doctoral journey. To my advisors, Dr. Debra Welkley and Dr. Evelyn Thomas, I am grateful for the patience, guidance, and expertise that you provided me along the way, and for the reminders to stay focused. To the former Career and Technical Education and Career and Technical Student Organization members who participated in this study, thank you! Your involvement reminded me of why I love career and technical education and career and technical student organizations. Thank you to Dr. Whitney Harper, my cohort companion who, whatever the time of day, always helped me stay motivated.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

The Smith-Hughes National Vocational Education Act, passed by the U.S. Congress in 1917, allocated federal funding for career and technical education (CTE) students to have access to technical centers and vocational teachers, whose responsibilities included guiding and overseeing vocational student organizations (VSOs; Alfeld et al., 2006; Threeton & Pellock, 2010). Since then, Career and Technical Student Organizations (CTSOs), formerly known as VSOs, have been a vital part of CTE in the United States (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a). CTSOs give students extracurricular opportunities through activities, programs, and competitive events to gain the skills and abilities that are needed to be successful in any career path (National Coordinating Council for Career and Technical Student Organizations [NCC-CTSO], 2019).

The George-Barden Act of 1946, the first piece of federal legislation to reference specifically VSOs (Alfeld et al., 2006), designated federal money for two VSOs, Future Farmers of America (FFA) and the New Farmers of America (Association for Career and Technical Education [ACTE], 2019). As of October 2018, eight CTSOs that align with 16 career clusters and 79 career pathways were recognized (NCC-CTSO, 2018). The Carl D. Perkins Career and Technical Education Improvement Act of 2018 (known as the Strengthening CTE for the 21st Century Act, Perkins V), provided funding on an annual basis for CTE programs, including CTSOs, across the United States (U.S. Department of Education [USDOE], Office of Career, Technical, and Adult Education [OCTAE], Division of Academic and Technical Education, Perkins Collaborative Resource Network, 2020).

According to the NCC-CTSO (2022), there are “2,027,880 student members combined” (para. 1) between the eight CTSOs. These eight CTSOs are “authorized by the U.S. Congress in

the Carl D. Perkins Career and Technical Education Improvement Act" of 2018 (NCC-CTSO, 2022, para. 3). CTSOs, formerly known as VSOs, first received funding as part of the Smith-Hughes National Vocational Education Act of 1917 (Threeton & Pellock, 2010). With this funding, the FFA and the New FFA was formed (ACTE, 2019). Their original purpose was to encourage interest in agriculture (D'Haem, 1993). Before there was an FFA student organization in Virginia, there was the FFA of this state founded in 1925 for boys taking agriculture classes (National FFA Organization, 2022). This FFA was formed to "not only cover agricultural interests, but would include the importance of personal growth, leadership, and cooperative efforts" (Bryant, 2001, p. 61). Since its inception, from reports generated from the Virginia Department of Education (VDOE; 2022) through agricultural education, the state's FFA has been developing its members for foremost leadership, individual growth, and career success (Bryant, 2001).

For girls, in 1945, "New Homemakers of America (NHA) was the African American organization that was to parallel the Future Homemakers of America (FHA)" (Aken & Jones, 2017, para. 1). In 1965, NHA merged with FHA (D'Haem, 1993). Boys were permitted to join starting in 1974 (Aken & Jones, 2017). A change in name came in 1999 at the National Leadership Meeting when voting delegates renamed FHA to Family, Career and Community Leaders of America (FCCLA; 2019). By 1969, there were six major CTSOs (still known at that time as VSOs) officially recognized as FHAs (D'Haem, 1993). Stringer (2018) noted that CTSOs now serve a population more likely to pursue postsecondary education.

When implemented by committed advisors, CTSOs play an important part in preparing students "to become productive citizens and to assume roles of leadership" (SkillsUSA Colorado, 2018, para. 3). According to SkillsUSA Colorado (2018), in a CTSO advisory

capacity, advisors have the ability to transform a student's life. If the advisor has transformational leadership skills to motivate; students (followers), as Bass and Bass (2008) noted, students will do more than they originally intended and thought possible.

Whether post-high-school students select to enter the world of work, college, or both avenues, students have the skills necessary to be a contributing member of their community (SkillsUSA Colorado, 2018). The research study was focused on the participants' perception that their postsecondary choices were influenced by their former membership as a high school student in a a CTSO. This researcher's study can affect students and teachers who are involved in a CTSO.

Definition of Key Terms

The following terms are defined for the purpose of clarification for this research study:

Career and technical education. According to the U.S. Congress in the Carl D. Perkins Career and Technical Education Improvement Act of 2018, the USDOE, National Center for Education Statistics (NCES), Institute of Education Sciences (2020) defined CTE "as courses (at the high school level) and programs (at the postsecondary subbaccalaureate level) that focus on the skills and knowledge required for specific jobs or fields of work" (para. 1).

Career and technical student organizations: Brown et al. (2016) defined a CTSO as "an organization for individuals enrolled in a career and technical education program that engages in career and technical activities as an integral part of the instructional program (Slide 5).

Cocurricular: Meaning some activities of a CTSO take place during regular classes while others occur outside of school time (Stone, 2017).

Postsecondary choices: Putnam (1981) defined these choices as "all instruction provided for persons who have completed secondary education or who have discontinued secondary education" (p. 3).

Program of work: As defined by the state (2019) where George High School (a pseudonym) is located a program of work is the CTSO "chapter's written plan of action that gives a detailed description of what the chapter wants to accomplish during the school year" (p. 1).

Vocational education: As defined by the Perkins Act of 1990, vocational education comprises "organized educational programs offering a sequence of courses which are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree" (USDOE, OCTAE, Division of Academic and Technical Education, Perkins Collaborative Resource Network, 2020, p. 4). In 2006, the term "vocational education" was retired (ACTE, 2019).

Vocational student organizations: VSOs are defined as organizations for persons who are enrolled in or connected "with Vocational/Technical Education instructional areas and which have national, state and local units" (D'Haem, 1993, p. 11).

Statement of the Problem

With CTSOs being a fundamental part of CTE since the Smith-Hughes National Vocational Education Act (1917; Brand et al., 2013), students have occasions during and after school to learn skills and abilities needed to be successful in any career path (NCC-CTSO, 2019). Supporters of CTE and its educators often note how partaking in a CTSO, in line with programs of study, can have a major benefit to a student's CTE experience (Dougherty et al., 2020). Dougherty et al. (2020) noted:

> Measuring whether a student participated in a CTSO (binary), whether it is aligned with their program of study (binary), and the number of years a student participated (ordinal) may be an effective way to describe the CTSO experience and provide another mechanism to measure the depth of student engagement in CTE in high school. (p. 14)

Dougherty et al. (2020) indicated that partaking in a CTSO might add a significant advantage to a student's postsecondary choice. In these days of data-driven decisions, school systems could benefit from a clear measure of how CTSOs affect members (Taylor, 2018b).

Threeton and Pellock (2010) found that, since the Smith-Hughes National Vocational Education Act (1917), CTE has been dramatically transformed, but the important relationship between CTE and CTSOs remains. Alfeld et al. (2006) suggested that studies with students who participate in CTSOs in high school need to be conducted to examine their post-high-school path. Taylor (2018b) recommended studies from the perspective viewpoint of each CTSO because "the voice of the differing CTSOs is needed" (p. 18). Brodersen et al. (2021) proposed addressing postsecondary education outcome gaps by exploring "outcomes of student subgroups" (p. 11). The Manufacturing Institute (2015), in partnership with SkillsUSA and the Educational Research Center of America (ERCA), found that participating in a CTSO had a significant impact on a member's career outlook, thus, pointing to a gap in the literature regarding a relationship between high school students who participate in a CTSO and their postsecondary choice.

Purpose of the Study

The purpose of this basic qualitative research study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. Students from a midsize city high school located in a mid-Atlantic state

of the United States were the target population of the study. Alfeld et al. (2006) noted that CTSOs have a positive effect on numerous outcomes connected to postsecondary student success. These outcomes included "academic motivation, academic engagement, grades, career self-efficacy, college aspirations, and employability skills" (Stone, 2017, p. 164). Dougherty et al. (2020) indicated that partaking in a CTSO might add a significant advantage to a student's postsecondary choice. There was a gap in the literature regarding a relationship between high school students who partook in a CTSO and their postsecondary choice (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a). Saed and Scates-Winston (2017) pointed out that CTSOs permit students to realize the connection between academics and career opportunities. Saed and Scates-Winston also indicated that CTSOs provide pathways to postsecondary employment or successful transition to college.

Research Question and Design

Qualitative research involves methodical and investigative research processes to understand the ways that people "view, approach and make meaning of their experiences, contexts, and the world" (Ravitch & Carl, 2021, p. 4). This researcher aimed to gain an understanding of the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. The methodology of the researcher was to conduct semistructured individual interviews the topic using the following research question:

> How do former participants in CTSOs describe the student organization's influence on their postsecondary choices?

This basic qualitative research study sought to recruit a minimum of 13 participants and no more than 18 participants through purposeful sampling. This researcher sent a recruitment

email and the Participant Information Sheet as an attachment to former Career and Technical Student Organization (CTSO) advisors. The email asked them to forward it to their former CTSO members. Once participants were identified they each participated in a semistructured interview where they described their CTSOs influence on their postsecondary choices. The interviews were automatically transcribed via the Zoom (2023) application, the participants reviewed their interview transcriptions, and then this researcher manually coded the transcripts.

Conceptual and Theoretical Framework

The conceptual framework built a case for why this research study was significant and relevant as well as how the study's design fittingly and rigorously answered the research question (Ravitch & Carl, 2021). According to Ravitch and Riggan (2017), the three elements of a conceptual framework are personal interests and goals, topical research, and theoretical frameworks. A vital role in shaping the research is the researcher's identity and positionality (Ravitch & Riggan, 2017).

This researcher contributed to CTSOs as a member and as an advisor. When this researcher was in high school, as a member of a CTSO, specifically Future Business Leaders of America (FBLA), for 4 years, there were opportunities offered by this researcher's FBLA chapter. After graduation from high school, the researcher attended college where, for 2 years, the researcher was a member of Phi Beta Lambda, the postsecondary division of FBLA (FBLA-Phi Beta Lambda, Inc., 2021). Once teaching CTE business courses, this researcher became a FBLA middle level advisor. After 15 years, this researcher switched school systems, becoming a CTE department chair. Currently this researcher is a CTE teacher specialist. From being a member of a CTSO to assisting a Department of Education with establishing a FBLA

Middle Level Division, this researcher saw the success and decline of a CTSO, which led the researcher to the topic of this research study.

In Iowa, Lebo (2022) found that from 2017–2021 there was a decrease in CTSO memberships, except for FFA and Technology Student Association (TSA). During this time, "in-person instruction and after-school activities were restricted due to the COVID-19 pandemic, CTSO advisors and their students were thrust into a new technological environment" (Baillieu & Crowder, 2021, p. 7). CTSO students became less motivated, memberships declined, and recruitment of new members became problematic (Baillieu & Crowder, 2021). Baillieu and Crowder (2021) found that some CTSO advisors discovered strategies for managing the decline while others still struggle with declining membership.

From a review of the literature, the researcher found that CTSOs, because they are cocurricular, can be used as an instructional component within any CTE course (Stringer, 2018). Members valued CTSOs, for they served as a place to develop leadership skills and learn practices that participants could use throughout their career (Alfeld et al., 2006). Solberg et al. (2018) found that state CTE directors, state school counseling directors, and school counselors within a school system are skeptical about the effectiveness of their counseling regarding career advising and CTE. Finally, AdvanceCTE (2017) found that current and prospective parents and students who were involved in CTE valued it and the many opportunities offered. In the study, focus groups made up of current and prospective parents and students involved in CTE completed a national survey that explored attitudes toward CTE and the opportunities it offers (AdvanceCTE, 2017). Although AdvanceCTE's (2017) research indicated that CTE and CTSOs were valued by current and prospective parents and students, the focus of this researcher's study

was to explore the perception that former high school student members of CTSOs have regarding the influence of that student organization on their postsecondary choices.

The theoretical framework that guided this research study was Amirianzadeh's (2012) hexagon theory of student leadership. In the hexagon theory of student leadership, Amirianzadeh (2012) considered "factors affecting the student leadership development from individual, group and social aspects" (p. 333). In the theory, Amirianzadeh (2012) explained that the emergence of a student's "leadership development will be done through a change in attitude, knowledge, skill and behavior" (p. 334). This change, Amirianzadeh noted in the hexagon theory of student leadership, happens because there is more involvement from the student. The study conducted by this researcher, through an interview process of former CTSO members, examined a gap in the literature (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a) regarding the relationship between high school students who participated in a CTSO and their postsecondary choice.

Assumptions, Limitations, and Scope

This qualitative study made every effort to guarantee the research methodology, design, and analysis of data was sound. With this qualitative study, there were certain assumptions, limitations, and scope to be anticipated. Assumptions can be viewed by the researcher as something accepted as true (Simon, 2011). Without assumptions, the study could not exist (Leedy & Ormrod, 2015). This study's main assumption was that those partaking in the study would answer all questions honestly and in a timely manner.

Limitations, according to Creswell and Guetterman (2019), are potential "problems with the study identified by the researcher" (p. 200). Limitations often relate to the sample size being small or factors related to data collection and analysis (Creswell & Guetterman, 2019). In this

study, the limitations included certain biases. Study participants were specific to former members of a high school CTSO rather than to members of any student organization. The number of former CTSO members that were recruited from each of the eight CTSOs contributed to the sample size being small. In qualitative research, the sample size may be small, and many researchers view this small sample size as a limitation, for the ability to generalize to the target population cannot be done; however, that is not the purpose of a qualitative study (Patten & Newhart, 2018).

George High School is the pseudonym that this researcher has used throughout this study to represent the high school involved in this research, which is located in a midsize city located in a mid-Atlantic state of the United States and whose former students were participants in the study. Approximately 30,000 students attend the midsize city's schools each year (VDOE, 2022). At George High School, in the fall of 2022, state reports were generated where George High School is located; the fall enrollment spreadsheet showed an enrollment of 1,837 students (VDOE, 2022). As of February 2023, only 92 students (5%) were members of CTSOs (A. Foster-Graves, personal communication, February 2022; R. Simmons, personal communication, February 2022; F. Safarmamad, personal communications, February 2022).

A potential bias to collecting data was the relationship that this researcher had with the participants. As a former employee at George High School, this researcher may had either taught or facilitated a CTSO event. Therefore, the participants might not have been as honest in their answers as they would have been if this researcher had no affiliation with George High School. This researcher asked all of the participants to review their interview transcript to ensure its accuracy. Having the participants check their interview transcripts "potentially enhances

accuracy of the data" (Birt et al., 2016, p. 1803). A potential bias was the researcher's history with CTSOs and possible bias toward their influence on students' postsecondary choices.

The scope defines the boundaries of the study (Simon, 2011). The scope of this qualitative study included former CTSO members who attended the same high school in a midsize city school district. The participants were at least 9 months removed from graduation. The participants were selected through purposeful sampling (Merriam & Tisdell, 2016).

Rationale and Significance

This qualitative research study reflected Alfeld et al.'s (2006) suggestion that follow-up studies with students who participated in a CTSO "in high school should be conducted to examine their postschool trajectories into work and/or college" (p. 150). Data gleaned from this research study showed the perception of former CTSO members' postsecondary choices relative to their involvement in a CTSO. CTSOs create a "safe place" for students to share challenges, to learn from a mentor, and learn about community resources (Saed & Scates-Winston, 2017). Saed and Scates-Winston (2017) also indicated that they can assist in providing equitable opportunities for students, which means guaranteeing that every student obtains needed resources and understanding to reach their maximum potential.

Alfeld et al. (2006) found that CTSOs benefited students. The more a student participates in a CTSO, the more the benefits to that student can be enhanced. However, as Alfeld et al. (2006) noted, there is untapped potential to be realized in CTSOs. One untapped potential is the ability that a CTSO might have to influence student outcomes. Huntsman (2012) found that "membership in a CTSO has a positive on student outcomes" (p. 15). Student outcomes affected were class grades and overall grade point average. A second untapped potential of CTSOs is the ability for a CTE teacher to understand the "effectiveness of their work in CTSOs" (Taylor,

2018b, p. 82). The significance of this qualitative study was focused on the exploration of the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs.

Summary

The purpose of this study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school, George High School. This chapter introduced how CTSOs are a part of CTE, with a brief history of CTSOs. The definitions of key terms, the statement of the problem, purpose for this study, research question, and design were also presented in this chapter. The conceptual and theoretical framework that guided this research study was Amirianzadeh's (2012) hexagon theory of student leadership. Finally, assumptions, limitations, and the scope and rationale and significance of the study were addressed.

Chapter 2 provides a review of literature regarding loss of interest in, success with, and effects of change on CTSOs. Also discussed are CTSOs, regarding how they are presented and viewed to students, and the importance of CTSOs. The review of literature in Chapter 2 provides insight into (a) CTE, (b) CTSOs, (c) student organizations that are not CTSOs, (d) articulation agreements with community colleges, (e) education's relationship to the workforce, and (f) the influence of school counselors. Chapter 3 introduces the methodological facets of the research. Chapter 4 provides a detailed account of the analysis method and presents the results and findings. Finally, in Chapter 5, this researcher discusses the findings, implications, and recommendations for future studies.

CHAPTER 2: LITERATURE REVIEW

The purpose of this qualitative study was to explore the perceptions of former CTSO members' postsecondary choices. The most salient element of CTSOs is student participation and the external environment's perception (AdvanceCTE, 2017). The significance of this qualitative study was its focus on the exploration of the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs. Alfeld et al. (2006) suggested that studies with students who participated in CTSOs in high school should be conducted to examine their post-high-school path. Brodersen et al. (2021) proposed addressing postsecondary education outcome gaps by exploring "outcomes of student subgroups" (p. 11). The Manufacturing Institute (2015), in partnership with SkillsUSA and the ERCA, found that participating in a CTSO had a significant impact on a member's career outlook. Therefore, in this qualitative study, this researcher sought to fill a gap in the literature regarding the relationship between high school students who participate in a CTSO and their postsecondary choices (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a).

Aragon et al. (2013), Jeffreys (1987), and Sessa et al. (2017) indicated that student organizations, whether a CTSO, content, or professional-based organization (PBO), affect students. CTSOs offer students with learning needs a way to build self-determination skills that enrich their transitional outcomes (Harvey, 2001). This current researcher's study supported Alfeld et al.'s (2006) suggestion that investigation should be pursued with students who participated in CTE and CTSO in high school to study their trajectories into work and/or college. Brodersen et al. (2021) proposed addressing postsecondary education outcome gaps by exploring "outcomes of student subgroups" (p. 11), thus, pointing to a gap in the literature regarding a

relationship between high school students who participate in a CTSO and their postsecondary choice, which this research study sought to address.

CTSOs add value to a student's school experience by giving them opportunities to apply knowledge and skills learned in CTE classes to real-world situations (Alfeld et al., 2006). Even though CTSO activities are linked to what students learn in a high school CTE classroom (Stringer, 2018), over time, students lose interest (Sanok et al., 2018). Sanok et al. (2018) found that members lose interest for varying reasons (e.g., lack of time, burnout, and changing priorities in their life).

Successful CTSOs are active, and they integrate rigorous academic and technical content, while focusing on career preparation (Stone, 2017). CTSOs are referred to as cocurricular because they connect what is being taught in CTE classes (Stringer, 2018). Changing CTE is essential to assist with "strengthening all aspects of our education system and creating high-quality job-training opportunities" (Duncan & Dann-Messier, 2012, p. 1). These opportunities, as Duncan and Dann-Messier (2012) noted, included students having access to internships, technical courses, virtual work experiences that connect what students are learning to real-life settings and choices.

Communication to students regarding college and career routes are often presented as separate paths—or are even pitted against one another (AdvanceCTE, 2017). Pappano (2021) stated that, rather than emphasize college or a career, school counselors should ascertain a student's interest, then assist them with discovering how to pursue it. AdvanceCTE (2017) found communication regarding both college and career readiness supports the goals and ideals of parents and students. Although postsecondary institutions and the workforce offer equal opportunities, CTSOs not only influence a student's college and career choice but they also

offer opportunities to gain the skills needed for success in college and on the job (Saed & Scates-Winston, 2017). The Manufacturing Institute (2015), in partnership with SkillsUSA and the ERCA, found that participating in a CTSO had a significant impact on a member's career outlook.

In this chapter, this researcher delves into (a) loss of interest in CTSOs, (b) success with CTSOs, (c) effects of change on CTSOs, (d) CTSOs: how they are presented and viewed to students, and (e) importance of CTSOs. It then discusses the conceptual framework and theoretical framework reviewing Amirianzadeh's (2012) hexagon theory of student leadership. In this literature review, this researcher will examine literature relative to (a) the history and background of CTE, (b) CTSOs, (c) student organizations not CTSOs, and (d) articulation agreements with community colleges. Additionally, this researcher discusses a gap in the literature regarding a relationship between high school students who participated in a CTSO and their postsecondary choice (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a). The exploration of qualitative, quantitative, and longitudinal studies is presented in a topical format. The literature review begins with a discussion on CTE, including postsecondary options, and perceptions and CTSO programs, their history, evolution, college affiliations, and value. Next, the literature is presented regarding student organizations not CTSOs. Finally, this researcher reviews the literature on articulation agreements with community colleges, including education's relationship to the workforce and the influence of school counselors. AdvanceCTE (2017) found that school counselors were one of the most trusted sources of information about CTE and its benefits.

Conceptual and Theoretical Framework

Ravitch and Riggan (2017) defined a conceptual framework as the overall argument regarding why the topic of a study matters. There are three components of a conceptual framework: (a) the researcher's personal interests and goals, (b) the topical literature review that shapes the framing of the study, and (c) the theoretical framework (Ravitch & Riggan, 2017). Although making a case for why this study is significant, the conceptual framework components "intersect, inform, and influence each other" (Ravitch, & Carl, 2021, p. 33).

When this researcher was in high school and college, they were a member of a CTSO and its postsecondary chapter. Once teaching CTE courses, this researcher became a CTSO advisor. In time, this researcher became a CTE department chair. Currently, this researcher is a CTE teacher specialist. From CTSO member to advisor, this researcher has seen the success and decline of a CTSO, which has led the researcher to the topic of this research study.

It was unknown to this researcher how former CTSO participants might describe the student organization's influence on their postsecondary choices. Therefore, in this study, this researcher examined a gap in the literature regarding a relationship between high school students who participated in a CTSO and their postsecondary choice (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a). Adams et al. (2018) noted that Amirianzadeh's (2012) hexagon theory of student leadership provided a lens for understanding the perceptions of former CTSO participants regarding how their participation might be related to their postsecondary choices. Adams et al.'s (2018) theory was constructed from verifiable student leadership studies over the span of two decades. Saed and Scates-Winston (2017) stated that CTSOs offer participants opportunities to develop leadership skills.

Theoretical Framework

Theoretical frameworks, according to Ravitch and Carl (2021), are "formal theories; that emerge and have been explored using empirical work" (p. 11–12). These formal theories are typically found in academic literature (Ravitch & Carl, 2021). Adams et al. (2018) noted that Amirianzadeh (2012), Keselman et al. (2015), Simonsen et al. (2014), and Villarreal et al. (2018) agreed "that students' leadership development should be a priority to assist students to form a strong leadership identity at an early stage" (p. 1). The theoretical framework for this research study was Amirianzadeh's (2012) hexagon theory of student leadership. A unique view of CTSOs is presented through the theoretical lens of Amirianzadeh's (2012) hexagon theory of student leadership,

The first discussion in the literature on student leadership might have been sparked by Astin's (1977, as cited in Adams et al., 2018) decades of research on the subject. From this research, Astin (1984, as cited in Adams et al., 2018) introduced the Student Involvement Theory. In this theory, Astin (1999) encouraged "educators to focus less on what they do and more on what the student does" (p. 522). Subsequently, Astin (1984, as cited in Adams et al., 2018) developed the College Impact Model, the Social Change Model, and the Transformative Leadership Model of student leadership. From this previous research, Astin (1999) continued the exploration "of the student involvement theory as it applied to the earlier research on dropping out" (p. 520). Astin decided to examine the involvement phenomenon in a more intensive area, studying the impact of college on a wide range of other outcomes such as (a) place of residence, (b) honors programs, (c) academic involvement, (d) student–faculty interaction, (e) athletic involvement, and (f) involvement in student government.

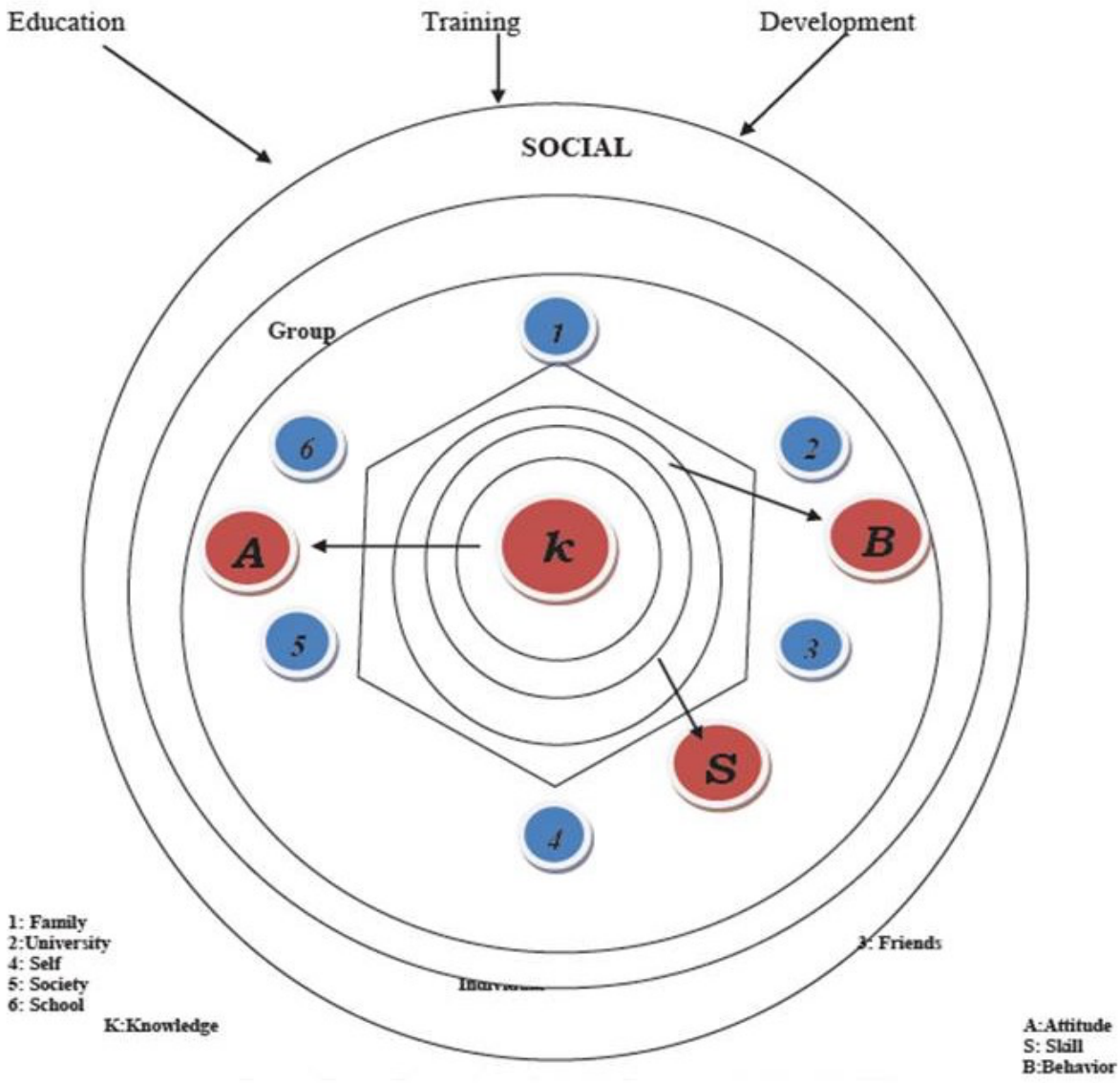
Astin and Astin (2000) found there to be “an increased emphasis on programs for student leadership development” (p. 13). These cocurricular areas of student leadership included living quarters where there are other students and student activities and organizations to include athletics. All of these student experiences “are rich with possibilities for developing leadership skills” (Astin & Astin, 2000, p. 21).

Kouzes and Posner (2011) created the Student Leadership Challenge Model in 2003 (Adams et al., 2018). This model highlighted the “common practices of exemplary student leadership and how they influence others” (Adams et al., 2018). Combining Astin’s student involvement theory created in 1984 and Kouzes and Posner’s (2011) Student Leadership Challenge Model developed in 2003 (Adams et al., 2018), Amirianzadeh et al. (2010) developed the College Student Leadership Competencies Model. In this model Amirianzadeh et al. (2010) proposed that to meet the needs of a changing student body “student affair practitioners need to rethink some of the key assumptions of their student leadership and practices” (p. 168). In their study on the effects of leadership attitude and leadership behavior, Amirianzadeh et al. (2010) “designed a model for assessing student leadership competencies development and affecting factors in university” (p. 168). Amirianzadeh et al.’s (2010) model was influenced by a mixed-method study in Fars Province, Iran, “on the effect of leadership attitude and leadership behavior such as mediatory variable on the student leadership competencies development” (p. 168). Amirianzadeh et al. (2010) suggested that considerations important in the development of student leadership competencies are “systematic thinking, challenging the process, inspiring a shared vision, enabling others to act, modeling the way and encouraging the heart” (p. 168). From Amirianzadeh’s (2010) Student Leadership Competencies Model, a more modern-day theory of student leadership was developed, Amirianzadeh’s (2012) hexagon theory of student

leadership (Adams et al., 2018). Amirianzadeh's (2012) hexagon theory of student leadership through a comprehensive attitude and systematic view considers "the factors affecting the student leadership development from individual, group and social aspects" (Amirianzadeh, 2012, p. 333). As shown in Figure 1, Amirianzadeh's (2012) hexagon theory of student leadership considered six vital and effective factors in student leadership development: individual, family, school, friend, college, and society.

Figure 1

Hexagon Theory of Student Leadership Development



Note. From "Hexagon theory: Student leadership development" by M. Amirianzadeh, 2012, *Procedia – Social and Behavioral Sciences, 31*, p. 337. Copyright 2011 by Elsevier Ltd.

Figure 1 represents that student leadership develops from education, training, and development. Creation of student leadership development is accomplished by adjustments in attitude, knowledge, skill, and behavior (Amirianzadeh, 2012). The theory promoted that student leadership is formed from one's education, school or training center, and development through themselves and their social environment (Adams et al., 2018).

Student leadership, as defined in by Lyons (2018), is students working together to affect positive change in their educational environment. Positive change in turn provides more strategies for organizational and personal growth (Lyons, 2018). Thus, promoting in the hexagon theory of student leadership Amirianzadeh's **(**2012) premise that student leadership is formed partly from their education.

As a first formal educational environment, schools can affect a student's leadership development (Amirianzadeh, 2012). As Alfeld et al. (2006) pointed out, through CTSOs, students are offered numerous activities to develop and improve their leadership skills. In school, students are also offered numerous courses, but those who take a CTE class do so because they made a personal consideration (Dougherty et al., 2020). In addition, school is one of six factors of Amirianzadeh's (2012) hexagon theory of student leadership. In the review of relevant literature, a longer analysis of Amirianzadeh's (2012) hexagon theory of student leadership components in relation to CTSOs is provided.

Review of Relevant Literature

CTSOs are a part of CTE courses; therefore, this researcher began by reviewing the history of CTE and how it became a valuable channel for students to go from high school to the world of work. The researcher also examined literature pertaining to CTSOs. This includes how CTSOs became an integral part of CTE, their impact, benefits, and drawbacks. To provide

comparison, this researcher looked at literature that focused on student organizations such as student government organizations in secondary schools that were not CTSOs. Literature regarding articulation agreements between school systems and community colleges, education's relationship to the workforce, and finally the influence of school counselors on students was also reviewed.

Overall, the literature indicated that college, not necessarily a 4-year college, and career success are goals to which both CTE students and their parents aspire (AdvanceCTE, 2017). CTSOs, because they are considered cocurricular, can be used as an instructional tool within CTE courses (Stringer, 2018). Participants value CTSOs, which serve as a place to develop leadership skills and behaviors that they will use throughout their careers (Alfeld et al., 2006). Solberg et al. (2018) found 58% of state school system administrators, directors, and school counselors are not very confident in the effectiveness of their career advising. Finally, CTSOs have a perception problem (AdvanceCTE, 2017). In a national survey, AdvanceCTE (2017) found that less than 47% of students had heard of CTE, how it works with CTSOs, and what it looks like within a school environment.

History and Background of Career and Technical Education

CTE, once known as vocational education, matriculated its way into middle and secondary schools (Niehoff, 2018). In the fall of 1906, the sentiment was that education in schools was not meeting students' needs; therefore, two 250 leaders from business, industry, and education established the National Society for the Promotion of Industrial Education was established (Moore, 2017). National Society for the Promotion of Industrial Education educated the public on the importance of industrial education and with an all-out lobbying effort persuaded the U.S. Congress to recognize the need for a national system of vocational education

(Moore, 2017). Therefore, the U.S. Congress enacted the Smith-Hughes National Vocational Education Act (1917), authorizing federal funds (ACTE, 2019) so that, for students having access to technical centers, CTE has been federally funded. College enrollment has been low, and technology has progressed; therefore, colleges have dropped courses and added others, or have revamped them as workforce needs have changed (Stringer, 2018).

Postsecondary Options and Career and Technical Education

According to the USDOE (2019), CTE provided pathways to success for high school students and offered them opportunities to personalize their education according to their interests and learning needs. At the high school level, CTE is meant to connect with and lead to postsecondary programs and degrees or certificates, apprenticeships, or employment (USDOE, 2019). Parents and students, when surveyed, want clear pathways into college and careers from their education system (AdvanceCTE, 2017). Nationally, Solberg et al. (2018) surveyed state CTE directors, state school counseling directors, and school counselors regarding whether they believed that school systems are *somewhat effective* or *not effective* at helping postsecondary CTE students. Across the board, Solberg et al. (2018) found that "states are not overly confident in the effectiveness of their career advising and development systems" (p. 2).

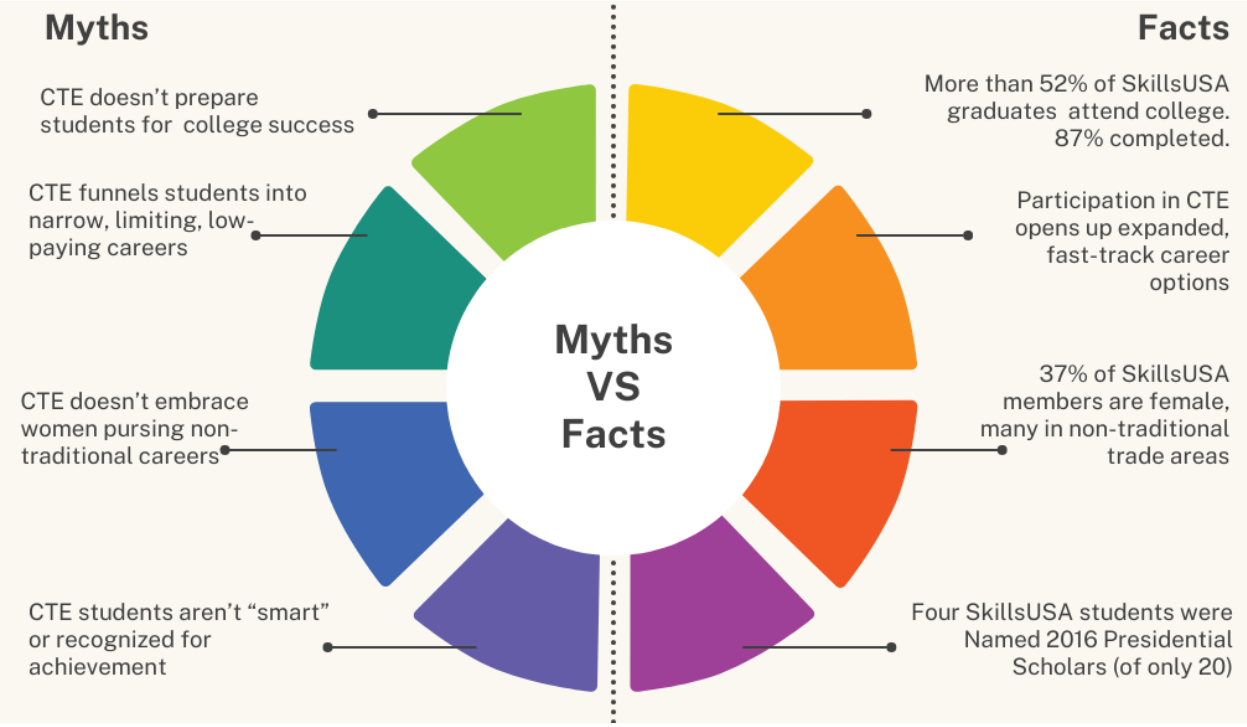
Perceptions Regarding Career and Technical Education and Career and Technical Student Organizations

Society's perception of CTE and CTSOs has changed over the years, especially since 1917 (SkillsUSA & Student Research Foundation, 2023). SkillsUSA and Student Research Foundation (2023) is a CTSO for middle school, high school, "and college/postsecondary students preparing for careers in the trades, technical and skilled service occupations" (para.1). Cohen and Besharov (2002) stated that, coupled with an amplified importance on academic skills

and a belief that college was for everyone, the perception of CTE became an "educational backwater for the disadvantaged" (p. 14). Figure 2 displays how Brown et al. (2016) compared four myths that students conveyed about CTE and SkillsUSA.

Figure 2

Dispelling the Myths



Note. This figure compares the myths and facts of Career and Technical Student Organizations (CTSOs). From *Supporting Analysis with Career Technical Student Organization Data*, by S. Brown, S. Spavone, & T. Lawrence, October 28, 2016. PCRN: 2016 Data Quality Institute.

According to Cohen and Beshsarov (2002), these student perceptions regarding CTE and CTSOs came from vocational education losing popularity in the United States during the 1980s and 1990s. In the 1980s, a momentum regarding "deficiencies in the academic skills of the American workforce" was growing (Cohen & Besharov, 2002, p. 15). Cohen and Besharov

(2002) noted that schools across the United States responded by increasing academic courses needed to graduate high school. During the 1980s and 1990s, with an academic focus and increased requirements, the number of students who finished a vocational concentration deteriorated from 34% to 25% (Cohen & Besharov, 2002).

With change in focus, CTE and CTSOs had a marketing and perception challenge. Ferguson (2018) wrote that many states were embracing new CTE strategies with a goal of keeping students on track to graduate high school, while expanding their postsecondary and employment options. New CTE strategies were implemented and high school CTE programs across the country experienced a renaissance (Schaffhauser, 2019). As Hudnett (2016) noted, at postsecondary levels, CTE course offerings were on the increase. Postsecondary institutions turned to their marketing departments (Hudnett, 2016). Adjustments were made to target high school CTE students (Hudnett, 2016). The materials told a convincing story about how enrolling in the respective school's CTE program would lead to a successful career (Broom, 2017).

As AdvanceCTE (2021) reported, changing employer attitudes towards CTE was about shifting the skills conversation. AdvanceCTE conducted a national survey in which 315 employers from predominately in-demand industries found CTE to be viewed positively by employers and helped them to meet skill-based hiring needs. AdvanceCTE noted that employers viewed CTE as a valuable pipeline to meeting their hiring needs.

Career and Technical Student Organizations

CTSOs are an integral part of a CTE instructional program. They are considered cocurricular and can be used as an instructional tool within CTE courses (Stringer, 2018). Fiscus and Hyslop (2008) noted, "The CTSO is a powerful instructional tool that works best when it is integrated into the career and technical education curriculum" (p. 3). CTSOs give students

extracurricular opportunities through activities, programs, and competitive events to gain the skills and abilities needed to be successful in any career path (NCC-CTSO, 2019). These can make an impact on a student's experience inside and outside of the classroom, community engagement, and future endeavors. As an organization, they create a "safe place" for students to share challenges, to learn from a mentor, and to learn about community resources (Saed & Scates-Winston, 2017). CTSOs assist in providing equitable opportunities for students, which means guaranteeing that every student acquires the necessary resources and information to reach their full potential (Saed & Scates-Winston, 2017). By joining CTSO, members (whether in a leadership position or not) have opportunities to develop self-confidence, a sense of community, and make professional connections, while being accountable for their actions (SkillsUSA Colorado, 2018).

History of Career and Technical Student Organizations

The George-Barden Act of 1946 designated federal money for two vocational education student organizations (ACTE, 2019). In 2023, eight CTSOs were aligned with 16 career clusters and 79 career pathways were recognized (NCC-CTSO, 2018). All CTSOs had members in all 50 states, and they were integrated into CTE programs and courses (Stauffer, 2023). However, not all school systems had chapters of each type of CTSO. Funding, in part, was provided by the Carl D. Perkins Career and Technical Education Improvement Act of 2018 (NCC-CTSO, 2018). Examples of well-known CTSOs are FCCLA and FBLA. Lesser known CTSOs are Educators Rising and Future Health Professionals (ACTE, 2022).

As society and the world changed, so did CTSOs. Competitive events, where members demonstrated their knowledge skills, were related to career clusters such as FBLA in which participants could compete in finance or information technology (Stauffer, 2023); these events

are reviewed and updated regularly. The names of competitive events are also updated to reflect the changing times. For the 2022–2023 competition, the CTSO FBLA (2023b) changed the name of a competitive event from 3-D animation to digital animation (para. 2 & 3). In 1988, the American Industrial Arts Student Association voted to change its name to TSA to reflect a move in emphasis from industrial arts to mainstream technology (Technology Student Association, 2021). In 1999, Future Homemakers of America voted to change its name to Family, Career and Community Leaders of America (FCCLA, 2019) to reflect its leadership-building programs and to detach from the term "homemaker" and the stigma that had developed around it during the mid-1990s. Since 1946, with federal funding, CTSOs have included hands-on instruction to academic work (Stringer, 2018). Through these organizations students may further their knowledge through participation in different experiences, activities, and competitions (Stauffer, 2023). CTSOs offer occasions for members to develop leadership skills and to network with other students and people in the world of business and industry (NCC-CTSO, 2018).

In a qualitative case study, regarding the value of CTSOs specifically in Texas, Taylor (2018b) wrote that, besides skilled and technical learning, CTE courses focused on soft skills, leadership, and teamwork. Not only do CTSOs enhance the CTE course curriculum, but they also assist in facilitating leadership (Taylor, 2018b). In a mixed-method study regarding funding of CTSOs, Taylor (2018b) noted that leadership conferences are among the many events offered to CTSO participants. Taylor surveyed teachers and showed that teachers found that CTSOs provide leadership skills and integrate effortlessly into classrooms.

The NCC-CTSOs (2018) stated that CTSOs are a powerful tool for assisting the United States in addressing key challenges in workforce development, student success, economic strength, and worldwide competitiveness. Through various learning experiences, CTSO members

take part in activities that allow them to expand their leadership and job competencies (Alfeld et al., 2006). Alfeld et al. (2006) noted that these activities allow students to experience curriculum that either directly or indirectly affects their achievement, transition to postsecondary education, and employability. As students matriculate from high school to college, they might join a student professional business organization (PBO; Lebrón et al., 2017).

At postsecondary institutions, PBOs were the second most popular type of groups that students joined (Dugan & Komives, 2007). As their name implies, PBOs are associated with professions (Lebrón et al., 2017). For example, Enactus is a PBO for "entrepreneurship students gain experience in new venture development" (Lebrón et al., 2017). Focusing on explorations of how PBOs accelerated student leadership development and profession-related leadership competencies, Lebrón et al. (2017) incorporated theory with real-world examples as they discussed PBOs, described their role in career and leadership development, and presented a three-stage development approach. Lebrón et al. concluded by noting that PBOs have the potential to result in direct success in a member's chosen career.

In a mixed-method case study, Jandrin (2019) focused on the impact CTSOs have on student career pathway choices specific to one midwestern urban public high school. Study participants were high school graduates who had been members of a CTSO during high school (Jandrin, 2019). The results showed that students involved in CTSOs gained transferable skills and had a raised awareness of career opportunities (Jandrin, 2019).

The Value of Career and Technical Student Organizations

In a qualitative case study on the value of CTSOs specific to Texas, Taylor (2018b) found that CTSOs affected students in ways that increased global communications and helped industries. In Texas, CTSO values are driven by "the needs of the industry and the economy"

(Taylor, 2018b, p. 9). Teachers who were interviewed for Taylor's (2018b) study attested that, by having CTSOs driven by the industry and economy of Texas, their students were put into real-world situations.

Johnson (2019) wrote about his experience of judging at a 2019 FBLA at the New York State Leadership Conference. As a managing partner of a marketing firm, while evaluating a high school team's 5-minute presentations on the importance of soft skills in the workplace, Johnson (2019) discovered a new respect for the excellence, character, and initiative of today's student. Jandrin (2019) wrote that CTSOs allow one freedom to discover and to take chances without losing valuable time in the tiny opening that makes up high school.

Joining a CTSO gives members a chance to have a more concentrated involvement in a particular CTE area of study (Scott & Sarkees-Wircenski, 2004). Students who come from a low-income environment are 7 times more likely to quit high school, but the opportunities in CTSOs provide a powerful practical and genuine solution to curb this dropout rate (Saed & Scates-Winston, 2017). Saed and Scates-Winston (2017) noted that teachers who successfully use CTSOs as a tool to increase class involvement and lasting student success rates have been proven true time and again.

Along with being a CTSO participant, students whose course load is 75% CTE classes as opposed to academic classes are less likely to drop out of high school (Plank, 2001, Plank et al., 2005, as cited in Aragon et al., 2013). Aragon et al. (2013) also found that girls and students of color benefit slightly more from a CTSO and CTE experience than do their counterparts. Harvey (2001) addressed the critical importance of CTSOs relative to students with special needs. Students with special needs share a purpose between special education and CTSO: self-determination (Harvey, 2001). Harvey (2001) noted that CTSOs offer students with learning

needs a way to build self-determination skills that enrich their transition to their postsecondary choices.

As with any organization, there are drawbacks to participating in a CTSO. Haynes (2021) discovered that interference with a student's social life was a disadvantage to some participants in a CTSO, while other members reported no disadvantages. Haynes conducted a study in which one participant noted the cost involved to attend the nationals was a disadvantage, for CTSOs are not fully funded. Two participants in Haynes' study noted that a disadvantage to participating in a CTSO was the interference it had with their social lives, for some of their friends were not involved with their CTSO.

Student Organizations not Career Technical Student Organizations

With the establishment of Phi Beta Kappa (n.d.) at the College of William and Mary in 1776, student organizations have historically been popular in high school and postsecondary institutions. Rosch and Collins (2017) discovered that well-run student organizations can serve as catalysts to leadership development in adolescents and emerging adults. Sessa et al. (2017) drew on research from Mayhew et al. (2016), McCauley et al. (2010), and McCall (2010) to show that experiences within student organizations and the people with whom the students interact within these organizations are powerful initiators for their leadership development. Within student organizations, members might interact with not only the advisor but also other school faculty and students not in their classes (Sessa et al., 2017).

Haines (2019) found a link between joining college level student organizations and a sense of belonging, whether the student organization was a content or performance-based organization (PBO) such as FBLA Collegiate (FBLA, 2023a) or Collegiate DECA (DECA Inc., 2023). Haines (2019) noted that this sense of belonging was developed through engagement with

respective student organizations, which aided students in feeling connected with their academic encounters. Haines also found that a reason to join a student organization was a student's desire to develop skills and to boost their leadership abilities, thus, enhancing their personal growth and development.

Nolen et al. (2020) investigated student-reported benefits from participating in a biology-based student organization at a research university in the southwestern United States. A majority of students involved in the investigation reported a sense of belonging was the largest benefit from affiliating with a content-based student organization (Nolen et al., 2020). The results of Nolen et al.'s (2020) study showed that student organizations provided members opportunities to develop and to better their knowledge of biology, to build professional connections, and to contribute to events (Nolen et al., 2020). Schafer et al. (2020) surveyed students, faculty, and alumni–practitioners on their perception of accounting student organizations. The results were that accounting profession-based student organizations provided opportunities to develop and to better members' knowledge about accounting and the transition from college to professional careers (Schafer et al., 2020).

Articulation Agreements with Community Colleges

The term "community college" did not become popular until 1950 when Jesse Parker Bogue wrote *The Community College*. To help lend credibility to the community college effort, "in 1960, the W. K. Kellogg foundation announced a series of grants to be used to establish university centers to train and educate community college leaders" (Drury, 2003, p. 5). This was considered an important step in the development of community colleges (Drury, 2003).

CTE programs might have articulation agreements with community colleges that often permit students to partake in college-level courses while in high school (Jonas et al., 2014).

Originally termed “junior colleges” or 2-year colleges, the origins of today’s community colleges dates back to the Morrill Act of 1862, called the Land Grant Act (Drury, 2003). This act expanded access to public higher education, to those who previously had been denied or prohibited it (Drury, 2003). The second Morrill Act was enacted in 1890, which provided for suppression of federal funds to colleges that withheld student acceptance to land grant colleges because of race, unless states provided separate institutions (Drury, 2003). In 1892, William Rainey Harper, president of the University of Chicago, divided the institution into a “junior” and “senior” college, thus, creating a structural separation (Drury, 2003). With President Harper as a major force behind its creation, the first junior college in America was established in 1901 (Drury, 2003).

Zeidenberg et al. (2007) wrote that many first-time college students, especially those attending community college, arrive unprepared to succeed. According to Zeidenberg et al., many first-time college students arrive on campus with poorly formed goals for a career, lack of awareness for needed education, and lack of knowledge of how to succeed in postsecondary institutions. Students are not prepared; therefore, community colleges across the Nation offered academic supports (e.g., developmental courses and tutoring) to assist students (Zeidenberg et al., 2007).

From 2008 to 2013, Jonas et al. (2014) conducted a longitudinal study in which students who (in the state where George High School is located) completed a CTE pathway were followed. Jonas et al. found that 66% of CTE completers and 73% of noncompleters enrolled in college within 1-year of high school graduation. When compared to noncompleters, CTE completers

- were less likely to enroll in 4-year colleges and more likely to enroll in 2-year colleges,
- were more likely to earn an associate degree and equally likely to earn a bachelor's degree,
- had similar chances of earning a bachelor's degree,
- earned a smaller proportion of a 4-year degree because they were less likely to enroll in 4-year colleges (Jonas et al., 2014).

Brodersen et al. (2021) found that CTE Nebraska and South Dakota concentrators were more likely than nonconcentrators to attain an associate degree as their highest postsecondary award. For this study, Brodersen et al. (2021) defined a concentrator as "a high school student who completed a sequence of courses aligned to a specific career cluster" (p. 2), and a nonconcentrator as a high school student who did not complete "a sequence of courses aligned to a specific career cluster" (p. 2). Across the country, a best practice among policy makers and a key strategy for CTE programs was to integrate rigorous academic content with workplace and technical skills (Duncan, A., & Dann-Messier, 2012).

Education's Relationship to the Workforce

In 1933, in the middle of the Great Depression, the Wagner-Peyser Act was enacted, which established the first federal workforce training program (National Able Network, 2019). In 1962, the U.S. Congress passed the Manpower and Training Development Act "to address new employment challenges in the United States" (Blake, 2017, para. 1). The U.S. Congress then repealed the Manpower and Training Development Act (1962) in 1973, for they passed the Comprehensive Employment and Training Act of 1973, which gave states more control over their locally offered services (Blake, 2017, para. 1). The Comprehensive Employment and

Training Act (1973) was repealed in 1982 because the U.S. Congress passed the Job Training Partnership Act of 1982 (Guttman, 1983). In 1998, the government repealed the Job Training Partnership Act (1982), consolidated workforce programs, and created the Workforce Investment Act (WIA) of 1998 (National Able Network, 2019).

With a bipartisan majority, the U.S. Congress passed and signed into law the Workforce Innovation and Opportunity Act (WIOA) on July 22, 2014 (USDOE, 2022). WIOA (2014) was designed to strengthen and improve the American public workforce system, by assisting Americans, including youths and those with significant barriers to employment to obtain high-quality jobs and careers and to help employers hire and retain skilled workers (USDOE, 2022). Additionally, through WIA (1998), the U.S. Congress "enacted a comprehensive youth employment program for serving eligible youth, ages 14–24 who face barriers to education, training, and employment" (U.S. Department of Labor, n.d., para. 1). As a result, the need for workforce training increased and in 2018 funding for WIOA (2014) was increased to emphasize apprenticeships and skills training (National Able Network, 2019).

Fourteen elements were incorporated into WIOA (2014) youth programs (Deutsch et al., 2021). These 14 elements were as follows:

1. tutoring, study skills training, instruction, and dropout prevention,
2. alternative secondary school services or dropout recovery services,
3. paid and unpaid work experience,
4. occupational skills training,
5. education offered concurrently with workforce preparation and training for a specific occupation,
6. leadership development opportunities,

7. supportive services,
8. adult mentoring,
9. follow-up services,
10. comprehensive guidance and counseling,
11. financial literacy education,
12. entrepreneurial skills training,
13. services that provide labor market information, and
14. postsecondary preparation and transition services. (Deutsch et al., 2021)

These 14 elements are located within the WIOA (2014) legislation under Chapter 2, Sec. 129, Use of Funds for Youth Workforce Investment Activities in H. R. 803 U.S. Congress. WIOA (2014) youth funding supports many different programs and services (e.g., Job Corps, YouthBuild, and the National Guard Youth ChalleNGe); therefore, Deutsch et al. (2021) noted that individual programs could be rigorously assessed. They determined that many of the WIOA (2014) youth funding supported programs offered the same or similar services as non-WIOA-supported programs (Deutsch et al., 2021). These same or similar services included (a) one-on-one assistance, (b) guidance in assessing career interest, (c) developing training plans, and (d) follow-up services that may include postemployment counseling (Deutsch et al., 2021).

The VDOE (2022) generated reports in Virginia where George High School is located, noting in the profile of a graduate that one of four components included a graduate's ability to demonstrate workplace skills. In 2020, the VDOE redesigned its work-based learning (WBL) methods of instruction. These high-quality WBL methods became effective July 1, 2021, according to the VDOE (2022) in the Virginia where George High School is located.

WBL program models "provide participants with opportunities to apply general skills related to holding a job in a real-world setting" (Deutsch et al., 2021, p. 12). The opportunities provided youth with occupational and basic or soft skills training in a real-world setting (Deutsch et al., 2021). In Virginia, where this study was conducted, recognized 12 high-quality WBL experiences. These experiences are coordinated by the school, related to students' career goals and interests, integrated with classroom instruction, and performed in partnership with local businesses or organizations (VDOE, CTE Resource Center, 2020). Whether in a supported program such as Youth CareerConnect or a non-WIOA-supported program such as a high school, WBL has been found to have a positive effect on employment and earnings outcome (Carter et al., 2011).

Influence of School Counselors

Solberg et al. (2018) found that school systems need to "examine and improve current career advising and development strategies school counselors" (p. 3). In their descriptive research design of 220 technical education students in the Ilorin metropolis of Nigeria, Ochayi et al. (2021) found that vocational guidance from counselors' influenced career choices. These findings imply that "students exposed to vocational guidance are likely to excel better in their career choice than others that are not exposed" (Ochayi et al., 2021, p. 428).

In a qualitative study with current and former University of Tennessee students who were past FFA members in high school, Sanok et al. (2018) revealed that college advisors' influence was one of several reasons that students chose to discontinue membership in the organization. Recommendations included that colleges "consider implementing professional development to help advisors encourage participation" (Sanok et al., 2018, p. 26). Suggestions also included that

the FFA needing to change the way it meets the changing needs and interests of its members (Croom & Flowers, 2001).

AdvanceCTE (2017) found that school counselors were one of the most trusted sources of information about CTE and its benefits. Of the parents and students surveyed, 80% identified school counselors as their source of information. However, Solberg et al. (2018) discovered, in their national survey research, that relatively few school counselors make a connection between CTE coursework and career pathways. Only 27% of middle school counselors compared to 60% of high school counselors "connect students with CTE courses or career pathways" (Solberg et al., 2018, p. 3). Those who did, found the connection to be an effective career advising strategy (Solberg et al., 2018).

Summary

In this chapter, the conceptual framework and theoretical framework, Amirianzadeh's (2012), hexagon theory of student leadership was presented relative to CTSOs. Literature thematic areas included the importance of CTSOs, changes to CTSOs, and myths versus facts about CTSOs were discussed. The literature presented in this review provided background related to the study, with a review of the history and background of CTE, postsecondary options, and perceptions. In the literature review, this researcher then delved into CTSO programs, their history, evolution, college affiliations, and value. Next, student organizations, not CTSOs, were examined in the literature. This researcher reviewed literature on the articulation agreements with community colleges and literature regarding education's relationship to the workforce. Finally, the researcher examined the influence of school counselors on a student's career choice.

Existing literature indicated that student organizations, whether CTSO, content, or PBO, affect students (Aragon et al., 2013). Plank (2001, as cited in Aragon et al., 2013) noted that

CTSO members are less likely to drop out of school. Aragon et al. (2013) also found that girls and students of color benefit slightly more from a CTSO experience than do their counterparts. Harvey (2021) noted that CTSOs offered students with learning needs a way to build self-determination skills that enriched their transitional outcomes.

The existing research also showed that CTSOs have weak advising (Solberg et al., 2018). Counselors are one of the most trusted sources of information about the benefits of CTE (AdvanceCTE, 2017). However, in a national survey, Solberg et al. (2018) found that relatively few school counselors made a connection between CTE coursework and career pathways.

In Chapter 3, this researcher presents the methodological facets of the research study that were used to answer the research question. Chapter 4 provides a detailed account of the analysis method and the results and findings. Finally, In Chapter 5, this researcher interprets the findings, implications, and recommendations for future studies.

CHAPTER 3: METHODOLOGY

CTSOs have endured and been an important part of CTE since their inception in 1917 when they were known as VSOs (Threeton & Pellock, 2010). Participation in a CTSO has the potential to add significant value to a student's CTE knowledge (Dougherty et al., 2020). By bringing together people from outside the field of education, CTSOs give high school students a learning experience that goes beyond the classroom (Taylor, 2018b).

People outside the field of secondary education might come from a local college, business and trade, or a community group (Taylor, 2018b). Through a CTSO, students are offered the opportunity to hear from other people in addition to their teacher about economics and personal finance issues and what is needed to obtain a certain type of jobs and certifications, among other educational and professional skills or opportunities. These opportunities might influence a CTSO member's postsecondary choices. Jandrin (2019) determined that, through experiences and opportunities offered through CTSOs, "a positive impact on student's career pathway choices" might occur (p. 2). The opportunities afforded through being a CTSO member influenced this researcher's college degree and career choice.

The purpose of this qualitative study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. Alfeld et al. (2006) noted that CTSOs have a positive effect on numerous outcomes connected to postsecondary student success. These outcomes included: "academic motivation, academic engagement, grades, career self-efficacy, college aspirations, and employability skills" (Stone, 2017, p. 164). A gap existed in the literature regarding a relationship between high school students who partook in a CTSO and their postsecondary choice (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a). Saed et al. (2017) pointed out that

CTSOs permit students to realize the connection between academics and career opportunities. They also indicated that CTSOs provided pathways to postsecondary employment or successful transition to college (Saed & Scates-Winston, 2017). Taylor (2018b) noted that school personnel and districts need a clear understanding of the impact that CTSO programs make on students. Taylor (2018b) also noted, "The stories of success and the impact that CTE and CTSOs have on the lives of students need to be told and celebrated" (p. 6). Brodersen et al. (2021) proposed addressing postsecondary education outcome gaps by exploring "outcomes of student subgroups" (p. 11).

Dougherty et al. (2020) stated that the extent to which a student was engaged in CTSOs might be measured by (a) whether they participated, (b) whether CTSO lined up with their area of study, and (c) numbers of years that they participated. The research question for this study was:

> How do former participants in CTSOs describe the student organization's influence on their postsecondary choices?

This research study used a basic qualitative methodology. In qualitative research, the researcher interacts with participants to gain information that is then analyzed, using open coding, to identify themes in the data (Patten & Newhart, 2018). A qualitative methodology was beneficial for the study because the goal was to explore former CTSO members' perceptions of the CTSO involvement on their postsecondary choices.

Within the umbrella of qualitative research, "between structured and unstructured" (Merriam & Tisdell, 2016, p. 110), is the semistructured interview. This researcher used this type of approach, specifically a virtual semistructured interview, to interact with former CTSO members. Virtual interviews, for documentation, allowed the researcher to video and audio record answers given by participants (Creswell & Guetterman, 2019). With virtual interviews,

"the researcher is no longer constrained by geography when considering participants" (Merriam & Tisdell, 2016, p. 116).

In a semistructured interview design, Ravitch and Carl (2021) noted, "The researcher uses the interview instrument to organize and guide the interview" (p. 134). The semistructured interview instrument (Appendix A) used in this study contained tailored questions asked across interviews. The semistructured interview design allowed the researcher to react to participant answers (Merriam & Tisdell, 2016). Therefore, the interviewer was able to ask additional questions according to the participant's responses (Ravitch & Carl, 2021).

Site Information and Demographics

The site for this qualitative study was George High School located in a midsize city in a mid-Atlantic state that currently offers four CTSOs. Taylor (2018b) found that "there is an unprecedented level of success and empowerment students can achieve through their time in CTE, especially when coupled with membership in a CTSO" (p. 6). Therefore, students and educators can learn from the stories of former members' perceptions of the CTSO involvement on their postsecondary choices. These stories could be used to inform potential changes in the membership numbers from declining to increasing membership. George High School was selected for this study because the school's CTE Department has experienced a decline in CTSO membership and, thus, pointed to understanding former members' perceptions of the CTSO involvement on their postsecondary choices.

At one time, George High School's CTE Department sponsored six CTSOs and an after-school engineering program (Lagesse, 2012). As of the 2022–2023 school year, this school had four CTSOs and no after-school engineering program. In 2022, the after-school engineering program merged into the TSA CTSO. In 2014, a lack of interest occurred; therefore, the CTSOs

Teachers for Tomorrow and Future Educators of America were disbanded. Membership numbers for all CTSOs are maintained at the national level. As of 2022, 2,027,880 students were members at the national level that were part of eight CTSOs that aligned "with 16 career clusters and 79 career pathways recognized by CTE" (NCC-CTSO, 2022, para. 1). CTSOs are considered cocurricular and can be used as an instructional tool within CTE courses (Stringer, 2018).

The problem that this researcher examined in this study was a gap in the literature regarding a relationship between high school students who participated in a CTSO and their postsecondary choices (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a). Alfeld et al. (2006) suggested that studies with students who participated in CTSOs in high school were needed to examine students' post-high-school path. Brodersen et al. (2021) proposed addressing postsecondary education outcome gaps by exploring "outcomes of student subgroups" (p. 11). Therefore, the purpose of this qualitative study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school.

From 2019 to 2022, the site had an average of 1,848 students in Grades 9–12 (VDOE, 2023). During that same time period, an average of 261 students in Grades 10–12 were CTE completers (VDOE, 2023). A CTE completer, as defined by the Data Management Division of the VDOE OCTAE (2018), is "a student who has met the requirements for a CTE concentration (sequence)" (p. 3). A concentration, also defined by the Data Management OCTAE "is a coherent sequence of state-approved courses as identified in the course listings" (p. 3). Since CTSOs are cocurricular, students partaking in a CTE course were participating in CTSO activities (Stone, 2017).

Participants and Sampling Method

To be eligible for this qualitative research study, potential participants must have been a former CTSO member at George High School. They also had to be older than age 18, and at least 9 months removed from graduation. The participants had to have been members of a CTSO for at least 1 year while they were at George High School.

After obtaining the Institutional Review Board approval (Appendix E) from the University of New England, this researcher used the purposeful sampling method to recruit participants. Purposeful sampling was conducted via a recruitment email to current and former CTSO advisors. The CTSO advisor emails are publicly available emails. The recruitment email stated that original invitees may forward the email and invite former members of CTSOs who have graduated from George High School to voluntarily participate in the research study. For this study, purposeful sampling was relevant and useful because it may have been difficult to contact participants as their current contact information may not have been known by this researcher. Naderifar et al. (2017) noted the purposeful sampling method may be used when it is difficult to contact participants.

The Advisor Recruitment Email (Appendix B) explained the study's purpose and asked current and former advisors of CTSOs for assistance in contacting previous CTSO participants. This researcher attached the Participant Information Sheet (Appendix C) to the recruitment email written for former CTSO members. The email to current and former advisors of CTSOs noted that they may forward the email and invite former members of CTSOs who have graduated from George High School to voluntarily participate in this research study. Former CTSO Member Recruitment Email (Appendix D) asked for volunteers to participate in this research study and requested they email the researcher directly if former CTSO members were interested in

participating. This researcher used a master list to hold the names and emails of the participants during the recruitment phase.

The sampling method for this research study was purposeful sampling. Purposeful sampling, as defined by Ravitch and Carl (2021), means the researcher purposefully selects people to take part in the research for a specific reason. In qualitative research, researchers regularly use purposeful sampling (Patten & Newhart, 2018). To explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school, 13 former members of CTSOs who had graduated from George High School self-identified as meeting the criteria.

In qualitative research, there are no set rules "when it comes to having a certain number of participants" (Ravitch & Carl, 2021, p. 83). Saturation is the point at which data collection no longer produces new themes, new information, or adds to existing themes (Creswell & Guetterman, 2019). Patten and Newhart (2018) point out that the minimum sample size for qualitative research varies with an average participant number of 13, for "qualitative research studies ranged from 10 to 26 participants" (p. 115). The researcher sought to recruit a minimum of 13 participants and no more than 18 participants for the research study, which was the average number that Patten and Newhart (2018) had determined for qualitative studies. This researcher acknowledged that more than 13 participants might have been needed to obtain data saturation, but capped recruitment at 18 participants. Thirteen participants were recruited for this research study.

Instrumentation and Data Collection

Qualitative results were presented through words (Patten & Newhart, 2018). This was accomplished by interviewing people and then, analyzing the data by reviewing interview transcripts (Patten & Newhart, 2018). Instrumentation for this qualitative study consisted of virtual interviews that were approximately 60-minutes in length with each participant using the Zoom (2023) platform**.** Specifically, this researcher used a semistructured interview conducted synchronously (in real time) to interact with former CTSO members. Interviews were recorded via Zoom. Once member checking of the transcript was completed, the recorded Zoom interviews were destroyed.

Patten and Newhart (2018) noted the semistructured interviews are the most common type of "measure for collecting date" (p. 161). Semistructured interviews allowed the interviewer to reword the question and as follow-up questions (Patten & Newhart, 2018). Additionally, there was no predetermined order for the questions to be asked (Merriam & Tisdale, 2016).

A virtual interview allowed the participant's geographical not to be known to protect participant confidentiality (Merriam & Tisdell, 2016). In addition, to protect further the participant's confidentiality, this researcher removed direct identifying data from the transcript. Garfinkel (2015) defined direct identifying data as "data that directly identifies a single individual" (p. 15). Deidentification was accomplished by replacing names with generic information and pseudonyms (e.g., Participant A).

Data collection was completed by this researcher asking eligible participants open-ended questions in hopes of obtaining impartial answers (Quad, 2016). Participants were allowed to talk openly about their experience as a member of a CTSO and describe the student organization's influence on their postsecondary choices. The interview protocol included

obtaining informed consent to interview and record before each semistructured interview began. Participants were informed they had the right to choose not to participate, or to withdraw their participation at any time until the Master List was destroyed without penalty or loss of benefits. Once the semistructured interview and recording had begun, if a participant withdrew their consent, the researcher would destroy any recordings or transcriptions related to that participant. None of the participants withdrew from the study.

The interview protocol included an introduction to the interview that consisted of stating that the interview was taking place using Zoom (2023), name of interviewer, goal, length of interview, and all identifying information would be deidentified. The introduction also included that the interview was both video and audio recorded. Participants had the choice to have their video on or off. Interviewees were asked if they had any questions for the interviewer and if they agreed to have the interview recorded. With Zoom interviews, audio transcription was enabled. This audio transcription feature allowed the interview audio recordings to be transcribed automatically via the Zoom (2023) application. Deidentified transcripts were shared with each participant for review after the interview and before coding was conducted.

Transcriptions from each interview were automatically emailed to this researcher via Zoom (2023). This researcher destroyed all recordings immediately after transcriptions were completed, de-identified, and reviewed by the respective study participant. Transcripts will be maintained for 3 years then destroyed after that time.

Interviews transcriptions included information regarding the interview, interviewee, topic, date, and length of time of interview. De-identifying and coding of the interview was conducted manually by this researcher. This researcher then used member checking to further enhance the dependability of the results (Patten & Newhart, 2018). Member checks were used to

check the accuracy of the transcription (Creswell & Guetterman, 2019). Member checking, also known as participant validation strategies, creates an environment where study participants can speak about the study (Ravitch & Carl, 2021). Participants were sent the transcripts of their interview for review and had 7 calendar days to return them to this researcher with any changes. If transcripts were not returned within the specified time transcripts were considered approved. For security purposes, the Zoom (2023) interview recordings and transcripts were saved on this researcher's personal OneDrive account through the University of New England; no other person had access to these files. This researcher destroyed the Zoom interview recordings upon participant approval of the interview transcripts.

Data Analysis

Qualitative data analysis involves (a) looking across the collected data set to recognize and create themes that eventually turn into findings and (b) assisting in answering the research question (Ravitch & Carl, 2021). After the interviews were automatically transcribed via the Zoom (2023) application, the participants reviewed their interview transcriptions, and then this researcher manually coded the transcripts. Coding, as Merriam and Tisdell (2016) described, is the method of making notes next to bits of data that the researcher feels is potentially relevant for answering the researcher's research question. In this research study, this researcher used open coding to start the coding process.

This researcher conducted the open coding of the transcripts manually. Merriam and Tisdell (2016) referred to open coding as "what one does at the beginning of data analysis" (p. 229). The coding process then moved to NVivo coding. Miles et al. (2020) defined Nvivo coding as using "words of short phrases from the participant's own language in the data record as codes" (p. 74). These coding methods were used to code the data collected in each interview. A

table for coding consisting of four columns and several rows was created using tools in Microsoft Word. One row was reserved for each question and answer. In the left column, the transcriptions were broken down into cells. In the right column, this researcher used Nvivo coding to "keep the data rooted in the participant's own voice" (Saldaña, 2016, p. 7). In the left column, the researcher highlighted excerpts. The right column, across from the highlighted excerpt, the researcher wrote down a word or words that represented that text. Finally, this researcher used descriptive coding to "document and categorize the breadth of opinions stated by multiple participants" (Saldaña, 2016, p. 7).

Each time a new word represented an excerpt, this researcher highlighted text in a different color. This allowed each Nvivo code to stand out. If there were more Nvivo occurrences than there were different highlight colors, this researcher used the shading tool located in the paragraph section of the home tab in Microsoft Word (Microsoft Support, 2023). Upon review, this researcher was able to capture essential elements and, when they were grouped together, "they actively facilitate[d] the development of categories and thus analysis of their connections" (Saldaña, 2013, p. 8). Reviewing the Nvivo codes allowed the researcher to "ascertain 'what' the interviewee feels, "and 'why' they feel that way" (Basit, 2003, p. 151). Finally, this researcher used descriptive coding to "summarize the primary topic of the excerpt" (Saldaña, 2016, p. 3). This process provided the researcher with information on the perceived influence of a CTSO participant's perception on postsecondary choices.

Limitations, Delimitations, and Ethical Issues

Every study has limitations, "matters and occurrences that arise in a study which are out of the researcher's control" (Simon & Goes, 2013, p. 1). These limitations or weaknesses might affect understandings of the findings (Patten & Newhart, 2018). Limitations in this qualitative

study included certain biases that needed be taken into consideration. First, study participants were specific to people who were involved in a CTSO while they were in high school. Second, the number of former CTSO members that were recruited from each CTSO varied. Finally, because the scope of this study was limited to one high school within a midsize city school system, one cannot apply a broad view of the results. Purposeful sampling and the eligibility criteria did not allow participants other than those who had graduated from George High School.

Delimitations define the boundaries of the study (Simon & Goes, 2013). In this qualitative study, the delimitation was its sample size. For this study's sample size, the researcher made the choice to recruit at least 13 participants, and no more than 18 participants. Patten and Newhart (2018) determined that the average number of participants for qualitative studies should be 13 participants. The location was also a delimitation because this researcher chose to use as participants who were graduates from a single school.

Ethical issues might arise at any stage in the research process (Sanjari et al., 2014). Ethical considerations "are associated with methods of right and wrong" (Patten & Newhart, 2018, p. 32). This researcher's considerations for this qualitative study were (a) to inform the participants of the study's purpose, (b) to refrain from deceptive practices, (c) to share information with the participants, and (d) to maintain confidentiality to protect the participants (Creswell & Guetterman, 2019). Maintaining a quality research design was imperative to ensure that this researcher upheld the highest ethical standards to protect all data collected and the participants. By using virtual interviews to gather data, protection of participant's rights included informing them about the study, using pseudonyms, and destroying all recordings and transcripts related to the participants' contributions to maintaining participant confidentiality.

The Belmont Report (Office of Human Research Protections, 1979) provided guidelines for using ethical practices in research with human subjects. The three principles outlined in the *Belmont Report* included respect for person, beneficence, and justice. A Participant Information Sheet was given to the participants before this researcher conducted the interview. At any time, if the participant withdrew from the research study, all recordings and transcripts related to the participant were destroyed. Not only was a participant's decision respected, but all efforts were made to secure their well-being so as not to do harm (Office of Human Research Protections, 1979). None of the participants withdrew from the research study.

Beneficence refers to the responsibility to maximize benefits and to reduce harm to study participants (Office of Human Research Protections, 1979). This study was designed to have minimal to no risks to participants. Potential risks included breach of confidentiality. Efforts to maintain the confidentiality of the participants included using pseudonyms when transcribing the interviews, using gender-neutral pronouns, and neutralizing any other personal information (e.g., location of their current job). This researcher's study was not one of a medical investigation and participants were older than Age 18; nevertheless, they still had the right to anonymity. If any of their personal information was exposed, it could cause harm (e.g., identity theft). Each participant, regardless of their decision was treated equally, for they were all equals (Office of Human Research Protections, 1979). To ensure no injustice occurred, the participants who chose to participate were shown the same courtesy during and after the interview and were asked the same questions.

For this research study, there were "fair procedures and outcomes in the selection of research subjects" (Office of Human Research Protections, 1979, p. 9). The participants were selected according to whether they were former CTSO members who graduated from George

High School. Throughout the process of ensuring that this research study adhered to the basic ethical principles and their application, ethics of care (Office of Human Research Protections, 1979) were taken. Regarding the philosophy of the ethics of care, Cahn (2019) noted that Virginia Held stated that the philosophy ethics of care "is concerned especially with fostering connectedness among people" (p. 124). In this basic qualitative research study, the philosophy ethics of care is this researcher's responsibility to care for the needs of those participating in this research study. This researcher ensured (a) that the virtual links for the participants to connect through Zoom (2023) for the interviews worked, (b) that time of interview was adhered to, and (c) that all participants received the same consideration.

A researcher–participant relationship can raise a variety of different ethical concerns (Sanjari et al., 2014). In this study, a bias that could influence the study was the researcher's relationship to the participants. The relationship was one in which the participants might have known this researcher as a former employee when they attended George High School. This researcher addressed potential past relation to participants bias by stating how the participant might have known this researcher. Eleven of the 13 participants knew this researcher from when this researcher served as an employee for George High School.

In qualitative research, for data collection and analysis, the primary instrument is the researcher (Merriam & Tisdell, 2016). According to Polit and Beck (2014), bias is "commonly understood to be any influence that provides a distortion in the results of a study" (p. 1). This researcher's bias was personal. To minimize this underlying bias, before the interview, this researcher reviewed the purpose of the interview and kept a journal.

Trustworthiness

Also known as the "truth value of qualitative research" (Connelly, 2016, p. 435), trustworthiness is about being able to trust the results from the research (Merriam & Tisdell, 2016). Criteria or standards include credibility, transferability, dependability, and confirmability (Guba, 1981). These components are commonly accepted, for they assist researchers to conceptualize, connect with, and plan for a variety of facets of validity (Ravitch & Carl, 2021). Each of these criteria is outlined below.

Credibility is the researcher's ability to consider all intricacies that come forward in a study (Guba, 1981, as cited in Ravitch & Carl, 2021). It establishes whether research findings are reliable information that was drawn from participants' original data (Korstjens & Moser, 2017). In the end, credibility assists the researcher with showing how the study's puzzle pieces connect (Ravitch & Carl, 2021).

The following strategies were used to ensure credibility of this study's findings: prolonged engagement, persistent observation, and member checking (Korstjens & Moser, 2017). Accounting for personal bias that might have influenced results, and rich, thick, and verbatim descriptions of participants, former CTSO members' accounts were included to support results (Noble & Smith, 2015). Each of these strategies helped validate credibility of the research study.

Transferability is the way in which findings are useful to persons in other settings (Connelly, 2016). This researcher supported the study's transferability "with a rich, detailed description of the context, location, and people studied, and by being transparent about analysis and trustworthiness" (Connelly, 2016, p. 436). Readers should be able to review the findings and apply them when conducting similar studies (Ravitch & Carl, 2021).

Dependability denotes stability of the data (Ravitch & Carl, 2021). To show dependability, this researcher maintained an audit trail by using a process log (Connelly, 2016). The process log included all activities that happened during the study (Connelly, 2016).

Confirmability means that "the degree findings are consistent and could be repeated" (Connelly, 2016). To show confirmability, as noted relative to dependability, this researcher maintained an audit trail. This audit trail included detailed notes of all decisions and analysis of progression (Connelly, 2016).

Summary

This chapter provided a description of the chosen methodology for this qualitative research study that explored the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. The following research question guided the study:

How do former participants in CTSOs describe the student organization's influence on their postsecondary choices?

A qualitative methodology was used in this research study through semistructured interviews with 13 participants. Site information and demographics, participants and sampling method, and instrumentation and data collection were also presented in this chapter. The data analysis process along with limitations, delimitations, and ethical issues were explained. Finally, trustworthiness was addressed. Chapter 4 provides a detailed account of the analysis method and present the results and findings of the study. Finally, in Chapter 5, the researcher discusses the interpretation of the findings, implications, and recommendations for future studies.

CHAPTER 4: RESULTS

The purpose of this qualitative study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. AdvanceCTE (2017) conducted a study, using focus groups made up of current and prospective parents and students who had been involved in CTE and who completed a national survey that explored attitudes toward CTE and the opportunities it offers. AdvanceCTE concluded that CTE and CTSOs were valued by current and prospective parents and students. Alfeld et al. (2006) suggested that studies with students who participated in CTSOs in high school needed to be conducted to examine their post-high-school path. Dougherty et al. (2020) suggested that partaking in a CTSO might add a significant advantage to a student's postsecondary choice. Brodersen et al. (2021) proposed addressing postsecondary education outcome gaps by exploring "outcomes of student subgroups" (p. 11). Thus, pointing to a gap in the literature regarding a relationship between high school students who participate in a CTSO and their postsecondary choice.

Amirianzadeh's (2012) hexagon theory of student leadership provided the theoretical framework for this study. In the hexagon theory of student leadership, Amirianzadeh (2012) considered "factors affecting the student leadership development from individual, group and social aspects" (p. 333). In the theory, Amirianzadeh's (2012) explained that a student's leadership develops "through a change in attitude, knowledge, skill and behavior" (p. 334). Amirianzadeh's noted that this adjustment happens because there is more involvement from the student. Therefore, in combination with the theoretical framework, this study was guided by the following research question:

How do former participants in CTSOs describe the student organization's influence on their postsecondary choices?

The researcher used a qualitative methodology, with a semistructured interview to collect data. The researcher used this type of approach, specifically a virtual semistructured interview, to interact with the participants. Virtual interviews allowed the researcher to video and audio record responses from participants (Creswell & Guetterman, 2019).

The interview protocol included obtaining informed consent to interview and record before each semistructured interview began. The participants were informed that they could withdraw from ~~of~~ the study at any time. Once the semistructured interview and recording began, if a participant were to withdraw their consent, the researcher would destroy any recordings or transcriptions related to that participant. None of the participants withdrew their consent.

The participants were recruited using the purposeful sampling Advisor Recruitment Email to current and former CTSO advisors. Thirteen participants, who met the study's requirements of being (a) a former CTSO member at George High School, (b) older than Age 18, and (c) at least 9 months removed from graduation, contacted the researcher to schedule a virtual interview. Interviews consisted of seven questions in a semistructured format. The interviews ranged in length from 7 to 25 minutes. Recorded interviews were auto transcribed with Zoom (2023). After each interview, the researcher reviewed each line of the transcript in conjunction with listening to the recording to ensure accuracy. While reviewing the transcript, the researcher de-identified the transcript and assigned a letter of the alphabet in place of each name (e.g., Participant A through Participant M) as a pseudonym. Also, when reviewing the transcript, the researcher de-identified any teacher that the participant might have discussed. Each teacher that a participant mentioned was assigned a letter of the alphabet (e.g., Mr. or Mrs. N through O) as a

pseudonym. The researcher provided each participant the opportunity to perform a member check of the transcribed interview. The participants had 7 calendar days to review the transcription for accuracy and to make changes. If the participants did not return the transcript after 7 calendar days, the transcript was deemed to be approved by default. Video recordings of interviews were deleted after the approval of each transcript. A master list was used to hold the names and emails of the participants during the recruitment phase.

Analysis Method

Once the participants had approved the transcripts (four via email and nine by default), this researcher then read each transcription in advance of beginning the coding process. Each participant interview was individually coded before the data was collectively analyzed so that this researcher could identify overarching themes. As part of the initial coding process, this researcher used open coding, making notes next to bits of data that struck this researcher as possibly pertinent for answering this study's research question (Merriam & Tisdell, 2016). After open coding, this researcher moved to NVivo coding. This researcher used "words of short phrases from the participant's own language in the data record as codes" (Miles et al., 2020, p. 74). This process ensured that the data remained rooted in the interviewee's own voice, as Saldaña (2016) recommended. Finally, this researcher used descriptive coding to "document and categorize the breadth of opinions stated by multiple participants" (Saldaña, 2016, p. 7).

The first cycle of coding resulted in 35 unique codes throughout the 13 participant's transcripts. These participants represented three CTSOs in which former interviewees participated during their time at George High School. Examples of the unique codes generated were weaknesses and strengths, skills learned, skills grew, discovered future, and outside influences. NVivo coding, the second cycle of coding, allowed this researcher to ensure that the

data stayed grounded in each participant's own language. Finally, using descriptive coding, this researcher "summarized the primary topic of the excerpt" (Saldaña, 2016, p. 3). The 35 codes, 11 categories, and 4 themes that were determined after this researcher read and reviewed the transcriptions and conducted three rounds of the coding process are represented in Table 1.

Table 1

Codes, Categories, and Themes

Codes	Categories	Themes
Skills, communication, research, time management Grew and got better at skills Learned a lot of soft skills Skills helped participant Valuable skill	Professional communication	Theme 1: Use of soft skills
Producing a presentation Public speaking experience	Presentation: Public speaking	
Team building Common goal Helped develop skills and teamwork	Teamwork: Working with others	
Business-related, like field trips Two field trips to institute of higher learning	Exposure: College field trips and fields of study	Theme 2: Engaging with others
Community outreach Important thing is the outreach Outreach position	Outreach: Community	
Network with individuals Networking skills	Networking: People in the field, students from other regions, states, and countries	
Able to apply a lot of skills Economics competition Health ethics competition International competition MATE ROV competition Prior to doing the competition Regional competitions	Demonstrate skills and compete at different levels	Theme 3: Participation in conferences

Codes	Categories	Themes
Good mental space Not weird for being the only girl in class Seeing other Black people, Brown people who look like me	Chance to be seen and see "other like-minded participants"	
Advisor believed, shaped members, mentor very encouraging Advisor's structure important	Advisors "motivated"	
Held office, chairman of fundraising, secretary Leadership exercises	Student leadership	Theme 4: Leadership preparation
Liked working closely with members Fantastic mentors Happy with mentor Mentor cared	Mentors: College, work	

All codes were determined from how former participants in the CTSOs described their student organizations influence on their postsecondary choices. The next section provides a presentation of results and findings from the interview data collected in this study.

Presentation of Results and Findings

Thirteen eligible participants who were former members of three different CTSOs were recruited for this study. All of the participants met eligibility criteria of being (a) a former CTSO member at George High School, (b) older than age 18, and (c) at least 9 months removed from graduation. The participants' experiences were gathered through virtual semistructured interviews that averaged 16 minutes in length from a range of 7–25 minutes. The semistructured interviews were conducted during May and June of 2023.

Individual Experiences

The following descriptions attempt to depict how each participant described their experience as a CTSO member. Within each participant's description are examples of how the former student perceived that the CTSO influenced their postsecondary choices. The participants

of the study were between 20 to 30 years old. As shown in Table 2, 9 of the participants were women and 4 of the participants were men; 1 participant was biracial, 7 were Black, and 4 were White.

Table 2

Participant Demographic Data Information

Demographic data	Participants
Gender Identity:	
Female	9
Male	4
Race:	
Biracial	1
Black	7
White	5
2-year institution of higher learning:	
Currently attending	1
4-year institution of higher learning:	
Currently attending	4
Degree Completed	6
Has a job in their field of study	6
Pursuing master's degree full time	1
Advanced individual training school as a member of the U.S. Army Reserves:	1
Attending and is working full time	

Regarding college and workforce, the demographic data information regarding the groups of participants were (a) 2-year institute of higher learning (one is currently attending), (b) 4-year institute of higher learning (four are currently attending, six have completed their degree and have a job in their field of study, and one has completed their degree and is pursuing their

master's degree, and (e) Advanced Individual Training school as a member of the U.S. Army Reserves (one attends and is working full time). Each participant in this study attended George High School. George High School represents a high school located in a midsize city in a mid-Atlantic state of the United States. Each participant interview was individually coded before the data was collectively analyzed to generate overarching themes. To protect confidentiality, a letter of the alphabet pseudonym (e.g., Participant A through Participant M) was assigned to each participant. The participant's individual data was reviewed to understand each participant's experience. After reviewing their individual experiences, the overarching themes will be discussed.

Participant A

Participant A was a member of their CTSO for 1 year. Participant A is 20 years old and is pursuing a degree in computer science and cybersecurity, while working part time. The last time that Participant A was a member of a CTSO was 4 years ago in 2019. When asked what type of activities they participated in as a member, Participant A stated, "Meetings and building research skills." Participant A described their overall experience as a CTSO member as "positive." When reflecting about participating in the CTSO, Participant A stated,

> I feel like I picked up a lot of skills. I got to meet some new people, that I feel like really gave me perspective. So, I feel like overall it made me a better student and definitely gave me skills I use to this day.

Reflecting on whether they believed their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant A stated, "Yes." Participant A elaborated on how they think it prepared them to enter the workforce or enter college saying,

> It definitely gave me some of the necessary skills I needed to be successful in the STEM field. Not just in my specific area of study, but I think in general in the STEM field. It taught me the importance of time management one, how to work with a group, how to network with individuals, and most importantly as I already brought up, how to research.

Participant A discussed how they believed that the CTSO *somewhat* influenced their postsecondary choice. They spoke of making informed decisions using the research skills that they had learned while participating in their CTSO, which is further illustrated with the statement,

> I'm really good at gathering information on anything now to be honest. So, when it came time to choosing schools, I was able to take some of that knowledge and apply it to finding schools and attending the university that would work best for me.

Relating their CTSO experience to college, Participant A thought that all of the skills learned in the CTSO "apply to really just being a good college student." Even though Participant A did not "spend too much time in the program," they felt like it gave them "a little boost in those skills helping me be successful at my current level," which was as a college student and a part-time worker.

When asked whether they would like share anything else that had not already mentioned, but that they would like to say about being a member of, participating in, or influenced by a CTSO regarding their postsecondary choice, Participant A said that they "felt like I mentioned everything." They were thankful for the opportunities afforded them by the CTSO. For all the CTSO had done for Participant A, they felt a way to give back was to partake in this study.

Participant B

Participant B was a member of their CTSO for 3 years. Participant B is 20 years old and pursuing a degree in civil engineering technology to be a technician, while working as an informational technology consultant at their 4-year institute of higher learning. The last time that Participant B was a member of a CTSO was 3 years ago. Elaborating on what type of activities they participated in as a member, Participant B stated, "Competitions, community outreach, fund raising, and field trips." Participant B described their overall experience as a CTSO member, stating, "To this day, I say it was the number one influence through high school and my entire time in the school system that shaped me and guided me into the person I am today." When reflecting about participating in the CTSO, Participant B stated,

> I had an opportunity to engage with fantastic mentors who were truly, truly committed to making sure that the girls involved in my organization were going to present the best versions of themselves in every part of their lives. Whether that was academically, socially, what not. We really were given the opportunity to grow our interests, learning and everything related to STEM and not even just STEM just I think every single thing that we did through the organization shaped me positively.

When asked whether they believed their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant B stated, "Absolutely." Participant B reflected on how the CTSO prepared them to enter the workforce or enter college, saying, "Personally, I sort of stuck with the STEM engineering route so what I am doing now is directly correlated to the subject matter and everything in which we did in my program."

Participant B discussed how they believed the CTSO "absolutely" influenced their postsecondary choice. Participant B spoke of connections that they

> fostered with the program are not compared to anything else that I would have been able to do. Peers of mine who are experiencing high school under the same circumstances, who did not participate in these programs, they definitely did not walk away with the same professional advantages that I did.

Participant B is "extremely thankful for the opportunities that I was given." These opportunities were positive influences on the participant. Participant B also stated that, even if they had decided to go down a path not related to STEM, they "can still confidently say that I would be positively affected" by their CTSO. When asked whether they would like to say anything else that had not yet been mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant B stated,

> It's the one thing I have included on my resume. I'm still very connected with a lot of the girls who were involved, which is very rare. I was very blessed to have a supportive family and a community allowing me to be involved in so many activities and without a doubt the CTSO that I was involved with, we're more connected than other organizations I was in. We professionally are connected, we socially are connected, we were just taught to support each other to constantly be learning.

Of their high school career, Participant B noted that the CTSO was the highlight of it. Participant B still cherishes the documentation from all the experiences. Finally, Participant B noted that they think it is sad that more students, whether they were interested in STEM or not, did not join the CTSO.

Participant C

Participant C was a member of their CTSO for 1 year. Participant C is 23 years old, graduated with a degree in mathematics from a 4-year institute of higher learning. At the time of

the interview, Participant C was teaching mathematics at George High School. The last time that Participant C was a member of a CTSO was 6 years ago in 2017. When asked what type of activities they participated in as a member, Participant C stated, “Field trips.” Participant C described their overall experience as a CTSO member as (a) making a big impact, (b) feeling supported, and (c) “the best $20 I’ve ever spent.” Reflecting about participating in the CTSO Participant C stated,

> I was a lower income student, like my mom is a school bus driver for the school system and my dad is not really in the picture, so the fact that so much of the program is subsidized. I got so much out of it for so little, which I think is one of the key things is accessibility. I mean Mr. N. [a pseudonym] bought me a pair of khaki pants to support me. That was something that really stuck with me. I remember it being a supportive environment. There are a lot of opportunities for you to succeed.

When asked whether they believed their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant C stated, “Yes and no.” Explaining their answer, Participant C noted that, on paper, the answer would be “No.” Their study of economics did not continue in college. Reflecting on their “Yes” answer or how they thought it prepared them to enter the workforce or enter college, Participant C discussed field trips where they learned a lot of soft skills such as communication, public speaking, time management, and teamwork while working on projects with other CTSO members. Those soft skills they are using in their current job as a teacher.

Participant C discussed how they believed that the CTSO influenced their postsecondary choice. They spoke of competitions,

> When Mrs. O. (a pseudonym for the advisor) told me that I had to go to the library to take the test, I had no idea what I was doing. I used common sense and got second place. I then took it a little bit more seriously and that got me second place in state, but I did not make it all the way to nationals for placement. To this day I'm extremely passionate about economics.

Relating their passion for economics to their college experience, Participant C stated that they

> Went halfway through college and was giving up on my engineering major, the first thing I asked the college to switch me to was economics. They were phasing out their Bachelor of Arts in economics in favor of a bachelor's in business administration with a major in economics which was not what I wanted to do. But yeah, it's had a huge impact.

When asked whether they would like to say any else that had not yet been mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant C stated that the CTSO "showed me a lot of motivation." In the CTSO, Participant C met students who wanted a better future for themselves. As a current teacher of mathematics, Participant C shared that they do not see much motivation among the students in their classroom.

Participant D

Participant D was a member of their CTSO for 2 years. Participant D is 26 years old, graduated with a degree in financial economics from a 4-year institute of higher learning. At the time of the interview, Participant D was working for the United States Bureau of Labor Statistics. The last time that Participant D was a member of a CTSO was 8 years ago in 2015. Elaborating on what type of activities they participated in as a member, Participant D stated, "Chairman of fundraising for our local chapter as well as a general member." Participant D described their overall experience as a CTSO member as "good" and that they "liked it."

Reflecting about participating in the CTSO, Participant D stated that the early stages of the CTSO were focused on the "importance of knowledge and understanding of the business world and the financial world. In general, taught financial literacy and as well as what to expect when going into the workplace."

When asked whether they believed their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant D stated, "Absolutely." Reflecting on how they think it prepared them to enter the workforce or to enter college, Participant D elaborated, saying,

> I thought the CTSO taught very good time management skills. It taught me how to work with others towards just a common objective whether it be raising funds for the local chapter, figuring out how to set up a one-on-one at a career fair, and a number of other things that I found myself repeating like competitions and university trips.

Participant D discussed how they believed that the CTSO "absolutely" influenced their postsecondary choice. Participant D said that their reason for joining the CTSO was to hone their time-management skills and to gain an understanding of working with others in a professional environment toward a common objective:

> Part of my reason for joining the CTSO was also my intent to go into a postsecondary education institute, and so joining the group would help with better training my time management skills, give me a little bit of insight and help working with groups in a more professional environment. But I would say it definitely prepared me a little bit more for college and time management and working with others toward a common objective.

When asked whether they would like to say anything else that had not yet been mentioned about being a member of, participating in, or the influence that a CTSO had on their postsecondary choice, Participant D stated,

> My involvement in the CTSO presented more challenges for me to learn how to overcome. I'd say that's another good benefit towards joining one of these organizations. It gives you obstacles to overcome as well as it helps you develop skills and teamwork.

Participant D stated that there were two "big takeaways" from joining a CTSO. One was that they had opportunities to learn how to overcome barriers. The other, within those same opportunities, was that one got to learn skills that could be used in college or the workforce.

Participant E

Participant E was a member of their CTSO for 2 years. Participant E is 30 years old, graduated with a degree in Business from a 4-year institute of higher learning. At the time of this interview, Participant E was teaching business courses at George High School. The last time that Participant E was a member of a CTSO was 12 years ago in 2011. Stating the type of activities that they participated in as a member, Participant E stated, "Competitions." Participant E described their overall experience as a CTSO member as "phenomenal." When reflecting about participating in the CTSO, Participant E stated,

> We did a CTSO competition where we had to construct our own business and work through the components of budget, data analysis, target audience, profit margins, all the things and oh and team building and leadership exercises. Those were my favorite.
>
> I got the opportunity to see the importance and the urgency of education, of my personal development right. Aside from books, you know, studying in the classroom, I really got to put some of my natural characteristics to the test and was also able to develop even

> greater social skills, speaking skills, things I didn't have language for at the time. It helped to provide me a greater outlook on who I can become right and the possibilities.

When asked whether they believed that their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant E stated, "100%, yes." Reflecting on how they think it prepared them to enter the workforce or enter college, Participant E elaborated,

> I think that it cut the tension and the fear. I also remember seeing other Black people, Brown people who look like me you know and in higher positions and who were extremely influential in their area of expertise and that helped to solidify me. Well, helped to solidify in my mind that anything is possible. That the work ethic and, attentionally, that a person has can get them in areas that they never even would've imagined.

Participant E discussed that they believed that the CTSO, "100%", influenced their career and future possibilities,

> It influenced me in my career, influenced me in my thinking right in my mindfulness of the possibilities that are ahead. I think sometimes all of us, well me, I won't speak for everybody, I limit myself, so the CTSO just created ample amount of opportunities that I am living today.

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, in speaking for themselves Participant E thought that it was easy for them,

> to overlook all the wealth of information that I received. I also remember not really appreciating the leader at the time, the instructor at the time, like not to the degree that I do now and so I would say that this program it's vital. It's just as necessary as arithmetic,

> as any history, as any science, whatever there is this program helps to create and helps subvert students and even when they don't recognize it. And so, if I could go back 12 years ago, the first thing I would say is thank you because that wasn't my first response initially. It was more so like we're here, this is cool. But now I just have a greater and deeper appreciation for the program itself and for the instructor.

More than team building and learning leadership skills, Participant E indicated that, through their CTSO experiences, they were able to see people in a professional capacity who looked like them. They learned about the significance of having an education beyond high school. Now, as they look back, they are grateful for the CTSO and its advisor.

Participant F

Participant F was a member of their CTSO for 4 years. Participant F is 20 years old and is pursuing a degree in environmental science while working at their 4-year institute of higher learning. The last time that Participant F was a member of a CTSO was 3 years ago in 2020. When asked what type of activities they participated in as a member, Participant F stated "Competitions." Participant F described their overall experience as a CTSO member as "very positive." When reflecting about participating in the CTSO, Participant F stated,

> I remember it as a very supportive freshman year because we were so close to getting first place. But, my second year, my sophomore year, we won our regional competition, and we were able to travel to Tennessee to participate in the International ROV competition and that was so cool. I met so many cool people and I got to see so many cool robots. Just to see the way other people who had won their regional competition had attacked their problems. It was really cool to see the way that everyone did it. And I definitely learned a lot throughout my years.

Reflecting on whether they believed that their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant F stated, “I think so.” Elaborating on how they thought it prepared them to enter the workforce or enter college and if not, what did, Participant F stated,

> I think that it prepared me to enter the workforce and college by giving me the opportunity to work with a team and being able to communicate with a team. And when there were times for presentations to come across, I had had experience presenting in front of a panel of judges which in high school is very scary. So, I guess it makes it a little bit less scary now that I had a little bit of experience. As far as not, because I’m not engineering; I haven’t had the opportunity to use the engineering skills that I’ve learned. But in my day-to-day life one of my graduation gifts was actually a little toolbox and I carry that around with me in case there is something I need to fix.

When asked whether they believed that the CTSO influenced their postsecondary choice, Participant F discussed how they thought “so, in a way.” Participant F stated that they are “not an engineer, but I definitely did learn that I really enjoy doing things hands on.” Participant F noted,

> My major is something where I have an opportunity to work with my hands and do things that don’t involve sitting at a desk. I honestly chose not to go into engineering because math is a bit of a struggle for me so while I enjoyed my time working in like engineering things. I know engineering is very math heavy. It wasn’t enough for me to want to pursue a career in engineering where I thought it would be something I might struggle through. I chose to do something I was passionate about that I thought was doable.

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant F stated,

> Being able to keep in contact with the alumni and seeing kind of like what options there are for someone like me and someone who has my interests. And, when we travelled to the national competition and just seeing what other options there were. The ROV competition I feel like gave me kind of like a practical application.

As of 2023, Participant F was pursuing a degree in environmental science versus engineering. However, through their CTSO, Participant F learned about the enjoyment of doing things hands on. Participant F shared that, through travels with the CTSO, they had real-world experiences that allowed them to see career options.

Participant G

Participant G was a member of their CTSO for 2 years. Participant G is 20 years old and is pursuing a degree in aerospace engineering while working at their 4-year institute of higher learning. The last time that Participant G was a member of a CTSO was 3 years ago in 2020. Participant G stated that the types of activities that they participated in as a member were that they "held office" and did "community outreach." Participant G described their overall experience as a CTSO member as "wonderful." Reflecting about participating in the CTSO, Participant G stated,

> Very educational and eye opening on a personal level. I learned a lot of public speaking skills, technical and hands on skills all at once. And, in general it helped me in the end because I feel more comfortable with heading a meeting. Like a female presenting person of engineering as well as being an engineer. With just that what that means on a basic

> level helped broaden my horizons on a whole other level than just classroom exposure to STEM topics because that is very basic very stagnant. But then the second I came into the CTSO my overall experience helped me become a more well-rounded I would say student and future engineer.

When asked whether they believed that their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant G stated, “Yes.” Participant G elaborated on how they think it prepared them to enter the workforce or enter college, saying,

> The CTSO was very STEM related and I knew I already liked STEM, but I didn’t know what parts of STEM I wanted to specialize in like do I want to be a scientist, do I want to be an engineer, do I want to be a technician. But going into college, a lot of people say is a sorting hat of sorts. But looking at majors and minors, being able to pick which one I’m going into, especially for the school that I’m attending, you have to know exactly what you want to study by the first year of your study. So, the CTSO did that for me. It put me into a category that would help me to grow my skills with what I was interested in.

Participant G explained that,

> Working on the ROV and doing things like working on technical writing, and descriptions, and making myself more literate in engineering. That was so important, and it showed the schools that I was applying for that I was ready. It gave me experience and it showed the higher ups that I basically had what I needed to have to know that I was exploring the right topics.

Participant G discussed how the CTSO “absolutely” influenced their postsecondary choice. Participant G spoke of (a) having actual experiences that allowed them to apply skills learned in

class, b) being provided a mentor, and how c) networking opportunities assisted them being more confident in themselves and their abilities. Participant G noted,

> Being in a CTSO, I was able to apply a lot of the skills I was learning in class but more than that, the networking and having actual experiences of going out and doing things. That is super valuable in thinking about attending university. Everything factors into that and being able to have an experience is what in the end the most useful thing when deciding where I was going to go.

Being provided a mentor by the CTSO gave Participant G an opportunity to learn things from someone other than the advisor. Participant G said,

> I also liked to mention how happy I was with the mentor the CTSO provided. The CTSO provided mentors for us that came from other schools (local colleges). Which is a huge inspiration and that's something I think is incredibly necessary. They would tell us about how their school was going and show us things we wouldn't know in high school that you'll only learn outside of high school and having those skills and that interpersonal connection with those influences was helpful for me. So, that inspired me to want to help understand all the concepts that we also needed to grasp in order to compete at the level we were competing in for our competitions.

Because of the mentor's influence, Participant G stated that, for them,

> College felt like an extension of what I was doing in the CTSO instead of it being an incredibly new concept that I'm going to need in college. I was more oh I'm extending myself to an outer source of information that I already know about. It helped me become more comfortable with the skills I have to branch out to a higher level of learning.

One of the more vital things, cited by Participant G, was that their CTSO offered was

> The outreach networking that I was able to collect over the years was so crucial because we were able to meet college students all over the world that had experience with engineering and especially working closely with them and my teachers and mentors just made it more comfortable as someone with zero real world job experience to be I can actually jump into that and do those things so it was more than just being introductory, it was very experiential for me and it helped with just being more confident in myself and my abilities.

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant G said,

> I wish I had joined earlier because it's such a great opportunity to take advantage of. Just having it there was a reassurance in my mind while I was still deciding to join, but there was something there to support my path.

After joining the CTSO, Participant G noted,

> It put me in a really good mental space. It calmed me down and made me realize there's girls out there that want to do the same thing as me. I'm not weird for being the only girl in my class or being smart but not being seen and it feels like it's a voice that doesn't quiet. The CTSO gave me a voice and a way to fit in with the skills that I already had but also to grow them. I became a better person and a better engineer in the future.

Being the first in their family to go to college, Participant G wanted,

> To know how I was going to decide for a college and knowing, having that experience in the CTSO gave me the ability to choose what college I'd like to go too based on the major they provided. So, it helped me organize my thoughts and understand where I was

> going to fit in the best. I applied to multiple schools, but I figured out what the ultimate school I wanted to go to because they had something that was available for me there to do. I wouldn't have known that for sure if I wasn't in this CTSO.

Not having anyone in their family that was an engineer, Participant G asked themselves, "How does that give me the ability to know what engineering actually is?" Participant G noted that, when they were in their CTSO, they "dabbed into everything." Participant G shared that the CTSO provided an opportunity to "apply a lot [of] the skills" they were learning in class.

Participant H

Participant H was a member of their CTSO for 3 years. Participant H is 22 years old and graduated college with a degree in elementary education. Participant H is teaching students in an elementary school. The last time that Participant H was a member of a CTSO was 5 years prior in 2018. The types of activities in which Participant H participated as a member were that they "held office" and attended "conferences." Participant H described their overall experience as a CTSO member as having "had a lot to do with professionalism building and public speaking skills."

When asked whether they believed that their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant H stated, "Yes." Reflecting on how they think it prepared them to enter the workforce or to enter college, Participant H elaborated, saying,

> The business achievement awards we had some resume building practice that came in handy for sure. Public speaking definitely came in handy and interview practice. We did a mock interview. So that was very helpful. And also travel knowledge whether it was traveling for school or work. For the national conferences we went to Texas, and we went

> to California, and just having that experience in my back pocket about knowing how to travel, what to bring, and what to know when it comes to going to a business conference. That was really cool and helpful too.

When considering whether they believed that their CTSO influenced their postsecondary choice, Participant H stated, "Yes." Participant H discussed how the CTSO influenced their postsecondary choice. Participant H spoke how, through CTSO business and professionalism experiences, leadership positions, and conferences that they attended while participating in their organization, the CTSO influenced their choice of going to college,

> The business and professionalism experiences I've had during high school for the CTSO when a lot of my college peers are just now branching out into office holding or leadership positions different conventions and conferences for certain organizations. I had already done that. So, I think that also correlates where I would be going and the different spaces I'd be existing in college.

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant H stated,

> First, I want to say that back in high school I was a member of the IB program so hadn't learned about the CTSO till my second year of high school. In order to participate in the CTSO I had to add some type of business course to my class schedule, and I really enjoyed that business course. It was a dual enrollment course as well and it's my opinion that I gained more out of that business course and the CTSO than staying in the IB program.

Participant H said that, if they could go back, they think they "would have just done regular high school with dual enrollment business courses and the CTSO all 4 years instead of just 3." To participate in the CTSO, Participant H was required

> To attain a lot of business clothes, so I think in high school I don't think a lot of students are shopping for blazers and slacks, but I did for conferences, and they really came in handy around the time college got started and for other work opportunities and then some. So, knowing more knowledge about business attire also came in handy for postsecondary opportunities.

Finally, Participant H discussed how the public speaking and networking skills that they learned while in the CTSO got better and came in handy during college,

> I grew and got better at my communication, staying in contact with higher ups within the CTSO when I began holding office. Emailing them, calling them periodically to know what was going on. Just those types of skills, communication skills that also improves and once I got to college a lot of my professors had mentioned the difference between my communication style when it came to attending class or any missing work with my peers. They noted how professional it was and so I hadn't thought about it in that way.

Participant H came to realize that "there is a level of professionalism that you should have when speaking with your professors in college." Knowing how to pack and travel for a business conference is a skill that they will carry in their "back pocket." Participant H noted that the experiences that they had as a member of a CTSO definitely helped them at college.

Participant I

Participant I was a member of their CTSO for 3 years. Participant I is 22 years old and graduated with a degree in the health and ethics field. Participant I is pursuing a master's degree

and working part time. The last time that Participant I was a member of a CTSO was 5 years ago in 2018. Participant I stated that the types of activities that they participated in as a member were that they "held office," attended "conferences," and participated in "business awards activities." Participant I described their overall experience as a CTSO member as "I took away public speaking skills and also my wanting to be in business as a career now."

Considering whether they believed their CTSO influenced their postsecondary choice, Participant I stated, "Yes." Reflecting on whether they believed their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant I stated, "Yes." Elaborating on how they think it prepared them to enter the workforce or to enter college, Participant I stated,

> It prepared me by giving me interview practice and when it came to traveling for business type of programs. I was able to prepare for that and college. Also public speaking, I had a lot of practice with that during high school so that was good with coming into college. Walking into classes where we had to speak a lot from the beginning.

Participant I discussed how the CTSO influenced their postsecondary choice. Participant I spoke of the influence from competitions at conferences and how their organization did influence them:

> It (the CTSO) did influence me with what I'm currently doing postsecondary with the experience I had during the health ethics competitions during the regional level conference. It influenced me to want to go into health ethics and within business administration and hospitals. It was a topic that I didn't know prior to doing the competition back in high school.

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant I stated,

> Overall, the CTSO was just really good with character development early on and once I got to college freshmen year hearing my professor say how a presentation, I did was very professional. And, because of all the experience that I had during the CTSO throughout high school I received in that moment freshmen year of college felt like a normal presentation style because I was so used to presenting in a certain tone of voice and manner. So, hearing that from the professor was like wow these are the experiences I got from high school actually are being seen and are different from what other students are like their mannerisms aren't what they seek.

As the interview was coming to an end, Participant I once again noted that their CTSO introduced them to a topic that eventually became their career, health ethics. Participant I stated that, overall, they felt that "the CTSO really helped with character development." As Participant I noted, participating in the CTSO was good preparation for their next level, which was college, and for the professional world.

Participant J

Participant J was a member of their CTSO for years. Participant J is 23 years old and graduated with a degree in the education. Participant J is pursuing a master's degree and working full time. The last time that Participant J was a member of a CTSO was 6 years ago in 2017. The types of activities Participant J participated in as a member were (a) field trips, (b) competitions, and (c) activities to "better themselves." Participant J described their overall experience as a CTSO member as "positive." Reflecting about participating in the CTSO, Participant J stated,

> I was able to go on different filed trips. The most prevalent in my memory was our field trip to Virginia Tech where we were able to have an overnight trip and hear different seminars from the business school of Virginia Tech. They talked about the importance of business and being a leader and the innovation that comes with business.

Discussing this particular field trip, Participant J remembered they "did a mini–Shark-Tank activity." The next year, Participant J also went on a field trip. Other activities in which Participant J participated were

> a mock stock exchange where we were able to exchange stocks essentially able to act as different stake holders in the stock market. I was also a part of the CTSO competitions where I was part of the public speaking competition. I was fortunate enough to win at a couple of different levels with that activity. I even partnered with Y Street where in it was a partnership with FBLA where we educated the public on the importance of not smoking and the impact that sugar has on youth. I really did everything that the CTSO had to offer, and it felt as though every month we were constantly participating in things that were a low or a reasonable cost and it shaped my high school experience. It became what high school was to me.

Participant J and their peers were kept busy with "activities that were constantly being offered" through their CTSO. Participant J stated that the activities that were

> Constantly being offered helped us to not participate in some of the harmful things that could happen in high school. For us, it was all almost like something to look forward to and something we enjoyed. I was able to recruit a lot of my friends and even family members that went to the school to become a part of the CTSO.

Through the CTSO, Participant J eventually found their spouse. They "met each other on one of the field trips in the CTSO." During the interview, Participant J reflected on their CTSO advisor, noting that they "were influential in guiding us as CTSO members." From the advisors came mentorship. Participant J shared,

> Getting a lot of mentorship from those advisors where they constantly were reminding us of different events, relating the events we were going to real life, giving us contacts as to the importance of business even though we were in a low income area I greatly believe that the advisor's and the experience that I had with them greatly shaped me and who I became and my outlook on business.

At the time of the interview, Participant J was working in the education field. Although a member of a CTSO, Participant J thought to themselves that they would

> never care about business, but the more we did things, the more that we emphasized the importance of being a leader, you know whether you are in business, mathematics, what have you the importance of trying and doing and practicing and seeing the world for what it was it really truly changed my life. And the more that I think about my experience in the CTSO, the harder it is to differentiate my current life from that experience and that background. So, to me, the CTSO was always a positive experience. I adored it. I wouldn't change it for the world.

When asked whether they believed their CTSO prepared them to enter the workforce or enter college in their desired career field, Participant J stated, "Yes." Reflecting on how they think it prepared them to enter the workforce or enter college, Participant J stated that, on the college side,

> I remember we went over dressing professionally in business attire and the first thing that happened when I went to [a postsecondary four year institution] was that we were required to dress in business attire and I know everybody else struggled with it, but I already had some outfits that I had packed and brought with me. Yes, packed business clothes to college (laughing) in true CTSO fashion. But I was ready, so I think that the CTSO gave me a lot of foundation and confidence that greatly influenced where I ended up now and I'll never forget.

On the workforce side, Participant J stated,

> I think professionalism is a big part of every workforce in general. And I think the CTSO does a great job of emphasizing the importance of presentation, the importance of acting like a business leader, acting like a professional, and I've notice in my career you can tell who doesn't have a strong background in professionalism. In business, in that kind of thinking and your kind of like I don't think you were part of a CTSO (laughing). You can kind of notice the difference between the people who have been trained in that way because that is essential what CTSOs do is they train you but it also still allows you to be who you are.

Participant J discussed how their specific CTSO chapter was and that their advisors taught them about business professional outfits and incorporating their own style,

> When I packed those outfits for college, not only were they in line with what a professional outfit looks like, they were also my own style. So, I think that the CTSO really taught me how to make business my own, how to take on my career as my own, and how to navigate that world keeping a good balance between the two. So, without a

> doubt I think my CTSO certainly prepared me for the workforce and definitely for college.

Participant J discussed how the CTSO "without a doubt" influenced their postsecondary choice. Participant J spoke of dreaming big, public speaking, and being ready for college because of the skills learned while participating in their organization,

> I did go on to attend a [postsecondary 4-year institution] to get my degree in education. Mrs. O. and the rest of the CTSO advisors were very encouraging and told me to dream big to not settle for what was around me and that my newfound confidence being a CTSO member was going to be more than enough to guide me towards this prestigious private school six hours away from home. So, without a doubt I think I was influenced by my CTSO. Because I did participate in the public speaking competitions that greatly influenced even how I'm speaking right now (laughing) I'm able to direct my tone of voice in a way that comes off as professional and they gave me a lot of foundational skills.

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant J shared how much the CTSO had affected them in their personal life. Participant J said that Mrs. O.

> Put so much care into the work ethic that I now have that it was a no brainer that I would get the opportunity to speak on that and to share how powerful my experience was and my connection with my advisors.

The CTSO advisor was “an important figure” of Participant J’s life during their time at George High School. To this day, they are still extremely close to their former CTSO advisor, Participant J believed that the relationship will stay that way.

Participant K

Participant K was a member of their CTSO for 3 years. Participant K was 23 years old and graduated with a degree in classical vocal performance. Participant K is a small business owner. The last time that Participant K was a member of a CTSO was 6 years ago. When asked what type of activities in which they participated as a member, Participant K stated that they “held office,” attended “conferences,” and went on “field trips.” Participant K described their overall experience as a CTSO member as “loved.” Reflecting about participating in the CTSO, Participant K stated,

> So, for instance I went to conferences. It’s always cool to say I got to go to a business conference while I was in high school. At those conferences, we would have different competitions from different aspects of the business world. Just seeing how much knowledge we had gained in that area. We also went to Virginia Tech for their business kind of get away and so, with that, we would do things like etiquette classes and learn more about the business world and how to be our own leader. Things like that are what I really enjoyed during my time there. I was secretary in a leadership role within the organization. So, I really enjoyed my time in the CTSO.

Reflecting on whether they believed that their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant K stated, “Yes.” Elaborating on how they think it prepared them to enter the workforce or to enter college, Participant K stated,

> My particular field I work in is performance entertainment. I'm a singer. So, when I went to college I went for performance aspects of that kind of study, but while I was there I did also take music business classes and that did help influence the later business that I decided to start. It is a music business and so you know not only am I helping people learn how to use their voice and do recording, studio things, record them for songs and everything, I understand how to run the business part of it which is a lot different than just being a performer.

Participant K discussed how "yes" the CTSO influenced their postsecondary choice. Participant K spoke of having a business and the influence of their teacher in their CTSO organization,

> For me personally I felt like of a business mind set, whether you are a business owner or not yet, it really does open up a lot of doors for you. So, when you are going for different jobs and things, you know your worth, you have confidence, and you have that power of negotiation just as if you were negotiating a deal while you were in business. After I did graduate college I did start my own business as well. So, I think it influenced me a whole lot. I really enjoyed my teacher who was overseeing the process. She was amazing and she really made it not only a fun experience. But, made us all know more about the business world and many of us have become leaders in our own right.

When asked whether they would like to say not already mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant K further discussed the influence of their CTSO on where they are now in their life. "If I had not joined the CTSO I probably wouldn't have ever started to think Huh I want to have my own music business. Where I'm at now that's not necessarily the end goal where I want to be."

Participant K noted that the end goal is "to have an even bigger business down the line." The foundation they had through the CTSO "and the way the business world, was presented to me in such a fun and tangible way" helped Participant K to see that owning their own business was something they could accomplish. It was not out of their reach.

Participant L

Participant L was a member of their CTSO for 6 years. Participant L is 21 years old and pursuing a degree in engineering, while working part time. The last time that Participant L was a member of a CTSO was 4 years ago in 2019. Considering what type of activities that they participated in as a member, Participant L stated that they "held office and competitions." Participant L described their overall experience as a CTSO member as "very good experience." Reflecting about participating in the CTSO, Participant L stated,

> I remember having fun and learning not really new things because once you do the first couple of years you have been doing the same thing for a while, but learning, getting a better idea of what I wanted to do with my life.

Participant L stated, "Yes," they believed that their CTSO influenced their postsecondary choice. When considering whether they believed that their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant L stated, "Yes." Reflecting on how they thought it prepared them to enter the workforce or enter college, Participant L stated that it "prepared me to enter college knowing how to do things, but I still had to take the class for. But it made that class very easy because I already knew how to do it." Participant L discussed how the CTSO prepared them for college. Participant L said that the CTSO "made me realize I wanted to do engineering, but I was never into it until I did the competition side of it I did not know which type of engineering I wanted to do."

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant L said,

> It helps you narrow it down what you want to do with your life because you can try different things. Like if you don't like technology, but you like government you can try the government aspects of it. It allows you to experiment in more or less of a safe space of what you actually like doing.

Even though Participant L was still deciding on the area of engineering to pursue, Participant L noted that they plan to declare their major when they enter their junior year of college. They further elaborated that the CTSO gave Participant L an opportunity to explore the different areas of engineering.

Participant M

Participant M was a member of their CTSO for 4 years for one CTSO and 1 year for another CTSO. Participant M is 23 years old and a member of the U.S. Army Reserves. At the time of the interview, Participant M was pursuing information technology certifications through a school sponsored by the military. The last time that Participant M was a member of a CTSO was 6 years ago in 2017. Reflecting on the types of activities in which they participated as a member, Participant M stated, "Field trips" for one CTSO and they did not remember anything, activities, nothing from the other CTSO. Participant M described their overall experience as a CTSO member as "really good." Reflecting about participating in the one CTSO, Participant M stated,

> We talked about business and the importance of business. We went into details about some stuff. We went on some trips about business. I remember us going to Virginia Tech and learning about the different opportunities that Virginia Tech had to offer.

During this particular field trip, CTSO members participated in "different business activities." The college sponsors brought in "freshmen or sophomores to talk to us about the business program and we'd do different activities with them." Participant M stated,

> I think it other than the business, teaching business, and different things about business, it formed a community of people that thought like you and you didn't feel alone, if that makes sense. I know that's not the goal of a CTSO, but for me personally it made me feel I'm not alone in this world there are people like me that's thinking the same way and striving for something bigger, and it just helped me to want more. It helped me to push for more, to not pick now as the final way.

When asked whether they believed that their CTSO prepared them to enter the workforce or to enter college in their desired career field, Participant M stated, "Yes." Reflecting on how they thought it prepared them to enter the workforce or enter college, Participant M spoke about the CTSO in which they participated for 4 years,

> I was thinking I need to go down a business field. Become a business lawyer or something in the business field. But I think the CTSO made me think outside the box. It just made me strive for more. I think the CTSO just really pushed me to want more, and it pushed me to like want to believe in myself even when consciously I'm doubting myself

Upon graduating from George High School, Participant M did not go into college. Participant M was on their own and it was not feasible. Participant M decided,

> I'm just going to do the workforce and then go to school when I'm set up enough. I think it's like working out in my favor. I just have to keep reminding myself that and that I'm on my path and I'm going to get there just in a different route. I think that's how the CTSO helped me. It just pushed me to want more, want more. Even if it's not in the field of business it just pushed me to want more.

Participant M discussed how the CTSO "for sure" influenced their postsecondary choice. Discussing the belief that advisors had in them and of being pushed to learn and want more while participating in their organization, Participant M thought, "It just helped me to push for more, push to learn more, push to want more." Participant M stated that they "still get anxious" and doubt themselves, but they still think,

> The advisors believed in me more than I believed in myself. Sometimes I would go home and be like they really believe in me and I don't think so myself, but they believe in me and I appreciate that. Sometimes I think about that and I'm like wow I gotta believe in myself as much as they believe in me. I think it really helped me because it just made me want to push for more and even though I'm like struggling sometimes I'm like God please where do I go from here? It's pushing me to want more.

When asked whether they would like to say anything else not yet mentioned about being a member of, participating in, or the influence a CTSO had on their postsecondary choice, Participant M discussed the advisors and thinking outside the box,

> The CTSO just helped with community. The teachers that were head of the CTSOs I feel like they genuinely cared about all the members and stuff that was going on at home. I feel it gave students a chance to think outside the box, outside the confines of school. Honestly, you're in school, you're learning things. But, I feel outside activities like

> CTSO just helps you to think outside the box and I feel people cared about your opinion and they listened to your opinion and they challenged your opinion and that you could go back and forth with people that was interested in a topic so you weren't talking to a wall you were talking to someone that would respond, someone that cared.

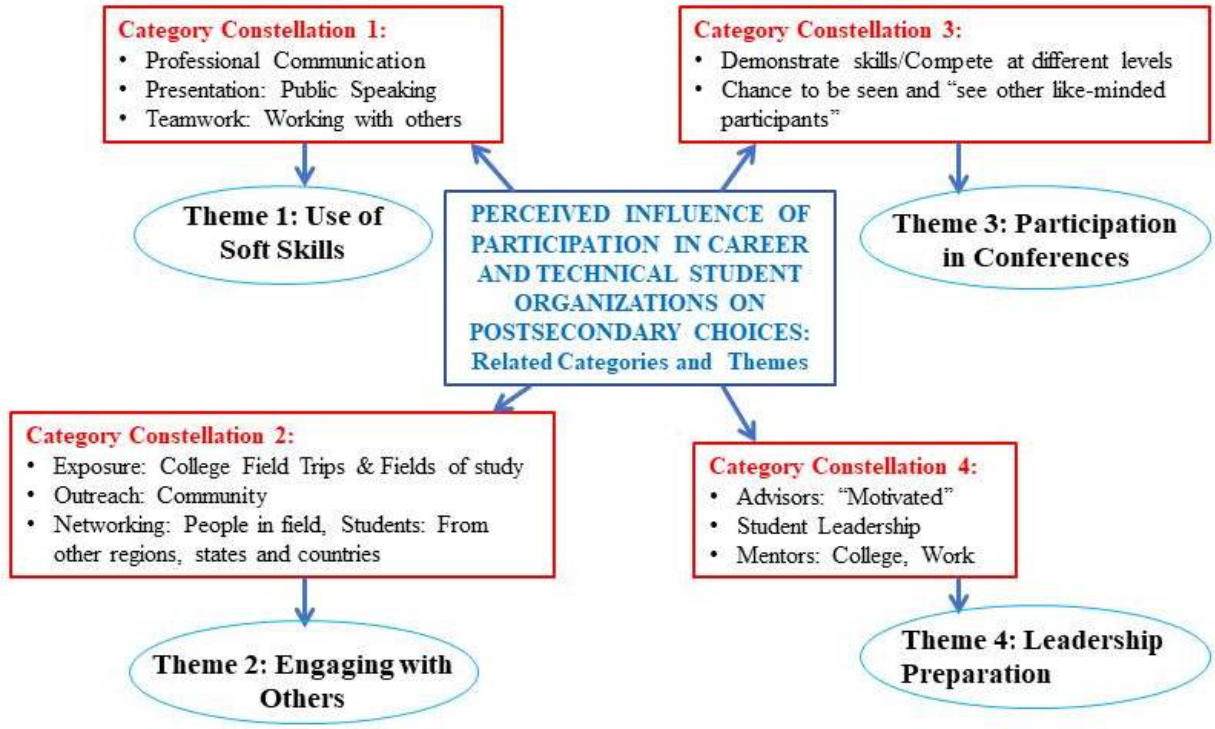
During their time in one of their CTSOs, Participant M felt part of a community. One of their CTSOs motivated them to want to learn and be more. Participant M felt cared for in the CTSO, which helped them with issues going on at home.

Emergent Themes

As shown in Figure 3, four overarching themes emerged from the coding process of the 13 interviews of former participants in CTSOs who took part in this study: Theme 1, use of soft skills; Theme 2, engaging with others; Theme 3, participation in conferences; and Theme 4, leadership preparation.

Figure 3

Related Categories and Themes



Note. The figure depicts groups of coded data into four large clusters. These clusters are noted as category constellations in red squares. From these category constellations the four themes that emerged are below each category, in a blue oval. The themes are Theme 1, use of soft skills; Theme 2, engaging with others; Theme 3, participation in conferences; and Theme 4, leadership preparation.

Figure 3 represents the four related categories and the four themes that were derived from category constellation groupings after this researcher conducted three rounds of the coding process. The themes were Theme 1, use of soft skills; Theme 2, engaging with others; Theme 3, participation in conferences; and Theme 4, leadership preparation. Beneath each category constellation square is a blue oval that contains a theme. In the following paragraphs, this

researcher discusses the coding process and construction of categories that were informed by the participants' experiences that contributed to the emergent themes.

Theme 1: Use of Soft Skills

Through the coding process, regardless of the CTSO, words associated with soft skills began to emerge. Seven participants of this qualitative study shared that, while a member of a CTSO, they learned or honed their soft skills (e.g., communication, public speaking, and teamwork). Matthews (2022) wrote that soft skills included, "Personality traits that are innate and challenging to measure. They are sometimes referred to as 21st-century skills, employability skills, interpersonal skills, life/career abilities, or college and career readiness skills" (p. 15).

During the initial open-coding process, this researcher noted that the participants' stated skills were learned or strengthened during their time in a CTSO. These codes, communication, public speaking, and teamwork were identified during the NVivo coding process. To ensure that the data remained rooted in the interviewee's own voice (Saldaña, 2016), this researcher highlighted specifics that participants shared regarding the soft skills that carried over into their postsecondary choices.

Communication is a soft skill that three participants of this qualitative study shared that they learned or honed while a member of a CTSO. The participants of this study stated that their communication skills were strengthened because of the opportunities of which they took advantage as a CTSO member. Participant F noted that communication was an area of weakness that was strengthened because of taking part in their CTSO. Participant F stated that "being able to communicate with a team" was one of those skills that definitely carried over to college and the workforce. Participant H shared that through their CTSO experiences, they got better at communicating. Participant H noted that, when they went to college, "Professors had mentioned

the difference between my communication style when it came to attending class or any missing work with my peers. They noted how professional it was and so I hadn't thought about it in that way."

Communication was not the only skill mentioned by the participants of this study. Public speaking was another skill that participants reported having honed during their time as a CTSO member, emphasizing that making presentations allowed them to practice their public speaking skills.

Public speaking is a soft skill that seven participants of this qualitative study shared that they learned or honed while a member of a CTSO. Participants of this study identified public speaking as a skill they learned and that was reinforced through CTSO competitions or while holding an office. As discussed by participants of this study, this skill was honed through partaking in a competition or contributing to a presentation. Participant G said that one of the things that they learned all at once was "a lot of public speaking skills." Participants C and F both noted that presentation aspect as part of the CTSO was a skill that carried over to college.

In high school, Participant F remembered "shaking so bad on the first time I had to present." In college, Participant F stated, "When there were times for presentations to come across, I had experience presenting in front of a panel of judges and so I guess it makes it a little bit less scary." Both participants H and I noted that they held offices within the CTSO; therefore, they had a lot of practice with public speaking. Participants E and J participated in public speaking competitions. Participant J stated participation in this event "greatly influenced" even how they speak now.

Teamwork is a soft skill that three participants of this qualitative study shared that they learned or honed while a member of a CTSO. The participants of this study discussed teamwork

as a skill that they learned and improved on through CTSO team-building exercises. As the participants of this study discussed, this skill was practiced through team-building activities that their CTSO offered. Participant C noted they learned "working on a project with other people and really finding your niche," which was a skill that carried over many times in college. Participant D identified that "a good benefit towards joining one of these organizations" is developing teamwork skills. Although Participant E said that team building was one of their favorite exercises to participate in as part of the CTSO, Participant F noted that "learning to work as a group and relying on my team members an equal amount" were skills that definitely carried over to college.

Theme 2: Engaging with Others

CTSOs offer occasions for members to develop leadership skills and network with other students as well as those in the world of business and industry (NCC-CTSO, 2018). Participants of this study were asked how their CTSO prepared them to enter the workforce or enter college. Eight participants mentioned that their CTSO offered opportunities to engage with others. These opportunities gave the participants of this study chances to use their soft skills, while broadening their horizons.

During the initial open-coding process, this researcher noted opportunities that the participants stated were offered to engage with others during their time in a CTSO. These codes of field trips, outreach, and networking opportunities were identified during the NVivo coding process. Ensuring that the data would remain rooted in the interviewee's own voice (Saldaña, 2016), this researcher highlighted specifics that participants had shared regarding these occasions to engage with others.

Five participants of this study discussed field trips. The field trips on which the participants went while a member of a CTSO gave lasting impressions. Participant B remembered "going on field trips that would engage us in different facets of different companies and stuff just to expand our horizons." Several participants remembered field trips to Virginia Tech as having a lasting impression.

Participant K remembered the CTSO field trip to Virginia Tech as being a business of excursion where they did etiquette classes and learned "more about the business world and how to be our own leader." Participants C, J, and M discussed the lasting impressions of the Virginia Tech field trip. Participant M recalled learning about different opportunities offered at the university and about participating with freshmen or sophomores from the university in different business activities. Participants C and J each recalled participating in team activities. Participant C stated they "learned a lot of soft skills through working on a project with other people." Participant J said the field trip was the "most prevalent" in their memory.

Field trips were not the only opportunity that the participants of this study mentioned. Outreach was another chance that the participants of this study mentioned and in which they could use their soft skills, while broadening their horizons. Outreach allowed one to practice their soft skills on people in the community and learn to network.

Three participants of this study discussed outreach opportunities. Outreach opportunities allowed CTSO members to raise funds and to meet people in their field of study. Participant B noted that community outreach was one of numerous activities in which they participated as a CTSO member. Through community outreach, Participant B said, "We were raising funds for our cause." Participant G considered outreach as "one of the more important things" that they did. Participant G stated, "The outreach networking that I was able to collect over the years was

so crucial because we were able to meet college students all over the world that had experience with engineering." Outreach opportunities taught CTSO members how to network. Participant A listed "how to network with individuals" as one of the skills that being a member of a CTSO taught them.

Three participants of this study discussed networking opportunities. As pointed out by participants of this study, networking opportunities allowed CTSO members the chance to make connections. These occasions allowed for connections to be made with members of their CTSO and with people from other regions, states, and countries. Some of these connections continue to this day.

Participant B stated that recommendations on their resume contain the names of people with whom they had connected through CTSO networking events. Participant B said, "Truly the connections I fostered with the program are not compared to anything else that I would have been able to do." At regional and international events, Participant F noted they "met so many cool people." Participant H said that, while they were holding a CTSO office, "staying in contact with higher ups within the CTSO" grew their networking skills.

Theme 3: Participation in Conferences

Being a member of a CTSO allowed the participants of this study to attend conferences where they had the opportunity to compete. Eleven participants shared that, while they were a member of a CTSO, they had participated in conferences where they had opportunities to partake in competitions and see themselves in professional positions. Competitions, at all levels, allowed the participants of this study to demonstrate their skills and possibly move on to the next level.

During the initial open-coding process, the researcher noted that the participants stated that, during their time in their CTSO, they had had opportunities to demonstrate their technical or

soft skills, while competing at different levels. These codes demonstrate that skills and competition at different levels and a chance to be seen were identified during the NVivo coding process. Ensuring that the data would remain rooted in the interviewee's own voice (Saldaña, 2016), this researcher highlighted the specifics that the participants shared regarding participating in conferences.

Opportunities to demonstrate skills and to compete at different levels are two experiences offered to CTSO members. Competitions allowed CTSO participants the opportunity to demonstrate skills learned during activities that their CTSO sponsored. Eight former CTSO members who participated in this study discussed their CTSO competitions and their importance.

As part of their CTSO experience, Participants B and F discussed participating in a competition of Marine Advanced Technology Education Remotely Operated Vehicles (MATE ROV; Marine Technology Society, 2023) and had the opportunity to advance to another level. Participant F noted that, their second year, the team "won our regional competition" and travelled to Tennessee to participate in the International ROV Competition. Participant F said that they met "so many cool people," saw so many robots, and definitely learned a lot.

Participant L discussed never being into engineering, but technology CTSO competitions made them realize they wanted to do engineering. Participants C, E, K, I, and J remembered competing in CTSO business competitions. Participant C competed in economics in which they were "second in the region, second in the state." Participants E and K recalled partaking in competitions having to do with "different aspects of the business world." One of Participant E's favorite CTSO competitions was the one in which they constructed their own business and worked through its components. Participant J competed in public speaking and won at a couple of different levels. That experience greatly influenced Participant J. To this day, they are able to

direct their "tone of voice in a way that comes off as professional." Participant I stated how participating in a CTSO health ethics competition influenced their future plans. It was a topic that they did not know prior to doing the competition.

Four participants of this study noted a chance to be seen by other like-minded people as a benefit of being a CTSO member. Joining a CTSO, participating in the experiences, allowed Participant E to see people who looked like and thought like them. They remembered "seeing other Black people, Brown people who look like me."

Being part of a CTSO put Participant G in "a really good mental space." They were no longer "weird for being the only girl in my class or being smart but not being seen." At college, Participant I had a professor comment on how a presentation they made was very professional. They stated, "Hearing that from the professor was like wow these are the experiences I got from high school actually are being seen." For Participant M, they saw their CTSO as "a community of people that" all thought the same. They know that was not the goal of their CTSO, but for them "it made me feel like I'm not alone in this world there are people like me that's thinking the same way."

Theme 4: Leadership Preparation

Nine participants in this study discussed opportunities regarding student leadership and how their advisors and mentors influenced them. During the initial open-coding process, this researcher noted the opportunities that the participants stated regarding leadership training during their time in their CTSO. The codes of student leadership, advisors, and mentors were identified during the NVivo coding process. To ensure that the data remained rooted in the interviewee's own voice (Saldaña, 2016), this researcher highlighted the specifics that the participants had shared regarding leadership preparation.

Student leadership in CTSOs was emphasized throughout the interviews. Seven participants of this study discussed student leadership as part of their CTSO experience. As noted by Participants E, “Leadership exercises . . . were my favorite.” In CTSOs, Participant J realized that “the more we did things, the more that we emphasized the importance of being a leader.”

Participants D, G, H, I, and K all held an office within their respective CTSO. Participant D served as chairman of fundraising for their local chapter. In their CTSO, Participant G became the “electrical engineering officer sometimes.” Participants H and I “participated in office holding.” Within the organization, Participant K said that they were the secretary, which they stated was “a leadership role within the organization.”

Three participants of this study discussed their advisors and how they had the ability to motivate. Participant J noted that an advisor’s approach is “a big part of the CTSO.” Participant J “greatly” believed that the advisors and experiences that they had as a CTSO member shaped them into who they have become today and shaped their outlook on business. They stated, “Mrs. O. [a pseudonym] and the rest of the CTSO advisors were very encouraging and told me to dream big to not settle for what was around me.” They discussed their current relationship with their former advisor, Mrs. O. as “extremely close.” Stating that they invited Mrs. O. to their wedding, and she attended.

Participant E recalled “not really appreciating the leader at the time.” Participant M felt that the CTSO advisors “genuinely cared about all the members” and about their home life. They noted, “The advisors believed in me more than I believed in myself.” Participant M believed that this helped them “because it just made me want to push for more.”

Mentors can be an advisor or the CTSO can provide mentor from a community resource. Three participants of this study discussed their interactions with mentors. Mentors might have

been the CTSO advisor, or a local college might provide someone, or someone from a local business might step up. Participant B, “Had an opportunity to engage with fantastic mentors who were truly, truly committed to making sure that the girls involved in my organization were going to present the best versions of themselves in every part of their lives.”

Participant G was happy with the mentors that the CTSO provided. The mentors came from other schools (local colleges). Participant G said that the mentors were “a huge inspiration.” The mentors provided guidance on things in the CTSO member’s field of interest. Participant G stated that having “that interpersonal connection with those influences was helpful for me.” Participant J stated, “Getting a lot of mentorship from those advisors where they constantly were reminding us of different events, relating the events we were going to real life, giving us contacts as to the importance of business” meant a lot to them.

Summary

When asked whether they believed that their CTSO influenced their postsecondary choice, 11 of the 13 participants said “Yes” or “Absolutely”; one participant stated, “Without a doubt,” and one participant “thought so.” The former CTSO members who participated in this qualitative study described the student organization’s influence on their postsecondary choices. Through their descriptions, the participants provided insight regarding the skills that they learned while participating in their respective CTSO and how they are using those skills as part of their postsecondary choice.

In this study, this researcher aimed to explore the perceptions of former CTSO members’ postsecondary choices relative to their involvement in CTSOs in a midsize city high school. In this chapter, this researcher elaborated on the purpose of the study, the research question, and the participant recruitment process. The analysis method, which provided the coding process, was

communicated. Next, the results and findings were presented to share how participants described their experiences as a CTSO member.

The former CTSO members that participated in this qualitative study described experiences and people that influenced them throughout their time in a CTSO at George High School. They also identified activities and opportunities that influenced them. This study aimed to gain an understanding of the perception of former CTSO participants regarding the relationship of their participation in a CTSO and their post high school pursuits (e.g., postsecondary education and career).

In the interviews, the participants shared their descriptions of (a) their overall experience as a CTSO member, (b) how advisors and mentors motivated them, and (c) how experiences from their CTSO influenced and flowed over into their postsecondary choice. Four themes emerged from the analysis of the coding generated in this study: Theme 1, use of soft skills; Theme 2, engaging with others; Theme 3, participating in conferences; and Theme 4, leadership preparation. Chapter 5 provides an interpretation of the data with the literature reviewed in Chapter 2. The researcher's interpretations of the study's findings, implications of the findings, and recommendations for future studies are also presented.

CHAPTER 5: CONCLUSION

CTSOs are a fundamental part of CTE since the Smith-Hughes National Vocational Education Act (1917; Brand et al., 2013); therefore, students have occasions during and after school to learn skills and abilities needed to be successful in any career path (NCC-CTSO, 2019). Supporters of CTE and its educators often note how partaking in a CTSO, in line with programs of study, can have a major benefit to a student's CTE experience (Dougherty et al., 2020). CTSOs can assist in providing equitable opportunities for students, which means guaranteeing that every student obtains needed resources and understanding to reach their maximum potential (Saed & Scates-Winston, 2017).

Aragon et al. (2013), Jeffreys (1987), and Sessa et al. (2017) indicated that student organizations, whether a CTSO, content, or PBO, affect students. Alfeld et al. (2006) suggested that studies of students who participated in CTSOs in high school need to be conducted to examine their post-high-school path. Taylor (2018b) recommended studies from the perspective viewpoint of each CTSO as "the voice of the differing CTSOs is needed" (p. 18). Brodersen et al. (2021) proposed addressing postsecondary education outcome gaps by exploring "outcomes of student subgroups" (p. 11). The Manufacturing Institute (2015), in partnership with SkillsUSA and the ERCA, found that participating in a CTSO had a significant impact on a member's career outlook. The purpose of this qualitative study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school.

Plank (2001, cited in Aragon et al., 2013) noted that CTSO members were less likely to drop out of school. Aragon et al. (2013) found that girls and students of color benefit slightly more from a CTSO experiences than their counterparts. Harvey (2021) noted that CTSOs offer

students with learning needs a way to build self-determination skills that enrich their transitional outcomes. When implemented by committed advisors, CTSOs play an important part in preparing students "to become productive citizens and to assume roles of leadership" (SkillsUSA Colorado, 2018, para. 3).

Taylor (2018b) noted, "The stories of success and the impact that CTE and CTSOs have on the lives of students need to be told and celebrated" (p. 6). Dougherty et al. (2020) stated that the extent to which a student was engaged in CTSOs might be measured by whether they participated, whether the CTSO lined up with their area of study, and numbers of years of participation. The problem that this researcher examined in this study was a gap in the literature regarding a relationship between high school students who participated in a CTSO and their postsecondary choice (Alfeld, 2006; Brodersen, 2021; Taylor, 2018a). The following research question guided this qualitative study:

> How do former participants in CTSOs describe the student organization's influence on their postsecondary choices?

Amirianzadeh's (2012) hexagon theory of student leadership provided the theoretical framework for this study. Through this theory, this researcher considered "factors affecting the student leadership development from individual, group and social aspects" (Amirianzadeh, 2012, p. 333). The purpose of using Amirianzadeh's hexagon theory of student leadership as the theoretical framework was to provide a lens for understanding the perceptions of former CTSO participants regarding how their participation might be related to their postsecondary choices.

In the hexagon theory of student leadership, Amirianzadeh (2012) explained that the emergence of a student's "leadership development will be done through a change in attitude, knowledge, skill and behavior" (p. 334), which happens because there is more involvement from

the student. Figure 1, in Chapter 2, Amirianzadeh's (2012) considered six vital and effective factors in student leadership development: individual, family, school, friend, college, and society, relative to the hexagon theory of student leadership. School (the first formal educational environment and one of six factors of the hexagon theory of student leadership) can affect a student's leadership development (Amirianzadeh, 2012). As Alfeld et al. (2006) pointed out, through CTSOs, students are offered numerous activities to develop and improve their leadership skills.

The chosen methodology of this study was a qualitative methodology, using a semistructured interview. Within the umbrella of qualitative research, "between structured and unstructured" (Merriam & Tisdell, 2016, p. 110), is the semistructured interview. This methodology was selected because the semistructured interview design allows the researcher to react to participant answers (Merriam & Tisdell, 2016). Therefore, the interviewer can ask additional questions according to the participant's responses (Ravitch & Carl, 2021).

George High School, which is located in a midsize city in a mid-Atlantic state that currently offers four CTSOs, was the chosen site for this study. This site was chosen because the school's CTE Department saw a decline in CTSO membership, which pointed to understanding former members' perceptions of the CTSO involvement on their postsecondary choices. At one time, George High School's CTE Department sponsored six CTSOs and an after-school engineering program (Lagesse, 2012). As of the 2022–2023 school year, George High School had four CTSOs and no after-school engineering program.

Thirteen eligible participants volunteered for the study. All of the participants met the requirements of being (a) a former CTSO member at George High School, (b) older than age 18, and (c) at least 9 months removed from graduation. Virtual interviews were scheduled and took

place using the Zoom (2023) platform with audio transcription enabled. Upon completion of individual interviews, which were autotranscribed by Zoom, this researcher reviewed them by going over each line in conjunction with listening to the recording to ensure accuracy. This researcher then deidentified each transcript before sending them to individual participants for an accuracy review as a member check (Creswell & Guetterman, 2019). After the member checks were received or the deadline passed, this researcher began manually coding the transcripts.

This researcher first used open coding and NVivo coding to ensure that the data remained rooted in the interviewee's own voice (Saldaña, 2016). Descriptive coding was then used to "summarize the primary topic of the excerpt" (Saldaña, 2016, p. 3). This resulted in 35 unique codes across the three CTSOs. The second round of coding allowed this researcher to categorize the codes, which then resulted in four emergent themes.

Individual interviewees expressed similar statements that their CTSO influenced their postsecondary choice. The participants described the skills that they learned while participating in their respective CTSOs and how they are using those skills as part of their postsecondary choice. They also shared their perceptions on how CTSO experiences influenced them. Finally, the participants shared how advisors and mentors influenced them throughout their time in a CTSO. In this chapter, this researcher discusses the interpretation of the study results, the implications of the study, and recommendations for action as well as for further research.

Interpretation and Importance of Findings

In the sections that follow, this researcher discusses the findings and their importance in relation to the research question that guided this study. The research question was:

> How do former participants in CTSOs describe the student organization's influence on their postsecondary choices?

The research question was developed to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. As part of the interpretations and importance, the discussion demonstrates how the theoretical conceptual framework provided a lens relative to those findings. In addition, as part of the interpretations and importance, how the findings are responsive to the research question is discussed.

The purpose of this researcher's study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. This researcher used a semistructured interview process, finding that the participants of CTSOs believed that their CTSO influenced their postsecondary choices; therefore, this process allowed this researcher to explore the why and how questions. The participant's responses assisted in answering the research question in this study.

Interpretations and Importance of Research Question

To explore this study's established research questions, 13 eligible participants who were former members of three different CTSOs participated in this study. Each participant was interviewed individually, attended George High School at different times, and might or might not have known each other. Jandrin (2019) determined that through experiences and opportunities offered through CTSOs there is "a positive impact on student's career pathway choices" (p. 2). Eleven of the 13 participants indicated that their experience as a CTSO member was positive. Participants A, F, and J described it as "positive." Participants B and K "loved it." Participant C stated that it was the best $20 they ever spent. Participants D, E, and G, individually, described their overall experience as good, phenomenal, and wonderful. Whereas Participants H and I, separately stated that their overall experience was of professionalism building and influenced

their future. Stone (2017) noted that the positive effects of CTSOs on numerous outcomes connected to postsecondary student success outcomes included "academic motivation, academic engagement, grades, career self-efficacy, college aspirations, and employability skills" (p. 164).

As part of the initial coding process, this researcher used open coding, making notes next to bits of data that struck this researcher as possibly pertinent for answering this study's research question (Merriam &Tisdell, 2016). During the second round of coding the researcher categorized these codes. Finally, descriptive coding was used to "document and categorize the breadth of opinions stated by multiple participants" (Saldaña, 2016, p. 7). After coding and analyzing the data, four emergent themes were derived: (a) Theme 1, use of soft skills; (b) Theme 2, engaging with others; (c) Theme 3, participation in conferences; and (d) Theme 4, leadership preparation. Each of these themes was responsive to the research question.

Theme 1: Use of Soft Skills

Theme 1 reflected how participants described their perception of the influence of their participation in a CTSO on their postsecondary choice. Eight participants discussed how they learned soft skills while participating in CTSO activities. As shown in Table 3, 10 codes and three categories contributed to Theme 1, use of soft skills.

Table 3

Codes and Categories That Contributed to Theme 1, Use of Soft Skills

Codes	Categories
Skills: Communication, research, time management	
Grew and got better at skills	
Learned a lot of soft skills	Professional communication
Skills helped participant	
Valuable skill	

Codes	Categories
Producing a presentation Public speaking experience	Presentation: Public speaking
Team building Common goal Helped develop skills and teamwork	Teamwork: Working with others

Note. This table shows 10 of the 35 unique codes that this researcher noted during the open-coding process. During the second round of coding this researcher categorized these codes, which are also shown next to the respective codes. These categories then resulted in the emergent Theme 1, use of soft skills.

Taylor (2018b) wrote that, besides skilled and technical learning, one of the things that CTE courses are focused on are soft skills. Communication was a soft skill that Participants F and H discussed. Participant F stated that "being able to communicate with a team" was a skill that definitely carried over to college and the workforce. Although Participant H shared that, through their CTSO experiences, they got better at communicating, Participant H also stated that, when they went to college, their professors mentioned, "The difference between my communication style when it came to attending class or any missing work with my peers. They noted how professional it was and so I hadn't thought about it in that way."

AdvanceCTE (2017) found that communication regarding both college and career readiness supports the goals and ideals of parents and students. Stringer (2018) noted that the CTSOs of today teach technical and "soft skills—leadership qualities like collaboration and communication that businesses today say are necessary for the modern workforce" (para. 6). Participant C noted that they learned that "working on a project with other people" was a skill that carried over many times in college. Participant D identified teamwork skills as "a good

benefit towards joining one of these organizations." In this theme, the participants discussed how soft skills (e.g., communication, public speaking, and teamwork) learned during former members' time in a CTSO influenced how they interacted in their postsecondary choices.

Theme 2: Engaging With Others

Theme 2 reflected how participants described their perception of the influence of their participation in a CTSO on their postsecondary choice. Although postsecondary institutions and the workforce offer equal opportunities, CTSOs not only influence a student's college and career choice but offer opportunities to gain skills needed for success in college and on the job (Saed & Scates-Winston, 2017). As shown in Table 4, seven codes and three categories contributed to Theme 2, engaging with others.

Table 4

Codes and Categories That Contributed to Theme 2, Engaging With Others

Codes	Categories
Business related like field trips Two field trips to 4-year institute of higher learning	Exposure: College Field Trips and Fields of study
Community outreach Important thing is the outreach Outreach position	Outreach: Community
Network with individuals Networking skills	Networking: People in field, Students: From other regions, states and countries

Note. This table shows seven of the 35 unique codes that were noted by the researcher during the open coding process. During the second round of coding the researcher categorized these codes, which are also shown next to the respective codes. These categories then resulted in the emergent Theme 2, engaging with others.

Eight participants recounted how field trips, outreach, and networking opportunities that they participated in during their time as a CTSO member allowed them to engage with others. The participants individually felt that they had developed skills they use to this day, met new people such as fantastic mentors who gave them perspective, and made them a better student by giving them an opportunity to grow their interests. Participant G wrote that the CTSO "put me into a category that would help me to grow my skills with what I was interested in." Participant B noted that, as a member of the CTSO, "we really were given the opportunity to grow our interests." These activities also influenced how they thought about postsecondary choices. Participant G noted that more than applying many of the skills they were learning in class, "The

networking and having actual experiences of going out and doing things. That is super valuable in thinking about attending university."

Participant J described the CTSO field trip to a university in another part of the state as the most prevalent in their memory. Participant J stated that they "were able to have an overnight trip and hear different seminars from the business school of a university. They talked about the importance of business and being a leader and the innovation that comes with business."

The NCC-CTSOs (2019) noted that CTSOs give students extracurricular opportunities. Participant A listed "how to network with individuals" as one of the things being a member of a CTSO taught them. Considered by Participant G to be one of the more vital things that they participated in as a member of a CTSO, Participant G stated, "The outreach networking that I was able to collect over the years was so crucial because we were able to meet college students all over the world that had experience with engineering."

Describing connections made through networking events, Participant B said the connections that they "fostered with the program are not compared to anything else that I would have been able to do." Participant B noted that recommendations on their resume contain names of people that they connected with through CTSO networking events. SkillsUSA Colorado (2018) wrote that, by joining a CTSO, members have opportunities to develop self-confidence, a sense of community, and make professional connections, while being accountable for their actions.

Theme 3: Participation in Conferences

Theme 3 demonstrated how participants described their perception of the influence of their participation in a CTSO on their postsecondary choice. Eleven participants described how conferences gave them a chance to demonstrate skills, compete at different levels, and be seen

for who they were at the time. As shown in Table 5, 10 codes and two categories contributed to Theme 3, participating in conferences.

Table 5

Codes and Categories That Contributed to Theme 3, Participating in Conferences

Codes	Categories
Able to apply a lot skills Economics competition Health ethics competition International competition MATE ROV competition Prior to doing the competition Regional competitions	Demonstrate skills; Compete at different levels
Good mental space Not weird for being only girl in class Seeing other Black people, Brown people who look like me	Chance to be seen and "see other like-minded participants"

Note. This table shows ten of the 35 unique codes that were noted by the researcher during the open coding process. During the second round of coding the researcher categorized these codes, which are also shown next to the respective codes. These categories then resulted in the emergent Theme 3, participating in conferences.

Taylor (2018b) noted that conferences are among many of the events offered to CTSO participants. Stauffer (2023) wrote that, through CTSOs, students might further their knowledge through participation in different experiences, activities, and competitions. Never having been into engineering, Participant L discussed how the CTSO "made me realize I wanted to do engineering, but I was never into it until I did the competition side of it." The experience of competing in public speaking at different levels greatly influenced Participant J, who noted to this day that they are able to direct their "tone of voice in a way that comes off as professional."

The participants noted that a chance to be seen by other like-minded people was a benefit of being a CTSO member. Being part of a CTSO put Participant G in "a really good mental space." They were no longer weird for "being smart but not being seen." Participant M knows that it was not the goal of their CTSO; however, for them, "It made me feel like I'm not alone in this world. There are people like me that's thinking the same way." Through their CTSO experiences and competitions, Participate E noted that they were able to see

> Other Black people, Brown people who look like me you know and in higher positions and who were extremely influential in their area of expertise and that helped to solidify me. Well helped to solidify in my mind that anything is possible.

Theme 4: Leadership Preparation

Theme 4 exhibited how participants described their perception of the influence of their participation in a CTSO on their postsecondary choice. Nine of the participants in this study stated that leadership activities influenced them during their time in a CTSO. Some participants held an office in a local CTSO, thus, becoming a student leader who had opportunities to influence the members of their CTSO. As shown in Table 6, eight codes and three categories contributed to Theme 4, leadership preparation.

Table 6

Codes and Categories That Contributed to Theme 4, Leadership Preparation

Codes	Categories
Advisor: Believed, shaped members, mentor, very encouraging Advisor's structure important	Advisors: "Motivated"
Held office: Chairman of fundraising, secretary Leadership exercises	Student leadership
Liked working closely with mentors	Mentors: College, work

Fantastic mentors
Happy with mentor
Mentor cared

Note. This table shows eight of the 35 codes, unique codes that this researcher noted during the open-coding process. During the second round of coding, the researcher categorized these codes, which are also shown next to the respective codes. These categories then resulted in the emergent Theme 4, leadership preparation.

Haines (2019) found that a reason to join a student organization was a student's desire to develop skills and to boost their leadership abilities, thus enhancing their personal growth and development. Alfeld et al. (2017) found that, through various learning experiences, CTSO members took part in activities that allow them to expand their leadership and job competencies. In their CTSO, Participant J realized that "the more we did things, the more that we emphasized the importance of being a leader." Participants E noted that "leadership exercises . . . were my favorite." Taylor (2018b) noted that leadership conferences are among many of the events offered to CTSO participants.

Through a comprehensive attitude and systematic view with the hexagon theory of student leadership, Amirianzadeh (2012) considered "the factors affecting the student leadership development from individual, group and social aspects" (p. 333). The NCC-CTSOs (2018) wrote that CTSOs offer occasions for members to develop leadership skills and network with other students as well as those in the world of business and industry. Thus, as the NCC-CTSO (2018) stated, CTSOs are a powerful tool for assisting the United States in addressing key challenges in workforce development, student success, economic strength, and worldwide competitiveness.

SkillsUSA Colorado (2018) wrote that, when advisors implement them, CTSOs play an important role in preparing students "to become productive citizens and to assume roles of leadership" (para. 3). From learning and demonstrating soft skills (Theme 1) to engaging with others (Theme 2) and participation in conferences (Theme 3) members of CTSOs indicated they received leadership preparation (Theme 4). These themes, connected to this study's research question and emulated Amirianzadeh's (2012) hexagon theory of student leadership, for they incorporate the theories six vital and effective factors in student leadership development: individual, family, school, friend, college, and society.

Participant M felt that the CTSO advisors "genuinely cared about all the members" and about their home life. They noted that "the advisors believed in me more than I believed in myself." Participant J stated, "Mrs. O. and the rest of the CTSO advisors were very encouraging and told me to dream big to not settle for what was around me." Participant G stated, "College felt like an extension of what I was doing in the CTSO instead of it being an incredibly new" because of the mentor's influence. Participant B noted that they, "had an opportunity to engage with fantastic mentors who were truly, truly committed to making sure that the girls involved in my organization were going to present the best versions of themselves in every part of their lives.

Jandrin (2019) wrote that CTSOs allow students freedom to discover and take chances without losing valuable time in the tiny opening that makes up high school. Harvey (2001) noted that CTSOs offer students with learning needs a way to build self-determination skills that enrich their transition to their postsecondary choices. By joining, members (whether they are in a leadership position or not) have opportunities to develop self-confidence and a sense of community, and opportunities to make professional connections, while being accountable for their actions (SkillsUSA Colorado, 2018).

Implications

The results of this study add to the existing literature about CTSOs by sharing the experiences of how former participants in CTSOs describe the student organizations influence on their postsecondary choices. Several researchers (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a) focused on the value of CTSOs, the impact of CTE, and the influence of student organizations that are not CTSOs, but no researchers previously studied the relationship between high school students who partook in a CTSO and their postsecondary choice. Alfeld et al. (2006) noted that further research might be able to determine the positive effects that they found regarding CTSOs lasting "after high school and into postsecondary and employment contexts" (p. 128) Studies with students who participated in CTSOs in high school need to be conducted to examine their post-high-school path (Alfeld et al., 2006). These researchers point to a gap in the literature regarding a relationship between high school students who participate in a CTSO and their postsecondary choice (Alfeld et al., 2006; Brodersen, 2021; Taylor, 2018a).

There are several implications from the results of this study. First, this study supports that "membership in a CTSO has a positive on student outcomes" (Huntsman, 2012, p. 15). Seven participants stated "Yes" when asked if they believed that their CTSO influenced their postsecondary choice. Four participants' responses indicated they had a positive experience as members of CTSOs. Participants B and D, two of the four, used the adverb "absolutely," implying that both participants were confident that the CTSO influenced their postsecondary choice.

Whereas, Participants F and J, separately elaborated that they "thought so" and "without a doubt." Participant F's answer implied that they were not sure whether their CTSO had

influenced their postsecondary choice because they were "not an engineer but I definitely did learn that I really enjoy doing things hands on." Participant F stated that their major in college was "something where I have an opportunity to work with my hands and do things that don't involve sitting at a desk. I honestly chose not to go into engineering."

Participant J's answer, "without a doubt," implies that they believed that their CTSO influenced their postsecondary choice. They stated, "Without a doubt, I think I was influenced by my CTSO." Participant J spoke of dreaming big, public speaking, and being ready for college, for their CTSO specifically influenced their postsecondary choice.

Second, this study supports the idea that the more a student participates in a CTSO, the more the benefits to a student can be enhanced (Alfeld et al., 2006). Seven participants (B, F, H, I, J, K, and L) of this study were CTSO members for 3 years or more. Participant F's freshman year of high school was also their first year of being in a CTSO. Joining the same CTSO their sophomore year afforded them an opportunity, once again, to enter the same competition. Their sophomore year, as they stated, the team "won our regional competition, and we were able to travel to Tennessee to participate in the International ROV competition." Participant J remembered attending the same field trip 2 years in a row. The first year they attended "different seminars." They remembered doing "a mini–Shark-Tank activity" the second year.

Finally, this study supports Saed and Scates-Winston's (2017) conclusion that CTSOs create a "safe place" for students to share challenges, to learn from a mentor, and learn about community resources. Participants G, J, and B discussed getting much out of mentorship. Participant G discussed how "the CTSO provided mentors for us that came from other schools (local colleges)." These mentors were a "huge inspiration" and made college feel "like an extension of what I was doing in the CTSO." Participant J described how their advisor was a

mentor, noting how they constantly reminded "us of different events, relating the events we were going to real life."

The implications from the findings from this research can provide insight to school principals and CTSO advisors regarding the perceived influence of participation in CTSOs on postsecondary choices. Former participants in CTSOs described their student organizations' influence on their postsecondary choices through individual interviews. Aragon et al. (2013), Jeffreys (1987), and Sessa et al. (2017) indicated that student organizations, whether a CTSO, content, or PBO, affect students. Advisors should observe, encourage, and mentor. Encouraging students to participate in CTSO experiences, whether they are classroom activities, competitions, or field trips provide "real-world" skills (AdvanceCTE, 2017). Finally, CTSOs are organizations in which students have an opportunity to learn from a mentor (Saed & Scates-Winston, 2017). As Participant G noted, being provided a mentor by the CTSO, gave them an opportunity to learn things from someone other than the advisor. Participant G stated that the mentor, "Would tell us about how their school (local university) was going and show us things we wouldn't know in high school that you'll only learn outside of high school." CTSO advisors and mentors have opportunities to affect and influence students. The participants of this study were influenced by their experiences, opportunities, and the people whom they met while participating in a CTSO.

Recommendations for Action

The purpose of this qualitative study was to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. This researcher determined the recommendations using the data collected in individual interviews with 13 study participants. This researcher recommends that people who are

interested in the topic of the influence of CTSOs on its former members should take several specific actions.

Recommendation 1 is for advisors to encourage member engagement in their respective CTSO competitions. Advisors should encourage CTSO members to participate in competitions. Competitions provide opportunities for students to demonstrate skills learned through their CTSO experiences. Participant C had never considered "economics very much," until they competed at their CTSOs regional level. Participant C said, "To this day, I'm extremely passionate about economics" because of this competition. The regional level of competition influenced Participant I, who stated, "The experience I had during the health ethics competitions during the regional level conference. It influenced me to want to go into health ethics and within business administration and hospitals."

Stauffer (2023) indicated that one of the ways that CTSO members might further their knowledge is through participation in different competitions. An extracurricular opportunity that CTSOs give students to gain skills and abilities needed to be successful in any career path is competitive events (NCC-CTSO, 2019). Competitions might give CTSO members opportunities to travel. Participant F stated, "When we travelled to the national competition," they got to see career options.

Recommendation 1 has relevance as informed by three of the four emergent themes: Theme 1, use of soft skills; Theme 2, participation in conferences; and Theme 3, engage with others. Competitions give CTSO members chances to demonstrate not only the technical skills, but also the soft skills that they have learned, Theme 1. Through chances to compete, students have the opportunity to participate in conferences and engage with others from different school, states, or countries.

Recommendation 2 is for school principals and CTE department chairs to continue to hire committed individuals as CTSO advisors. Fiscus and Hyslop (2008) noted that, without devoted, committed, and student-centered advisors, "CTSOs would be hampered in their efforts to have an impact" (p. 31) on the organization's members. Craft (2012) wrote, "Because participation in extracurricular activities can have such a strong impact on student achievement, schools need to hire the best possible" advisors. When implemented by committed advisors, CTSOs can play an important part in preparing students "to become productive citizens and to assume roles of leadership" (SkillsUSA Colorado, 2018, para. 3). Advisors have an opportunity, as a mentor, to have a great impact on the students who choose to participate in CTSOs. Participant M shared that their CTSO advisors, "Believed in me more than I believed in myself. Sometimes, I would go home and be like they really believe in me and I don't think so myself, but they believe in me and I appreciate that."

As Participant E looked back on their time as a member of a CTSO, "there is gratefulness for the CTSO and its advisor." Participant J reflected on their CTSO advisor noting that they "were influential in guiding us as CTSO members." When implemented by advisors, CTSOs play an important role in preparing students "to become productive citizens" (SkillsUSA Colorado, 2018, para. 3).

Fiscus and Hyslop (2008) concluded that CTSOs play an important role in preparing students to become productive citizens and to assume positions of leadership in their communities. Advisors, as CTSO leaders, give structure to a student organization. The advisor's structure, as Participant J noted is "a big part of the CTSO." When implemented by committed advisors, CTSOs play an important part in preparing students "to assume roles of leadership"

(SkillsUSA Colorado, 2018, para. 3). Recommendation 2 has relevance as informed from the emergent Theme 4, leadership preparation.

Recommendation 3 is for members of CTSOs to participate in leadership activities or hold an office within their respective CTSO. Advisors should encourage CTSO members to participate in leadership exercises, chair a committee, or run for an office. Nine former CTSO members that participated in this qualitative study provided statements about leadership or stated that they had held an office within their respective CTSO. Participant K said that they were "secretary in a leadership role" in their school CTSO. Participant I stated that they "grew and got better at my communication, staying in contact with higher ups within their CTSO when they began holding office."

Haines (2019) found that a reason to join a student organization was a student's desire to develop skills and to boost their leadership abilities, thus enhancing their personal growth and development. Participant H noticed in college that "my college peers are just now branching out into office holding or leadership positions." Participant H had already done that in their high school CTSO. They thought it also correlated to "where I would be going and the different spaces I'd be existing in college."

In the hexagon theory of student leadership, the theoretical framework for this study, Amirianzadeh's (2012) noted that student leadership development happens because there is more involvement from the student. Participant D was the chairman of fundraising for their CTSO local chapter. Participant D stated, "It taught me how to work with others towards just a common objective." By participating in leadership activities, Participant K learned how to be their own leader and is currently a small business owner. Participant E did not hold an office but stated that

one of their favorite components of their CTSO was participating in leadership exercises. Recommendation 3 has relevance as informed by Theme 4, leadership preparation.

Recommendations for Further Study

The findings of this study indicated that former CTSO members believed that their CTSO influenced their postsecondary choice. These findings suggested that former participants in CTSOs were influenced by their experiences, opportunities, and people they met. From these findings, the researcher recommends that two broader studies be conducted to explore the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. First, a broader study could include former members of any high school student organization, not only those specific to former members of a high school CTSO. Second, a broader study could include former CTSO members from more than one high school.

The broader study of exploring the perception of former participants in student organization, not only those specific to former members of a high school CTSO, could ascertain whether those student organizations influenced former participants in their postsecondary choices. Although the findings from this research study provided insight into how former participants in CTSOs describe the student organizations influence on their postsecondary choices, it was limited to one high school. A broader study in which a researcher might explore the choices of former members of a CTSO from more than one high school could determine whether former members of CTSOs at schools other than George High School are influenced on their postsecondary choices.

Conclusion

This qualitative study explored the perceptions of former CTSO members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. Upon the analysis of the data collected through 13 semistructured interviews, the findings were that former participants in CTSOs perceived an influence by the student organizations on their postsecondary choices. The findings suggested that former participants in CTSOs were influenced by their experiences, opportunities, and the people whom they met. Upon the analysis of the data collected, findings indicated that former CTSO members believed that their CTSO had influenced their postsecondary choice. From the analysis, four themes were generated: Theme 1, use of soft skills; Theme 2, engaging with others; Theme 3, participation in conferences; and Theme 4, leadership preparation.

Individually, when asked whether they believed that their CTSO influenced their postsecondary choice, Participants A, C, E, F, G, K, L, and M stated, "Yes." Participants B and D said, "Absolutely." Whereas Participants H and I, separately stated that they "thought so" and "without a doubt." The participants named opportunities such as competitions, activities, and experiences as CTSO influences that made them begin to think about their postsecondary choices.

The findings also suggested that former CTSO members' experience overall as a CTSO member was positive. Participants A, F, and J described it as "positive." Participants B and K, "loved it." Participant C stated that the CTSO was "the best $20 I ever spent." Participants D, E, and G, individually, described their overall experience as good, phenomenal, and wonderful. Whereas Participants H and I, separately stated their overall experience was professionalism building and an influence on their future.

This study's findings contribute to filling the gap in the literature (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a) regarding a relationship between high school students who participate in a CTSO and their postsecondary choices. The results of this study showed a positive overall experience for CTSO members. The participants of CTSOs believed that their CTSO influenced their postsecondary choices supported the findings of existing research on CTSOs and their influence they have on students. The results of this study supported the findings of existing research (AdvanceCTE, 2017; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a) on CTSOs and their influence they have on students. This researcher identified two areas for further study. First, a broader study to include former members of any high school student organization, not only those specific to former members of a high school CTSO. Second, a broader study to include former CTSO members from more than one high school.

From this study's findings, the researcher has three recommendations for action. Recommendation 1 is for advisors to encourage member engagement in their respective CTSO competitions. Advisors should encourage CTSO members to participate in competitions. Recommendation 2 is for school principals and CTE department chairs to hire committed individuals as CTSO advisors. Recommendation 3 is for members of CTSOs to participate in leadership activities or hold an office within their respective CTSO.

This research study allowed the researcher to increase their knowledge of the research process. It was like putting together a puzzle. The pieces of the puzzle were the tasks needed to fill a gap in the literature regarding a relationship between high school students who partook in a CTSO and their postsecondary choice (Alfeld et al., 2006; Brodersen et al., 2021; Dougherty et al., 2020; Taylor, 2018a). Through the tasks of developing original research, collecting data

through interviews, conducting data analysis, and evaluating literature the researcher contributed to filling a gap in the literature.

REFERENCES

Adams, D., Semaadderi, P., & Tan, K. L. (2018). Student leadership and development: A panoramic view of trends and possibilities. *International Online Journal of Educational Leadership*, *2*(2), 1–3. https://doi.org/10.22452/iojel.vol2no2.1

AdvanceCTE. (2021, October 1). Shifting the skills conversation: Employer attitudes and outcomes of career technical education https://careertech.org/resource/employer-attitudes-CTE

AdvanceCTE. (2017, April 1). The value and promise of career technical education: Results from a national survey of parents and students. https://careertech.org/resource/value-and-promise-of-cte-results-from-a-national-survey

Aken, B., & Jones, R. (2017). New homemakers of America, Kentucky. Notable Kentucky African Americans (NKAA) Database. https://nkaa.uky.edu/nkaa/items/show/2882

Alfeld, C., Hansen, D. M., Aragon, S. R., & Stone, J. R. (2006). Inside the black box: Exploring the value added by career and technical student organizations to students' high school experience. *Career and Technical Education Research*, *31*(3), 121–156. https://doi.org/10.5328/cter31.3.121

Amirianzadeh, M. (2012). Hexagon theory: Student leadership development. *Procedia –Social Behavioral Sciences*, *31*, 333–339. https://doi.org/10.1016/j.sbspro.2011.12.063

Amirianzadeh, M., Jaafari, P., Ghourchian, N., & Jowkar, B. (2010). College student leadership competencies development: A model. *International Journal for Cross-Disciplinary Subjects in Education*, *1*(3), 168–172. https://doi.org/10.20533/ijcdse.2042.6364.2010.0023

Aragon, S. R., Alfeld, C., & Hansen, D. M. (2013). Benefits of career and technical student organizations on female and racial minority students' psychosocial and achievement outcomes. *Career and Technical Education Research*, *38*(2), 105–124. https://doi.org/10.5328/cter38.2.105

Association for Career and Technical Education. (2019). A brief history of CTE. https://www.acteonline.org/wp-content/uploads/2019/06/BriefHistoryofCTE-Timeline-June2019.pdf

Association for Career and Technical Education. (2022, February 28). CTSO make CTE work: Learn about the organizations. https://www.acteonline.org/career-and-technical-student-organizations-make-cte-work/

Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, *40*(5), 518–529. https://www.middlesex.mass.edu/ace/downloads/astininv.pdf

Astin, A. W., & Astin, H. S. (2000, January). *Leadership reconsidered: Engaging higher education in social change.* Kellogg Foundation. https://eric.ed.gov/?id=ED444437

Baillieu, C., & Crowder, C. L. (2021, October). Challenges to maintaining student engagement and student organizations activities faced by advisors in the uncertain environment of COVID-19. *Online Journal for Workforce Education and development*, *11*(1). https://opensiuc.lib.siu.edu/ojwed/vol11/

Basit, T. (2003). Manual or electronic? The role of coding in qualitative data analysis. *Educational Research, 45*(2), 143–154. doi:10.1080/0013188032000133548 2

Bass, B. M. & Bass, R. (2008). *The Bass handbook of leadership. Theory, research and managerial applications.* Free Press.

Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking. *Qualitative Health Research*, *26*(13), 1802–1811. https://doi.org/10.1177/1049732316654870

Blake, I. A. (2017, November 21). What is the Job Training Partnership Act? Small Business – Chron.com. https://smallbusiness.chron.com/job-training-partnership-act-43539.html

Bogue, J. P. (1950). *The Community College. McGraw-Hill.*

Brand, B., Valent, A., & Browning, A. (2013, March 21). How career and technical education can help students be college and career ready: A primer. American Institutes for Research. https://www.air.org/resource/brief/how-career-and-technical-education-can-help-students-be-college-and-career-ready

Brodersen, R. M., Gagnon, D., Liu, J., & Tedeschi, S. (2021, May). *The impact of Career and Technical Education on postsecondary outcomes in Nebraska and South Dakota.* Institute of Education Sciences, Regional Education Laboratory Central. https://ies.ed.gov/ncee/edlabs/regions/central/pdf/REL_2021087.pdf

Broom, C. (2017, March 17). Five marketing ideas to capitalize on the CTE renaissance. Spaces4Learning. https://spaces4learning.com/articles/2017/03/17/marketing-cte.aspx

Brown, S., Spavone, S., & Lawrence, T. (2016, October 28). *Supporting analysis with career technical student organization data*. Paper presented at the Data Quality Institute 2016 Conference: Using data to assess CTE student outcomes, October 27–28. https://s3.amazonaws.com/PCRN/uploads/Supporting_Analysis_With_Career_Technical_Student_Organization_Data.pdf

Bryant, B. W. (2001). *History of the Virginia FFA Association* [Doctoral dissertation, Virginia Polytechnic Institute and State University]. https://vtechworks.lib.vt.edu/bitstream/handle/10919/26640/VAFFAHistory.PDF

Cahn, S. M. (2019). *Exploring ethics: An introductory anthology* (5th ed.). Oxford University Press.

Carl D. Perkins Career and Technical Education Improvement Act. Pub. L. 115-224 (2018).

Carter, E. W., Trainor, A. A., Ditchman, N., & Ownes, L (2011). A pilot study connecting youth with emotional or behavioral summer difficulties to work experience. *Career Development for Exceptional Individuals, 34*(2), 95–106. doi:10.1177/0885728810395745

Cohen, M., & Besharov, D. J. (2002, March 21). *The role of career and technical education: Implications for the federal government*. Office of Vocational and Adult Education. https://eric.ed.gov/?id=ED466939

Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, *25*, 435–436. https://pubmed.ncbi.nlm.nih.gov/30304614/

Comprehensive Employment and Training Act of 1973. Pub. L. 93-203 (1973).

Craft, S. W. (2012). *The impact of extracurricular activities on student achievement at the high school level* [Doctoral dissertation, University of Southern Mississippi].

Creswell, J. W., & Guetterman, T. C. (2019). *Educational research: Planning, conducting, and evaluating quantitative and qualitative* (6th ed.). Pearson Education Limited.

Croom, B, & Flowers, J. L. (2001). *A question of relevance: FFA programs and services as perceived by FFA members and non-members*. https://eric.ed.gov/?id=ED462282

DECA Inc. (2023). Enhance your business skills: Grow as a leader while networking with college and university students from around the world. https://www.deca.org/collegiate

Deutsch, J., Allison-Clark, K., & Yañez, A. (2021, May 31). *A research evidence scan of key strategies related to WIOA. The Workforce Innovation and Opportunity Act (WIOA)*

research portfolio. Mathematica; Social Policy Research Associates, Office of the Assistant Secretary for Policy, Department of Labor, Chief Evaluation Office. https://eric.ed.gov/?id=ED614830

D'Haem, J. (1993, January 1). The knowledge and perceptions of Michigan secondary vocational education administrators toward vocational student organizations [Master's thesis, Michigan State University]. https://doi.org/doi:10.25335/M5TM72697

Dougherty, S. M., Kamin, S. J., & Klein, S. (2020, October). *Improving measurement in career and technical education to support rigorous research*. Career and Technical Education Research Network. https://cteresearchnetwork.org/resources/improving-measurement-cte

Drury, R. L. (2003, Spring). *Community colleges in America: A historical perspective*. Virginia Community College System. https://files.eric.ed.gov/fulltext/EJ876835.pdf

Dugan, J., & Komives, S. (2007, January). *Developing leadership capacity in college students: findings from a national study*. [Technical report]. https://www.researchgate.net/publication/237536892_Developing_Leadership_Capacity_In_College_Students_Findings_From_a_National_Study

Duncan, A., & Dann-Messier, B. (2012, March 31). *Investing in America's future: A blueprint for transforming career and technical education.* Office of Vocational and Adult Education, U.S. Department of Education. https://eric.ed.gov/?q=source%3A%22Office%2Bof%2BVocational%2Band%2BAdult%2BEducation%2C%2BUS%2BDepartment%2Bof%2BEducation%22&ff1=eduElementary%2BSecondary%2BEducation&id=ED532493

Employment and Training Act of 1973. Pub. L. 93-203 (1973).

Ferguson, M. (2018). Washington view: The past, present, and future of CTE. *Phi Delta Kappan*, *100*(2), 64–65. https://doi.org/10.1177/0031721718803575

Fiscus, L., & Hyslop, A. D. (2008). *CTSO: Career and technical student organizations: A reference guide* (3rd ed.). https://www.education.pa.gov/Documents/K-12/Career%20and%20Technical%20Education/Student%20Organizations/CTSO%20Guidelines%20Booklet.pdf

Future Business Leaders of America. (2023a, April 18). 2023 FBLA collegiate national leadership conference: June 22–25, Atlanta, GA. https://www.fbla-pbl.org/2023-collegiate-nlc/

Future Business Leaders of America. (2023b, January 31). FBLA high school competitive events: 2023–24 guidelines, rating sheets, and resources. https://www.fbla-pbl.org/divisions/fbla/fbla-competitive-events/

Future Business Leaders of America-Phi Beta Lambda, Inc. (2021, September 29). *History*. https://www.fbla-pbl.org/about/history/

Galdas, P. (2017). Revisiting bias in qualitative research: Reflections on its relationship with funding and impact. *International Journal of Qualitative Methods, 16*, 1–2. https://doi.org/10.1177/1609406917748992

Garfinkel, S. L. (2015). *De-identification of personal information.* U.S. Department of Commerce, National Institute of Standards and Technology. https://doi.org/10.6028/nist.ir.8053

George-Barden Act of 1946. Pub. L. 586 (1946).

Guttman, R. (1983, March). Jobs Training Partnership Act: New help for the unemployed. *Monthly Labor Review*, 3–10. https://stats.bls.gov/opub/mlr/1983/03/art1full.pdf

Haines, K. (2019, May 01). Student perspectives on joining student organizations. http://hdl.handle.net/2047/D20316470

Harvey, M. W. (2001, January). Viewpoint: Transition in the field of special education. *Preventing School Failure: Alternative Education for Children and Youth. 45*(3), 100. https://www.proquest.com/openview/552271099926a2b5aab34bcfe26ae61f/1?pq-origsite=gscholar&cbl=16028

Haynes, B. (2021). *The relationship of career and technical student organizations to college and career readiness* (Doctoral dissertation, Gardner-Web University).

Hudnett, R. (2016, September 16). What it takes to attract students to a CTE offering. Nova Southeastern University, NSUWorks. https://nsuworks.nova.edu/fse_stuarticles/5/

Huntsman, J. (2012, April 6). *The impact of membership in career and technical student organizations (CTSO'S) upon student achievement.* (Research paper). https://www.nwmissouri.edu/library/researchpapers/2012/Huntsman,%20Jill.pdf

Jandrin, L. P. (2019). *The impact of career and technical student organizations on student career pathway choices at one mid-western urban public high school* (Master's thesis, University of Wisconsin-Stout). http://digital.library.wisc.edu/1793/81266

Jeffreys, B. J. (1987, January 1). *Variables associated with cocurricular participation in vocational student organizations* (Doctoral dissertation, Virginia Polytechnical Institute and State University). http://hdl.handle.net/10919/77806

Job Training Partnership Act of 1982. Pub. L. 97-300 (1982).

Johnson, S. (2019). Believe it before you present it. *The Business Journal – Central New York, 33*(16), 1–3. https://www.proquest.com/docview/2221178480?accountid

=12756&parentSessionId=qMlGTF2rXuNV61N9WlinOOOaejIuSNs%2BpqJYFC1i%2BxI%3D&forcedol=true

Jonas, D. L., Garland, M., & Yamaguchi, R. (2014, October). Career and technical education credentials in Virginia high schools: Trends in attainment and college enrollment outcomes. https://files.eric.ed.gov/fulltext/ED616549.pdf

Keselman, A., Ahmed, E. A., Williamson, D. C., Kelly, J. E., & Dutcher, G. A. (2015). Harnessing health information to foster disadvantaged teens' community engagement, leadership skills, and career plans: A qualitative evaluation of the Teen Health Leadership Program. *Journal of the Medical Library Association*, *103*(2), 82–86.

Korstjens, I., & Moser, A. (2017). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, *24*(1), 120–124. https://doi.org/10.1080/13814788.2017.1375092

Kouzes, J. M., & Posner, B. Z. (2011). *The five practices of exemplary leadership* (2nd ed.). Pfeiffer. https://www.amazon.com/Five-Practices-Exemplary-Leadership/dp/0470907347

Lagesse, R. (2012). *Home*. Girls in engineering. https://granbygie.weebly.com/home.html

Lebo, A. (2022). *The annual condition of secondary career and technical education: Courses, programs, students and faculty: 2022*. Iowa Department of Education. https://www.ccforiowa.org/media/cms/2022_The_Annual_Condition_of_Second_9F0D2429763BA.pdf

Lebrón, M. J., Stanley, C. L., Kim, A. J., & Thomas, K. H. (2017). The empowering role of profession-based student organizations in developing student leadership capacity. *New Directions for Student Leadership, 2017*(155), 83–94. https://doi.org/10.1002/yd.20252

Leedy, P., & Ormrod, J. (2015). *Practical research: Planning and design* (11th ed.). Pearson Education Limited.

Lyons, L. B. (2018). *Fostering leadership in high school: Development and validation of student leadership capacity building scales* [Doctoral dissertation, Antioch University]. https://aura.antioch.edu/etds/449/

Manpower and Training Development Act of 1962. Pub. L. 87-415 (1962).

Manufacturing Institute & SkillsUSA. (2015, October 2). *Attracting the next generation.* (Workforce Research Paper). https://www.skillsusa.org/attracting-the-next-generation-workforce-research-paper/

Marine Technology Society. (2023). The *MATE ROV competition*. https://materovcompetition.org/

Matthews, A. (2022). *Changing perceptions of career and technical education (CTE): Bridging the Soft Skills Gap with high quality CTE* [Doctoral dissertation, St. John's University]. https://scholar.stjohns.edu/theses_dissertations/385/

Mayhew, M. J., Rockenbach, A. H., Bowman, N. A., Seifert, T. A., Wolniak, G. C., Pascarella, E. T., & Terenzini, P. T. (2016). *How college affects students: 21st century evidence that higher education works* (Vol. 3). Jossey-Bass.

McCall, M. W. (2010). Recasting leadership development. *Industrial and Organizational Psychology, 3*, 3–19. https://doi.org/10.1111/j.1754-9434.2009.01189

McCauley, C. D., VanVelsor, E., & Ruderman, M. N. (2010). Introduction: Our view of leadership development. In E. VanVelso, C. D. McCauley, & M. N. Ruderman (Eds.), *Handbook of leadership development* (pp. 1–26). Jossey-Bass.

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Microsoft Support. (2023). *Apply shading to words or paragraphs*. https://support.microsoft.com/en-us/office/apply-shading-to-words-or-paragraphs-2020d0e0-f99e-4d53-a895-009077cbcfda

Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE.

Moore, G. (2017, February 23). The Smith-Hughes Act: The road to it and what it accomplished. *Techniques Magazine*, *92*(2), 17–21. doi:10.5812/sdme.67670

Morrill Act of 1862. Pub. L. 37-108 (1862).

Morrill Act of 1890. Pub. L. 111-122 (1890).

Naderifar, M., Goli, H., & Ghaljaie, F. (2017). Snowball sampling: A purposeful method of sampling in qualitative research. *Strides in Development of Medical Education*, *14*(3), 1–6. https://www.researchgate.net/publication/324590206_Snowball_Sampling_A_Purposeful_Method_of_Sampling_in_Qualitative_Research

Family, Career, and Community Leaders of America. (2021, August 22). *When did FHA future homemakers of America change the name to FCCLA?* https://fcclainc.org/about/history

National Able Network. (2019, March 22). *Wayback Wednesday: WIOA, the history, and our future*. National Able Network. https://www.nationalable.org/2019/03/22/wayback-wednesday-wioa-the-history-and-our-future/

National Coordinating Council for Career and Technical Student Organizations. (2018, October 4). *Home*. CTSOs. https://www.ctsos.org/

National Coordinating Council for Career and Technical Student Organizations. (2019, March). Definition, mission, purpose and criteria for membership. https://www.ctsos.org/wp-content/uploads/2019/03/2016-Final-Definition-NCC-CTS-JULY-16.pdf

National Coordinating Council for Career and Technical Student Organizations. (2022, September 16). CTSOs. https://www.ctsos.org/ctsos-2/

National Future Farmers of America Organization. (2022, May 18). FFA history: About FFA. https://www.ffa.org/ffa-history/

Niehoff, M. (2018, January 18). What CTE gets, what CTE needs to get more. Getting Smart. https://www.gettingsmart.com/2018/01/cte-gets-cte-needs-get/

Noble, H., & Smith, J. (2015, April 1). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing, 18*(2). http://dx.doi.org/10.1136/eb-2015-102054

Nolen, Z. L., Daniel, K. L., & Bucklin, C. J. (2020). Perceived benefits from participating in content-based student organizations. *Journal of Student Affairs Research and Practice, 58*(4), 417–429. https://doi.org/10.1080/19496591.2020.1796689

Ochayi, O. A., Olabo, O. O., Aderogba, O. A., Sunday, K. O., & Adebayor, I. F. (2021). Extent at which vocational guidance influence career decision of vocational and technical students. *Indonesian Journal of Educational Research and Review, 4*(2), 424–430. https://doi.org/10.23887/ijerr.v4i2

Office for Human Research Protections. (1979, April 18). The Belmont Report. HHS.gov. https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html

Pappano, L. (2021, December 23). More students question college, putting counselors in a fresh quandary. *The Hechinger Report*. https://hechingerreport.org/more-students-question-college-putting-counselors-in-a-fresh-quandary/

Patten, M. L., & Newhart, M. (2018). *Understanding research methods: An overview of the essentials* (10th ed.). Routledge.

Perkins Act of 1990. Pub. L. 101-392 (1990).

Phi Beta Kappa. (n.d.). The history of Phi Beta Kappa. https://www.pbk.org/History

Polit D. F., Beck C. T. (2014). *Essentials of nursing research: Appraising evidence for nursing practice*. Wolters Kluwer/Lippincott/Williams & Wilkins Health.

Putnam, J. F. (1981, March 28). *Postsecondary student terminology: A handbook of terms and definitions for describing students in postsecondary education*. U.S. Department of Education, National Center for Education Statistics. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=79409

Quad, A. D. J. P. (2016, March 17). *Research methodology in education*. https://lled500.trubox.ca/2016/225

Ravitch, S. M., & Carl, N. M. (2021). *Qualitative research bridging the conceptual, theoretical, and Methodological* (2nd ed.). Sage.

Ravitch, S. M., & Riggan, M. (2017). *Reason and rigor: How conceptual frameworks guide research* (2nd ed.). SAGE.

Rosch, D. M., & Collins, J. D. (2017, August 22). The significance of student organizations to leadership development. *New Directions for Student Leadership,* (155), 9–19. https://doi.org/10.1002/yd.20246

Saed, E., & Scates-Winston, E. (2017, September). *Making an impact: How CTSOs support students in poverty*. Association for Career and Technical Education. https://www.acteonline.org/wp-content/uploads/2018/05/Techniques-September2017-HowCTSOsSupportStudentsInPoverty.pdf

Saldaña, J. (2016). The coding manual for qualitative researchers. In *The coding manual for qualitative researchers* (3rd ed., pp. 1–39). SAGE.

Sanok, D. E.-M., Stripling, C. T., Stephens, C. A., & Griffith, A. P. (2018). Factors impacting former FFA members' decision to discontinue FFA after high school. *Journal of Research in Technical Careers, 2*(2), 26. https://doi.org/10.9741/2578-2118.1037

Schafer, B. A., Cleveland, C., & Schafer, J. B. (2020). Stakeholder perceptions of the value of accounting student organizations. *Journal of Accounting Education, 50*, 1–16. https://doi.org/10.1016/j.jaccedu.2020.100656

Schaffhauser, D. (2019, August 1). Preventing CTE renaissance from repeating problems of the past. THE Journal. https://thejournal.com/articles/2019/08/01/preventing-cte-renaissance-from-repeating-problems-of-the-past.aspx?m=1

Scott, J. L., & Sarkees-Wircenski, M. (2004). *Overview of career and technical education* (4th ed.). Amer Technical Pub.

Semaadderi, P., Adams, D., & Tan, K. L. (2019). Student leadership and development: A panoramic view of trends and possibilities. *International Online Journal of Educational Leadership, 2*(2), 1–3. https://www.researchgate.net/publication/337439118_Student_Leadership_And_Development_A_Panoramic_View_Of_Trends_And_Possibilities

Sessa, V. I., Alonso, N., Farago, P., Schettino, G., Tacchi, K., & Bragger, J. D. (2017). Student organizations as avenues for leader learning and development. *New Directions for Student Leadership*, *2017*(155), 21–32. https://doi.org/10.1002/yd.20247

Simon, M. K. (2011). Assumptions, limitations and delimitations. In *Dissertation and scholarly research: Recipes for success*. Dissertation Success, LLC. https://studylib.net/doc/8312011/assumptions---limitations-and-delimitations

Simon, M. K., & Goes, J. (2013). Scope, limitations, and delimitations. In *Dissertation and scholarly research: Recipes for success*. Dissertation Success, LLC. https://www.ders.es/limitationscopedelimitation1.pdf

Simonsen, J. C., Velez, J. J., Foor, R. M., Birkenholz, R. J., Foster, D. D., Wolf, K. J., & Epps, R. B. (2014). A multi-institutional examination of the relationships between high school activity involvement and leadership characteristics. *Journal of Agricultural Education*, *55*(1), 200-214. https://files.eric.ed.gov/fulltext/EJ1122318.pdf

SkillsUSA Colorado. (2018). The benefits of implementing a career and technical student organization. http://skillsusa.cccs.edu/the-benefits-of-implementing-a-career-and-technical-student-organization/

SkillsUSA & Student Research Foundation. (2023, January 25). SkillsUSA makes career and technical education better. https://www.skillsusa.org/news/report-skillsusa-makes-career-and-technical-education-better/#:~:text=SkillsUSA%20members%20are%20more%20excited,while%20in%20a%20CTE%20classroom

Smith-Hughes National Vocational Education Act of 1917. Pub. L. 740 (2017).

Solberg, S., Martin, J., Haines-Mayne, S., Richards, C., Larson, M., Gilli, L., Muller, L., Turner, J., Griffin, J., Barry, M., Osborne, S., Salazar, D., Bell, J., & Wendt, S. (2018). *The state of career technical education: Career advising and development*. New Skills for Youth Initiative (CCSSO, Advance CTE, ESG, & JPMorgan & Chase Co.) https://cte.careertech.org/sites/default/files/files/resources/State_of_CTE_Career_Advising_Development_2018.pdf

Stauffer, B. (2023, July 18). What is a career and technical student organization (CTSO)? Applied Educational Systems Education. https://www.aeseducation.com/blog/career-technical-student-organization-ctso

Stone, J. R. (2017). Introduction to pathways to a productive adulthood: The role of CTE in the American High School. *Peabody Journal of Education*, *92*(2), 155–165. https://doi.org/10.1080/0161956x.2017.1302207

Stringer, K. (2018, November 27). When cocurriculars spark careers: over 80 years: How "career and technical student organizations" have evolved from bricklaying to business management to robotics. https://www.the74million.org/article/when-co-curriculars-spark-careers-over-80-years-how-career-and-technical-student-organizations-have-evolved-from-bricklaying-to-business-management-to-robotics/

Taylor, B. (2018a, September 24). *Funding career and technical student organizations determining the value of the CTSO experience* [Doctoral dissertation, Texas A&M University]. https://oaktrust.library.tamu.edu/bitstream/handle/1969.1/174437/TAYLOR-RECORDOFSTUDY-2018.pdf?sequence=1&isAllowed=y

Taylor, B. (2018b). The value of a career and technical student organizations in texas. *Electronic International Journal of Education, Arts, and Science, 4*(9), 1–26. http://eijeas.com/index.php/EIJEAS/article/view/130

Technology Student Association. (2021). Technology Student Association: History. https://tsaweb.org/about/about-tsa/history

Threeton, M. D., & Pellock, C. (2010). An examination of the relationship between SkillsUSA student contest preparation and academics. *Journal of Career and Technical Education*, *25*(2), 94–108. https://doi.org/10.21061/jcte.v25i2.481

U.S. Department of Education. (2019, September). Bridging the skills gap: Career and technical education in high school. CTE Data Story. https://www2.ed.gov/datastory/cte/index.html#:~:text=Career%20and%20technical%20education%20(CTE)%20provides%20an%20important%20pathway%20to,interests%20and%20unique%20learning%20needs

U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences. (2020). About CTE Statistics. https://nces.ed.gov/surveys/ctes/about.asp#:~:text=on%20trade%20schools%3F,What%20is%20CTE%3F,jobs%20or%20fields%20of%20work

U.S. Department of Education, Office of Career, Technical, and Adult Education Division of Academic and Technical Education, Perkins Collaborative Resource Network. (2020). Perkins V. https://cte.ed.gov/legislation/perkins-v#:~:text=Perkins%20Career%20and%20Technical%20Education,our%20nation's%20youth%20and%20adults

U.S. Department of Education. (2022, January). The Workforce Innovation and Opportunity Act state plan. https://wioaplans.ed.gov/

U.S. Department of Labor. (n.d.). *WIOA youth formula program*. https://www.dol.gov/agencies/eta/youth/wioa-formula

Villarreal, S., Montoya, J. A., Duncan, P., & Gergen, E. (2018). Leadership styles predict career readiness in early college high-school students. *Psychology in the Schools*, *55*(5), 476–489. doi:10.1002/pits.22131

Virginia Department of Education. Office of Career, Technical, and Adult Education. (2018). CTERS user's manual. https://www.vaffa.org/docs/sidemodules/CTERS%20User%20Manual_75616.pdf

Virginia Department of Education, Career and Technical Education Resource Center. (2020). https://www.doe.virginia.gov/teaching-learning-assessment/k-12-standards-instruction/career-and-technical-education-cte/hqwbl

Virginia Department of Education. (2022). CTE high-quality work-based learning. https://www.doe.virginia.gov/teaching-learning-assessment/k-12-standards-instruction/career-and-technical-education-cte/hqwbl

Virginia Department of Education. (2023). School quality profiles: Download data. http://schoolquality.virginia.gov/download-data

Wagner-Peyser Act of 1933. Pub. L.73-30 (1933).

Workforce Innovation and Opportunity Act of 2014. Pub. L. 113-128 (2014).

Workforce Investment Act of 1998. Pub. L. 105-220 (1998).

Zeidenberg, M., Jenkins, D., & Calcagno, J. C. (2007, May 31). *Do student success courses actually help community college students succeed?* (CCRC brief. Number 36). Columbia University, Community College Research Center. https://files.eric.ed.gov/fulltext/ED499357.pdf

Zoom. (2023, September 25). Audio transcription for cloud recordings. https://support.zoom.us/hc/en-us/articles/115004794983-Audio-transcription-for-cloud-recordings

APPENDIX A

INTERVIEW PROTOCOL: SEMISTRUCTURED INTERVIEW QUESTIONS

1. In which Career and Technical Student Organization (CTSO) were you a member?
2. How many years were you a member?
3. What type of activities did you participate in as a member?
4. Please tell me about your overall experience as a CTSO member.
5. Do you believe your CTSO influenced your postsecondary choice?
    a. If so, how do you think it influenced it?
    b. If not, why do you think it did not influence it?
6. Do you believe your CTSO prepared you to enter the workforce or enter college in your desired career field?
    a. If so, how do you think it prepared you to enter the workforce or enter college?
    b. If not, what do you think did prepare you to enter the workforce or enter college?
7. Please share anything else you would like to say about being a member of, participating in, or the influence a CTSO had on your postsecondary choice that hasn't been mentioned today.

APPENDIX B

ADVISOR RECRUITMENT EMAIL

Hello Current or Former Career & Technical Education Advisor!

I am currently a doctoral student at the University of New England. I am conducting a study titled, *Perceived Influence of Participation in Career and Technical Student Organizations on Postsecondary Choices,* for my dissertation. The purpose of this research study is to explore the perceptions of former Career and Technical Student Organization (CTSO) members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. I am seeking 13–18 participants to participate in my doctoral research study.

To be eligible to participate in this study they need to be:

- Age 18 or older
- A former Career and Technical Student Organization (CTSO) member at George High School, a pseudonym
- At least nine months removed from graduation

Participation in this research is voluntary. Participation will consist of one recorded interview of approximately 60 minutes. The interview will be conducted on Zoom at a time of the participant's convenience. If there are more than 18 people who express interest, only the first 18 will be selected to interview. All data will be kept confidential, and pseudonyms will be used to protect the identities of respondents. All identifying information, including school names, locations, and staff names, will be deidentified.

Please review the attached Participant Information Sheet, which outlines the specific details of this study including confidentiality and privacy measures.
Please forward this email with the attachment and invite former members of CTSOs who have attended or graduated from George High School (a pseudonym) to participate in this research study. Participation is voluntary. If they are interested in sharing their experience with CTSOs while they were in high school, they may contact me via email at dmarshall4@une.edu and we can set up a time for an interview over Zoom.

If you would like additional information or have any questions, please reach out to me at the above listed email.

Thank you for forwarding this email to recruit your former CTSO participants for this study.

Sincerely,

Deborah K. Marshall
Doctoral Student
University of New England
dmarshall4@une.edu

APPENDIX C

PARTICIPANT INFORMATION SHEET

Version Date:	May 12, 2023
IRB Project #:	0523-11
Title of Project:	Perceived Influence of Participation in Career and Technical Student Organizations On Postsecondary Choices
Principal Investigator (PI):	Deborah K. Marshall
PI Contact Information:	Dmarshall4@une.edu

INTRODUCTION

- This is a project being conducted for research purposes. Your participation is completely voluntary.
- The intent of the Participant Information Sheet is to provide you with important details about this research project.
- You are encouraged to ask any questions about this research project, now, during or after the project is complete.
- The use of the word 'we' in the Information Sheet refers to the Principal Investigator and/or other research staff.

WHAT IS THE PURPOSE OF THIS PROJECT?

- The general purpose of this research project is to explore the perceptions of former Career and Technical Student Organization (CTSO) members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school.
- At least 13 participants will be invited to participate, and no more than 18, in this research as part of the investigator's dissertation research.

WHY ARE YOU BEING ASKED TO PARTICIPATE IN THIS PROJECT?

You are being asked to participate in this research project because you are a former CTSO member, you were a member of a CTSO for at least one year while at George High School (a pseudonym) age 18 or older, and at least nine months removed from graduation.

WHAT IS INVOLVED IN THIS PROJECT?

- You will be asked to participate in one semistructured interview with the principal investigator that will last 60 minutes over Zoom.
- You can choose a pseudonym to be used in place of your name for the study.
- You will be given the opportunity to leave your camera on or off during the interview, and your interview will be recorded using Zoom.

- You will be emailed a copy of your interview transcript to review for accuracy. You will have seven calendar days to respond, or the PI will assume that you have no comments, and the transcript will be assumed to be approved.

WHAT ARE THE POSSIBLE RISKS OR DISCOMFORTS INVOLVED FROM BEING IN THIS PROJECT?

The risks involved with participation in this research project are minimal and may include an invasion of privacy or breach of confidentiality. This risk will be minimized by using a pseudonym for each of the participants' names and by eliminating any identifying information from the study. Participants will have the opportunity to review their transcripts for accuracy and will be given the choice to have their cameras off during the interview. Participants have the right to skip or not answer any questions, for any reason.

Please see the 'WHAT ABOUT PRIVACY & CONFIDENTIALITY?' section below for additional steps we will take to minimize an invasion of privacy or breach of confidentiality from occurring.

WHAT ARE THE POSSIBLE BENEFITS FROM BEING IN THIS PROJECT?

There are no likely benefits to you by being in this research project; however, the information we collect may help us understand the influence Career and Technical Student Organizations (CTSOs) have on members postsecondary choices relative to their involvement in CTSOs in a midsize city high school.

WILL YOU BE COMPENSATED FOR BEING IN THIS PROJECT?

You will not be compensated for being in this research project.

WHAT ABOUT PRIVACY AND CONFIDENTIALITY?

We will do our best to keep your personal information private and confidential. However, we cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Additionally, your information in this research project could be reviewed by representatives of the University such as the Office of Research Integrity and/or the Institutional Review Board.

The results of this research project may be shown at meetings or published in journals to inform other professionals. If any papers or talks are given about this research, your name will not be used. We may use data from this research project that has been permanently stripped of personal identifiers in future research without obtaining your consent.

The following additional measures will be taken to protect your privacy and confidentiality:

- Data will only be collected during one on one participant interviews using Zoom, no information will be taken without participant consent, and transcribed interviews will be checked by participants for accuracy before they are added to the study.
- Pseudonyms will be used for all participants and any personally identifying information will be stripped from the interview transcript.

- All names and e-mails gathered during recruitment will be recorded and linked to a uniquely assigned pseudonym within a master list.
- The master list will be kept securely and separately from the study data and accessible only to the principal investigator.
- The interview will be conducted in a private setting to ensure others cannot hear your conversation.
- Participants are given the option to turn off their cameras during the Zoom interview.
- Once member checking of the transcribed interview is complete the recorded Zoom interview will be destroyed.
- Once all transcripts have been verified by the participants, the master list of personal information will be destroyed.
- All other study data will be retained on record for 3 years after the completion of the project and then destroyed. The study data may be accessed upon request by representatives of the University of New England (e.g., faculty advisors, Office of Research Integrity, etc.) when necessary.
- All data collected will be stored on a password protected personal laptop computer accessible only by the principal investigator.
- The results of the project will not be shared with the site leadership.

WHAT IF YOU WANT TO WITHDRAW FROM THIS PROJECT?

You have the right to choose not to participate, or to withdraw your participation at any time until the Master List is destroyed without penalty or loss of benefits. You will not be treated differently if you decide to stop taking part in this project.

If you request to withdraw from this project, the data collected about you will be deleted when the master list is in existence, but the researcher may not be able to do so after the master list is destroyed.

WHAT IF YOU HAVE QUESTIONS ABOUT THIS PROJECT?

You have the right to ask, and have answered, any questions you may have about this research project. If you have questions about this project, complaints or concerns, you should contact the Principal Investigator listed on the first page of this document.

WHAT IF YOU HAVE QUESTIONS ABOUT YOUR RIGHTS AS A RESEARCH PARTICIPANT?

If you have questions or concerns about your rights as a research participant, or if you would like to obtain information or offer input, you may contact the Office of Research Integrity at (207) 602-2244 or via e-mail at irb@une.edu.

APPENDIX D

FORMER CTSO MEMBER RECRUITMENT EMAIL

Hello Former Career & Technical Education Student!

I am currently a doctoral student at the University of New England. I am conducting a study titled, *Perceived Influence of Participation in Career and Technical Student Organizations on Postsecondary Choices,* for my dissertation. The purpose of this research study is to explore the perceptions of former Career and Technical Student Organization (CTSO) members' postsecondary choices relative to their involvement in CTSOs in a midsize city high school. I am seeking 13–18 participants to participate in my doctoral research study.

You are eligible to participate in this study if you are:

- Age 18 or older
- A former Career and Technical Student Organization (CTSO) member at George High School, a pseudonym
- At least nine months removed from graduation

Participation in this research is voluntary. Participation will consist of one recorded interview of approximately 60 minutes. The interview will be conducted on Zoom at a time of your convenience. If there are more than 18 people who express interest, only the first 18 will be selected to interview. All data will be kept confidential, and pseudonyms will be used to protect the identities of respondents. All identifying information, including school names, locations, and staff names, will be deidentified.

Please review the attached Participant Information Sheet which outlines the specific details of this study including confidentiality and privacy measures.

If you are interested in sharing your experience with CTSOs while you were in high school, please contact me via email at dmarshall4@une.edu and we can set up a time for an interview over Zoom.

If you would like additional information or have any questions, please reach out to me at the above listed email.

Thank you for your consideration of participation in this study.

Sincerely,

Deborah K. Marshall
Doctoral Student
University of New England
dmarshall4@une.edu

APPENDIX E

UNIVERISTY OF NEW ENGLAND INSTITUTIONAL REVIEW BOARD APPROVAL

UNE UNIVERSITY OF NEW ENGLAND
INNOVATION FOR A HEALTHIER PLANET

Office of Research Integrity
Institutional Review Board

Biddeford Campus
11 Hills Beach Road
Biddeford, ME 04005
(207) 602-2244 T
(207) 602-5905 F

Portland Campus
716 Stevens Avenue
Portland, ME 04103

DATE OF LETTER: May 12, 2023

PRINCIPAL INVESTIGATOR: Deborah Marshall
FACULTY ADVISOR: Debra L. Welkley, Ed.D.

PROJECT NUMBER: 0523-11
RECORD NUMBER: 0523-11-01

PROJECT TITLE: Perceived influence of participation in career and technical student organizations on postsecondary choices

SUBMISSION TYPE: New Project
SUBMISSION DATE: May 11, 2023

ACTION: Determination of Exempt Status
DECISION DATE: May 12, 2023

REVIEW CATEGORY: Exemption Category # *2ii*

The Office of Research Integrity has reviewed the materials submitted in connection with the above-referenced project and has determined that the proposed work is exempt from IRB review and oversight as defined by 45 CFR 46.104.

You are responsible for conducting this project in accordance with the approved study documents, and all applicable UNE policies and procedures.

If any changes to the design of the study are contemplated (e.g., revision to the research proposal summary, data collection instruments, interview/survey questions, recruitment materials, participant information sheet, and/or other approved study documents), the Principal Investigator must submit an amendment for review to ensure the requested change(s) will not alter the exempt status of the project.

If you have any questions, please send an e-mail to irb@une.edu and reference the project number as specified above within the correspondence.

Best Regards,

Bob Kennedy, MS
Director of Research Integrity