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A Phenomenological Study of Community College Career and Technical Education Graduates' Perceptions of the Impact of Online Delivery on Their Employability Skills Preparation

Jarett John Gilbert
jgilbert19@georgefox.edu

A PHENOMENOLOGICAL STUDY OF COMMUNITY COLLEGE CAREER AND TECHNICAL EDUCATION GRADUATES' PERCEPTIONS OF THE IMPACT OF ONLINE DELIVERY ON THEIR EMPLOYABILITY SKILLS PREPARATION

by

Jarett John Gilbert

FACULTY RESEARCH COMMITTEE:

Chair: Linda Samek, EdD

Member: Dane Joseph, PhD

Member: Gary Sehorn, EdD

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"A Phenomenological Study of Community College Career and Technical Education Graduates' Perceptions of the Impact of Online Delivery on Their Employability Skills Preparation," a Doctoral research project prepared by JARETT GILBERT in partial fulfillment of the requirements for the Doctor of Education degree in Educational Leadership.

This dissertation has been approved and accepted by:

Linda Samek		Committee Chair
November 5, 2021	Linda Samek, Ed.D.	Emeritus Administrator
November 5, 2021	Dane Joseph, Ph.D.	Associate Professor of Education
Gary Sehorn		
November 5, 2021	Gary Sehorn, Ed.D.	Associate Professor of Education

ABSTRACT

This qualitative study used a phenomenological approach to elevate and explore the voices of Oregon community college graduates of online career and technical education (CTE) programs to better understand how they perceive they were prepared with employability skills. The participants graduated from their program in Spring 2020, after their final term of classes were shifted completely online due to COVID-19. A three-interview protocol was conducted to explore how participants define employability skills, and the extent to which they felt their online learning experience prepared them with strong teamwork, communication, and results-orientation skills, requisite for success in their fields. Five major findings were uncovered in this study: (a) participants broadly perceive dependability, adaptability, and work ethic as the most desirable employability skills; (b) participants define strong teamwork skills as the ability to delegate and communicate tasks based on a realistic assessment of individuals' abilities within the team; (c) participants believe that strong communication skills are relational, and marked by honesty and transparency, self and situational awareness, and non-verbal skills such as listening and body language; (d) participants understand strong results-orientation as the ability to effectively plan to clear outcomes and implement; and (e) employability skills can be taught and learned in an online modality, provided the appropriate technology, preparedness of the instructor, and alignment of assignments or activities. This study sought to bring student voice to the literature on online CTE learning, although it represents a particular experience in time with COVID-19. Implications for this study suggest a need for CTE programs and employers to better articulate desirable employability skills to students, for faculty to build belonging and communication into instructional plan, and for community colleges to invest in appropriate technology and professional development for growth and development of online CTE learning.

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Chapter 1: Introduction

The higher education landscape shifted drastically in Oregon on March 19, 2020 when—pursuant to her declaration of a state of emergency—Governor Kate Brown issued an executive order suspending all in-person higher education activities due to the coronavirus, or COVID-19, outbreak (Exec. Order No. 20-09, 2020). At that date, the rate of infection was 46.14 new cases per day, but would increase to just over 72.86 cases per day by the end of the month (Johns Hopkins University and Medicine, 2020). Although some community college classes and programs were already delivering instruction in online, remote, or hybrid modalities, or were more readily adaptable, many faculty were uncertain of how to translate career and technical education (CTE) curriculum—traditionally heavy with hands-on, face-to-face instruction—in time for Spring term 2020 (i.e., approximately April to June 2020). As a result, cancelled or postponed CTE courses were one contributing factor to the significant decrease in student FTE at the 17 Oregon community that term (Higher Education Coordinating Commission, 2020). Many in higher education, including myself, have since contemplated how we were not more proactively prepared for such a shift. Perhaps unsurprisingly, little research has been conducted about online or remote delivery of CTE programs, let alone research that seeks the perspectives of students and alumni (Horvitz, 2019; Horvitz et al., 2019). This study endeavors to elevate and explore the voices of Oregon community college CTE alumni whose final term was delivered fully or partially online due to COVID-19, to learn to what extent they perceive that their online learning experiences impacted their employability skill preparedness.

Problem Statement

Community colleges create equity and prosperity through access to affordable and transformative workforce education. Higher education in the United States, however, has never

before faced such myriad and complex challenges to its mission fulfillment, such as decreased state funding in the face of rising costs of operation, the availability of more advanced technology leading to increased competition for students, and the demand by those students for more flexible delivery models (Fullan & Scott, 2009; Marx, 2006). Online education has been identified as one opportunity to overcome these change forces: "Distance education enrollments continue to grow, even in the face of declining higher education enrollments" (Allen & Seaman, 2016, p. 4). Despite this popularity, however, CTE programs have not been quick to embrace online delivery, whether due to faculty reluctance or inability to easily translate their course content to the delivery method, inadequate or nonexistent training and infrastructure for the creation and support of online or remote-delivered programs, or the inflexibility of program accreditors or state regulators to substitute online delivery for supervised on-site learning.

The COVID-19 pandemic has highlighted both the need for and lack of online and remote CTE offerings at community colleges (Hechinger & Lorin, 2020). Many in higher education believe it to be a long-awaited and once-in-a-lifetime catalyst for system change, or at least for resilient institutions: "The institutions that will thrive in the future will be the ones that embrace online platforms, not just a hastily assembled, short-term replacement for classes, but long-term expansions of classroom instruction, campus life, and off-campus learning" (Kelchen et al., 2020, para. 10). Fortunately, most community colleges are already offering distance education (Allen & Seaman, 2016; Lokken, 2019) and use learning management systems, and many faculty have diversified their pedagogical approaches in ways that translate to online learning (i.e., readings ahead of class, flipped classroom). Furthermore, everyday familiarity with user-friendly internet technology is undeniable, as digitally-savvy Americans regularly turn to the internet for how-to videos and instruction manuals. Inevitability and possibility seem to

suggest a future for online CTE programs, or at least a more robust adoption by CTE programs of online delivery methods.

In sum, students are the heart of the transformative mission of community colleges, who have historically been tasked with offering their students responsive, market-relevant education that leads directly to jobs or prepares them for further study (Cohen et al., 2013). CTE is the hands-on, practical, and experiential training and education that prepares students to join the workforce in fields like healthcare and manufacturing. Traditionally, the specialized knowledge, skills, and competencies gained by CTE students has been learned face-to-face; however, as the global economic and social landscape changes (Fullan & Scott, 2009; Marx, 2006), the acceptability of and need for online modalities has become exceedingly clear. To create meaningful and effective CTE training programs, which endeavor to develop students' technical and employability skills, the voice of program alumni would be a powerful contributor.

About the Researcher

My interest in this topic is professional. I began my career in higher education in 2009, working throughout with career and technical education (CTE) programs. From 2009-2015, I served in three different roles at the New York University College of Dentistry (NYUCD) in New York, New York. In my first two roles, I worked to recruit international dental students into clinical specialty certificate programs (i.e., prosthodontics, implantology, periodontics), support them throughout their education, and then engage them in professional advancement activities (i.e., conferences, study groups) after they graduated. In my third role at NYUCD, I served as Director of the Linhart Continuing Dental Education Program, where I oversaw three clinical participation programs for American general practitioners and supported the development,

scheduling, and implementation of continuing education programs for domestic and international dentists (i.e. multi-day workshops, clinical conferences, Invisalign trainings).

In 2016, after relocating to my wife's home state of Oregon, I transitioned into the transformative mission of community colleges. From 2016-2020, I served as Director of Health Sciences at Clackamas Community College (CCC) in Oregon City, Oregon, providing leadership to 11 full-time faculty, three full-time staff, and over 15 part-time faculty and staff, in support of seven degree and certificate programs. After two years in this role, I was asked to further contribute as the Associate Dean of Technology, Applied Science, and Public Services, in which capacity I further supported the Campus Directors of our two centers in Milwaukie and Wilsonville, Oregon, to focus on connecting the college with business, industry, and community partners with these centers. I also oversaw our community education programming, registered apprenticeships, and some of our natural resource technology programs (i.e., fire science, geographic information systems).

The essential role of community colleges in workforce and community development became abundantly clear to me throughout my time at CCC, as some of my most important foci were student and faculty recruitment, clinical placement, networking, and budgeting. To illustrate, two of my biggest tasks for the Vice President of Instruction and Student Services and the Dean of Technology, Applied Science, and Public Services, were environmental scans of our two centers' communities (which included interviews with key internal and external stakeholders, i.e. students, economic development, businesses) and a thorough examination of the institutional impact and sustainability of one of the college's CTE programs. In my experience, administrators, faculty, and staff always reference the standalone expense of CTE programs; however, the institutional impact of these programs can be both tangible (i.e.,

connectedness to related instruction, grant attractiveness) and intangible (i.e., alumni achieve the opportunity to begin new careers to sustain their desired livelihood). It is also worth noting that community colleges face a challenge in tracking their alumni once they enter the workforce in their chosen field.

In May 2020, during the first academic term (11 weeks) fully impacted by COVID-19, I assumed the role of Vice President of Instructional Services at Columbia Gorge Community College (CGCC) in The Dalles, Oregon, with a center in Hood River, Oregon. CGCC is a small (Carnegie Classification of Institutions of Higher Education, n.d.) rural-serving institution, a Hispanic-Serving Institution, and, of the 17 Oregon community colleges, CGCC is among the three smallest in terms of student full-time equivalency and budgets. Formally, by the state of Oregon, CGCC serves a two-county area; however, as the only higher education institution within a seven-county radius, we informally serve many more communities across a sizeable geographic area. CTE degree and certificate offerings at CGCC include nursing and medical assistant, electro-mechanical technology, welding, unmanned aerial systems, and business and entrepreneurship, with construction technology, aviation maintenance technician, and advanced manufacturing in development. Like many of my peers in Oregon and across the nation, I recognize COVID-19 serves as an opportunity to explore how the traditional face-to-face delivery of CTE programs can be reimagined to better serve our rural student populations and our business and industry partners.

Purpose Statement

The purpose of this study is rooted in my professional experience. Over six years as a community college administrator, including four years with direct oversight over CTE programs, I witnessed there and throughout the state a tendency towards the traditional CTE delivery

model, with certain exceptions (i.e., hybrid model delivery for several health sciences programs that were at-distance). I, myself, was not aware of substantial efforts in the community college to shift to mostly- or fully-online delivery methods for CTE programs with substantial hands-on learning requirements. Unfortunately, this lack of preparedness for online delivery of many community college CTE programs in Oregon was complicated by Governor Brown's executive order to suspend all face-to-face learning, except for healthcare-related trainings that had to adhere to social distancing and other safety protocols (Exec. Order No. 20-09, 2020; Exec. Order No. 20-17). Statewide conversations indicated a steep drop in student FTE at most community colleges, attributed primarily to non-health sciences CTE offerings in Spring term 2020, as well as a significant decrease in high school accelerated learning (i.e., dual credit, sponsored dual credit, expanded options), and non-credit community education.

So much of CTE has traditionally been place-bound—with a traditional preference for hands-on, supervised training—that especially rural students might benefit from the adoption of online delivery methods, at least for content that seeks to build the transferable employability skills demanded by employers. Spring term 2020 graduates, therefore, may be able to shed some light on their lived experience of a sudden shift to online learning with broad implications for CTE delivery in the future. The purpose of this study is to elevate and explore the voices of Spring term 2020 graduates to understand the extent to which they perceive that their online CTE program experiences prepared them with the employability skills needed for professional success. My research of existing literature indicates the lack of student voice as a gap which now seems so relevant due to the impact of COVID-19. In fact, a leading researcher in higher education online learning and distance education, Dr. Regina Garza Mitchell, confirmed as much with me in an email about my research: "I haven't run across much that deals with online

technical education, and virtually nothing about the student experience" (personal communication, February 25, 2020). While student success indicators may inform continuous program and course improvement, as well as funding and institutional action, I assert that there is much to be learned from our alumni who, employed in the field of their study, may provide valuable insight into the effectiveness of their instructional delivery method. As a community college administrator in Oregon with over a decade of total experience in higher education and CTE, I see a direct, practical application for our CTE alumni feedback, now more than ever.

Research Questions

The purpose of this study is to understand how community college graduates perceive their online CTE programs prepared them with employability skills. Imperatore and Hyslop (2018) have developed a widely-accepted framework for CTE that articulates specific employability skills: "problem solving, critical thinking, teamwork, communications and workplace etiquette" (p. 1). The United States Department of Education organizes CTE employability skills into three broad categories in its *Employability Skills Framework* (Perkins Collaborative Resource Network, n.d.): effective relationships (i.e. interpersonal skills, personal qualities), applied knowledge (i.e. critical thinking skills, applied academic skills), and workplace skills (i.e., resource management, communication skills, systems thinking). Similarly, in a recent survey, European businesses specified their most desired employability skills amongst three broad categories (personal, social, and methodological), and teamwork, communication, and results orientation emerged as the top three (Succi, 2019). I intend to contribute to the gap in knowledge about online CTE programs by seeking graduate experience on the following research questions:

- How do graduates of online CTE programs understand employability skills?

- How do these graduates perceive that their online CTE program prepared them with teamwork skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with communication skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with results orientation skills for the workplace?

Significance of Study

The goal of this research study is to better understand how community college CTE graduates perceive their online, distance programs prepared them with the employability skills requisite for success in the workforce. Research about online CTE programs is sparse, especially those that focus on the student or graduate voice (Horvitz et al., 2019). Since most community colleges were forced into remote course delivery in Spring term 2020 (i.e., roughly April to June 2020) by the pandemic, this represents a unique opportunity to contribute to our understanding of the extent to which CTE curriculum can achieve its promised outcomes even through online delivery. Given the challenges facing higher education broadly (Fullan & Scott, 2009; Marx, 2006), and CTE more specifically (Fletcher Jr, 2018)—especially as it concerns meeting the needs of business and industry and the impact of increased competition for students on institutional viability—community colleges need the best information possible to continue to improve their product. To that end, CTE students who graduated in June 2020 are likely to have experienced both the traditional face-to-face delivery model, as well as online, remote delivery. Better understanding their lived experience of the impact of online learning on their preparedness for the workforce is of value to continuous improvement. This is especially true of employability skills, often referred to as soft skills, for which debate exists about the extent to which higher

education institutions are meeting industry needs—or if industry has their own role to play in graduate growth (Hurrell, 2016; Succi & Canovi, 2019). The findings of this study have a potential to help faculty improve their online CTE programs for student success and institutions to more clearly market their online CTE programs to students.

Definition of Terms

Career and technical education. Education and training aimed at preparing students with both technical and employability skills requisite for success in the workforce. Also known as occupational, vocational, or technical education, or by its acronym, CTE, such programming requires responsiveness on the part of higher education institutions to labor market demand to prepare students for "a distinct economic sector and/or profession" (Lepori, 2020, p. 2118).

Community college. Public or not-for-profit higher education institutions who are regionally accredited to offer certificates, associate degrees, and, increasingly, applied baccalaureate degrees (Bragg & Love, 2019; Cohen et al., 2013). In the state of Oregon, community colleges can submit applied baccalaureate programs for approval by the Higher Education Coordinating Commission (n.d.-a). Community colleges are also referred to as junior colleges or technical colleges.

Employability skills. Often known as soft skills or professional skills, employability skills refer to the transferable personal, social, and methodological traits of an individual (Succi, 2019) or applied knowledge, relationship, and workplace skills (Perkins Collaborative Resource Network, n.d.) that can predict success in technical or cognitive tasks (Heckman & Kautz, 2012). In CTE, employability skills and technical skills are the primary intended learning outcomes (Imperatore & Hyslop, 2018).

Online learning. Refers to programs or courses delivered fully or partially through web technology (Lokken, 2019; McAvinia, 2016). The intent of this research project is not to further the disagreement in terminology (i.e., *online* versus *distance* versus *remote*) that pervades academia (Moore et al., 2011); rather, any reference in this study to online programs refers to those whose course content may be defined as web-facilitated (up to 30% of instruction uses web-based technology), hybrid (up to two-thirds), and fully online (Allen & Seaman, 2016). Any reference to online learning in this research project is inclusive of remote synchronous (set class time, live delivery via video conference technology), online asynchronous (self-paced via a course shell on a learning management system, i.e., Moodle), HyFlex (students choose delivery method on a given class day), or hybrid and blended learning modalities.

Results orientation. An employability skill defined by the ability to prioritize time, resources, and tasks in the achievement of an overarching goal (Haselberger et al., 2012; National Institutes of Health, n.d.). A results-oriented individual understands the direction of the organization or the project at hand, and their place in the achievement of that goal, and uses their own critical thinking skills, resource management skills, and personal qualities to contribute to or achieve a goal (Perkins Collaborative Resource Network, n.d.).

Limitations and Delimitations

Due to COVID-19, most community college CTE programs in Oregon were forced to adopt fully or partially online delivery methods through the end of the 2019-2020 academic year (Exec. Order No. 20-09, 2020; Exec. Order No. 20-17). Therefore, COVID-19 created a unique opportunity to study the extent to which online delivery methods for CTE programs were as effective in preparing students with employability skills as traditional methods. That said, the pandemic presented a few complications to data gathering for this study. Although field

observations can be powerful data sources for phenomenological studies (Creswell & Poth, 2018), I recognized that, given protocols for maintaining employee safety and functioning businesses, I would not be allowed to conduct in-person observations of my participants. Therefore, I gathered my data virtually, using videoconferencing technology (i.e., Zoom) to conduct interviews and review artifacts. I expected that this would be the safest and most flexible approach for myself, my participants, and their places of employment. Given that my data collection occurred during primarily the winter and spring months of 2021, I believe this also removed potential transportation barriers, including those caused by inclement weather. Finally, I considered that the virtual gathering of data made sense as my participants and I were working full-time, so coordinating directly around their schedules made the process more convenient for everyone.

Several delimitations have also been necessitated by this study. First, in the earlier iterations of this research, I endeavored to focus on fully online CTE programs; however, I quickly found that literature on online CTE programs is sparse, especially those that focus on the student or graduate voice (Horvitz et al., 2019). Therefore, I expanded my interpretation of online CTE programs to include those who deliver at least some of their content online, in hope of better generalizing my findings to the larger population of CTE students who are learning through non-traditional methods. This allowed me greater flexibility, as well, to focus on the community college population in Oregon, where my professional network will be important to my sampling process. Additionally, while I first aspired to focus solely on alumni in industrial technology programs (i.e., advanced manufacturing, welding), I understood this as unnecessarily restrictive. My study requires that participants are currently employed in their field of study, and recent reports suggest that, primarily due to COVID-19, businesses are taking or are expected to

take significant cost-cutting measures in the fourth quarter of 2020, including permanent layoffs, temporary furloughs, and hiring freezes (Davidson, 2020). Focusing on one specific CTE profession, then, might hamper my selection process. Furthermore, I anticipate that diverse representation of CTE professions will also better serve the generalization of my findings.

Organization of the Study

This research study is divided into five chapters. Directly following this introductory chapter, I explore the literature at the foundation of my research topic that justifies the study itself. In chapter three, I introduce and articulate my research design, including my method, sample, instrumentation, and data collection and analysis procedures. After implementing my research design to gather data on my topic, I will present my findings in chapter four and discuss them further, along with implications for practice and further research, in chapter five. Documentation relevant to the sampling and data collection and analysis, or any other part of this dissertation, will be included in the appendices.

Chapter 2: Literature Review

The transformative mission of community colleges demands faculty and administrators provide responsive, market-relevant education that will adequately prepare the nation's workforce. Despite the increasing popularity of online courses and programs in community colleges (Allen & Seaman, 2016; Lokken, 2019), there is a surprising dearth of research about online career and technical education ("CTE") programs (Horvitz, 2019; Horvitz et al., 2019). In my professional experience in community college CTE programming, I offer that the lack of research about online CTE programs—at least in the state of Oregon, where I work—indicates, at best, a slower embrace of the online delivery method in CTE programs than in general education, lower-division collegiate coursework. In late winter 2020, Oregon community colleges were forced to either cancel most of their CTE offerings or support CTE faculty in translating their content to an online delivery. This unprecedented disruption for higher education, fortunately, offers community colleges an opportunity to learn how they can provide high-quality online CTE programs that still meet course, program, and institutional learning outcomes that equip students with the specific technical and transferable employability skills requisite for professional success. The purpose of this literature review is to provide historical context for CTE in community colleges and to examine the current research on employability skills and online learning in CTE. My key search attributes and their variants included: vocational, technical, career-technical, or occupational education; community or two-year college; employability, professional or soft skills; STEM; and online, hybrid, distance/remote, HyFlex, or blended learning. Using these terms, I searched for peer-reviewed articles using four

primary digital tools: EBSCO Education Source, ProQuest databases, ERIC, and Google Scholar.

CTE and Community Colleges

Career and technical education, or CTE, is any educational or training program that prepares students for success in specific sectors or professions. In the United States, CTE has been a traditional core institutional offering of community colleges that is tasked with "double function of ensuring basic vocational education and functioning as a filter to access more advanced higher education" (Lepori, 2020 p. 2122). This differed from the European system, where CTE was obtained outside of the university system. However, regardless of the duration of the education, CTE program or course completers leave with market-relevant or industry-identified technical and employability skills that permit them to sit for professional licensure or certification, or lead directly to employment or promotion. To facilitate deeper understanding of CTE, I will elaborate on its history, goals, and structure.

Modern workforce education and training in the United States is born from the tradition of apprenticeship where the student (apprentice) of a specific trade would work for and learn from a supervisor (i.e., master craftsperson or journeyperson). As the United States began to industrialize its economy and expand its territory in the 19th century, the need for a specialized workforce in a variety of industries was apparent. Acknowledging a need to fuel national growth—and perhaps motivated to stem the spread of slavery in its new territories—Congress passed the Morrill Act of 1862, which set aside federal land for the establishment of universities to educate rural citizens and farmers in agricultural and mechanical trades (Allen-Diaz, 2015; University of Missouri System, 2012). With this and subsequent funding, the many land-grant universities in the United States (i.e., Oregon State University in Corvallis, Oregon) were

established, and robust agricultural, science, and engineering programs became prevalent. Trade schools also sprouted across the country. The Association for Career and Technical Education (2020) attributes the modern CTE curriculum to the St. Louis Manual Training School of Washington University and its efforts to combine hands-on technical training and classroom learning. The American Association of Junior Colleges (AAJC) began to shoulder the mantle of occupational education in the 1920s, with a mission to "train the technicians occupying the middle ground between manual laborers and professional people" (Lange, 1927, as cited in Cohen et al., 2013, p. 304-305). Practically speaking, this level of training remains the focus of many community college CTE programs today.

The popularity of community college CTE programs did not begin to grow until the middle of the twentieth century. In fact, it was not until the Vocational Education Act of 1963 expanded access and equity in CTE programs that CTE enrollment began to rival that of pre-baccalaureate transfer education (Advance CTE, 2020). As part of community college education, CTE reached its peak in the 1980s and early 1990s (Cohen et al., 2013), although the focus of CTE in the mid-1990s did begin to align with the needs of the growing knowledge-based economy (Horvitz et al., 2019). CTE continues to try to respond to market needs and—as it is so closely tied to workforce development and employment—the mission and funding of CTE remains a popular fixture of legislation and lobbying at both secondary and postsecondary levels. The popularity in CTE may well be attributed to the sheer diversity of program opportunities that align with workforce needs. The National Center for Education Statistics (n.d.) reflects the variety of CTE programming in the categories it monitors: "agriculture and natural resources; business support, management, and finance; communications; computer and information sciences; construction; consumer services; education; engineering and architecture; health

sciences; manufacturing; marketing; public, social, and protective services; repair; and transportation" (para. 1). An even longer list of degrees and certificates available within these program categories include non-credit programs and courses, as well as customized occupational skills trainings.

While CTE is not exclusive to community colleges—as four-year institutions and, increasingly, secondary schools educate students into certification, licensure, and employment—community colleges certainly play the most significant role in the preparation of America's workforce (O'Banion, 2019). In fact, the value of a community college CTE certificate or degree has legs in research. Pham et al. (2020) conducted a quantitative study of community college student response data using the 2014-2016 California Technical Education Outcomes Survey. The researchers confirmed that, regardless of certificate or degree obtained, community college CTE graduates in California have better wages and improved work status than those who do not pursue a CTE certificate or degree. Given the breadth of industries served by CTE, it's worthwhile to consider how much of this success is attributable to program structure and curricular approach. To the latter point, in their *Quality CTE Program of Study Framework*, Imperatore and Hyslop (2018) stipulate curricula for CTE programs must meet three quality thresholds: alignment with technical standards of profession, core subject competencies in math, writing, and science, and employability skills "such as problem solving, critical thinking, teamwork, communications and workplace etiquette" (p. 1). In other words, successful CTE programs prepare students to enter the workforce with both industry-specific technical skills and transferable, professional employability skills that will serve them no matter where they work.

Since program alignment with the labor market is one of the defining features of successful, relevant CTE programs (Van Noy et al., 2016) include business and industry

representation on program advisory committees allows direct feedback on learning outcomes. This influence of the voice of local business communities—sometimes combined with program accreditation—further contributes to "program prescription" (p. 267). As a result, CTE programs tend to be comprised of a clear, efficient schedule of courses that drive students toward completion. This clarity of academic planning can be helpful for students. However, the same external influences that strengthen CTE in community colleges, can also add complications. Fullan and Scott (2009) and Marx (2006) nod to the challenges presented by decreased state funding to public higher education institutions, increased competition between institutions for a limited pool of students, and growing student desire for greater convenience and flexibility in their education. As CTE includes many fields of study that require supervised hands-on learning and therefore is traditionally delivered face-to-face, the sudden challenges presented by COVID-19 exacerbated concerns. For example, student recruitment can be an issue when wages and job placement are uncertain, and faculty recruitment is a frequent issue when academic wages are greatly surpassed by those in industry (Fletcher Jr., 2018). The future of CTE requires community colleges to take a creative, balanced, and adaptable approach that continues to involve industry partners to address these myriad challenges.

Employability Skills and CTE

Vocational education and training programs have long been associated with the technical skills in a given field: glossy brochures show manufacturing students operating computer-aided design & computer-aided manufacturing machines, wildland firefighters swing a variety of axes, nurses insert intravenous fluids into high-fidelity manikins, and pilots graph the landscape with unmanned aerial vehicles. From a marketing standpoint, these applied skills are the most tangible illustrations of *what* a job is. However, success in a specific job or profession requires much

more than technical prowess, and, employers are increasingly just as interested in the transferable, intangible skills that-in combination with the technical skills—make for a well-rounded employee. In fact, as one participant argues in a Singaporean study of employer attitudes on employability skills: “Technical skills can be learned on the job site, while soft skills determine the success factor of the students” (Scheef et al., 2019, p. 5). In my professional experience sitting in advisory committee meeting, this has often been the case. The Association of Career and Technical Education *Quality CTE Program of Study Framework* codifies the same sentiment nationally, as it mandates CTE learning outcomes account for both technical knowledge and professionalism (Imperatore & Hyslop, 2018). Those professional skills are further articulated in the U.S. Department of Education’s *Employability Skills Framework* (Perkins Collaborative Resource Network, n.d.), and ensure the ideal CTE graduate can deftly perform the tasks that define a profession, and that they can do so as a versatile contributor to and member of a team or organization.

The concept of employability is relatively amorphous. While there is greater agreement that certain, universal traits make for a desirable employee, which specific traits are the most important is the subject of more controversy. Behind the broader idea of employability skills is human capital theory which, stated simply, stipulates that education and training develop skills that will allow individuals to contribute to the productivity of an organization and increase their earning potential (Becker, 1962; Frese & Rauch, 2001; Suleman, 2018; Xu & Fletcher, 2017). Higher education—and especially community colleges, whose mission is significantly tied to workforce development—has one of the most prominent roles in building consensus with business and industry on desirable employee traits and supporting students in that development. Clarke (2017) notes the common approaches in higher education are to either embed

stakeholder-desired traits into course and program learning outcomes, or to integrate practical work experiences into the academic programs themselves. The United States Department of Education provides their own *Employability Skills Framework* (Perkins Collaborative Resource Network, n.d.) as a guide, and categorizes employability skills for CTE into three distinct groupings of related traits: effective relationships (i.e. interpersonal skills, personal qualities), applied knowledge (i.e. critical thinking skills, applied academic skills), and workplace skills (i.e., resource management, communication skills, systems thinking).

As earlier mentioned, many institutions of higher learning incorporate some level of employability skills into their own institutional, program, or course learning outcomes. This is exemplified in the institutional level learning outcomes of the academic programs at Columbia Gorge Community College (n.d.), where the institution annually assesses its ability to prepare students with five broadly desired traits of employers and society: communication, critical thinking and problem-solving, quantitative literacy, cultural awareness, and community and environmental responsibility. Each CTE program, then, further aspires to incorporate into their didactic, hands-on, and practical or clinical learning experiences to the traits emphasized by their local stakeholder advisory committees. This is one example of the typical approach taken by American community colleges to respond to market needs for technical and employability skills.

Literature on employability does, however, acknowledges frustration caused by this unique human capital development process. Industry stakeholders might blame community colleges if hired alumni do not demonstrate the skills requested. Likewise, community colleges might feel unappreciated or misled if earnest efforts (i.e., greater focus on conflict management, less on communication) are met with drastically different or opposite requests the following year (Succi & Wieandt, 2019). One question that arises in the literature is to what extent higher

education should be considered the only or primary entity responsible for employability: “There is a mismatch in the reciprocal expectations of companies, students and universities, and no clear starting point for a discussion.” (Succi & Canovi, 2019, p. 1838). Hurrell (2016) argues that employers can conflate personal attributes with employability skills in their judgement of employee performance and, in a mixed methods study of three Scottish businesses, found “soft skills gaps may be blamed on employers rather than purely individuals, the family or education system…owing to deficient organizational practices” (p. 624).

Another perspective on graduate employability skills and CTE comes from the European Union, which first attempted to calibrate the education systems of member and non-member European states with its 1999 Bologna Process and subsequent 2009 European Higher Education Area (European Commission, n.d.). In their study of the Bologna Process and its stakeholders, Sin and Neave (2016) emphasize the individual is most responsible for their employability, and furthermore, claim employability and higher education are not exclusively linked. For some researchers, the inability to pinpoint specific, universally-accepted employability skills is attributed to the belief that employability itself is something *perceived* rather than *certain* (Clarke, 2017; Suleman, 2018).

Despite frustrations, the historical relationship between community colleges and business and industry remains strong, and broad agreement exists that higher education is a power agent in increasing graduate employability – and there is good reason. In their study of student achievement data and longitudinal behavioral data, Heckman and Kautz (2012), identified not only that “personality traits predict many later-life outcomes as strongly as measures of cognitive ability” (p. 457), but that personality traits such as conscientiousness even *cause* outcomes. These findings seem to give weight to recent efforts to identify groupings of employability skills

that institutions of higher education can use as a common language with employers. For example, in a survey of 420 Italian human resource managers, Succi (2019) identified the most strongly preferred employability skills across personal, social, and content-reliant/methodological categories. After asking the Human Resource managers to rate their top choices in each category and their top five preferred employability skills, Succi found the most preferred were *teamwork*, *communication*, and *results-orientation*. In a different, mixed methods survey of 1200 master's program students and alumni and 800 business school managers in Italy and Germany, Succi and Canovi (2019) found the highest ranked employability skills were *communication*, *commitment to work*, and *teamwork*. Furthermore, Scheef et al. (2019), interviewed 12 Singaporean job developers who were employed by or familiar with schools for students with intellectual and development disabilities, and found *attitude* and *dependability* were the most common employability skills described, though *communication* was also related. In their interview of twenty Australians in nine professional areas, Moore and Morton (2015) also noted there was a specific need for adaptable *written communication* skills. Each of these studies reveal that, when presented with options within broad categories of professional skills, clear preferences emerge that can help higher education serve their role in the preparation of students for employability.

Online Learning in CTE

Technological advancement has had an incredible impact on higher education. Representative of this is the embrace of online teaching and learning. While annual community college enrollment in the United States has been in decline since 2011, the share of enrollment in distance education courses has actually increased (Allen & Seaman, 2016; Lokken, 2019). In his fifteen-year longitudinal survey of higher education administrators, Lokken (2019) observes that

a variety of online learning options are available for students, with courses that are "fully-online, blended, hybrid, Web-assisted, Web-enhanced, and Web-facilitated" (p. 35). Some institutions, both public and private, are even offering fully-online degrees and certificates, which are highly valued by students seeking a flexible, convenient option for reaching their academic goals (Benson et al., 2008; Gauvreau et al., 2016). In a survey of chief academic officers on distance education in higher education—the thirteenth and final annual survey of its kind—Allen and Seaman (2016) report that, despite challenges in faculty acceptance of online delivery methods and instructional techniques, over 60% of institutions believe distance offerings are critical to their long-term strategy, and over 70% believe learning outcomes for online offerings are "the same or superior to those in face-to-face instruction" (p. 5). Although causation is not clear in the literature, there appears to be a correlation between community college investment in online learning and distance education enrollments.

Existing literature suggests the adoption of online delivery methods in higher education is not equal across disciplines. Horvitz et al. (2019) supposes online learning literature strongly favors general education because "the hands-on tradition [of CTE]…are time-consuming, challenging to replicate, and require coordination and buy-in from multiple constituents" (p. 239). To begin to fill this gap, Horvitz et al. (2019) interviewed 15 primary investigators of National Science Foundation Advanced Technological Education funded projects as a way to gain understanding of their online curriculum conversion. Common delivery approaches identified were *fully online* courses and *hybrid* courses that included some combination of live, synchronous content or self-paced, asynchronous content. Technical skills acquisition in these programs, was facilitated with pre-recorded video, simulations, equipment at home or in a lab, and professional site experience. Horvitz et al. revealed through their interviews that a variety of

models exist for online CTE delivery; but, just how effective is online learning for CTE students, and specifically for employability skills acquisition?

With consideration that online learning represents a wide spectrum of adoption of web- and computer-based technology (Horvitz, 2019; Horvitz et al., 2019; Lokken, 2019), and the programs of study that comprise CTE is equally diverse (National Center for Education Statistics, n.d.), existing literature in online CTE does indicate success in facilitating student achievement of learning outcomes. Yen et al. (2018) examined this success their quantitative study of child development courses taught in three different modalities: face-to-face, blended, and fully online. The researchers sought to compare student academic outcomes and course satisfaction amongst the 85 students enrolled across the three modalities. Although their students still preferred face-to-face interaction to a fully-online experience, the researchers found there was no difference in overall student performance or satisfaction with their modality. Instructors who have examined a gradual change of modality over time as opposed to delivering all three methods concurrently, have reported similar results. Godlewska et al. (2019) conducted a quantitative study to learn how an annual seat-load of nearly 400 geography survey students performed as instructors adopted an active and blended learning course delivery. Using in-class surveys of demographic data, online student surveys, and questionnaires to measure deep and surface learning, as well as monitoring student use of the learning management system, researchers found an overall increase in student. Neither study, unfortunately, deals with the student experience and their acquisition of employability skills.

In addition to industry-specific technical skills, CTE endeavors to prepare students for employability with personal, social, and methodological skills that can predict, or cause, success in other areas of life (Heckman & Kautz, 2012; Succi, 2019). Industry-desired employability

skills include “communication, teamwork, problem solving, critical and innovative thinking, creativity, self-confidence, ethical understanding, capacity of lifelong learning, the ability to cope with uncertainty, […] responsibility” (Succi & Canovi, 2019, p. 1835-1836). In the CTE classroom, students acquire both technical and employability skills simultaneously as they learn to work effectively with their peers. Online instructional delivery, especially fully-online, asynchronous courses, can create a sense of isolation amongst students, and could have a negative impact on employability skills. To explore this concern, Brubacher and Silinda (2019) conducted a quantitative survey of 350 distance education students in seven different disciplines at a university in South Africa. The researchers sought to determine the extent to which persistence is correlated to intrinsic motivation, help-seeking attitudes, and perceptions of academic competence, workload, and stress. Their results indicate “intrinsic motivation was a significant predictor of persistence while competence was not” (p. 165), and that help-seeking and stress were only indirect factors. While Brubacher and Silinda were not measuring the extent to which students were able to effectively learn these skills in the online medium, it is worth noting that employability skills can be as predictive of success in education as in the field. On the other hand, Cannistraci et al. (2018), provide a good look at the impact of online delivery on employability skills. In their qualitative study of 92 RN-to-BSN students, Cannistraci et al. explored the extent to which student self-efficacy, or belief in one’s ability to achieve, was impacted by moving interprofessional educational experiences to an asynchronous distance education format. Based on 46 responses to pre-test and post-tests based on four core competencies (i.e., communication, roles and responsibilities, values and ethics, teamwork), researchers found a significant positive change in the students after the asynchronous interprofessional experience. Similar findings were discovered by Myers et al. (2014), who

conducted a qualitative review of their attempt to develop teamwork and accountability amongst students in online information communication technology courses. The faculty researchers piloted two techniques—process-oriented inquiry learning and immediate feedback assessment technique—in two synchronous and one asynchronous course to develop these employability skills in their students. Initial student and faculty feedback indicate these methods are indeed an effective alternative to face-to-face learning.

Conclusion

This literature review endeavored to provide an historical context of CTE in community colleges and its role as a driver of workforce development, to examine the current research on employability skills and their integral role in CTE curriculum, and to share the findings of available literature about online CTE delivery. The purpose of CTE is to prepare the workforce with technical and employability skills that will contribute to the professional success of alumni. However—even as online courses are increasingly popular for community college students—an overall decline in enrollment (Allen & Seaman, 2016; Lokken, 2019), is due in part to CTE being slow to embrace online delivery methods (Benson et al., 2008; Garza Mitchell et al., 2016; Gauvreau et al., 2016). To remain competitive and relevant in a higher education landscape that is characterized by decreased funding and increased competition amongst schools and student demand for flexible delivery methods (Fullan & Scott, 2009; Gauvreau et al., 2016; Marx, 2006; Succi & Canovi, 2019), community colleges would benefit from either embracing new or improving their existing online CTE courses. One of the best ways to understand how online CTE can lead students to employability is to seek the experiences of its alumni who have entered the workforce. A qualitative, phenomenological approach is therefore appropriate for this research project, as the purpose of phenomenology is to gain essential insights from individuals'

experiences that can be used to generalize to a similar, larger population (Creswell & Poth, 2018; Yin, 2015). I assert that spring term 2020 graduates represent a unique opportunity to learn about online CTE and employability, as they will have experienced the traditional delivery of their program and—due to COVID-19—a shift to mostly or fully online delivery of that course.

Chapter 3: Methodology

In this chapter, I introduce the research design for my study. In addition to introducing myself as the researcher, I will attempt to bracket any potential biases that may influence the study, as well as the assumptions, limitations, and delimitations that will frame it. I will share how I attempted to maintain trustworthiness and credibility in my study, and will describe my research setting, participants, and methods for gathering and analyzing data.

Purpose and Research Questions

The purpose of this study is to understand how graduates of community colleges perceive online CTE programs prepared them with employability skills. To help close the existing gap in literature, I gather in this study the following data from Spring term 2020 community college graduates whose CTE programs moved fully or partially online as a response to pandemic-precipitated safety protocols:

- How do graduates of online CTE programs understand employability skills?
- How do these graduates perceive that their online CTE program prepared them with teamwork skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with communication skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with results orientation skills for the workplace?

Research Design

When the coronavirus, or COVID-19, pandemic, forced higher education institutions to shift to fully or partially online modalities for their spring term 2020, many CTE programs were ill-prepared for the transition (i.e., automotive, manufacturing, welding). In Oregon, Higher

Education Coordinating Commission (2020) reported that its community colleges experienced a 27% drop in FTE enrollment in CTE programming in Spring 2020 from the prior year, whereas lower division collegiate enrollment saw only a 10% drop (p. 2). Unfortunately, the drop in CTE enrollment in Oregon and beyond is unsurprising, given the sheer lack of literature about online CTE courses and practices (Horvitz et al., 2019). Although institutions and faculty are adapting to support the translation of CTE curriculum to online delivery formats, it has been noted that future research would benefit from using the student experience (Garza Mitchell et al., 2016) to understand the extent to which online CTE programs are fulfilling their mission to equip the future workforce with the appropriate technical and employability skills (Imperatore & Hyslop, 2018). The coronavirus, which resulted in CTE programs suddenly adopting online instructional delivery methods, has created a unique environment to learn from community college CTE graduate experiences.

The intent of this study was to better understand the efficacy of online CTE learning through the lived experiences of individuals (i.e., community college graduates). Therefore, I chose a qualitative, phenomenological research design. Qualitative research is differentiated from quantitative research by its interpretive, meaning-making approach to understanding the world (Merriam & Tisdell, 2015; Terrell, 2016). Phenomenology, more specifically, is a qualitative approach in which a researcher seeks to gather the lived experiences of a phenomenon by individuals and, working with those individuals, identify meanings of their experiences to better understand some aspect of the phenomenon (Creswell & Poth, 2018; Yin, 2015). Van Manen (2017) summarizes:

> The term “lived” experience equates with living-through, prereflective, prepredicative, nonreflective, or atheoretic experience while realizing that we cannot simply access the

> living meaning of lived experiences through introspective reflection.… The instant of the moment we reflect on a lived experience, the living moment is already gone, and the best we can do is retrospectively try to recover the experience…. So, the challenge of phenomenology is to recover the lived meanings of this moment without objectifying these faded meanings and without turning the lived meanings into positivistic themes, sanitized concepts, objectified descriptions, or abstract theories. (p. 812)

Phenomenology, therefore, is an essentially reflective and collaborative research approach, in which the meanings uncovered through discussion between the researcher and participants are derived through analysis of lived experience data collected in interview, field observation, and artifacts or documents.

In phenomenology, the main instrument for gathering data is the researcher, who enters into the world of the participants with their own experiences, perspectives, hopes and concerns. To at least somewhat account for any philosophical assumptions or biases that might overtly or unconsciously influence the meaning-making process, phenomenologists introduce themselves thoroughly, bracket their potential biases, and provide textural (what participants experienced) and structural (how the participants experienced it) descriptions (Creswell & Poth, 2018). A final phenomenological report is rich and robust, allowing for the reader to get a full picture of the lived experience and in what manner the generalized essences were identified.

Context of the Study

In a qualitative phenomenological study, a researcher seeks to understand some aspect of a phenomenon by making meaning of the lived experiences of individuals of that phenomenon. In this study, I seek to better understand the extent to which online CTE community college programs are perceived by their alumni to prepare them with the employability skills requisite

for success in the workforce. In this section, I describe the demographics of my sampling population, my participant sample, and my sampling process.

Demographics

The state of Oregon is home to 17 public, two-year community colleges (Oregon Community College Association, n.d.). According to the state Higher Education Coordinating Commission (n.d.-b), of the total unduplicated community college headcount of 261,482 students reported in Fall 2019: 53% identified as white and 13% as Hispanic or Latino; 50% identified as female and 43% as male; 22% identified as traditional students (18-21 years old), 30% as early-career (22-34 years old),), and 17% as mid-career (35-49 years old); 10,978 Associate degrees and 3,984 career certificates were awarded. From this data, for-credit CTE instruction accounted for only 15% of total instruction. While these statistics cannot be assumed to have consistency with the disaggregated CTE student population, they described the overall community college student population as largely white, slightly more female than male, and mainly non-traditional. Given the declining enrollment in community colleges nationwide (Lokken, 2019), as well as the disruption caused by COVID-19 in higher education and especially CTE, these statistics suggested the participant pool should not be limited to any one school in Oregon if I want the sample size to reflect the state's demographic composition.

Participants

My study participants met the following criteria after completing a Participant Eligibility Questionnaire: they were 21 years of age or older, had earned a CTE degree or certificate in academic year 2019-2020 from an Oregon community college, at least one of their Spring 2020 CTE courses was shifted fully online due to COVID-19, and, at the time of the interviews, had been working in their field of study for more than three months after graduation. While 4-6

participants were desired for this study, the fourth eligible identified participant experienced scheduling conflicts that ultimately hindered their interview series. The three participants who completed the study had focuses in three different CTE program areas, at three different community colleges, and were located in three different regions in Oregon.

Selection Process

Participation criteria matched the specificity of the phenomenon my study sought to explore; therefore, I felt purposive sampling was the most suitable selection method (Saldaña & Ornasta, 2018). As Vice President of Instructional Services at Columbia Gorge Community College in Oregon, I am connected to my peer chief academic officers and instructional deans and directors through the Council of Instructional Administrators ("CIA"), as well as my own professional network. The CIA served as an informal gatekeeper to contact the administrators and faculty in the programs of study of focus in my study; and those contacts served as more formal gatekeepers to share the informed consent form and Participant Eligibility Questionnaire with their Spring term 2020 graduates. In qualitative research, gatekeepers are individuals with proximity to participants of interest to a researcher and--due to their status, influence, or network-can help the researcher connect with those potential participants (Seidman, 1998).

Data Sources and Collection

Phenomenology is a research method by which a researcher seeks to better understand a central phenomenon by exploring the lived experiences of the participants and making generalizable meaning of those experiences (Creswell & Poth, 2018; Merriam & Tisdell, 2015). The phenomenological researcher is the main instrument for gathering the data (Seidman, 1998), which are the lived experiences of the participants (van Manen, 2017). In this study, my data

sources were interviews and artifacts, and I maintained memos of my own reactions to, reflections on, and identification of emerging themes from the data.

Interviews

I conducted three one-on-one interviews with my three participants via Zoom videoconferencing software. Since phenomenological studies value both the responses of participants, and their interactions—real and perceived—with the researcher, I recorded and retained each interview. Once each interview began, I locked the meeting to avoid unintended entrants. Each video recording was securely stored on the Columbia Gorge Community College (CGCC) server for only as long as it took to transcribe the interview and memo my observations. At that point, each interview was permanently deleted and only my pseudonym-laden transcripts were stored on my secured desktop. CGCC President, Dr. Marta Yera Cronin, as my doctoral work was approved and encouraged as part of my professional development.

My interview process followed Seidman's (1998) three-interview series, which breaks the series into three distinct sessions (pp. 11-12). The first interview focuses on the personal history of the participant as it pertains to their enrollment in their program of study and employment into that field. The second interview focuses on the details of their experience of the phenomenon, or, in this case, their perception of how their online program experience impacted their employability skills. Finally, the third interview sought to reflect on the meanings they made of their lived experience of the phenomenon. While I intended for all to occur between January 2021 and mid-March 2021, the birth of my first child pushed this schedule out to the very start of June 2021.

Each interview was approximately forty-five minutes in length, and was scheduled to ensure each round was completed for each of the three participants before moving to the next

interview round. A semi-structured interview protocol was prepared prior to each interview, with the first two protocols reviewed by peer content experts, and the final protocol was built using the meanings made by my participants in the first two interviews. I intended to build each protocol with clear, succinct, open-ended questions, but I was flexible to provide clarification for participants where they were confused, and to probe their responses with clarifying questions.

Documents

The central phenomenon of this study is online CTE learning, and I leverage the remote era ushered in by COVID-19 to facilitate understanding of the extent to which non-traditional online, remote instructional delivery in CTE is able to prepare students with employability skills requisite for workforce success. In addition to interviews, qualitative researchers can use participant documents to gain further insight into the lived experience of its participants (Creswell & Poth, 2018; Merriam & Tisdell, 2015). After the first interview, I asked my participants to share two documents that they believed represented their employability skills. I suggested documents that included a performance evaluation from their place of employment and a graded group assignment from a Spring term 2020 course. However, I was flexible to receive any document the participant felt might further our discussion based on the first interview protocol.

Memos

While research memos are not data obtained directly from the participant, they can be powerful tools for the researcher. In phenomenology, a credible researcher does not make assumptions about the lived experience of their participants; rather, the researcher acknowledges that the lived experience of the participants and the meanings they attribute to them are the data to be understood. That said, memos are an effective tool for the researcher to record reactions to

the data, as well as their attempts to identify themes, and invite critical self-reflection that can serve as an audit trail for the study (Merriam & Tisdell, 2015). A variety of memoing techniques are available to researchers, including, as Creswell and Poth (2018) articulate: "Segment memos capture ideas from reading particular phrases in the data…. Document memos capture concepts developed from reviewing an individual file or as a way of documenting evolving ideas from the review across multiple files" (p. 189). To augment the interview process and resulting analysis, I recorded my interactions to interviews, within the transcript and review documents, and in my coding matrix.

Data Analysis Procedures

Data analysis is the most important and complex part of qualitative research, as it leads to the generalizable themes or essences of the central phenomenon. The analysis process actually begins in the data collection phase, with the consistent organization of data. While I intended to use a computer-assisted qualitative data analysis software, I ultimately developed my own coding matrix using Microsoft Excel at the recommendation of my chair. The first step to this analysis was transcription of the video conferenced primary data. My first level of transcription was used to secure transcription technology from audio. I performed a second, manual transcription andsubsequent listening session before permanently deleting the video and audio. I Interview transcripts, document analyses, and memos were securely stored and organized on my personal laptop, so data could easily be reviewed, and the I could make notes and begin the coding process.

My data coding process was grounded in the big question of my study, purpose statement, and the research questions I created to achieve that understanding. Thus anchored, I conducted the first level of NVivo coding to interview data and document analyses to identify

significant statements or key phrases from which themes could be distilled from the meanings participants made of their experience (Patel, 2014; Saldaña, 2009). My notes and memos throughout the coding and analysis process helped me explain why certain significant statements were chosen and then clustered into meaning units, and further into themes. Using these codes, I endeavored to develop textural (what was experienced), structural (how the phenomenon was experienced), and finally composite descriptions to elucidate the themes of participant experiences. (Creswell & Poth, 2018). These informed the basis of what I identified as further implications for research and practice.

Bracketing of Potential Bias

Phenomenology is a qualitative research method that seeks to ascertain generalizable themes, or essences, from the shared lived experiences of an identified phenomenon (Creswell & & Poth, 2018). In this method, the researcher is the main instrument (Seidman, 1998), gathering data from, yet alongside, the study's participants. Bracketing, also known as epoche or phenomenological reduction, is the practice of acknowledging and setting aside potential bias as it pertains to the focus of the study so the researcher may concentrate on the data without worry for preconceptions or prejudice. In her summary critique, LeVasseur (2003), argues against the ability of bracketing to help the researcher transcend or separate from their own biases, stating, "human experience is essentially formed around the interests and intentions that give it meaning" (p. 409). In other words, LeVasseur rejects the notion that a researcher can simply self-identify their biases and not have them influence their interpretation of the data. Perhaps a happy medium between these two ends of the spectrum is articulated by Tufford and Newman (2012), who state bracketing "facilitates the researcher reaching deeper levels of reflection across all stages of qualitative research: selecting a topic and population, designing the interview, collecting and

interpreting data, and reporting findings" (p. 81). While bracketing may not truly eliminate a researcher's bias from their approach to the collection of data the power of self-reflection through the research process arguably contributes honesty and transparency for both the researcher and their intended audience. To that end, I endeavor to share my beliefs and experiences that, if unaccounted for, might unduly influence the research process.

As aforementioned, I have worked for over a decade in higher education—always around career and technical education, and for the last six years specifically in community colleges. I am a firm believer in the transformative mission of community colleges which--through supporting our students to achieve their academic goals--can bring about personal and societal change. I recognize community college triangulation with business and industry, and with workforce agencies, can be imperfect. While local partners can share their individual wants or needs as it concerns technical and employability skills, these needs can and do change over time. I speculate that faculty and administrators who convene advisory committees may not always know how to get the most—or the most measurable—data from committees. Additionally, I have never been an employee in a career and technical trade, nor have I owned my own business.

Finally, as experience and worldview can influence the research process, I feel it is important to recognize my own membership roles in society (Peshkin, 1988). I identify as male, straight, and white, with a progressive worldview, and I do not particularly associate with any one community, a factor which may be attributed to my frequent moving as a youth in a military family. Beyond childhood, I have traveled extensively and lived in Europe for four years. As an Oregon resident since 2015, I feel secure in knowledge of local demographics, culture, and history, but I admit I there is still have a lot to uncover. My professional career began at a four-year institution and contrasts my academic career in private, liberal arts schools, which could

influence my approach to certain topics. Overall, I see myself as someone who likes to listen and learn, and I am committed to reflection throughout my research process, and I rely on peer input to identify if any of my decisions or questions are inappropriately influenced by my biases.

Assumptions, Limitations, and Delimitations

Phenomenology requires transparency on the part of the researcher to ensure the generalizable essences of participants' experiences are not unduly influenced by the feelings or experiences of the researcher. Creswell and Poth (2018) identify four philosophical assumptions that should be checked before and throughout the meaning making process: ontological, epistemological, axiological, and methodological. Writ brief, a researcher should ensure; they separately record their observations and their reactions or thoughts on those observations; they allow their understanding of phenomenon to come directly from the participants, and that interpretations of meaning are arrived at alongside the participants; that the meaning making process is interpretative and gradually moves from detail to generalization. Earlier in this chapter, I attempted to bracket my personal experience and biases (Tufford & Newman, 2012) and acknowledge my membership roles (Peshkin, 1988) which I will use as a reminder throughout my research process. In later sections of this chapter, I will describe my efforts to maintain trustworthiness and credibility throughout this research study, including my data collection and analysis processes. Although my study does not have a specific theoretical framework, I am taking a constructivist, or interpretivist, approach (Creswell & Poth, 2018). In this capacity, I am not working inductively from my own theory or assumption of what the research will reveal, as I will let my participants' lived experiences lead to a generalized understanding of the phenomenon.

Limitations and delimitations are, respectively, the external factors and the researcher's attempts to control those which might impact the generalizability of the research study (Terrell, 2016). The primary limitation of the phenomenological design on my study, as well as my own delimitation for it are caused by the same external factor: COVID-19. The main data collection method for this study was the semi-structured interview, which conventionally, but not exclusively, is conducted face-to-face. At various points since Fall 2020, infection rates spiked in the United States, so I deemed physical convening for interviews unsafe. To ensure consistency and safety for all participants, I virtually gathered interview data using video conferencing technology (i.e., Zoom). As participants were employed full-time in their field of study, I presume this pre-emptive measure was mutually beneficial to the participants and myself, because I also work full-time. However, access to broadband or video-conferencing must be considered as a potential barrier to participation.

As further note on this study, I cannot ignore the possibility that some participant responses to the online CTE experience were reactionary to the pandemic. While the COVID-19 climate was not an optimal scenario to understand online CTE experiences in general, the pandemic did create a specific opportunity to explore possibilities of this modality. However, the results of this study should not be considered the only or best representation of what could otherwise be assumed to be a well-planned and organized delivery of content by faculty. Rather than ignore the potential influence of the pandemic on the specific experiences of participants, I want to clarify understanding of this external factor on the data.

Trustworthiness & Credibility

The trustworthiness and credibility of this qualitative phenomenological study and its findings lies in the transparency of its researcher and validity of its instruments and analysis. The first way I attempted to demonstrate the trustworthiness and credibility by triangulating my data

sources. Yin (2015) advises that researchers: "Should keep a 'triangulating mind' throughout your research and always seek to develop *converging lines of inquiry* about all your research actions and assumptions" (p. 87). In other words, emergent findings from a single source are not sufficient to generalize to the whole group about the phenomenon. Instead, I sought to connect themes that emerged from each participant's three-interview series, their documents, and my own notes.

Another way I will demonstrate trustworthiness and credibility is through respondent validation, or member checks (Josselson, 2013; Merriam & Tisdell, 2015). I incorporated significant statements and themes from data sources into my interview protocol, to solicit direct feedback from participants and to further explore their thoughts and reactions. I also closed each interview with a specific and ongoing request for participant feedback. Where it was possible to do so given timelines, I attempted to share interview transcripts with the participants, though, neither those attempts to share, nor invitations to share new revelations or changes in thought produced any disagreement, clarification, or need to change data.

Memoing is another strategy for demonstrating credibility. I recorded my reactions to the data and used those reactions to inform the development or edits of interview protocols and to create space for critical self-reflection. These notes serve ultimately as an audit trail for my decision-making (Creswell & Poth, 2018; Merriam & Tisdell, 2015). On a similar note, I identified several peers, both professional and academic, to serve as external auditors of my approach, should critical self-reflection require further thought or challenge. My chair provided ongoing and consistent feedback throughout my research process.

Ethical Considerations

As the data for this study was collected from human participants—Oregon community college CTE graduates—the George Fox University institutional review board ("IRB") was required to proceed. When research involves human participants, it is necessary to demonstrate a clear purpose and plan for data collection that adheres to universal ethical principles established by the U.S. Department of Health and Human Services' (1979) *Belmont Report*: respect for persons, beneficence, and justice. Ethical research requires informed consent of each participant and distribution of information about the researcher and purpose of the study. This process requires confirmation that participation is voluntary, and gives participants the right to review the research or withdraw at any point, identifies the steps taken to protect their person, reputation, and anonymity, and informs them how the study will be disseminated (Seidman, 1998).

I remain committed to transparency in personal, professional and academic endeavors. For this reason, it was imperative to keep my participants informed of my overall plan and timeline (which changed throughout the course of the research, to adapt to participants' work and life needs, and to engage in member checking to ensure that the significant statements and themes are consistent with the meaning each participant is making about their lived experience (Josselson, 2013)). Beyond informed consent and transparency of my process, I also approached his process with a "relational ethic" (Tracy, 2013, as cited in Merriam & Tisdell, 2015), and was prepared to address potential ethical dilemmas cautiously and within their unique context. For example, if a participant response or question during the data collection process was to require a specific human response unrelated to the research process, I would have taken a clear pause from the interview to address the topic. In those situations, the deviation from protocol would have been clearly noted in my interview documentation, and I would have consulted with my chair.

Fortunately, no such issue arose during the data collection process. This was perhaps aided by my preparation of semi-structured interview protocols with open-ended questions (Seidman, 1998) that were validated by content experts, and used to guide all conversation.

Chapter Four: Findings

In this phenomenological research study, my goal was to better understand how graduates of community colleges perceive their online career and technical education (CTE) programs prepared them with the non-technical, professional skills ("employability skills") that employers seek in tandem with field-specific technical ability. Using a three-interview protocol and document review, I explored with my participants their unique experiences of online CTE learning during Spring term 2020. I chose this specific time period, as CTE programs across the nation—many that were never fully or partially offered prior in remote modality—were largely forced to move online by pandemic-precipitated safety protocols. My interviews with my study participants were held via Zoom for these same safety reasons. From the data collected, I endeavored to identify emergent themes that might illuminate my four research questions:

- How do graduates of online CTE programs understand *employability skills*?
- How do these graduates perceive that their online CTE program prepared them with *teamwork* skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with *communication* skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with *results orientation* skills for the workplace?

In this chapter, I introduce my three participants, explore the emergent themes from the data on employability skills, discuss how each participant perceived the ability to learn these skills in an online modality, and provide a summary of the findings.

Participant Profiles

My study participants all met the following criteria after completing a Participant Eligibility Questionnaire: they were 21 years of age or older, had earned a CTE degree or certificate in academic year 2019-2020 from an Oregon community college, at least one of their Spring 2020 CTE courses was shifted fully online due to COVID-19, and at the time of the interviews, had been working in their field of study for more than three months after graduation. A fourth eligible participant was also initially identified, but was not interviewed due to scheduling conflicts. The three participants who completed the research study had focuses in three different CTE program areas, at three different community colleges, in three different regions in Oregon. To protect confidentiality, I used pseudonyms for my participants and any other potentially identifying information (i.e., employer, instructor) that they may have shared during our time together. The participant profiles that follow are intended to provide foundational context for the reader.

Participant One: Lenny

Lenny, who identifies as Hispanic and male, earned an associate's degree in automotive technology from his community college. He shared that his journey to a college degree began in high school, where he earned transferable college credit through his school's dual credit program. Like many other students, Lenny did not complete his first attempt at a college degree right after high school. However, what spurred Lenny to try again in 2018 with the automotive program was personal fulfillment, passion and curiosity. To the former point, Lenny admits:

> I wanted to do something that I actually enjoyed instead of just a 'gives you good money' type of thing. I just wanted to be able to learn something I'm actually interested in,

> something that I would gain knowledge that I appreciate, instead of 'just for a job' situation type of thing.

For Lenny, personal fulfillment is very directly tied to a passion and curiosity for cars that grew over time from a hobby. Lenny describes himself as "more of a hands-on kind of person" who is intrigued by the complexity and interconnectedness of automotive technology, and enjoys tinkering with the machines. I feel it is important to allow Lenny's own words to illustrate how this passion and curiosity led him to his ultimate program of study—and career:

> I mean, when I first started buying my own cars, it was just changing little things—it was just lightbulbs, just a handle that broke, you know, tiny little things for the most part. It was just kind of cosmetic. Then after that, it's going to kind of tinkering and playing with my own car—just going to find little things, like brakes, tune-ups, things like that. But when I started playing with it, and the more difficult it got for the engine work and things like that, at that point in time, I just didn't understand it. But everything intrigued me, like how things work. There was just so much going into a car and there's so many aspects to it, I mean there's electrical, there is mechanical, there is chemical, there is electricity. Nowadays there's more computer than anything else. I mean, there's just so many different systems and they all have to work together to work properly. I mean, all that was just kind of like mind-blowing to me, and at one point I was like, "I really want to learn…. I really want to know how it works."

Lenny, who has been working as an automotive technician since he graduated, also shared the importance of collaboration in working on cars. When Lenny first began tinkering with cars as a hobby, it was "in conjunction with one of my best friends…kind of like a bonding moment…working together to figure things out." What he discovered in both his program of

study and working in the field is that pairing is commonplace, because it is helpful to the learning process and it enhances the ability to diagnose and resolve issues with vehicles. The *doing* of automotive technology, therefore, has a technical component for Lenny, but also a social component.

At the end of our first interview, Lenny shared what it would take for him to end his shift and say he had a good day: "Knowing that every single job that I did, it was done correctly, it was done on time, and that I was able to [perform at] the best of my abilities."

Participant Two: Adam

Adam, who identifies as white and male, earned his associate's degree in renewable energy technology at the end of Spring term 2020. Originally from Washington state, Adam's journey to Oregon and his current field of study is a bit of a winding road after high school, and includes living with his wife in their converted green bus. Not unlike many community college adult learners, Adam followed his interests and did not settle on a specific career until it was clear to him what field he wanted to enter:

> I bounced around a lot of different colleges, with different goals and everything. I have an herbal medicine apprenticeship, I have a bicycle mechanic certificate, I have a little bit of everything under my belt…. I wanted to become a wind tech…. What changed me from wanting to do wind tech into what I'm doing now [is] I really enjoyed the internship that it offered, as well as the stability. I don't have to move from place to place to place, I can be in one spot.

Adam was first inspired to pursue his program of study by seeing videos and photos a friend shared on social media while servicing a wind turbine. After Adam inquired about what programs could qualify him to do that job, his friend recommended a school in Washington state.

Adam ultimately chose his community college program after he discovered the recommended school was not regionally accredited. For Adam, the transferability of credits was paramount, should he want to continue his studies at a four-year institution: “Besides getting me into a well-paying job, I can transfer credits. I can take that and expand on it, and get a Bachelor's down the line. It's not a dead end, but it's not just job training—it's life skills.” Adam was the only participant for whom credit transferability was an expressed determining factor in choosing their program.

Although renewable technology became his specific area of study, Adam has always been someone who loves “working with my hands and fixing things.” In particular, Adam is drawn to any projects or activities that require troubleshooting and problem-solving skills. In his role as an analytics and development technician, where the variety and complexity of the machinery is vast, Adam regularly engages these two skills working individually, or in tandem with his mentor:

> You've never encountered this machine before, you're not very familiar with it, can you fix it? And being able to sit there, knowing that I have the resources, I need to find out…where to start…and kind of tracking down the lines on how to fix it…. Even if I'm unfamiliar with it, I can explore and expand upon what I do know, and become fluent in whatever technical skill I need to approach it with.

At the end of the work day, Adam feels most accomplished when he has risen to meet multiple challenges: “I really enjoy chaos…. Several things either broke down, or several things needed attention, I was able to properly juggle between all of them, and get them all situated in one way or another.”

Participant Three: Rachel

Rachel, who identifies as Asian and female, earned her one-year certificate from a community college dental assisting program in Oregon. Rachel dealt with the sudden shift to online learning in her final term the same way she has responded to all other challenges in her personal and professional journey: she believed in herself, and persevered. Rachel immigrated to the United States from the Philippines in 2006 with some high school education. She was a small business owner for over eight years, during which time she completed English as a Second Language courses, and eventually obtained her GED. After realizing that she met the qualifications to enroll in a dental assisting program, Rachel sold her business and began studying. She has worked as a dental assistant since she graduated.

Rachel wanted to work in a healthcare from an early age, as she was interested in the subject matter, and she viewed it as an opportunity to help people while building financial stability. She recalled: “When I was a kid in the Philippines, working in a healthcare field is like a dream come true. And, of course, my parents couldn’t afford to send me there.” When Rachel moved to the United States, she understood achieving her dream would require her to complete her education. She said, “Before I owned that place, I already know [sic] that I want to finish school because knowing that you don't have any degree at all, working here, it's like, impossible to have a good life here.” She ultimately chose her dental assisting program because of the community college’s convenient proximity to her home, and because of her familiarity with the college from her GED experience. Rachel spoke highly of her alma mater, citing: “They’re very, very helpful to me…. I like my school. They really help you succeed.”

Dental assistants work as part of an oral healthcare team and perform a variety of tasks in support of patient care. While there is some level of repetition of tasks to be performed, such as

set up and cleaning of the room, x-rays and medical histories, making temporary crowns, and polishing teeth, Rachel enjoys the variety and newness of the procedures and patients she supports in her role. In fact, she articulates: "We help each other and we learn, you know, as we progress and I like it…. It's not boring for me. It's more challenging and I like to learn." The desire to learn and apply her skills for the accomplishment of her daily tasks—as part of a team, and in service of others—was supported throughout our interviews.

Finally, when I asked Rachel what it would take for her to have a good day at work, she succinctly noted: "Everything running smoothly—that makes me happy going home. Like, 'Okay, I was a good assistant. I can do it again.'"

Emergent Themes

Technical skills and employability, or professional, skills are the primary learning outcomes of career and technical education (Imperatore & Hyslop, 2018). As defined earlier in this study, employability skills refer to the transferable personal, social, and methodological traits of an individual (Succi, 2019) that can predict success in technical or cognitive tasks (Heckman & Kautz, 2012). Employability skills are therefore are considered of universal value, and transcend the specific technical skills of any given field. The primary goal of this study was to better understand how Oregon community college CTE graduates perceive their programs prepared them with the employability skills of their field. This included understanding what these alumni perceive employability skills to be broadly, as well as three specifically: teamwork, communication, and results-orientation. The following section endeavors to identify the common themes that emerged from my participants' shared experiences.

Dependability, Adaptability, and Work Ethic

Consistent with my first research question, my participants and I explored what they understood about employability skills, including their definition and ranking of those most desired skills required for success in their own fields, and by employers universally. Even when I probed their thoughts on specific employability skills—teamwork, communication, and results-orientation—different skills emerged commonly as more highly valued to my participants. Through their interviews and discussion about their shared documents, Lenny, Adam, and Rachel, most commonly perceived dependability, adaptability, and work ethic (Table 1) as primary employability skills.

Dependability. Lenny and Rachel most directly and frequently championed dependability, or reliability, as the most important employability skill in their fields, and Adam suggests its value, as well. All three participants work in a role that requires some level of teamwork, whether that requires being paired with another technician, working as part of a care team, or having one level of responsibility within a chain of service. Lenny defined dependability most traditionally across these interviews, in my observation, while Rachel and Adam seem to have a somewhat more nuanced view of dependability that related to honesty and transparency.

Dependability, along with communication and work ethic, were the three essential employability skills that Lenny shared throughout his interviews. He succinctly summarizes the importance of dependability in his professional experience: “I believe it’s one of the biggest problems that we have, not being able to count on someone, whether or not they're going to be there for us.” In fact, when Lenny described the traits of his best and worst co-workers, as well as the employability traits he sees in himself, dependability was central to his responses. His best co-worker was “never that kind of person that would just flake around” and Lenny equally prides

himself as a team player who is "willing to always help anyone in anything, doesn't matter what it is…even if it's not my job." Lenny believes instructors can teach or evaluate dependability through attendance. However, he views the quality of dependability as not being easily taught, but "something that you have to go in either having or not having."

Table 1.

Employability Skills

	Lenny	Adam	Rachel
Perceived desirable employability skills in participant field (I1.Q5)	Hard-working; Ability to learn; Prioritization; Effectively use your time	Attitude; Work ethic; Getting along; Professionalism/Attire; Easygoing; Troubleshooting	Reliable; Honest; Teamwork; Willingness to learn
Perceived desirable employability skills in all fields (I2.Q1)	Dependability; Communication; Work ethic	Adaptability	Sincere; Direct; Honest; Friendly; Professional attitude
Perceived employability skills of best coworker (I2.Q2)	Dependable; Work ethic	Versatility; Adaptability; Knows limits/Self-awareness	Reliable, Knowledgeable, Team-player, Patient
Perceived employability skills of worst coworker (I2.Q2d)	Drama; Unreliable; Weak work ethic; Distracted (on phones)	Resistant to change; Not motivated/Cannot be motivated; Do the bare minimum	"Not doing her part" (P3.I2.Q2d, 11:39); Not on time; Bad attitude; Not able to take constructive criticism; Bring their personal problems to the office
Perceived employability skills of self (I2.Q3)	Communication; Work ethic; Team Player: Lead by example; Cannot take criticism	Adaptability	Reliability; Willingness to learn

Like Lenny, Rachel agrees to an extent that the teachability of these qualities depends on the learner. Rachel also frequently mentions reliability as a quality of a strong dental assistant, and remembers her worst co-worker ever as one who was "not doing her part," and thus caused

other individuals in the office to work harder. This can be particularly stressful when patient lives and health are at stake. In their belief that reliability means acknowledgment of one's own limits, Rachel and Adam share a divergent view from Lenny. Rachel describes this practically in the dental office: "If you don't know anything, just don't guess. Just ask somebody that's very knowledgeable. It's life [at stake]." In fact, Rachel views her best co-worker as someone to whom she can ask questions and from whom can receive correction. Adam describes this acknowledgement as more requisite to team and task success: "We had to reach out…. Being able to pull in information from elsewhere and teaching and cooperating." That is to say, if an individual cannot acknowledge the limits of their expertise and skills, they cannot be relied upon to maintain expensive equipment or complete complex tasks in a timely fashion. Overall, my participants see dependability as a quintessential skill of anyone working with others in a team or business.

Adaptability. All three participants agree adaptability is a key employability skill, and also describe the quality as versatility, the ability to take criticism, and the willingness to learn. In recounting the qualities of his best co-worker, Adam provides a clear example of what he considers an adaptable colleague:

> Things are always changing at work and just…to be able to jump from one task to another, without any issue, no complaining and no worry.... He was able to take a look at something and go either I have a solution, or if I don't, I know who to talk to.

Throughout the interview series, many of Adam's thoughts on adaptability indicate a need to readily address whatever problem arises—even if that means reaching out to someone with more or different knowledge. Adaptability and dependability are closely tied in this way, both for Adam and Rachel. In fact, Adam believes so strongly in the need for adaptability in his role that

he actively prepares to be more adaptable: “I make it a point to try to take on different tasks that I might not be familiar with and about, and I totally do see myself occasionally if I'm thrown a curve ball.”

Individual adaptability to ensure team success requires more than just proactive practice of multiple tasks: it demands a willingness to learn new things and to accept constructive criticism. Rachel prides herself as “willing to be teached [sic],” and throughout her interview series, she expresses the need to be open and eager to learn when she describes how she was interviewed for her jobs, how she is evaluated in her current role, and how she identifies attributes of her best and worst co-workers. Lenny adds a corollary to this aspect of adaptability, and evokes Adam’s comments about self-driven improvement: “They have to be able to either be willing to learn it, but be able to keep up with it, as well.” Lifelong learning within one’s field, therefore, might be indicative of a successful employee.

Finally, all three participants further specify that learning includes a willingness to accept, if not seek, constructive criticism from others. Interestingly, all three mention the lack of this trait in their worst co-worker. In one interview, Lenny suggests that the ability to receive and apply constructive criticism can and should be taught in CTE programs, regardless of delivery modality:

> For example, if there was an exercise per se for class, let's say the instructor had a meeting one-on-one, as far as what went wrong, when it should be done, gave him that criticism/experience in a weekly base or like bi-weekly…to get the students used to getting feedback back. As they go through, reassure them this is not a bad criticism, this is just professional criticism. This is for your benefit, essentially. Getting them used to that kind of criticism from early on, I think that could be something that could be taught I

> believe because I know a lot of people, they just don't like to be told that they're wrong, but unfortunately that's the way it is.

Thus, adaptability for my participants means being able to perform—and willing to learn how to improve performance--in a variety of circumstances, to achieve a common task or goal.

Work ethic. All three participants agree strong work ethic is a desirable employability skill. The breadth of their definitions, however, includes effort and professionalism. Lenny admires those in the automotive service field who are "able to prioritize the time and know what's been done" to accomplish the most in a given workday. That includes looking for something to do when they are done with a given task. Lenny often describes dependability and work ethic in almost the same breath, and identifies unprofessional co-workers as prone to distractions, like constantly looking at one's phone during the workday. For Lenny, work ethic can be improved only if reception to constructive criticism—above-described as a trait of adaptability—is firmly in place. Lenny said this might require peer review or group work to truly demonstrate an individual's impact:

> Could be done…or can be reinforced, per se, through online or through…. just regular feedback on how things are doing, criticism, then at the same time reviewing the reaction of people and how they react and how those could be done I believe, perhaps could be improved or learned.

Adam similarly views effort and professionalism—traits he perceives valued in his field in the form of an easygoing, friendly attitude—as the two interconnected sides of work ethic. He is particularly disheartened by coworkers who lack motivation and only do the bare minimum, to the detriment of team performance and chemistry. Adam shared his perspective of how his current values hiring individuals who can excel independently and within a team:

> A lot of it is how to get along with people. All of our technical skills are important, but they focus on culture. And if you can get through the program and show up with different skills and abilities, but more importantly have a good attitude, as well as skills to back it up, you have a much better chance of being hired and retaining your position than if you show up as someone who is, you know, perhaps even overqualified or even just qualified with a poor attitude or poor work ethic.

Like Lenny and Adam, Rachel shares an all-encompassing view of work ethic as effort and attitude. Rachel—who often explores more relational skills—actually provided the most stoic definition of work ethic: "No matter how stressful the job can be sometimes, you just keep smiling and just pretend nothing happened and just do your job and the employer likes that." Therefore, for Rachel, the most desirable employees in CTE fields understand a given task or goal is more important than the issues of a single person. Perhaps this explains why she and Lenny both identified bad co-workers as those who bring personal drama to the office setting. For each of them, there is a clear line between work and life that—if not appropriately balanced—can negatively impact one's ability to fulfill their role within a team.

Delegate and Communicate

Throughout the interview series, I asked my participants to extrapolate on the three most commonly desired employability skills by employers identified by Succi (2019): teamwork, communication, and results-orientation. Teamwork, or the ability to work effectively with others, is almost universally considered essential for employment throughout the literature. It is not surprising, then, that in identifying key employability skills, my participants chose three—dependability, adaptability, and work ethic—and defined them within the context of successfully performing and enjoying their jobs. To my participants, strong *teamwork skills* (Table 2) are

most commonly characterized by an understanding of the strengths and weaknesses of team members and self, and the associated ability to delegate tasks, but also in the ability to communicate effectively, to network, and an overall quality of helpfulness.

Table 2.

Teamwork Skills

	Lenny	Adam	Rachel
Perceived teamwork skills in participant's field (I1.Q10)	Communication; Work Together; Prioritization of Tasks	Able to contribute; Communication	Helpfulness
Perceived teamwork skills of best coworker (I2.Q2a)	Leader; Engaging; Able to communicate	Adaptability; Networking; Shoulder-tap; Self-awareness; Jack-of-all-trades knowledge	Understandable; Good attitude; Nice; Knows the strengths of the individuals within a team and assigns them to tasks accordingly

My participants all work in roles where accomplishment of tasks require some degree of collaboration with others. Lenny, for example, works alongside another automotive technician on projects, but also interfaces with other roles throughout the total service process. As a dental assistant, Rachel is an integral part of an oral health care team, which is comprised of assistants, hygienists, dentists, and office staff. Finally, in his role as an analytics development technician, Adam works both independently and within a team of engineers to complete complex tasks. In all cases, each believes their role and contribution is not the only one that matters. In fact, all three felt knowing their place and the extent of their own and others' abilities is requisite for success. Adam offered an analogy that, I believe, illustrates their shared perspective:

> If the USS Enterprise was all human or all Klingon, or all Romulan, or basically any one group, it wouldn't work as amazing as it did. To teach that is basically the whole magic of the Enterprise, that it's a whole mix of people and skills. That's what makes it work.

In other words, an employee with strong teamwork skills understands the extent of their own abilities and those of their peers to lead or contribute to a task, to recognize a lack of specific knowledge or skill and willingly remediate, and to organize everyone's involvement in a task so everyone contributes their strengths. Overall, my participants shared a common definition of universal teamwork skills, and--although they may not have perceived their own experience of online learning as optimal--they agreed teamwork skills can be acquired through an online modality.

Communication is Relational

Another desirable attribute of employability is the ability to communicate. When Adam and Lenny first identified *communication skills* as essential to *teamwork skills*, I was concerned that an exploration of this employability skill would be redundant. However, all three participants offered more nuanced, relational views of communication (Table 3) than I might have assumed based on their references to teamwork.

While Lenny and Adam both acknowledge that short, simple, and direct verbal and written communication is essential in fields where documentation is critical to the job, Lenny distinguishes clarity and appropriateness of communication. Articulation for Lenny is, first and foremost, about honesty and integrity: "I believe it's crucial to explain to the customers why we need to do what we need to do.... Otherwise, they would feel like, 'Oh, they're just trying to rip me off and take my money.'" This statement resonated with me as one of self-recognition in a field of entrepreneurs who—in a competitive business—build sustainability through a reputation

and trust. In a similar vein, trustworthy communication in Lenny's field is authentic, because it considers the unique needs of each individual, including understanding of the customer or the motivation of a co-worker.

Table 3.

Communication Skills

	Lenny	Adam	Rachel
Perceived communication skills in participant's field (I1.Q11)	Verbal; Written; Document; Able to explain; Honesty/Transparency; "Make it simple to understand."	Self-awareness; "Understanding not to take anything personal."; Openness; Honesty; Give credit to others	Focus; Listen; Sense from body language
Perceived teamwork skills of best coworker (I2.Q2b)	Adaptable to each individual	Humor; Email etiquette: "short and simple."; "How and when to communicate."; Networking; socially active	Calm; Respectful & Understanding: "Communicate [like] you're an adult, you're not a kid, mistake is a mistake and just make sure that it won't happen again."

While Lenny primarily focuses on communication with others for the sake of a quality service and customer experience, Adam focuses on communication that fosters a calm, easygoing team environment in a field with complex technical. Perhaps it is unsurprising that Adam extols humor as a quintessential example of effective relational communication, as it improves the environment for performance:

> Humor diffuses a lot of situations and it lowers stress levels all around. It doesn't get quite enough credit I think that it deserves. A couple of good jokes while working, as well as incorporating pop culture references and everything like that, it makes everyone feel more included and he does a great job at doing that.

What rings true for me in Adam's attribution of humor as a communication skill is that effective workplace humor requires a strong awareness of self, others, and situation, knowing "how and when to communicate." In this regard, humor can be seen as another demonstration of adaptability, which he values both as the single most important employability skill and as a key attribute of strong teamwork skills.

Rachel agrees strong communication skills are relational in nature. However, she identifies this value in her field in the form of unspoken or modeled communication skills such as listening, body language, and choice of tone. As a member of a patient care team, a dental assistant must be able to focus and listen to hear the unique needs of the dentist and the patient. Rachel seems to acknowledge that listening is not only performed with one's ears, but an action invited through one's own presentation: "If you love your job…you're more friendly to them, your presence. They can really tell it…. If they sense that you're not in the mood, they can sense it, too. And they're not as willing to share whatever they're feeling." For Rachel, this is also conveyed through another feature of communication skills—the ability to express understanding through calmness and respect. Describing her best co-worker: "He tries to communicate you're an adult, you're not a kid. A mistake is a mistake, and just make sure that it won't happen again." This is consistent with her and Lenny's suggestion that taking constructive criticism is a desirable employability skill. It also validates the value of adaptability provided by Adam's description of humor and self- and situational awareness.

Planning to the Outcomes

Results-orientation was the final specific skill I explored with my participants and--despite attempts to clarify it, I found it to be most difficult for my participants to understand and to place in their fields. By the second interview, I decided to provide a single definition to all

participants to calibrate a baseline for discussion. I defined results-orientation as the ability of an individual employee to prioritize tasks based on their fit within the work to achieve the bigger, overarching goals of a job or activity. Participant responses (Table 4) largely indicate planning with outcomes in mind as the strongest attribute of result-orientation skills.

Table 4.

Results-Orientation Skills

	Lenny	Adam	Rachel
Perceived results-orientation skills in participant's field (I1.Q12)	"Oriented in the outcomes, in the goals, essentially."; Efficient	Consequences (Ethics); Prioritization; "Who it's coming down from."; Big picture; "Get-up-and-go"	Focus; Plan ahead; Time management; Punctuality; Dedication; "You need to also ask questions, it's very important. Don't just guess."
Perceived results-orientation skills of best coworker (I2.Q2c)	"Just getting things done."; Structure; Communicate; Persuasion: "Able to essentially get everyone to connect, get on board and help out."	Priority, Ability to juggle; Having direction; "Having everyone on board and different skills spread out your ship becomes a lot more agile."	Thinks in advance; Plan; Assigns based on strength and ability

Rachel identified the ability to plan effectively as the most impactful expression of results-orientation skills in the dental office. For her, the need to plan effectively is exacerbated by the fact that every patient is different, even if some of the tasks are repetitive for the members of the care team. Reflecting on the qualities of her best co-worker, she admires his effective management of both time and talent to achieve quality execution of each patient's care plan:

> He always thinks in advance, 'Okay, I'm not focused [on] just one procedure.' He's also already planned the whole day, how he's going to assign us, how this work's going to be played the whole day without too much stress.

This response aligns with her earlier responses about strong teamwork skills, as well as her skepticism that an online modality can be an effective way to teach or learn this skill. She notes in a dental setting, planning is best learned hands-on, in the lab or clinical setting, where you are performing the work of the dental office:

> Once it's really in real life, it's a different story because, for example, a beginner and new students, you forget everything you learned at work and so some things, you get flustered, you don't know what you're doing. So, that makes you get behind and then somebody that's very knowledgeable has to come and help you…. So, I guess you can learn the basics online, but really the hands on…it really depends on the person.

Lenny agrees with Rachel that strong results-orientation skills require an understanding of outcomes. However, Lenny adds that—in the automotive services field—what you do and how you do it speaks equally to your ability and professional reputation and to the company as a whole. Ultimately, the bottom line of the automotive service company is the most important, as it provides sustainable employment. In example, Lenny shares the following scenario:

> In my field, we'll get paid what is called flat-rate…. Each job has a specific time. So, let's say, your brakes. They take, for example, an hour to fix. You're going to pay for that one hour: whether that work takes 30 minutes or two hours…. As a technician, you obviously want to become as efficient as you possibly can, because if you're beating the clock, you're, kind of, making more money, in that sense. But at the same time, you also have to be efficient in the way that, for example, let's say I made those brakes in half hour instead of an hour, but something went wrong because I was careless or I start to rush too much, and when that comes back, that gives him reputation at the company, and then also have

to redo the job, not even pay for it again. So, everybody who is a technician obviously has the goal to be as efficient as possible and to do things right, the first time around.

For Lenny, pre-pandemic lab activities were a close approximation of how the work is performed on the job, which occurs in a shop, with different levels of service, and alongside another tech. In his Spring 2020 online learning experience, however, he does not believe that the assignments offered were able to replace the results-orientation skills he would normally acquire. He shared a simulation assignment that he felt was an impractical replacement of the originally intended activity, and therefore did not meet the learning outcomes. Despite this, Lenny believes results-orientation skills can be taught in an online modality, and suggests a group project to "help the team separate or break down the job so that each individual can work in a certain/specific area and things can be done."

In discussing outcomes-based planning, Adam perceives the clearest outcomes are those delineated by leadership, as they give the individual technicians in his field the ability to juggle and prioritize tasks in the name of achieving goals. Perhaps this is due to Adam's general application of specific technical skill-sets to complex engineering tasks: "People let me know and let everyone else know if it's a high priority or not, and who it's coming down from.... I don't necessarily have the big picture...I'm looking at pieces of machinery with very specific tasks." When leadership articulates the need and purpose of a given assignment—provided that they deem the outcome and means as ethical—he believes he and his coworkers are motivated to realize its full potential, because they are a group of adaptable, agile individuals who shoulder-tap each other as needed.

Although my participants initially struggled to make sense of the concept of results-orientation, their responses ultimately indicate a level of common understanding, and they were

able to recognize examples of it in their day-to-day work. For my participants, strong results-orientation skills are defined by the ability to effectively plan a variety of tasks in the achievement of clear outcomes.

Analysis of Findings

My research aspired to better understand how graduates of community colleges perceive that their online CTE programs prepared them with the employability skills (non-technical, professional skills) that employers seek in tandem with field-specific technical ability. The goal in exploring these unique graduate experiences was to help community colleges better understand how they might provide high quality CTE learning through various online modalities, from remote synchronous (i.e., set class times, live delivery of lesson over Zoom) to online asynchronous (i.e., self-paced learning, typically through a course shell on a learning management system like Moodle or Blackboard), and hybrid to Hyflex (i.e., students choose the modality by which to interact on a given class day). To this end, I further explore my findings in the context of my research questions:

- How do graduates of online CTE programs understand *employability skills*?
- How do these graduates perceive that their online CTE program prepared them with *teamwork* skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with *communication* skills for the workplace?
- How do these graduates perceive that their online CTE program prepared them with *results orientation* skills for the workplace?

Employability Skills

Prior to the start of the COVID-19 pandemic, all three participants were enrolled in fully face-to-face CTE programs. For this reason, I felt my participants experiencing the same subject matter in two different modalities (face-to-face and online/remote) and applying those skills in the workplace gave them a unique perspective. This research study attempted to get at the heart of employability skills in CTE, and the extent to which alumni perceive these skills can be learned through non-traditional modalities. Due to the hands-on nature of CTE, many assume it is not as easily translated to online formats as lower division collegiate education. However, employability skills transcend specific subject areas and are often learning outcomes in general education disciplines, including writing, literature, psychology, math, and life sciences. Over the course of our three-interview protocol, Lenny, Adam, and Rachel were all able to speak to their experience of employability skills, although it took a while for them to make sense of the general concept. One might gather from this interaction that, if you ask alumni of CTE programs to talk about employability in their field, the response is almost always about technical skills, not professional skills.

When I asked participants to describe what qualities they expected to learn in their programs, each mentioned technical skills, but not everyone mentioned employability skills. For example, Lenny did not initially cite employability skills as something he thought he would learn, but instead referred to automotive service techniques, such as alignment. Rachel did explicitly mention teamwork skills, but she realized it was a critical quality after speaking about dental procedures, the needs of the dentist, and the anatomy of the teeth. Adam specifically mentioned technical math as knowledge required for employability, and he actually described three employability skills right off the top: troubleshooting, problem-solving, and the ability to

learn. In these initial descriptions, Adam referred to them from a technical, applied perspective, which suggested he thought that the employability skill was a technical skill: “That troubleshooting aspect is kind of that intuition. It's the sitting there and listening to it, listening to what the machine is doing, and looking at it, and then finding a solution that allows it to move forward.” Lenny similarly describes troubleshooting as a technical skill of an automotive technician. Based on the evolution of the responses of my participants through the process, I would assert that, generally speaking, CTE students do not see employability skills as universally applicable, or distinct from one’s field.

Another way that my participants and I explored employability was by discussing whether or not their expectations were met prior to and after switching to online learning, whether or not they felt their employability was impacted by the switch, and what they learned about themselves through the experience. All participants agreed their expectations were met prior to the pandemic-precipitated switch, but not after. Perhaps unsurprisingly, they felt their lab experience—where they applied their technical knowledge and built skill—could not be replicated. Despite this, none of the three participants believed their employability was impacted as a result of learning online. All three participants felt they obtained or possessed the skills they needed to be employable in the academic terms prior to the switch online; therefore, the online learning experience was more about surviving and graduating. All three participants viewed graduation as ticking the last box, and their shared sentiment can perhaps be summarized by this quote from Rachel about her employer:

> They hired me because they see that quality of me no matter what, even though it’s COVID, I’m there helping them, helping myself.… No matter what the circumstances, I always do my homework and whatever the teacher asked me, that never changed.

> Because I want to succeed…. That never changed my attitude of one thing: to finish this program so I can start working…. My hope never changed.

Despite not feeling as though they learned much in the way of employability skills in their final online term, all three participants were able to identify personal attributes that an employer might desire. Lenny, who felt he was able to learn online but did not prefer it, identified intrinsic motivation as something he learned through the experience with an unfamiliar modality: "If I want to accomplish it and I have, it has to come from me." Adam, who also did not prefer online learning, learned about the need to create structure for motivation and self-care: "You need to build yourself a schedule and you need to stick with it. You need to include dumb little things like go for a 25-minute walk and drink water." For her part, Rachel did not like learning online; but felt that her own study skillset was easily adapted to the change in modality. All three participants spoke to their own resilience in the face of change, which tied closely to their comments on work ethic. Another quote from Rachel is an appropriate summary:

> As long as I'm focused and I have the determination to finish it. My mind is like…I need to do this. There's no room for fail. And, so, it's either virtual or in class. I did well because I just told myself, you can do this. Nothing is impossible.

Ultimately, the data shared by my participants indicates they are very much able to identify employability skills when they consider what they admire and do not in their coworkers—especially when prompted with specific employability skills (i.e., teamwork, communication, results-orientation). The three broad categories of employability skills they feel are valued across their fields are dependability (being present, being honest), adaptability (ability to perform in a variety of settings, willingness to improve), and work ethic (proactive effort, professional comportment).

Teamwork Skills

Lenny, Adam, and Rachel consider strong teamwork skills as the ability to recognize the strengths of self and others and appropriately use that information to complete or assign tasks in achievement of tasks and goals, as well as the ability to clearly and appropriately communicate with others on the team. All three participants described themselves as naturally possessing teamwork skills, but they agreed those skills could be learned or honed in a virtual modality, with quality technology and appropriate assignments. Though not particularly fond of the online lab experience where many of the teamwork skills are practiced, Rachel still acknowledged her experience translated successfully to her job: "It's very possible that you can learn it online… We've learned teamwork during my class, and then as I progressed, I just got better and having a good coworker it really enhanced my knowledge [of] the work." The evaluative documents she provided—one clinical practicum evaluation from Spring 2020, and a recent job evaluation—confirm as much, as they both emphasized the employability skills Rachel spoke to during her interviews. This indicates that her employer values and communicates those skills as desirable. Adam also shared an employer evaluation that conveyed the value of employability skills.

Perhaps more an effect of the pandemic than of online learning, Adam saw his Spring 2020 online learning experience as one that helped him realize a naturally adapted skill: "It wasn't something I learned there, it was something that was exhibited there because we had to reach out…. Being able to pull in information from elsewhere and teaching and cooperating." While Lenny and Rachel also introduced learning from peers as a desirable adaptability trait for employees in their field, Adam suggested using interdisciplinary and intergenerational learning to teach and model teamwork in CTE programs, whether delivered face-to-face or virtually. Essentially, Adam suggests program alumni or second-year students, and students from related

programs, should collaborate with each other—or students earlier in the program—on a project. In his program, he thinks this could be actualized through building an HVAC system together, involving programming logic controllers, structural pieces, design, and welding:

> A generational course. The second years work directly with first years for a couple of courses. I'll be honest, the first year, I absolutely loved it and got a lot of information that was fuzzy at the beginning of the second year. Having them go back and work with the first year on some of that stuff might be really handy for both of them.

Ultimately, Lenny, Adam, and Rachel believe that teamwork skills can be learned, honed, or exhibited in CTE learning, regardless of modality, so long as the technology and assignment are appropriate for the learning.

Communication Skills

Strong communication skills identified by my participants were relational in nature—communicating in an honest, transparent, timely, and complete fashion, communicating in a way that is appropriate for those present and the situation, and communicating as a performative act of listening, body language, and tone. In some ways, my participants disagreed about the ability to teach these definitions of communication. Rachel believes—as with all employability skills—the ability to learn communication skills depends on the predisposition of the learner. Adam is similarly skeptical when it comes to teaching and learning humor online, due to the risk of miscommunication or translation. This is an intriguing point, however, as he earlier defined humor as rooted in situational awareness. When it comes to accountability and transparency attributes of communication, Adam is a firm believer that it can be taught online: “Mistakes happen and that's one of the biggest things in the field…. No one's blaming you unless this is something that you always do and accidents happen”

Ultimately, it was Lenny who most strongly believes clear, appropriate communication can be taught and evaluated in an online modality. For him, an instructor with the right assignment or even one who has interactions with their students, can teach or model this important skill. This was particularly noticeable to Lenny during Spring 2020, as he found it understandable but difficult to get in touch with his instructors:

> When I was doing things online, when I would have a question, I would have to be very clear as [to] what I was trying to ask essentially…. I have to really think on how to explain things, whether they would understand what [was] the problem, the situation was so they can help me back, I guess. I did not think about that before, but that's definitely a good skill to be able to just clarify any concerns or questions or situations, not just to the service writer, but [to] my coworkers, my peers, or anybody else.

Results-Orientation Skills

The final specific employability skill I explored with my participants was results-orientation. Despite the definitions I attempted to offer, this skill was often elusive for my participants. Ultimately, breaking it down into prioritization of tasks and placing it within the bigger picture was enough for my participants to access the concept. For my participants, results-orientation was largely about understanding the larger goals of the individual and team through the expressed direction of leadership or supervisors, as well as the ability to plan how to most efficiently and ethically complete one's work towards achieving those outcomes. Adam believes ethics and prioritization can be learned in an online modality, at least for his area of study. In his experience, these skills were not taught directly, but as part of another skill:

> Prioritizing things, it wasn't necessarily directly taught, but you ended up learning that as you are troubleshooting various components. First priority is always going to be keeping

> yourself and others safe. So, make sure something's powered off and everything like that. Prioritization you can learn [and] it can be taught online.

Ethics was also an aspect of result-orientation for Rachel, who acknowledges her role in patient care and safety as one of life and death. Though she believes the basics of prioritization, time management, and planning, can be taught virtually, Rachel thinks a dental assistant must learn these skills hands-on, in the lab or clinic, as part of a care team in order to truly understand their place in the care of patient. In the automotive service industry, by contrast, Lenny believes that results-orientation can be taught online, even though that was not his personal online CTE learning experience during Spring 2020:

> I believe it could be done, especially if you have a group project, for example, or something that is starting a project through online learning. If it's structured correctly, I believe it could be used in order to help the team separate or break down the job so that each individual can work in a certain, specific area, and things can be done.

Overall, there was less agreement amongst my participants as to how well and how universally results-orientation skills could be taught online. That said, with the examples provided by two of my participants, there seem to be implications for specific fields.

Summary of the Findings

This study was designed to better understand how graduates of community colleges perceive that their online CTE learning experiences in Spring 2020 prepared them with the employability skills requisite for hire and success in their chosen fields. Three such community college graduates from different fields participated in this study, and shared their unique experiences of online CTE learning. Through data collected in our three-interview series and document analysis, I was able to identify four themes about employability in CTE fields:

1.) The most desirable employability skills are dependability (being present, being honest), adaptability (ability to perform in a variety of settings, willingness to improve), and work ethic (proactive effort, professional comportment);
2.) Strong teamwork skills are characterized by the ability to delegate and communicate tasks to others based on a realistic assessment of others' and one's own abilities;
3.) Strong communication skills are, at root, relational in nature: honest and transparent, demonstrating situational awareness, and is as much about listening and body language, as verbal or written skill;
4.) Effective planning (prioritization of tasks) is tied to clearly articulated outcomes.

My three participants did not believe that their own employability was significantly or otherwise impacted by the shift to online modalities for Spring 2020, as they felt their professional skills—and a bulk of their technical skills—were learned in face-to-face programs prior to the pandemic. That said, all participants believe most employability skills can be taught and learned in an online modality, if the assignment serves the desired learning outcome.

Chapter Five: Discussion

The purpose of this study was to explore the voices of community college graduates to determine how they perceive their online CTE programs prepared them with the employability skills requisite for professional success in their fields. I identified an opportunity to contribute student voices to the current literature about online learning, specifically in CTE, which has traditionally been assumed to be more difficult to translate to an online format than general education and primarily marketed as technical skills development. While existing literature has explored employers and community colleges' determination of employability skills preparedness of students, and faculty development of online learning modalities, my literature search did not present as much of the student—and specifically graduate—perspective on these topics. When asked to think about employability skills and online CTE learning, however, there is much to learn for all in higher education, as my participant Lenny acknowledges upon reflection of our time together:

> It kind of brought out some points that I haven't really thought about. For example, like the employability skills, that's one of those things that I didn't really think about as far as being affected in between being online and not online, and I do think one of the valuable things about it is, for example, once we came online, we essentially had to figure out a way to make things work, which in a way it's a skill for work. If there's a problem, we have to figure out a way to make things, one way or another. So, I think in a way that kind of help helped me in a way, I suppose.

In this chapter, I will connect the findings of my study with recent and relevant literature, and address the implications for practice and further research that I discovered. It is my hope that

the findings of this study will be of use to community colleges in their institutional investment, academic assessment, and continuous improvement and professional development processes.

Employability Skills in CTE

The very heart of this study is the graduate perception of employability skills. Broadly speaking, business and industry and higher education understand effective CTE programs equally facilitate learning of employability skills and field-relevant technical skills (Imperatore & Hyslop, 2018). However, the lack of agreement on a ranking of those skills indicates employability is perhaps more *perceived* than *certain* (Clarke, 2017; Suleman, 2018). In the construction of this study, I referenced the U.S. Department of Education *Employability Skills Framework* (Perkins Collaborative Resource Network, n.d.) and its categorization of employability skills for CTE, as well as a European study by Succi (2019) that applies Haselberger et al.'s (2012) soft skills modules for higher education in the European Union to seek a more certain understanding of employability. From the latter, I chose *teamwork*, *communication* and *results-orientation* to focus my participants, as they were the top choices by a number of Human Resources managers. My attempt to explore the broad and specific understandings of my participants' employability skills revealed alumni more easily identify technical skills than they do employability skills, and that variation in their responses is consistent with the overall challenge of pinpointing a universally-specific employability skillset.

My participants identified the most desirable employability skills in their fields as dependability, adaptability, and work ethic. Their responses defined strong teamwork skills as the ability to delegate and communicate tasks to others based on assessment of their abilities, and results-orientation skills as the ability to effectively prioritize according to clearly articulated outcomes. My participants conceived of strong communication skills in a much more varied

way. While the relational importance of communication—as well as the need for strong verbal and written communication—was clear, one participant also stressed honesty and transparency. Another participant keyed into situational awareness and brevity, while the third highlighted listening, body language, and tone. While this was the meaning we made together—and seems to make sense to those alumni who are now applying what they learned in the classroom to their careers—it does not match perfectly with what I will refer to, respectively, as the American and European frameworks.

The American framework, the U.S Department of Education *Employability Skills Framework* (Perkins Collaborative Resource Network, n.d.) is divided into categories of Applied Knowledge, Effective Relationships, and Workplace Skills. Upon review, my collective participant data (Table 5) most completely meets the Effective Relationships category, checking off every item in the Personal Qualities sub-category, such as demonstrating responsibility, flexibility, integrity, professionalism, and a willingness to learn, and a positive attitude—and most under the Interpersonal Skills sub-category (i.e., understands teamwork, respond to customer needs). In the Applied Knowledge sub-categories of Applied Academic Skills and Critical Thinking Skills, participant responses of troubleshooting, problem-solving, writing, and calculating tick most boxes, as well. In Workplace Skills, however, several interesting takeaways emerge. First—while the major participant takeaways for communication skills varied—each, as individuals, would largely check all the boxes in the Communication Skills category. What is lacking in the checklist is specification of the unspoken communication skills from Rachel. In the Systems Thinking sub-category—which mostly closely aligns with the qualities of Results-Orientation—my participants did identify the primary concept of understanding their roles and assignments within a team, but did not speak to monitoring or improving systems and processes.

Table 5.

Participant Meanings in the "American Framework"

Category	Sub-category	Skills Represented in Findings
Effective Relationships	***Personal Qualities***	Demonstrates responsibility and self-discipline, Adapts and shows flexibility, Works independently, Demonstrates integrity, Demonstrates professionalism, Demonstrates a willingness to learn, Displays a positive attitude and sense of self-worth.
	Interpersonal Skills	Understands teamwork and works with others, Responds to customer needs, Exercises leadership
Applied Knowledge	***Applied Academic Skills***	Writing skills, Math strategies/procedures
	Critical Thinking Skills	Thinks creatively, Thinks critically, Solves problems, Plans/organizes
Workplace Skills	***Communication Skills***	Communicates verbally, Listens actively, Conveys information in writing, Observes carefully. *Checklist could use greater specification of non-verbal communication.*
	Resource Management	Manages time, Manages personnel, Manages resources.
	Systems Thinking	Understand and uses systems. *Participants didn't speak to improving systems or processes.*
	Information Use	*Demonstrated by participants, but not expressly mentioned.*
	Technology Use	*Demonstrated by participants, but not expressly mentioned.*

Note. Table identifies participant data within the checklist based on the U.S. Department of Education *Employability Skills Framework* (Perkins Collaborative Resource Network, n.d.).

This seems appropriate, given their general confusion with the concept. Finally, as it pertains to the Information Use (i.e. locates, organizes, uses, analyzes) and Technology Use sub-categories, many of the checklist skills were demonstrated by my participants through the ways they engaged with online CTE learning in Spring 2020, even though they were not specifically mentioned as desired employability skills. For example, when asked what he would tell himself before Spring 2020 if he could, Adam said he would advise structuring his learning, which was something Rachel cited as a strength that helped her through Spring 2020.

The European framework developed by Haselberger et al. (2012) and referenced by Succi (2019) for conversations with employers categorizes employability skills—referred to as soft skills—as Personal, Social, and Content-Reliant/Methodological. The two frameworks do not overlay perfectly, and I suspect the sub-categories within the American framework, as well as some level of difference in cultural approach to employability, account for some of the lack of alignment. When I applied the European framework to my participants' data (Table 6), two of their most desirable employability skills, dependability and work ethic, were firmly in the Personal category, while the third skill of adaptability straddles Personal and Content-Reliant/Methodological groupings, which is under the skills of tolerance to stress and creativity/innovation, and adaptability to changes, respectively. Quite frankly, in considering the employability skills and attributes shared by my participants, the European framework better serves to highlight the outlier responses and skills unaddressed by my participants. To the former, Adam identifies humor and networking as important skills in his field, which fosters a relaxed team environment. Adam's description of humor in our interviews highlights the importance of self and situational awareness, which I believe are somewhat captured by culture adaptability (Social) and self-awareness (Personal). Adam was also the only participant to cite, in

the context of evaluation, the importance of building one's contact network (Social). What skills from the European framework were lacking in my participant data? Conflict management and negotiation skills--both in the Social category--are missing. When discussing their worst co-workers, none of the participants brought up the need for these skills, or shared an example highlighting that quality in themselves. It occurs to me that these are important teamwork (Social) and management skills (Content-reliant/Methodological) that should probably be included in institutional learning outcomes, even if the student is training into an entry-level industry role or a largely independent-working role.

Table 6.

Participant Meanings in the "European Framework"

Social	Personal	Content-Reliant/ Methodological
Teamwork	Learning Skills	Customer/user orientation
Communication	Professional Ethics	Continuous improvement
Leadership Skills	***Adaptability = Tolerance to stress + Adaptability to changes + Creativity/innovation***	
Humor = Culture adaptability + Self-awareness		Results orientation
Contact network **Participants missed Conflict Management and Negotiation.*	Dependability Life balance Commitment	Management skills **Participants missed Decision making, Analysis skills, and Resarch and information management skills.*

Note. Table identifies participant data within the source of Haselberger et al. (2012, p. 13-28) as listed in Succi (2019, p. 289-290).

Ultimately, the American and European frameworks are tools that can be applied or adapted to suit the local workforce and institutional needs of a given community college. A tool is not a solution in itself, but only a means to help execute the strategy to ensure students are meeting employability goals that can "determine the success factor of the students" (Scheef et

al., 2019, p. 5). Whether CTE teaching and learning is occurring face-to-face, or one of many different web-facilitated modalities, such a tool could be a powerful to ensure learning outcomes are being built into assignments and activities, and that students are mastering them. A completed checklist--perhaps included as part of a program e-Portfolio—might be one way that an employer could verify a student's strengths in a given area.

Online CTE Learning

The other primary goal of this research study was to contribute to the gap in literature about online CTE learning, specifically the student voice. Career and technical education has traditionally been one of the two core institutional purposes of community colleges, who are considered to serve "a double function of ensuring basic vocational education and functioning as a filter to access more advanced higher education" (Lepori, 2020, p. 2122). However, the landscape of higher education and CTE looks much different than it did at the time of the passage of the Morrill Act of 1862 to industrialize our economy. Change has come in almost every facet imaginable: demands of growing business and industry, global competition between institutions, increased student desire for choice and convenience, the advancement of technology, and, generally, the way many jobs are performed (Fullan & Scott, 2009; Marx, 2006). Over more than a decade, community colleges have seen a steady decrease in enrollment, while the overall share of online courses increases (Allen & Seaman, 2016; Lokken, 2019). Unfortunately, CTE has been slow to embrace online delivery methods (Benson et al., 2008; Garza Mitchell et al., 2016; Gauvreau et al., 2016) that might adapt to the needs of the modern student. Furthermore, while the perspective of CTE faculty delivering their modality is important, it is the perspective of said modern student that is truly lacking in the literature.

My participants all graduated from their CTE program in Spring 2020, after experiencing a full shift of their CTE program classes to an online modality for the first time. In all cases, delivery was shifted primarily to live synchronous courses that used Zoom technology. My participants shared counterbalancing perspectives: they learned something about themselves through the online learning experience, but they felt they already possessed the employability skills they needed; they did not learn employability skills through the online modality, but believe it is possible to do so effectively, depending upon the technology, assignments, and ability of the instructors; and they would not enroll in a fully online delivery of their program, but they all agree that aspects of online learning made it a better experience. This sentiment is evident in recent studies about student learning in face-to-face, blended, and fully online modalities. Seeking to compare student academic outcomes and course satisfaction across different modalities of the same child development content, Yen et al. (2018) found that, although their students still preferred face-to-face interaction, there was no difference in overall student performance or satisfaction with their modality. Similarly, Godlewska et al. (2019) have observed that, in adopting blended learning approaches to their geography course, student performance increased overall as the instructors refined their instructional approach. If anything, this certainly provides some hopeful context for the future of online CTE learning.

One of the most fruitful lines of inquiry with my participants, given the discussion of the value of online CTE learning pertains to what was made more difficult, easier, or remained unchanged by the shift online. The single clearest answer for each participant was around what made learning more difficult: not being in the lab. This answer is unsurprising, given that the general perspective of CTE revolves around technical skills. Lenny and Adam primarily lamented the fact that they did not have direct access to their instructor, should they have

questions in applying a given technical skills, and all three participants felt lost without the appropriate equipment and tools. Adam further notes physical time on the equipment—which requires supervision in his area of study—is equally about trial and error: "Part of it is…headbutting a brick wall until the wall breaks. If you're having troubles with something, you have to keep at it and keep going." All this considered, the lab environment is also one—but not the only—place for students to learn, hone, or apply employability skills such as teamwork, communication, prioritization and time management, and conflict management.

In their 2019 article about fully online and hybrid CTE courses, Horvitz et al. found that pre-recorded video—as well as virtual simulations and take-home lab kits—were common practices. When asked what features of their shift online made learning easier, my participants all shared the same answer: lectures were enhanced by recorded video. Lenny did not receive a take home lab kit, nor did he enjoy his simulation experiences; however, the lecture recordings "really made a difference for me being able to make notes and be able to absorb more of that information." Rachel, who had an insufficient experience with a take-home lab kit, but no virtual simulation, similarly enjoyed re-watching the lectures, which was not an option in her program until after the shift online. She already made it her own personal practice to find procedures on YouTube to enhance her learning, so the ability to also go back and watch the lecture again was helpful for her. Adam enjoyed his take-home lab kit and was already familiar with pre-recorded video content embedded into their learning management course shell. However, recorded lectures were also useful to him. Overall, it appears that recorded lecture is a feature of online CTE learning that alumni feel should stay.

As it pertains to what remained unchanged in their learning despite the shift online, no participant shared the same response. While his fellow participants might agree, Adam is the

only one who observed "everything was affected in one way or another," be it personal, academic, or professional. While this is likely more related to the pandemic than about online learning, it does raise a point that instructors should be prepared to meet students where they are, with whatever external factors are impacting their ability to learn. Online CTE instructors—whose remote presence might cause some students anxiety—might consider intentionally scheduling regular time to meet with students, either virtually or on-campus, clearly listing appropriate student resources for referral in their course shell and syllabi, and seeking student feedback on course content delivery. Lenny acknowledged the testing in his program was already based on performance, so he did not feel surprised at how he would be evaluated. In this regard, one might take away the importance of calibrating assignments, regardless of modality, to evaluate learning outcomes in much the same way. For assignments that assess both technical and employability skills, but remotely, the instructor should consider if students had an equitable opportunity to learn the material (i.e., printed lab equipment at home versus actual dental assisting equipment in the lab). Finally, Rachel commented on something that is not perhaps a feature of online learning, but that I felt was important to note about her experience, and that of students who face a variety of barriers to learning:

> No matter what the circumstances, I always do my homework and whatever the teacher asked me, that never changed. Because I want to succeed…. But that never changed my attitude of one thing: to finish this program so I can start working. That never changed because I want it. My hope never changed.

In their study of distance education students at a University in South Africa, Brubacher and Silinda (2019) discovered "intrinsic motivation was a significant predictor of persistence while competence was not" (p. 165), and that help-seeking and stress were only indirect factors

of persistence. Cannistraci et al. (2018), in their RN-to-BSN study, found a significant positive change in student self-efficacy after an online asynchronous interprofessional learning experience. In these cases, examining students' attitudes and motivations, and seeking to help students call those forward or reflect upon them, could be potentially powerful in online modalities where students might otherwise feel alone or disconnected.

Although my participants prefer an in-person or hybrid learning experience for CTE, they all believe that most of the employability skills can be taught online depending on the quality of technology, preparedness of the instructor, and appropriateness of assignments or activities. For example, to teach teamwork and adaptability, Adam suggested an interprofessional, intergenerational project, such as building and servicing an HVAC system, in which the second year students in his program could help the first years learn the next iteration of their content, and by working with students in other areas of focus, they could understand how each role is prioritized and fits into the overall goal. Lenny suggested that attendance could serve as an easy record of a student's dependability, but—in terms of willingness to learn—he suggested a group projects where students learn to give and receive constructive criticism are essential to educating adaptable employees. From Rachel's recommendations, some level of non-verbal communication training would be helpful when working in teams, or with clients and customers. From an optimistic standpoint, my participants all recognized that the pandemic-precipitated shift online was sudden, that everyone was impacted—faculty and students alike. Therefore, in recognizing the lack of preparedness of their instructors or quality of the online learning, they are optimistic that planning could improve the CTE learning experience online—but only to the extent that hands-on remains for labs.

Additional Findings

In my final interview protocol, I posed several questions to my participants about their sense of engagement and what they perceived as helpful or unhelpful to their online learning in Spring 2020. These questions were part of a student survey developed by Vice President Dr. Betsy Julian and the Instructional Deans at Central Oregon Community College. With Dr. Julian's permission to use these questions in my dissertation project, I wanted to focus on a few insights from my participants (Table 7).

When asked about their level of engagement or connectedness during Spring 2020 online courses, my participants represented the gamut of responses. Adam felt almost completely disconnected: "On a scale of one to ten in terms of connected or engaged, I'd put myself at a two." This was corroborated by his responses about the need for structure and self-care that were interrupted by pandemic-precipitated safety protocols. Rachel continued to feel connected personally to her classmates and instructors, even while she observed that some of her classmates did not have the same experience. I might attribute this to an earlier admission by Rachel that her personal study habits and approach were not impacted by the shift online. Lenny described himself as engaged by the live synchronous lectures, but said he was unable to find the same sense of connection with the lab material. This is consistent with Lenny's perception that, while lecture content was readily translated to the online modality, labs were not so.

Table 7.

Online CTE Learning Experience

	Lenny	Adam	Rachel
How engaged and connected did you feel in your Spring 2020 online CTE courses? (I3.Q6)	Remote-synchronous lectures felt engaging; however, online/remote labs: "That was actually very disconnected."	Low sense of engagement: "On a scale of one to ten in terms of connected or engaged, I'd put myself at a two."	Felt connected personally: "Even though it's just online, I always look forward to it because everyday you are learning….So every time we have zoom meeting, I'm always there supporting each other."
Most helpful to online CTE learning, within faculty control? (I3.Q8)	Prerecorded classes	Prepared lab equipment: "He made sure that we all were going home with a complete kit for soldering, for everything."	Print images of lab instruments
Least helpful to online CTE learning, within faculty control? (I3.Q8)	Less timely communication	Lecture style did not translate: "Just straight up reading from the book."	-
Most helpful to online CTE, outside faculty control? (I3.Q9)	Scholarship	Able to stay in classmates' home, instead of his converted bus.	YouTube videos: "I was looking at that syllabus advance that they gave us, I pick that lesson that we can learn and search it [on] YouTube and watch a lot of videos about it…. And that really, really helped me."
Least helpful to online CTE, outside faculty control? (I3.Q9)	-	Self-care: "The whole stress of not being able to do anything. I lost my gym, I wasn't able to go to the gym anymore."	Nothing more than a few internet issues.

When my participants considered the impact on their learning of anything within or outside of their instructor's control, the findings were even more varied. Earlier in this chapter, I discuss my participant's preference for recorded lectures and take-home labs. However, it bears noting that my participants all mentioned the challenge of less timely communication and feedback from instructors on assignments and progress, even outside of these questions. Adam even noted a primary concern about one instructor's ability to adapt to the change in modality. I was further intrigued by what my participants shared about those things outside of their instructor's control. Lenny said scholarship, which holds a whole different light when you understand Lenny was working during school, so the shift in modality to live synchronous classes did not create greater flexibility for him. Adam—who previously lived a lifestyle that was relatively untethered to a specific place—ultimately found comfort in the security of a home base, even whilst his typical self-care outlets were closed off. Finally, Rachel reminded me that so many learning supports are online and free for students, but the challenge of broadband infrastructure can completely or intermittently impact everyone.

Implications for Practice

As a higher education administrator, my leadership team, my faculty, and my peers across the state are constantly seeking best practices and revelatory data that can help us better serve our students. Data from alumni can be difficult to come by, especially when their community college goals were to learn quickly and affordably as a stepping stone into their first or next career. Quite frankly, I experienced this myself when trying to gather participants for this qualitative study. Our community college students often face many barriers to retention and completion that are external to the institutions. It is not necessarily a surprise that recent alumni can be hard to survey or ask to participate in a study when they are finally applying what they

have learned in school to their profession, in the pursuit of transformation of their own lives! That said, I am grateful to my participants—Lenny, Adam, and Rachel—for sharing with me their time and experiences to better understand how community colleges can use a variety of online modalities to equip CTE students with relevant technical and employability skills. I believe what I learned from them has great implication for practice now: better articulate employability skills in CTE learning overall, proactively build belonging and communication strategies into planning, and invest in infrastructure and professional development to ensure high-quality teaching and learning regardless of the online modality.

Articulate Employability Skills

When given the opportunity, alumni of CTE programs are able to identify desirable employability skills within their fields. This can be inspired by their own personal experiences and preferences, informed by how they are evaluated by their supervisors, or even insinuated through their hiring process. However, as earlier mentioned, identifying universal employability skills is more of a theoretical exercise than a practical one: "There is a mismatch in the reciprocal expectations of companies, students and universities, and no clear starting point for a discussion" (Succi & Canovi, 2019, p. 1838). Community colleges exist to serve the communities within a designated area and align with workforce development agencies and business and industry partners. However, they also typically have their own institutional learning outcomes or some other general education goals for their graduates. It occurs to me that this is ample ground for a properly and regularly convened CTE Program Advisory Committee to examine course outlines, course and program learning outcomes, examples of assignments, and adapt some form of employability skills checklist, such as the U.S. Department of Education *Employability Skills Framework* (Perkins Collaborative Resource Network, n.d.). Administrators and faculty in CTE

areas should reach out to their peers to learn from those who feel they are collaborating to identify the appropriate employability skills of focus for their programs. Learners can be motivated when they understand what they are intended to learn. In CTE, instructors have a unique opportunity to leverage hands-on lab learning to extol not just the technical skills but the employability skills that will make them a more desirable hire upon graduation. Regardless, instructors should be encouraged to speak explicitly about employability skills in the classroom. Here it should be noted that employers, too, have a role and responsibility to represent these skills in job announcements, talking to CTE program classes, and at job fairs. By triangulating the message from employers, institutions, and faculty, CTE students make begin to see employability skills as clearly as technical skills in the value of their education.

Build in Belonging and Communication

Whether it was largely attributed to the pandemic, or an ongoing symptom of online learning, many students felt less engaged with their learning and with their peers (Almendingen et al., 2021; Verma et al., 2021). As it pertains to engagement with the course material, one of the biggest challenges cited by my participants was a lack of timely communication from instructors. While they all understand the demands on their instructors were drastically increased with the switch online, their responses indicate a perceived a disparity between the quality and length of time for instructor feedback on campus as opposed to remotely. noted that in the pre-pandemic classroom, “you get your answer right away.” Now, however, 36 hours after a Tuesday class without an email response regarding a quiz on Thursday can be a stressor for a student who is unsure about their ability to learn. This feeling may be further exacerbated in students from marginalized communities, who may be balancing other concerns as they try to navigate college. Anxiety can impact engagement with fellow students—who may feel less connected with their

peers in an online modality—and can negatively impact learning from a physiological respect. Romero (2015) specifies students who question their belonging are at a disadvantage: "Hypervigilance and extra stress uses up cognitive resources that are essential for learning, diminishing their performance and discouraging them from building valuable relationships" (p. 2). To mitigate these anxieties, instructors should proactively build a plan for timely, effective communication on student performance, and space and time for students to connect with each other beyond group projects into their instruction. Suggestions by Murphy et al. (2021) include encouraging faculty to check in early and often with students, no matter how small the gesture (i.e., email greeting, anonymous online polling during classes), communicate and follow-through on the timeline to follow-up with student inquiries, and intentionality of constructive feedback.

Invest in People and Technology

The expense of CTE to community colleges is well-documented, but the true cost of the lack of preparedness to provide higher education of the future was undoubtedly realized during the pandemic. In Oregon, community college enrollment dropped with the shift online, especially at schools where CTE programs were unable or unwilling to explore the bounds of online modalities. Some community colleges had to spend additional funds to provide last-minute professional development for faculty who had never taught using any web-facilitated format. Adam referred to this as a big "scramble." As the immediate and medium-term fiscal impacts of COVID-19 are clear, community colleges should seek to leverage this crisis opportunity to strengthen our institutions for the future of higher education. Some CTE students have said that they learn better when they have access to the recorded lecture or related video content, so institutions should supply the instructional software and hardware technology necessary to record, edit, store, and share that content for the benefit of all. Some students in

CTE have said that hybrid models work, so institutions should invest in the technology and faculty professional development to support the delivery and structure of this programming. CTE students regularly express they are hands-on learners, and instructors now have time to plan take-home labs in the face of the next pandemic or snow day. For HyFlex learners, institutions should find funds to invest in kits and consider incorporating them regularly as assignments, regardless of circumstances. Some CTE students have identified that employability skills can be learned, depending on the appropriateness of assignments or activities to the outcomes intended, so institutions should invest in professional learning communities that share and explore best practices, and academic assessment coordination that can workshop these assignments with instructors. A laundry list of technological and professional development investments could be made, but ultimately, investments in sound and relevant practice benefit all students and, thereby, their institutions.

Recommendations for Further Research

This qualitative phenomenological study contributes three alumni voices to the discussion of online CTE learning, but the gap in the literature remains an opportunity for other researchers to add student and alumni perspectives. Building greater understanding of how our community college graduates perceive of their employability based on their online CTE learning experiences seems imperative at a time when community college enrollment is otherwise declining. I recommend further research on this topic extends our knowledge of the graduate voice, explores the spectrum of online learning modalities, and connects the perspectives of all roles in higher education.

The student voice, and particularly that of community college graduates, is still underrepresented in the literature. A first recommendation would be to apply some version of

this interview series protocol to other CTE program alumni within Oregon and beyond. An adaptation of my protocol might focus on a different set of specific skills, perhaps all aggregated within the personal, social, and methodological traits identified by Succi (2019) or the applied knowledge, relationship, and workplace skills categories of the Perkins Collaborative Resource Network (n.d.). Another approach might be to elevate and explore graduate perceptions within a single category of CTE, such as those defined by the National Center for Education Statistics (n.d.). Finally, to understand the extent to which a specific institution or group of institutions is perceived by its alumni as effectively instilling its institutional learning outcomes, or specific employability skills valued within its CTE department, a researcher might conduct a focused case study.

There remains an argument in academic arenas about the terminology and definitions of the variety of online learning. Presumably in an effort to better understand how a specific modality impacts student learning, disagreements prevail on shared definitions of online learning, distance education, and remote learning (Moore et al., 2011). In this study, my usage of online learning was inclusive of any remote learning that is in some way supported by web technology, including remote synchronous learning via Zoom, online asynchronous learning using a Moodle shell, hybrid, and the HyFlex model of learning that gives students participation choices. It is likely that community colleges will continue to embrace and develop web-supported modalities, and therefore it is important to learn not merely how faculty perceive their value, but how students and alumni perceive their value. For that reason, future researchers might seek to understand how CTE students understand employability skills within a specific modality, or compared to similar students in different modalities like Yen et al. (2018) did in their study of three modalities of the same subject matter. One way to achieve that might be to

reach out to graduates of known online CTE programs, much in the way that Horvitz et al. (2019) reached out to in primary investigators of National Science Foundation Advanced Technological Education funded projects on online curriculum conversion. As interest in HyFlex is growing, a researcher might seek to study students in any available CTE programs in this modality in order to determine if they preferred to learn fully or mostly online versus fully or mostly in-person.

Finally, practical research considerations also contribute to overall understanding of employability skills in online CTE learning. For example, effective CTE facilitates learning and acquisition of relevant knowledge and skills identified by local, state, and national industry needs. As such, it would be valuable to understand how all players perceive employability skills in online learning. This includes faculty, institutional administrator, alumni, and employer perspectives. An interesting angle might be to explore the extent to which satisfaction differs between alumni of online and in-person programs, and why. Valuable insight would also be gained from comparing best practices of current online CTE instructors as they facilitate learning of employability skills, and those of effective online non-CTE instructors. Additionally, it would also be good to know the preferred technology of online CTE learners and instructors.

Conclusion

This study aspired to elevate and explore the voices of Oregon community college graduates to better understand how they perceive their online CTE prepared them with employability skills. The findings illuminated the experiences of my participants in their online learning experiences during the Spring 2020 shift online due to COVID-19, couched within the context of their professional experience in their field of study, and within their prior learning in a completely face-to-face modality. My participants and I discovered dependability, adaptability,

and work ethic are among the most desirable employability skills in their fields, that strong teamwork is defined by the ability to delegate and communicate tasks, strong communication by honesty and transparency, self and situational awareness, and listening, and that strong results-orientation is essentially the ability to plan to outcomes. Most importantly, we learned most employability skills can be learned in an online modality, provided the appropriate technology, preparedness of the instructor, and alignment of assignments or activities. While this study serves to explore a specific moment in time, I am hopeful that this contribution of student voice to the literature of online learning might inspire the further practice and research that will strengthen community colleges and CTE for years to come.

References

Advance CTE. (2020). *History of Advance CTE.* https://careertech.org/100yrs

Allen, I. E., & Seaman, J. (2016). *Online report card: Tracking online education in the United States.* Babson Survey Research Group. http://onlinelearningsurvey.com/reports/onlinereportcard.pdf

Allen-Diaz, B. (2015). Sustaining the promise of the land-grant university system. *California Agriculture, 69*(2), 68–69. https://doi.org/10.3733/ca.v069n02p68

Almendingen, K., Morseth, M. S., Gjølstad, E., Brevik, A., & Tørris, C. (2021). Student's experiences with online teaching following COVID-19 lockdown: A mixed methods explorative study. *PloS One, 16*(8), e0250378–e0250378. https://doi.org/10.1371/journal.pone.0250378

Association for Career and Technical Education. (2020). *History of CTE*. https://www.acteonline.org/history-of-cte/

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *The Journal of Political Economy, 70*(5, Part 2), 9–49. https://doi.org/10.1086/258724

Benson, A. D., Johnson, S. D., Duncan, J., Shinkareva, O. N., Taylor, G. D., & Treat, T. (2008). Community college participation in distance learning for career and technical education. *Community College Journal of Research and Practice, 32*(9), 665-687. https://doi.org/10.1080/10668920600859848

Bragg, D., & Love, I. (2019, February 14). At the tipping point: The evolving—and growing—landscape of the community college baccalaureate. *New America*. https://www.newamerica.org/education-policy/edcentral/at-the-tipping-point/

Brubacher, M. R., & Silinda, F. T. (2019). Enjoyment and not competence predicts academic persistence for distance education students. *International Review of Research in Open & Distance Learning, 20*(3), 165–179. https://doi.org/10.19173/irrodl.v20i4.4325

Cannistraci, P., Kehm, B., Pieper, B. B., Speerschneider, K., Farber, S. L., & Storandt, B. C. (2018). Difficult to doable: Interprofessional collaborative practice in distance education. *Journal of Nursing Education, 57*(4), 225-228. https://doi.org/10.3928/01484834-20180322-06

Carnegie Classification of Institutions of Higher Education. (n.d.). *Methodology.* https://carnegieclassifications.iu.edu/2010/methodology/index.php

Clarke, M. (2017). Rethinking graduate employability: the role of capital, individual attributes and context. *Studies in Higher Education, 43*(11), 1923–1937. https://doi.org/10.1080/03075079.2017.1294152

Cohen, A. M., Brawer, F. B., & Kisker, C. B. (2013). *The American community college*. ProQuest Ebook Central. https://ebookcentral-proquest-com.georgefox.idm.oclc.org

Columbia Gorge Community College. (n.d.). *Institutional core learning outcomes assessment*. https://www.cgcc.edu/institutional-assessment/institutional-core-learning-outcomes-assessment

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches.* (4th edition). SAGE.

Davidson, P. (2020, November 2). 'It's certain going to get worse': Businesses plan more layoffs, hiring freezes as COVID-19 escalates. *USA Today*. https://www.usatoday.com/story/money/2020/11/02/unemployment-2020-many-businesses-still-plan-layoffs-hiring-freezes/6094411002/

European Commission. (n.d.). *EU policy in the field of vocational education and training.* https://ec.europa.eu/education/policies/eu-policy-in-the-field-of-vocational-education-and-training-vet_en

Fletcher Jr., E. C. (2018). Characteristics of Career and Technical Education Faculty across Institutions of Higher Education in the United States. *International Journal of Adult Vocational Education and Technology*, *9*(1), 42-58. https://doi.org/10.4018/IJAVET.2018010104

Frese, M., & Rauch, A. (2001). Entrepreneurship, Psychology of. In *International Encyclopedia of Social & Behavioral Sciences* (pp. 4552–4556). Elsevier Ltd. https://doi.org/10.1016/B0-08-043076-7/01420-0

Fullan, M., & Scott, G. (2009). *Turnaround leadership for higher education*. San Francisco, CA: John Wiley & Sons.

Garza Mitchell, R. L., Etshim, R., & Dietz, B. T. (2016). Online CTE in the community college. *Career & Technical Education Research, 41*(3), 193–212. https://doi.org/10.5328/cter41.3.193

Gauvreau, S. A., Hurst, D., Cleveland-Innes, M., & Hawranik, P. (2016). Online professional skills workshops: Perspectives from distance education graduate students. *International Review of Research in Open and Distributed Learning, 17*(5). https://georgefox.idm.oclc.org/login?url=https://www-proquest-com.georgefox.idm.oclc.org/docview/1829492335?accountid=11085

Godlewska, A., Beyer, W., Whetstone, S., Schaefli, L., Rose, J., Talan, B., Kamin-Patterson, S., Lamb, C., & Forcione, M. (2019). Converting a large lecture class to an active blended

learning class: why, how, and what we learned. *Journal of Geography in Higher Education, 43*(1). https://doi.org/10.1080/03098265.2019.1570090

Haselberger, D., Oberheumer, P., Perez, E., Cinque, M., & Capasso, D. (2012). Mediating soft skills at higher education institutions: Guidelines for the design of learning situations supporting soft skills achievement. *ModEs Project*. https://gea-college.si/wp-content/uploads/2015/12/MODES_handbook_en.pdf

Hechinger, J., & Lorin, J. (2020, March 19). Coronavirus forces $600 billion higher education industry online. *Bloomberg Businessweek.* Retrieved from https://www.bloomberg.com/news/articles/2020-03-19/colleges-are-going-online-because-of-the-coronavirus

Heckman, J. J., & Kautz, T. (2012). Hard evidence on soft skills. *Labour Economics, 19*(4), 451–464. https://doi.org/10.1016/j.labeco.2012.05.014

Higher Education Coordinating Commission. (n.d.-a). *Applied baccalaureate programs.* https://www.oregon.gov/highered/institutions-programs/ccwd/Pages/applied-ba.aspx

Higher Education Coordinating Commission. (n.d.-b). *Community college student data.* https://www.oregon.gov/highered/research/Pages/student-data-cc.aspx

Higher Education Coordinating Commission. (2020). *Impact of COVID-19 on public postsecondary institutions*. https://www.oregon.gov/highered/research/Documents/Student/COVID-19-Impact-PreliminaryFindings-Enrollment.pdf

Horvitz, B. S. (2019). Extending the reach of technical education with distance learning. *Community College Journal of Research and Practice, 43*(7), 534-538. https://doi.org/10.1080/10668926.2018.1507849

Horvitz, B. S., Garcia, L. R., Garza Mitchell, R., & Calhoun C.D. (2019). An examination of instructional approaches in online technical education in community colleges. *Online Learning*, *23*(4), 237-252. https://doi.org/10.24059/olj.v23i4.1613

Hurrell, S. A. (2016). Rethinking the soft skills deficit blame game: Employers, skills withdrawal and the reporting of soft skills gaps. *Human Relations*, *69*(3), 605–628. https://doi.org/10.1177/0018726715591636

Imperatore, C., & Hyslop, A. (2018). 2018 ACTE quality CTE program of study framework. *Association of Career and Technical Education*. https://www.acteonline.org/wp-content/uploads/2019/01/HighQualityCTEFramework2018.pdf

Johns Hopkins University and Medicine. (2020). America is reopening. But have we flattened the curve? *Coronavirus Resource Center.* https://coronavirus.jhu.edu/data/new-cases-50-states/oregon

Josselson, R. (2013). *Interviewing for qualitative inquiry: A relational approach*. Guilford Press. https://ebookcentral-proquest-com.georgefox.idm.oclc.org

Kelchen, R., Aoun, J. E., Liming, S., Bousquet, M., Starr, G. G., Carey, K., McGuire, P., Kalman-Lamb, N., Dowe, P. K., Christman, P., Bartram, E., Vinsel, L., Hungerford, A., Weatherby, L., Callard, A., Grawe, N. D., Kanuga, M., Dhillon, J., Hsu, H., Deneen, P. … Wellmon, C. (2020, April 10). How will the pandemic change higher education? *The Chronicle of Higher Education*. Retrieved from https://www.chronicle.com/article/How-Will-the-Pandemic-Change/248474

Lepori, B. (2020). Non-university education and professional institutions. In Teixeira P.N., Shin J.C. (eds), *The International Encyclopedia of Higher Education Systems and*

Institutions (pp. 2118-2124). Springer. https://doi-org.georgefox.idm.oclc.org/10.1007/978-94-017-8905-9_585

LeVasseur, J. J. (2003). The Problem of Bracketing in Phenomenology. *Qualitative Health Research,* 13(3), 408–420. https://doi.org/10.1177/1049732302250337

Lokken, F. (2019). *2019 ITC annual national elearning report survey results: Trends in elearning: Tracking the impact of elearning at community colleges.* Washington, DC: Instructional Technology Council.

Marx, G. (2006). *Future focused leadership: Preparing schools, students, and communities for tomorrow's realities.* Alexandria, VA: Association for Supervision and Development.

McAvinia, C. (2016). *Online learning and its users.* Elsevier Science & Technology. https://doi-org.georgefox.idm.oclc.org/10.1016/B978-0-08-100626-9.02001-3

Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation*. ProQuest Ebook Central. https://ebookcentral-proquest-com.georgefox.idm.oclc.org

Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *The Internet and Higher Education, 14*(2), 129–135. https://doi.org/10.1016/j.iheduc.2010.10.001

Moore, T., & Morton, J. (2015). The myth of job readiness? Written communication, employability, and the 'skills gap' in higher education. *Studies in Higher Education (Dorchester-on-Thames), 42*(3). 591–609. https://doi.org/10.1080/03075079.2015.1067602

Murphy, M. C., Boucher, K., & Logel, C. (2021, January 19). How to help students feel a sense of belonging during the pandemic. *Greater Good Magazine*.

https://greatergood.berkeley.edu/article/item/how_to_help_students_feel_a_sense_of_belonging_during_the_pandemic

Myers, T., Blackman, A., Andersen, T., Hay, R., Lee, I., & Gray, H. (2014). Cultivating ICT students' interpersonal soft skills in online learning environments using traditional active learning techniques. *Journal of Learning Design, 7*(3), 38–53. https://doi-org.georgefox.idm.oclc.org/10.5204/jld.v7i3.194

National Center for Education Statistics. (n.d.). *About CTE statistics.* https://nces.ed.gov/surveys/ctes/about.asp#a

National Institutes of Health. (n.d.). *Results orientation.* Office of Management. https://hr.nih.gov/working-nih/competencies/competencies-dictionary/results-orientation

O'Banion, T. U. (2019). A brief history of workforce education in community colleges. *Community College Journal of Research and Practice, 43*(3), 216-223, https://doi.org/10.1080/10668926.2018.1547668

Or. Exec. Order No. 20-09, (Mar. 19, 2020).

Or. Exec. Order No. 20-17, (Apr. 17, 2020).

Oregon Community College Association. (n.d.). *Community college facts and figures.* http://www.occa17.com/resources_/facts-figures/

Patel, S. (2014, September 18). *A guide to coding qualitative data*. https://salmapatel.co.uk/academia/coding-qualitative-research/

Perkins Collaborative Resource Network. (n.d.). *Employability skills*. https://cte.ed.gov/initiatives/employability-skills-framework

Peshkin, A. (1988). In search of subjectivity. One's own. *Educational Researcher, 17*(7), 17-21. www.jstor.org/stable/1174381

Pham, M., Greaney, K. C., & Abel, L. (2020). California community colleges produce positive employment outcomes: Results from the career technical education outcomes survey. *Community College Journal of Research and Practice, 44*(1), 52-60. https://doi.org/10.1080/10668926.2019.1650843

Romero, C. (2015, July). *What we know about belonging from scientific research.* Mindset Scholars Network. http://studentexperiencenetwork.org/wp-content/uploads/2015/09/What-We-Know-About-Belonging.pdf

Saldaña, J. (2009). *Coding manual for qualitative researchers*. ProQuest Ebook Central https://ebookcentral-proquest-com.georgefox.idm.oclc.org

Saldaña, J., & Ornasta, M. (2018). *Qualitative research: analyzing life* (First edition). SAGE.

Scheef, A. R., Walker, Z. M., & Barrio, B. L. (2019). Salient employability skills for youth with intellectual and developmental disabilities in Singapore: the perspectives of job developers. *International Journal of Developmental Disabilities 65*(1), 1-9. https://doi.org/10.1080/20473869.2017.1335479

Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences.* New York, NY: Teachers College Press.

Sin, C., & Neave, G. (2016). Employability deconstructed: Perceptions of Bologna stakeholders. *Studies in Higher Education, 41*(8), 1447-1462. https://doi.org/10.1080/03075079.2014.977859

Succi, C. (2019). Are you ready to find a job? Ranking of a list of soft skills to enhance graduates' employability. *International Journal of Human Resources Development and Management, 19*(3), 281–297. https://doi.org/10.1504/IJHRDM.2019.100638

Succi, C., & Canovi, M. (2019). Soft skills to enhance graduate employability: Comparing students and employers' perceptions. *Studies in Higher Education (Dorchester-on-Thames), 45*(9), 1–14. https://doi.org/10.1080/03075079.2019.1585420

Succi, C., & Wieandt, M. (2019). Walk the talk: soft skills' assessment of graduates. *European Journal of Management and Business Economics, 28*(2), 114–125. https://doi.org/10.1108/ejmbe-01-2019-0011

Suleman, F. (2018). The employability skills of higher education graduates: insights into conceptual frameworks and methodological options. *Higher Education, 76*(2), 263–278. https://doi.org/10.1007/s10734-017-0207-0

Terrell, S. R. (2016). *Writing a proposal for your dissertation: guidelines and examples*. The Guilford Press.

Tufford, L., & Newman, P. (2012). Bracketing in Qualitative Research. *Qualitative Social Work, 11*(1), 80–96. https://doi.org/10.1177/1473325010368316

University of Missouri System. (2012, November 14). *The Morrill act and today's land-grant university* [Video]. Youtube. https://youtu.be/AgMj1ZlfArM

U.S. Department of Health and Human Services. (1979). *The Belmont report: Ethical principles and guidelines for the protection of human subjects in research*. https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/read-the-belmont-report/index.html

van Manen, M. (2017). Phenomenology in its original sense. *Qualitative Health Research, 27*(6), 810–825. https://doi.org/10.1177/1049732317699381

Van Noy, M., Trimble, M., Jenkins, D., Barnett, E., & Wachen, J. (2016). Guided pathways to careers: Four dimensions of structure in community college career-technical programs. *Community College Review*, *44*(4), 263–285.

Verma, S., Kumar, B., Chandra, S., Singh, N., Kumari, P., & Verma, A. (2021). Knowledge, attitude, and psychological effect on undergraduate/postgraduate students in Lockdown COVID-19 situation. *Journal of Pharmacy & Bioallied Sciences*, 13, 696–698. https://doi-org.georgefox.idm.oclc.org/10.4103/jpbs.JPBS_829_20

Xu, D., & Fletcher, J. (2017). Chapter 14 - Understanding the relative value of alternative pathways in postsecondary education: Evidence from the state of Virginia. In *Bridges, Pathways and Transitions* (pp. 227–257). Elsevier Ltd. https://doi.org/10.1016/B978-0-08-101921-4.00014-2

Yen, S. C., Lo, Y., Lee, A., & Enriquez, J. (2018). Learning online, offline, and in-between: Comparing student academic outcomes and course satisfaction in face-to-face, online, and blended teaching modalities. *Education and Information Technologies*, *23*(5), 2141-2153. https://doi.org/10.1007/s10639-018-9707-5

Yin, R. K. (2015). *Qualitative research from start to finish.* (Second edition). Guilford Press. https://ebookcentral-proquest-com.georgefox.idm.oclc.org

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

Institutional Review Board Approval

2201142

GEORGE FOX UNIVERSITY HSRC INITIAL REVIEW QUESTIONNAIRE Page 11

Title: A Phenomenological Study of Community College Graduates' Perceptions of the Impact of Online Delivery on Their Employability

Principal Researcher(s): Jarett Gilbert

Date application completed: **12/30/20**

(The researcher needs to complete the above information on this page)

COMMITTEE FINDING: For Committee Use Only

☒ (1) The proposed research makes adequate provision for safeguarding the health and dignity of the subjects and is therefore approved. **Exempt under category #2**

☐ (2) Due to the assessment of risk being questionable or being subject to change, the research must be periodically reviewed by the **HSRC** on a basis throughout the course of the research or until otherwise notified. This requires resubmission of this form, with updated information, for each periodic review.

☐ (3) The proposed research evidences some unnecessary risk to participants and therefore must be revised to remedy the following specific area(s) on non-compliance:

☐ (4) The proposed research contains serious and potentially damaging risks to subjects and is therefore not approved.

Chair or designated member — Date: **12/31/20**

APPENDIX B

INFORMED CONSENT FORM

Research Participant Informed Consent Form

Prospective Research Participant: Please read this consent form carefully, and ask as many questions as you like before you decide whether you want to participate in this research study. You are free to ask questions at any time before, during, or after your participation in this research.

PURPOSE OF THIS RESEARCH STUDY

You are being asked to participate in a research study conducted by Jarett Gilbert, a doctoral candidate at George Fox University in Newberg, Oregon. The purpose of this study is to understand how graduates of Oregon community college career and technical education (CTE) programs perceive that online delivery methods prepared them for success in their profession. This study will specifically focus on how graduates feel that online delivery was an appropriate method to building their employability skills: those professional, non-technical skills that are universally desired by employers of all hires. In this study, online learning is broadly defined as programs or courses delivered fully or partially through web technology, as opposed to fully face-to-face classroom or lab learning.

Your eligibility to participate in this study will be identified in the accompanying confidential questionnaire, which can be completed in 3-5 minutes. The researcher will contact you directly to confirm your eligibility. Broadly, participants in this study will have graduated from an Oregon community college in Spring term 2020 with a CTE certificate or degree, in which their final term was offered fully or partially online due to COVID-19. Participants will also have been employed in their field of study for at least one month. There will be no financial compensation for this study. Your participation in this study is voluntary and can be discontinued at any time without penalty or bias.

The duration of this study will be January 13, 2021 through February 26, 2021. You will be asked to participate in three 45-minute interviews via Zoom video-conferencing software, and to provide the researcher with two documents that you believe speak to your employability skills preparation (i.e., job performance evaluation, group assignment from Spring term 2020 class). The researcher will schedule your interviews based on your schedule availability. Observations made by the researcher will be checked with you throughout the study period. You will be apprised of any new or significant findings in the study, and upon request, you may receive a summary of the results from the study.

POSSIBLE RISKS OR DISCOMFORT

The researcher has identified and addressed two risks associated with this survey: confidentiality of participants and digital privacy. To ensure your confidentiality, your identity and that of your alma mater and place of employment will only be referred to by aliases and/or general descriptions in any documentation that will be part of the final report. You will have the opportunity to comment on your representation in that reporting. It should be noted that any records or data obtained as a result of your participation in this study may be inspected by the sponsor George Fox University, by any relevant governmental agency, or by the George Fox

University Institutional Review Board. These records will be kept private in so far as permitted by law."

Data collected throughout this study (i.e., interview transcript, participant-shared documents) will be stored, organized, and analyzed digitally on the researcher's secure, password-protected laptop, their student Google Drive, and in their computer-assisted qualitative data analysis software. Zoom interviews will be conducted by the researcher in a secure room. Video and audio of each interview will be recorded. Those files will be encrypted and password-protected on a cloud server managed by an institution of higher learning; however, all video and audio files will be permanently deleted once the researcher has transcribed the interview. There are no additional risks or benefits associated with this study identified for participants.

The findings of this study may be of use to higher education institutions in their planning and budgeting to support online or remote delivery in CTE programming, and to CTE faculty in the continuous curricular improvement processes. Ultimately, the improvement of and investment in online CTE instruction can have implications on equity gaps in student achievement and workforce success.

Any further questions you have about this study will be answered by the Principal Investigator, Jarett Gilbert, by phone: (917) 859-0039, or by email: jgilbert19@georgefox.edu

Any questions you may have about your rights as a research subject will be answered by the Faculty Dissertation Chair, Dr. Linda Samek, by email: lsamek@georgefox.edu

AUTHORIZATION

I have read and understand this consent form, and I volunteer to participate in this research study. I understand that I will receive a copy of this form. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study. I further understand that nothing in this consent form is intended to replace any applicable Federal, state, or local laws.

Participant Name (Printed or Typed): _____

Date: _____

Participant Signature: _____

Date: _____

Principal Investigator Signature: _____

Date: _____

APPENDIX C

INTERVIEW PROTOCOL 1

Semi-structured Interview Protocol 1

1. Tell me a little about yourself. Where are you from? Where did you go to high school?
2. What are the career goals and interests that led you to choose your field of study?
    a. What are the things about your career/interest area that you really like to do?
    b. What are some of the aspects about your job that are team-oriented?
3. How did you come to choose your community college CTE program?
4. What the qualities or skills that you expected to acquire through your program? (Maybe considering the job you thought you would be getting after the program, your dream job.)
5. What does it mean to be "employable" in your field? What are the qualities or skills of a desirable employee at your company in your industry?
    a. If you remember your interview for your current job, do you remember if they asked you questions about your ability to succeed beyond technical skills? Like working in teams, communicating with others, prioritizing tasks?
6. Prior to adjustments to COVID-19 safety protocols, to what extent do you believe that your expectations for the program were met/realized? (How did you know?)
7. How did your instructional delivery change in after the impact of COVID-19? That is to say, did you move fully online? Partially online? What did it look like? (How many classes were impacted? What did that different look like? What did teamwork look like?)
8. To what extent do you believe that your original expectations for the program were met/realized in spring term 2020 with a shift of your instructional delivery to fully- or partially-online methods?
    a. What do you perceive was ***more difficult*** to learn online?
    b. What do you perceive was ***easier*** to learn online?

c. What do you perceive was ***unchanged*** about your learning experience?

9. To what extent do you believe that your own employability was impacted by the shift in instructional delivery?
10. What does ***teamwork*** in your industry look like? How would you define good teamwork skills?
11. What does it mean in your industry if someone has strong ***communication*** skills?
12. What does it mean to be ***results-oriented***?
13. What does it take for you to go home at the end of your shift and say that you had a really good day?
14. Do you have any questions for me at this time?

Participant Interviews via Zoom

Lenny – January 26, 2021
Adam – January 28, 2021
Rachel – February 8, 2021

APPENDIX D

INTERVIEW PROTOCOL 2

Semi-structured Interview Protocol 2

Preface for participants: Career and technical education, or CTE, prepares students with two important skill sets: the technical skills of a trade, and the more universal "soft skills" that—regardless of the employer, country, or profession—make you a good employee. We'll call these employability skills.

1. What do you perceive are the desirable employability skills that every employee should have, regardless of their trade? (Or, more simply, characterize for me the traits of an ideal employee.)
2. Tell me about the best co-worker you ever had. What made them a good employee?
    a. How would you describe the way they work in teams?
    b. How would you describe their communication skills?
    c. How would you describe their ability to prioritize tasks? How about their ability to see how their work fit into the bigger goals of the company/team/clinic?
    d. What about the worst co-worker you've ever had?
3. How much of yourself do you see in these descriptions? What aspects resonated with you?
    a. In what ways do you think your program prepared you with these skills?
    b. In what ways is this also true of your Spring term online experience?
    c. If you feel that you weren't prepared well, in what ways do you think you could've been better prepared?
4. *Document 1, from Spring Term 2020:* You provided one document from your Spring Term 2020 online learning experience. Tell me more about the document, and the class/assignment it is from?
    a. What reason did this stand out for you over any others you could have shared?

   b. What do you recall about this particular learning experience?
   c. What about this learning experience is true of your current role?

5. *Document 2, from Spring Term 2020:* You provided one document from your current job. Tell me more about it.
   a. What reason did this document stand out for you over any others to share?
   b. How do you believe this represents your employability skills?
   c. When you reflect upon your degree program overall, what comes to mind about this document?
6. What did you learn about yourself from your online learning experience? [OPTION: Do you believe you would've learned this about yourself in a fully face-to-face learning environment?]
   a. To what extent do you believe it impacted your employability? If so, in what ways did you improve your own employability?
   b. When you reflect on what we discussed in this interview, in what ways do you think a fully or mostly online experience would have impacted your employability?
   c. What would change that?
7. Do you have any questions for me?

Participant Interviews via Zoom

Lenny – March 3, 2021
Adam – February 26, 2021
Rachel – March 1, 2021

APPENDIX E

INTERVIEW PROTOCOL 3

Semi-structured Interview Protocol 3

1. To the extent that you thought about our interviews after the fact, what came to mind for you about your online learning experience and your own employability?
2. In terms of the way you interact with people, what about communicating online/virtually with each other in the work place, learning place, or with friends and family is the same? Different?
3. In earlier interviews, I asked you about what your current job entails, and the thing you enjoy most about your job. I'd like to ask you now to engage with me in a little thought exercise. Walking through a typical working day, what aspects of your job could be completed online or remote? How would you do so?
4. I asked in the first interview if you think that your employability skills (i.e., communication, teamwork, results orientation) were impacted by online learning. I'd like to read you some of what you said about employability skills, and ask you to think about the ways you feel that this was taught to you, or can be taught using virtual communication?
    a. TEAMWORK, Interview #1: <Quote>; TEAMWORK, Interview #2: <Quote>;
    b. COMMUNICATION, Interview #1: <Quote>; COMMUNICATION, Interview #2: <Quote>;
    c. RESULTS ORIENTATION, Interview #1: <Quote>; RESULTS ORIENATION, Interview #2: <Quote>;
    d. KEY EMPLOYABILITY SKILL, Interview #2: <Quote>;
    e. KEY TO AVOID (WORST COWORKER), Interview #2: <Quote>;

5. In terms of employability skills, reflecting on where you are in your career, and where you want to be now or go from here, what, if anything, would you tell yourself entering that online term?
    a. In our second interview, you said about WHAT YOU LEARNED ABOUT YOURSELF: <Quote>;
6. How *engaged* and *connected* did you feel in your Spring 2020 online CTE courses?*
7. You noted in our first interview that the easier things to learn online were Zoom lectures or pre-recorded videos, and the more difficult things to learn online were anything hands-on where you needed to consult experts. What does this tell you about the importance of choosing the appropriate delivery method for certain content? How would you reimagine your program experience as an online or hybrid one, if you could? What would it take your institution to convince you such a program is worth your time? (Do you need to be face-to-face to gain those employability skills?)
8. What one thing within a faculty member's control was *most helpful* to your success in remote/online, in-person/online, or remote/in-person classes in Spring 2020? *Least helpful*?*
9. What one thing outside a faculty member's control was *most helpful* to your success in Spring 2020? *Least helpful*?*
10. Any questions for me?

**With permission of Dr. Betsy Julian, Vice President of Instruction at Central Oregon Community College (COCC), I used these questions that were created by the COCC Instructional Deans as part of their student survey.*

Participant Interviews via Zoom

Lenny – April 29, 2021
Adam – May 23, 2021
Rachel – May 3, 2021