Spring 2019

Soft Skills in Mississippi Community Colleges' Online Career and Technical Programs

Joanna Sue Alston
University of Southern Mississippi

SOFT SKILLS IN MISSISSIPPI COMMUNITY COLLEGES' ONLINE CAREER AND TECHNICAL PROGRAMS

by

Joanna Sue Alston

A Dissertation
Submitted to the Graduate School,
the College of Education and Human Sciences
and the School of Education
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

Approved by:

Dr. Lilian H. Hill, Committee Chair
Dr. Richard Mohn
Dr. Eric Platt
Dr. Kyna Shelley

Dr. Lilian H. Hill Committee Chair	Dr. Sandra Nichols Director of School	Dr. Karen S. Coats Dean of the Graduate School

May 2019

Published by the Graduate School

THE UNIVERSITY OF SOUTHERN MISSISSIPPI®

ABSTRACT

Soft skills are an essential piece in the employment puzzle, and most students' behavioral characteristics require development, if not complete transformation, before learning can subsequently be transferred to the workplace. To that end, this facet of occupational education in community colleges' online courses was in need of exploration to determine whether instructors were having success in implementing instructional and assessment methods for both teaching and grading students' soft skills behaviors. This mixed methods study narrowed the focus of an extremely broad topic to four skills, specifically communication, critical thinking, teamwork, and work ethic. A look at how those skills related to online students' overall employment readiness was also examined.

In an effort to provide a comprehensive investigation, the study began with a focus group to collect ideas and generate themes for items to create a questionnaire. The questionnaire was distributed to instructors of online CTE courses at participating institutions to collect survey data. Participants who volunteered via an open-ended question on the survey instrument were then invited to share their stories through interviews. This in-depth investigation produced deeper meaning and explained points found in the quantitative data that otherwise seemed contradictory.

Both quantitative and qualitative data showed a critical dearth of teamwork instruction and assessment. Nevertheless, overall findings were conducive to promoting incorporation of soft skills in online courses as well as allowing instructors to trust the educational process when considering whether online students are ready for employment.

ACKNOWLEDGMENTS

It is with utmost appreciation that I acknowledge my committee chair and adviser, Dr. Lilian Hill, whose support and patience have guided me through this process. Regardless of my sincerity, “thank you” seems so insufficient. I would also like to acknowledge the remaining members of my committee for the roles they have played in propelling me toward the finish line: Dr. Richard Mohn, Dr. Eric Platt, and Dr. Kyna Shelley. Their dedication to my success was vital throughout this journey, and it is much appreciated.

Acknowledgments also go to the qualitative participants in my study, both focus group members and interviewees. Without their input, my research would not exist.

Thanks to Dr. Gwendolyn Pope as well for allowing me the use of her questionnaire as a basis for building the one in my research project. She answered the call from a complete stranger in a different state and said, “Yes,” providing a valuable jump-start to my study.

Very special thanks to the Delta Kappa Gamma Society International and Mississippi (Zeta) State Organization for awarding scholarships to me. These funds helped to make a dream become reality.

Lastly, it is with humble gratitude that I acknowledge my coworkers and administrators at Mississippi Gulf Coast Community College for their support through words of encouragement, shoulders to cry on, and valuable input and insight into the topic of soft skills.

Thank you.

DEDICATION

This work is dedicated to my family and friends who have supported me and sacrificed time we could have spent together while I instead worked toward this degree.

To my son Brian—we survived! There were times I did not know if we would, but we have made it to the other side, just in time for your senior year of high school. I look forward to spending more time with you and enjoying it without guilt.

To my parents and Kevin—thank you for picking up the slack while I attended class or met with professors. I appreciate the many late nights you had to endure so that I could complete required coursework.

To my "girls" Gloria, Daphne, Stephanie, Debbie, Kelly, and Elana—thank you for checking on me and making me take care of myself. You have been with me every step of the way, and all of your support and cheerleading have finally paid off.

"The LORD deal kindly with you, as you have dealt . . . with me." (Ruth 1:8 King James Version)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

LIST OF ABBREVIATIONS

CTE	Career and Technical Education
USM	The University of Southern Mississippi

CHAPTER I - INTRODUCTION

Soft skills are an essential component of the characteristics, personal and professional, that employers desire and pursue when hiring employees (Al-Alawneh, 2011; Ali, Rosli, Sujadi, Usodo, & Perdana, 2017; Makhathini, 2016; Rao, 2010; Robles, 2012; Schulz, 2008; Tulgan, 2015). As postsecondary career and technical education (CTE) programs at community colleges are intended to prepare adult learners for employment upon graduation (Association for Career & Technical Education, 2018), these programs should include not only a focus on technical skills but also instructional content related to the soft skills required by employers. Due to the interpersonal nature of soft skills (National Soft Skills Association, n.d.), implementation of related, instructional content in a face-to-face course may happen without as much focused planning as would be required when teaching an online course. For that reason, online CTE students' preparation for employment must be intentionally cultivated through methods that include learning transfer of technical knowledge from classroom to workplace as well as transformative learning and transfer of essential soft skills. A closer look at instructional practices is therefore requisite in programs that identify an ultimate objective of employability, yet have distinguished no standard for teaching and assessing soft skills.

Soft Skills for the 21st Century

The concept of soft skills is difficult to define due to the complexity and integration of multiple qualities that contribute to the overall result of effective interaction with other people (Miller, Biggart & Newton, 2013; National Soft Skills Association, n.d.; Tulgan, 2015). To create more confusion, other terms with similar meanings are used in related literature—employability skills (Miller et al., 2013; Rao,

2010; Robles, 2012), general skills (Gordon, 2008), generic skills (Al-Alawneh, 2011), and micro-social skills (Muzio, Fisher, Thomas, & Peters, 2007). Furthermore, a skill that may be considered soft in one field may be a technical, or hard, skill in a different field (Schultz, 2008). There are some skills, however, that are consistently included in this "category" across the literature—communication (Al-Alawneh, 2011; Ali et al., 2017; Guffy & Loewy, 2013; Makhathini, 2016; Rao, 2010; Tulgan, 2015); critical thinking (Ali et al., 2017; Schulz, 2008; Tulgan, 2015); problem-solving (Ali et al., 2017; Makhathini, 2016; Tulgan, 2015); teamwork/social skills (Al-Alawneh, 2011; Ali et al., 2017; Hughes & Jones, 2011; Rao, 2010; Sitompul, Kustono, & Suhartadi, 2016; Tulgan, 2015); and work ethic (Associated Press, 2015; Kyllonen, 2013; Robles, 2012; Schulz, 2008; Tulgan, 2015).

Another contributing factor to the elusiveness of a concrete definition for soft skills is that the demand for different types of skills changes over time and by geographic location (Al-Alawneh, 2011; Makhathini, 2016; Miller et al., 2013; Rao, 2010). In considering communication, for example, the evolution of ways in which society communicates has evolved dramatically over the past century since soft skills were incorporated into the study of engineering education by Mann (1918). However, his "personal qualities" of tact and understanding in particular are still requisite when communicating with not only instructors but also fellow coworkers and supervisors (Mann, 1918, p. 106). This comparison illustrates the point that basic concepts of skills are similar across decades of time, even though the skills themselves may be exhibited through methods that are remarkably varied, such as handwritten letters and text messages. A closer look at soft skills within the realm of CTE as well as from the

perspective of both educators and employers provides insight into how these skills are addressed via instruction and their continued importance, perhaps increasingly, in the 21st century.

Career and Technical Education (CTE)

Occupational programs are offered within the auspices of career and technical education (CTE), a title that was coined around the turn of the 21st century (Association for Career & Technical Education, 2018; Gordon, 2008). Known previously by a myriad of terms—career education, occupational education, vocational education, and vocational-technical education, CTE prepares students for careers in a wide range of fields (Cohen & Brawer, 2003; Gordon, 2008). Preparation for employment is emphasized in the 2014 Workforce Innovation and Opportunity Act (WIOA), which includes provisions for adult education through its Title II Adult Education and Family Literacy Act (AEFLA) (Campbell & Love, 2016; OSERS, 2016). By definition, adult education consists of activities designed for learning among individuals who are identified as adults, including not only basic skills but also technical education (Bierema, 2010; Merriam & Brockett, 2007). As a form of adult education, CTE programs integrate learning with Knowles' andragogical principles for adult learners, such as their need to know, motivation, and self-concept as well as the influence of past life experiences in the learning process (Hansman & Mott, 2010; Kistler, 2011; Merriam et al., 2007).

CTE programs are offered at both secondary and postsecondary institutions, with graduates of the postsecondary programs earning a technical or applied science associate degree (Association for Career & Technical Education, 2018; Gordon, 2008). At the postsecondary level, CTE is a viable option for those adult learners who need

advancement in technical knowledge due possibly to previous termination from employment or, for some, due to a job-related requirement for continued training in a global workforce (Gordon, 2008; Merriam et al., 2007; Reese, 2011; Reese, 2012). Although CTE programs are offered at both two- and four-year institutions nationwide, only two-year, community/junior colleges offer these programs in the state of Mississippi (Mississippi Community College Board, 2019), where approximately 100,000 skilled workers were educated at community colleges in 2017 (Ward, 2018).

Though heavily skills-based in content, CTE has moved into the realm of online education along with academic courses at higher education institutions (Garza Mitchell, 2017), and percentages of students taking at least one online course have steadily increased (Lederman, 2018). Online occupational programs have become widespread in community colleges and serve as an important contribution not only to evolving economic demands but also in fulfilling the mission of community colleges (Githens, Sauer, Crawford, & Wilson, 2012). By definition, these programs are considered "online" if 50% or more of the mandated coursework is available through online course delivery and the offering institution has labeled them as such. Although two-year colleges are less likely to offer online degree programs, Githens, Sauer, Crawford, and Wilson (2012) reported that certificate programs in career clusters well-suited for online learning are commonly offered in an online format.

Student populations in community colleges' CTE programs are typically diverse and nontraditional (Garza Mitchell, Etshim, & Dietz, 2016; Gordon, 2008; Horvitz, 2017). Nontraditional populations consist of adult learners who may have families and either full- or part-time employment (Horvitz, 2017; Kim, Sax, Lee, & Hagedorn, 2010;

Ma & Baum, 2016; Markle, 2015; Offerman, 2011). According to the Association for Career & Technical Education (2019), CTE programs play an essential role in not only training but also retraining both unemployed and underemployed individuals. Students may have been unable to secure employment with completed degrees or could be studying for a new career altogether (Cummins, 2015; Hyslop, 2011). In order to reach these nontraditional students who may have limited time due to either work-related or personal responsibilities, institutions are offering online courses as a viable alternative to face-to-face courses in both adult and continuing education programs (Conceição, 2007; Donavant, 2009; Garza Mitchell, 2017; Grosjean & Sork, 2007), even though lack of faculty expertise and interest in online education limits participation and presents barriers to CTE program offerings (Garza Mitchell et al., 2016). Furthermore, with regard to student achievement, past research studies have found no significant difference between online and face-to-face learning environments (Benson, Johnson, Duncan, & Shinkareva, 2005; Johnson et al., 2004; Meyer, 2002). Unfortunately, the same cannot be said for development of soft skills, some of which were found to be significantly higher in adult learners at community colleges who participated in a face-to-face, work-based learning program (Ali et al., 2017).

Educators' Perspective

While studying programs in an educational setting, students are exposed to more instructional content regarding technical (hard) skills than soft skills as their instructors teach them how to perform job-related tasks (Pant & Baroudi, 2008; Sitompul et al., 2016). However, employers look for employees who have both technical knowledge and interpersonal soft skills to complement their existing teams (Al-Alawneh, 2011; Ali et al.,

2017; Makhathini, 2016; Tulgan, 2015). Many authors call for the development of soft skills by embedding those skills into a program's design and then evaluating students' demonstration of that development (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Miller et al., 2013; Sitompul et al., 2016). This scenario requires cooperation between educators and employers that provides specific, program-related soft skills needed in the respective fields (Al-Alawneh, 2011). This cooperation can take many forms, such as internships, apprenticeships, or work-based learning (Al-Alawneh, 2011; Ali et al., 2017). Within career and technical education, these partnerships are found in the form of advisory committees (Carl D. Perkins Act, 2006), comprised of employers from the local area who would potentially hire graduates from programs and who also give feedback on program curricula and courses.

Employers' Perspective

Employers want to hire employees who have both technical (hard) skills and soft skills (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Rao, 2010; Tulgan, 2015). The challenge in doing so exists worldwide, specifically in countries such as England, Germany, Hong Kong, India, Jordan, Netherlands, and the United States (Al-Alawneh, 2011; Miller et al., 2013; Rao, 2010). Some authors go as far as suggesting that a degree is no longer the "main attraction" for employers due to students' lack of connection between education and work, an issue that results in unemployment (Al-Alawneh, 2011; Ali et al., 2017; Rao, 2010). All of these points indicate the value of students-turned-employees who possess the skills necessary to be successful in the workforce, a ratio that is reported as 85% soft skills and 15% technical skills (National Soft Skills Association, n.d.; Rao, 2010).

Problem Statement

According to many employers, soft skills are essential to an individual's employability (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Rao, 2010; Robles, 2012; Schulz, 2008; Tulgan, 2015). As the goal of CTE programs is to prepare students for employment, incorporating instruction and evaluation of students' soft skills development is necessary in order for them to be truly workforce-ready (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Miller et al., 2013; Sitompul et al., 2016). In an effort to remain abreast of an aspect of employment that is constantly evolving, due in part to the demand for different types of social and cultural skills (Al-Alawneh, 2011; Makhathini, 2016; Miller et al., 2013; Rao, 2010), much research has been conducted on this topic within the last decade.

In addition to the research available in peer-reviewed literature, several related projects were found in a review of dissertations from the last ten years. For example, studies have been performed on aligning programs with employer needs (Carreira, 2008; Dean, 2017; Hargis, 2011) as well as gaining insight into student and employer perspectives of employability skills, specifically at community colleges (Harris, 2013; Williams, 2015). Additionally, soft skills have been addressed in vocational and CTE courses (Coughlin, 2012; Hendren, 2016; Patriquin, 2016; Pope, 2017; Randolph, 2016). Soft skills have also been studied in online courses at four-year institutions (Lindsey, 2014; McGarry, 2016; Meeks, 2017; Olson, 2016). There is a lack of research, however, taking soft skills into account in online CTE courses at community colleges. Several authors have documented the need for study of soft skills in CTE that uses online course delivery, calling specifically for an examination of the relationship between online course

delivery and academic or learning outcomes (Garza Mitchell, 2017; Garza Mitchell et al., 2016; Githens et al., 2012; Horvitz, 2017). Given the limited face-to-face interaction in an online program, as well as the shorter time spent learning both hard and soft skills in a two-year, CTE program as compared to a four-year program, the call for this research focus has merit.

Purpose Statement

The purpose of this study was to investigate specific, employer-desired soft skills of community college students who are enrolled in online CTE courses. Four skills are consistently identified in literature as being desired by employers—communication (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Rao, 2010; Tulgan, 2015); critical thinking (Ali et al., 2017; Schulz, 2008; Tulgan, 2015); teamwork (Al-Alawneh, 2011; Ali et al., 2017; Rao, 2010; Sitompul et al., 2016; Tulgan, 2015); and work ethic (Associated Press, 2015; Kyllonen, 2013; Robles, 2012; Schulz, 2008; Tulgan, 2015). The study identified methods of introducing and teaching the concept of soft skills to students enrolled in online CTE courses at community colleges as well as approaches for assessing students' development of those skills. Additionally, the study explored instructors' perspectives of online CTE students' skill level in the four specified soft skills—communication, critical thinking, teamwork, and work ethic—and instructors' perspectives of online CTE students' overall readiness for employment in their CTE focus areas.

Research Goals and Objectives

Goals of the research study were to explore community college instructors' perspectives of specific, employer-desired soft skills—communication, critical thinking,

teamwork, and work ethic—as found in students who are enrolled in online CTE courses. Four goals and related research questions contributed to this exploration through both qualitative and quantitative measures. They were as follows:

Goal 1. The study investigated community college instructors' opinions of the soft skills with which online CTE students enter courses. The research question for this goal was as follows:

RQ1. When courses begin, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?

Goal 2. The study also investigated instructional methods being used by community college instructors to introduce and teach the concept of soft skills to online CTE students. The research question for this goal was as follows:

RQ2. What instructional methods are being used to teach the soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?

Goal 3. The study then investigated assessment methods being used by community college instructors to assess the soft skills of online CTE students through either formative or summative approaches. The research question for this goal was as follows:

RQ3. What methods are being used to assess students' soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?

Goal 4. Lastly, the study explored community college instructors' opinions of the soft skills with which online CTE students exit their courses as well as the instructors'

opinions of their online CTE students' employment readiness. The research question for this goal was as follows:

RQ4. When courses end, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, (d) work ethic, and (e) overall employment readiness?

Conceptual Framework

The four specific soft skills included for investigation in the study are found within the *Employability Skills Framework* (see Figure 1), introduced by the U.S. Department of Education's Office of Career, Technical, and Adult Education (OCTAE) in 2014 as a means of leveraging and connecting "the efforts of policy makers, educators, and employers" in not only defining and measuring these skills but also merely naming them (OCTAE, n.d.). This interactive framework serves as a resource for instructors and students as well as employers (Knowles, 2014). Although many states reported having a standard for employability skills within their CTE components prior to the introduction of this tool, the *Employability Skills Framework* offers a measure of accountability in aligning these standards across all stakeholders, including employers.

In conjunction with the *Employability Skills Framework*, two learning theories provided a lens for guiding the research study: transformative learning and learning transfer. Transformative learning theory ultimately results in change not only of one's personal views but also of how he/she views the world as a whole (Merriam, Caffarella, & Baumgartner, 2007; Weimer, 2012). Through Mezirow's key components of experience, critical reflection, reflective discourse, and action (Merriam et al., 2007), individuals can transform their perspectives and become more proficient with soft skills

such as communication, critical thinking, teamwork, and work ethic, potentially leading to the *Framework's* desired result of learning transfer.

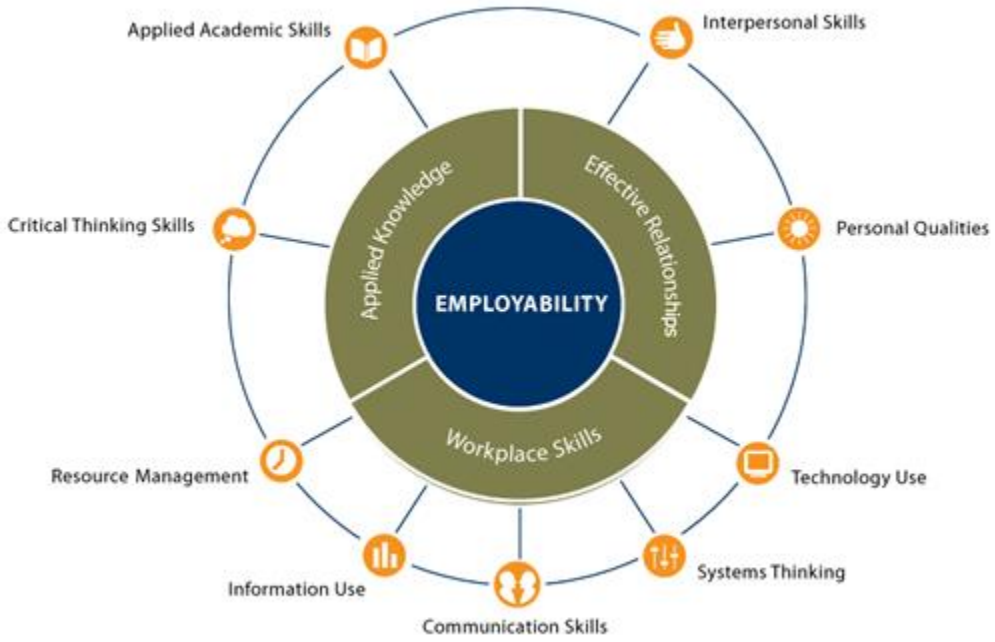

Figure 1. Employability Skills Framework

An initiative of the Office of Career, Technical, and Adult Education, U.S. Department of Education, as part of the project to support state's employability standards; introduced in 2014 (OCTAE, n.d.). Reprinted with permission.

Learning transfer theory, also referred to as transfer of learning, is defined as the idea of enabling students to transfer and apply learned concepts from an educational setting to, in this instance, a workplace setting (Botma, Van Rensburg, Heyns, & Coetzee, 2013; Green, 2013). The goal for a classroom-to-workplace transfer scenario is Ellis's (1965) *positive transfer*, in which students' experiences with soft skills in classroom settings aid or facilitate their performances in workplace environments. These experiences serve as a foundation for change through reflection and discourse and potentially result in the development of a viewpoint that is more autonomous (Leberman, McDonald, & Doyle, 2006). The potential for a changed perspective in learning transfer

of skills for employability served as the basis for including transformative learning as a part of the conceptual framework.

Justification for the Study

In an effort to advance the field of adult education, specifically career and technical education for adult learners, the current study has a potential to benefit CTE students and instructors at community colleges as well as employers who are associated with and hire graduates from respective CTE programs. These benefits could be realized through improvements at two levels—in online courses and in online programs. Gains from the study would first be experienced in the form of improved soft skills training in online CTE courses, and these improvements would aid students, instructors, and employers. Soft skills are considered a strong contributor to individuals' productivity (Robles, 2012); thus, students will become not only better students but also better employees. Employers who have positive experiences with students from a CTE program will be more inclined to hire future graduates from that program which, in turn, improves the relationship between employers and instructors.

As online courses improve, an online program will also develop overall, possibly expanding and increasing in enrollment. The desired end-result of CTE is to prepare students for employment (Association for Career & Technical Education, 2018); improved programs will produce students who are better prepared for the workforce and potentially larger numbers of better-prepared students due to growing admissions. As a result of potential growth in numbers, institutions could also benefit from increased revenues and may even require additional faculty members in order to teach the added sections of program coursework. Furthermore, employers who may have previously been

uncomfortable hiring students from online programs may become more accepting of this mode of education.

In addition to the benefits realized by CTE, the research study has a potential to improve the entire online segment of the field of adult education. If soft skills of students enrolled in online CTE courses improve, these improvements could then be demonstrated through students' behaviors in non-CTE courses, thus increasing their productivity in all courses. This increase in students' participation and, consequently, grades would positively influence instructors as well. Additionally, an improved online experience could potentially lead to larger enrollment and, as a result, increased tuition and fees revenue for institutions.

Definitions

21st Century – a period of 100 years that began on January 1, 2001, and will end on December 31, 2100 ("The 21st century," 2011).

Advisory Committee – a group of local employers who are invited to meet with instructors of CTE programs to advise them of field-related trends and provide curriculum feedback in fulfillment of the collaboration requirements set forth in the Perkins Act (Carl D. Perkins Act, 2006; "Mississippi State Plan," n.d.).

Career and Technical Education – occupational education programs that focus on students' preparation for employment; previously known as vocational education (Gordon, 2008).

Community College – any public or private postsecondary institution that is accredited to award credentialing up to the two-year, associate degree (Cohen & Brawer, 2003).

Formative Assessment – feedback that is provided during the learning process and allows for guidance to learners' improvement (Galbraith & Jones, 2010).

Nontraditional Students – adult learners who are older than the average age of high school graduates and have responsibilities such as families or employment (Cohen & Brawer, 2003; Ma & Baum, 2016).

Online Course – a course offered via distance education or e-learning (Archer & Garrison, 2010).

Online Program – any educational program that meets the criteria of having 50% or more of mandated coursework available through online course delivery and being labeled as such by the offering institution (Githens et al., 2012).

Soft Skills – a complex set of integrated activities that contribute to effective interaction with other people, specifically with regard to employment or occupational education (Miller et al., 2013; National Soft Skills Association, n.d.; Tulgan, 2015). Four of these skills were investigated in the current study and are individually defined as follows:

- *Communication* – the process in which both information and meaning are transmitted, including not only verbal but also nonverbal messages (Guffy & Loewy, 2013; Rao, 2010).
- *Critical Thinking* – the process of interpreting, analyzing, and evaluating an argument or idea (Fisher, 2011).
- *Teamwork* – a set of cognitive and social skills used in fostering the successful results of a group's tasks or responsibilities (Hughes & Jones, 2011; Rao, 2010; Tulgan, 2015).

- *Work Ethic* – a multidimensional construct reflective of an individual's attitudes and beliefs regarding work-related behavior (Miller, Woehr, & Hudspeth, 2002).

Summative Assessment – feedback that is provided at the end of a learning unit or course (Galbraith & Jones, 2010).

Workforce Development – a system of policies and programs, either public or private, that serves a two-fold purpose: to provide individuals with knowledge and/or skills for either gaining or improving employment, and to provide employers with a means of achieving their organizational goal to employ effective, skilled personnel (Jacobs & Hawley, 2009; Tan, McGough, & Valerio, 2010).

Delimitations

Delimitations of the research study include the following:

1. The concept of soft skills consists of myriad abilities; however, this study focused on communication, critical thinking, teamwork, and work ethic.

2. Participants in the study were instructors of online CTE courses who are employed by Mississippi community and junior colleges and did not include instructors who teach solely traditional CTE courses or instructors from other states.

3. The conceptual framework presented limits the lens through which soft skills were viewed to one restricted by transformative learning and learning transfer theories, excluding other potential theoretical lenses.

Assumptions

1. Since soft skills are an integral part of employers' hiring preferences, it was assumed that soft skills are discussed in CTE courses.

2. Instructors of CTE courses are preparing students for employment in the 21st century workforce.

3. The sample of instructors teaching online CTE courses at Mississippi community and junior colleges was representative of the overall instructor population.

4. Participants of the focus group and interviews, as well as those who answered the questionnaire, were well-informed on the subject and provided accurate and truthful responses.

Summary

Due to the need for soft skills training in online CTE courses at community colleges (Githens et al., 2012; Horvitz, 2017), an investigation of teaching this concept as well as assessing students' development of communication, critical thinking, teamwork, and work ethic was requisite. The exploration of instructors' perspectives regarding these learners' overall employment readiness was also needed in order to establish whether learning transfer has indeed resulted as intended within the *Employability Skills Framework* model. As online learning increasingly permeates the field of adult education, specifically career and technical education for adult learners (Donavant, 2009; Garza Mitchell, 2017), it is imperative that CTE students in online courses at community colleges receive adequate preparation for employment in not only hard (technical) skills but also soft skills. This research study informs related stakeholders of where this preparatory goal is succeeding and where more work has yet to be done.

CHAPTER II – LITERATURE REVIEW

In a study related to soft skills in online CTE courses at community colleges, several areas of literature are relevant and necessary for establishing detailed context. To that end, this review of literature begins with soft skills, specifically the four included in this study—communication, critical thinking, teamwork, and work ethic; continues with occupational education as a form of adult education, including faculty and students as well as a description of online CTE; and ends with the community college system, its importance in workforce development, and a closer look at Mississippi's system. An explanation of all three pieces of the conceptual framework—the *Employability Skills Framework*, transformative learning theory, and learning transfer theory—is also provided.

Soft Skills

Soft skills have become one of the most important aspects of consideration in employment during the 21st century (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Rao, 2010; Robles, 2012; Schulz, 2008; Tulgan, 2015). A multifaceted concept that is difficult to define (Andrews & Higson, 2008; Gutman & Schoon, 2013; Rao, 2010; Tulgan, 2015), this area is seen by some employers as being more important than technical knowledge, also known as hard skills, in prospective employees (Miranda-Wolff, 2017; National Research Council, 2011; Roepe, 2017). The challenge for students who desire to become employable is to practice soft skills in their coursework so that they can work to perfect these skills and then, theoretically, transfer them to employment (Ali et al., 2017; Makhathini, 2016; Moore & Pearson, 2017; Rao, 2010). First, however,

they must be able to identify what soft skills are and learn how they can be implemented in not only classroom situations but also workplace settings.

Authors of related literature identify soft skills as abilities, attitudes, attributes (personal or career), personality traits or characteristics, preferences, qualities, or talents that individuals possess (Gutman & Schoon, 2013; Heckman & Kautz, 2012; James & James, 2004; National Soft Skills Association, n.d.; Perreault, 2004). Some authors place the importance of soft skills above employment alone, suggesting that soft skills are requisite for having a successful life in general and becoming a contributing member of society (Gutman & Schoon, 2013; Heckman & Kautz, 2012; National Research Council, 2011). Unfortunately, these skills are not easily taught or assessed in a classroom setting (Carbone & Gholston, 2004; Mitchell, Skinner, & White, 2010; Moore & Pearson, 2017; Yen, Sooun, & Seokha, 2001). According to the National Research Council (2011), however, it is better for people to develop these skills while students, prior to obtaining employment. To that end, Mitchell, Skinner, and White (2010) encouraged professional development for all instructors who teach soft skills as part of their curricula since most of the classroom focus tends to be on the technical skillset needed for employment (Pant & Baroudi, 2008; Sitompul, 2016).

To further complicate the topic of soft skills, many terms are used to identify this concept—21st century skills (National Research Council, 2011; Partnership for 21st Century Learning, n.d.), employability skills (Makhathini, 2016; Miller et al., 2013; Rao, 2010; Robles, 2012), general skills (Gordon, 2008), generic skills (Al-Alawneh, 2011), life skills (Associated Press, 2015), micro-social skills (Muzio et al., 2007), and non-cognitive skills (Gutman & Schoon, 2013). Additionally, various activities are

mentioned that, as a whole, contribute to the overall result of effective interaction with other people (National Soft Skills Association, n.d.). With specific regard to occupational education, however, four skills are commonly discussed and are thus the focus of the current study regarding how students are learning the skills in a classroom setting and then transferring them to the workplace: communication, critical thinking, teamwork, and work ethic (Al-Alawneh, 2011; Ali et al., 2017; Associated Press, 2015; Ellis, Kisling, & Hackworth, 2014; Makhathini, 2016; Moore & Pearson, 2017; Rao, 2010).

Communication

Communication is a fundamental action in the 21st century workplace (Al-Alawneh, 2011; Ali et al., 2017; Guffy & Loewy, 2013; Makhathini, 2016; Rao, 2010; Tulgan, 2015). Most employees communicate with a variety of individuals throughout the workday, from superiors to consumers, and they must know how to communicate appropriately in each situation. Furthermore, they communicate through not only verbal means but also nonverbal gestures, motions, and signals (Anders, 2015; Guffy & Loewy, 2013; Halbe, 2012; Rao, 2010). Using nonverbal communication in a proper manner actually reinforces verbal communication and aids in delivering the intended message.

In addition to basic communication skills, employees should be mindful of cultural and generational differences that could hinder the communication process (Guffy & Loewy, 2013; Tulgan, 2015). The global economy and workforce of the 21st century may introduce scenarios in which employees work with either coworkers or colleagues from around the world. Additionally, a workforce in many countries includes members of three or four generations (Tulgan, 2015). Working with individuals from different

countries or cultures, as well as those from generations other than one's own, could necessitate the use of specific and clear language, avoiding jargon and slang (Guffy & Loewy, 2013).

Critical Thinking

Critical thinking is both linked to and listed as a precursor for problem-solving skills by some authors (Ali et al., 2017; Özyurt, 2015; Schulz, 2008; Tulgan, 2015). However, there is a clear distinction between the two skillsets (Özyurt, 2015; Tulgan, 2015). The ability to view something critically is not used solely when solving problems. Critical thinking occurs when an individual hears an argument and is able to analyze it objectively and without bias (Fisher, 2011; Hall, 2015; Özyurt, 2015; Tulgan, 2015). In so doing, the person is then able to form a rational judgment on the issue. This soft skill is useful in problem solving as well as many other work-related tasks, including some instances of communication, teamwork, and work ethic.

Teamwork

Teamwork has become increasingly popular in the workforce (Ali et al., 2017; Hughes & Jones, 2011; Loughry, Ohland, & Woehr, 2014; Rao, 2010; Robles, 2012; Schulz, 2008; Tulgan, 2015). Teams may be small or large, consisting of two individuals or many more. Additionally, teams may be virtual with meetings held in an online setting (Breuer, Hüffmeier, & Hertel, 2016; Clark, Karau, & Michalisin, 2012). Even though not all employees are comfortable with or even like working in teams, the ability to do so is important to employers (Ali et al., 2017; Hughes & Jones, 2011; Robles, 2012; Schulz, 2008). Other characteristics included in a potential employee's team participation are trust, agreeableness, and conscientiousness, traits likewise germane to

successful working relationships (Breuer et al., 2016; Clark et al., 2012; Hughes & Jones, 2011; Loughry et al., 2014).

Some of the special considerations of communication skills are also seen in teamwork skills, specifically when team members are from different countries or cultures (Evers, Rush, & Berdrow, 1998; Knowlton, Halvorsen, Handler, & O'Rourke, 2014). This is especially true when the team meets virtually since nonverbal communication may not be transmitted appropriately in an online setting (Guffy & Loewy, 2013). An individual's conscious effort toward specific and clear language, both verbal and nonverbal, will facilitate a positive team experience and, ultimately, a successful project.

Work Ethic

Work ethic is described as willingness to work, or be hard-working, and is identified through various means, from an individual's initiative to attendance records (Kyllonen, 2013; Miller et al., 2002; Robles, 2012; Tulgan, 2015). As a soft skill, it also consists of personality traits such as honesty, integrity, loyalty, and sense of responsibility (Miller et al., 2002; Robles, 2012; Velasco, 2012). Although mentioned at times in conjunction with professionalism (Kyllonen, 2013), the two terms are not synonymous. Professionalism does, however, include traits such as integrity and ethics (Blaszczynski, 2014; Sullivan, 2005).

The concept of work ethic has been adapted since the introduction of the World Wide Web and social media to incorporate how employees spend their time at work (Miller et al., 2002; Tulgan, 2015). Passing the workday by surfing the Web or connecting with friends and followers is considered a waste of employers' resources and thus unethical workplace behavior. For employees who use social media or Web-based

resources as part of their work-related responsibilities, it is incumbent upon their honesty, integrity, and sense of responsibility to abstain from personal usage during company time.

Assessment of Soft Skills

A common theme runs throughout related literature: There is no consensus regarding soft skills assessment because assessing soft skills is challenging (Blaszczynski & Green, 2012; Chan, 2011; Gonzalez, Abu Kasim, & Naimie, 2013; Ingols & Shapiro, 2014; National Research Council, 2011). Likewise, no standard test exists that is used by all educational institutions and employers, an issue that is undoubtedly linked to the absence of standards in general for soft skills assessment (S. Rouse, personal communication, October 19, 2018, at workshop *Bridging the Gap between Academics and the Workplace*). This lack of standardized assessment is due to the fact that the abilities, skills, behaviors, etc., constituting "soft skills" are not uniform across literature (Aworanti, Taiwo, & Iluobe, 2015; Gonzolez et al., 2013; National Research Council, 2011). Even though there are several assessments, many in the form of written tests, they either cover different skillsets (Aworanti et al., 2015) or may test for only one skill, such as the Multidimensional Work Ethic Profile (Miller et al., 2002). Furthermore, these written assessments are usually self-reported indicators of individuals' abilities, which have potential to present a different set of challenges, perhaps students' incentives to misrepresent themselves (Kyllonen, 2013).

Regardless of these difficulties, Blaszczynski and Green (2012) described educators' process of engaging in assessment of soft skills as "critical" due to its role in accountability to stakeholders, including prospective employers. Additionally, teachers

have the ability to guide students by setting examples of effective communication as well as other soft skills (Evers et al., 1998). The aspect of CTE that prepares students for employment also reflects accountability (Ellis et al., 2014). Many educational institutions are not only using the written assessments (Hughes & Jones, 2011; Ingols & Shapiro, 2014; Kyllonen, 2013) but also integrating soft skills into program curricula (Beard, Schwieger, & Surendran, 2008; Ingols & Shapiro, 2014; Loughry et al., 2014) and even creating their own assessments to mirror student objectives (Beard et al., 2008; Hughes & Jones, 2011; Ingols & Shapiro, 2014). In addition to written, self-reported tests, institutions are using other forms of assessment such as pretests/posttests, class projects, observations, presentations, and portfolios (Beard et al., 2008; Blaszczynski & Green, 2012; Chan, 2011; Mitchell & Durham, 2010; National Research Council, 2011). Teaching methods, goals, and objectives may require revision and/or refinement (Beard et al., 2008; Hughes & Jones, 2011), and more than one assessment method may be necessary (Blaszczynski & Green, 2012). The importance of soft skills to employers (Ali et al., 2017; Makhathini, 2016; National Research Council, 2011; Tulgan, 2015), however, makes both instructional and assessment efforts essential in preparing students to transfer these skills from the classroom to the workplace setting.

Conceptual Framework

Any effort to delve deeper into the concept of soft skills, and adult learners' transfer of those skills from a classroom to workplace setting, must be framed in a multifaceted approach that encompasses both visualizing the skills in context as parts of a whole as well as incorporating the learning portion into a conceptual framework that equally serves both aspects. The framework for the current study begins with a look at

how the four specific soft skills being researched—communication, critical thinking, teamwork, and work ethic—"fit" in the overall concept of soft skills by using the *Employability Skills Framework* (OCTAE, n.d.) to visualize the parts as well as the whole. Learning transfer theory (Ellis, 1965; Leberman et al., 2006; Royer, 1979) rationalizes, to some degree, the learning portion of the framework; however, in order to conceptualize the study completely, a transformative learning piece is needed to explicate the potential for changed perspective from "student" to "employee." By incorporating both learning theories into its framework, the study provides closure to a design that may otherwise be lacking.

Employability Skills Framework

Introduced in May 2014 by the U.S. Department of Education's Office of Career, Technical, and Adult Education (OCTAE), this framework was provided as a "one-stop resource" that would serve to align employability skills across stakeholders—students, instructors, and employers (Knowles, 2014). The *Framework* consists of three overarching categories that the creators viewed as comprising the idea of employability: Applied Knowledge, Effective Relationships, and Workplace Skills (OCTAE, n.d.). Along the outer ring are icons reflecting specific groups of skills that fall into each of the three main categories. An expanded view (see Figure 2) of the *Framework* lists detailed actions that describe and explain the specific groups of skills. From these lists the reader is able to summarize what its creators meant by, for example, Effective Relationships—Interpersonal Skills that include understanding teamwork and working with others.

Although information regarding the *Framework* is still provided through OCTAE's Division of Academic and Technical Education (OCTAE, n.d.), including a

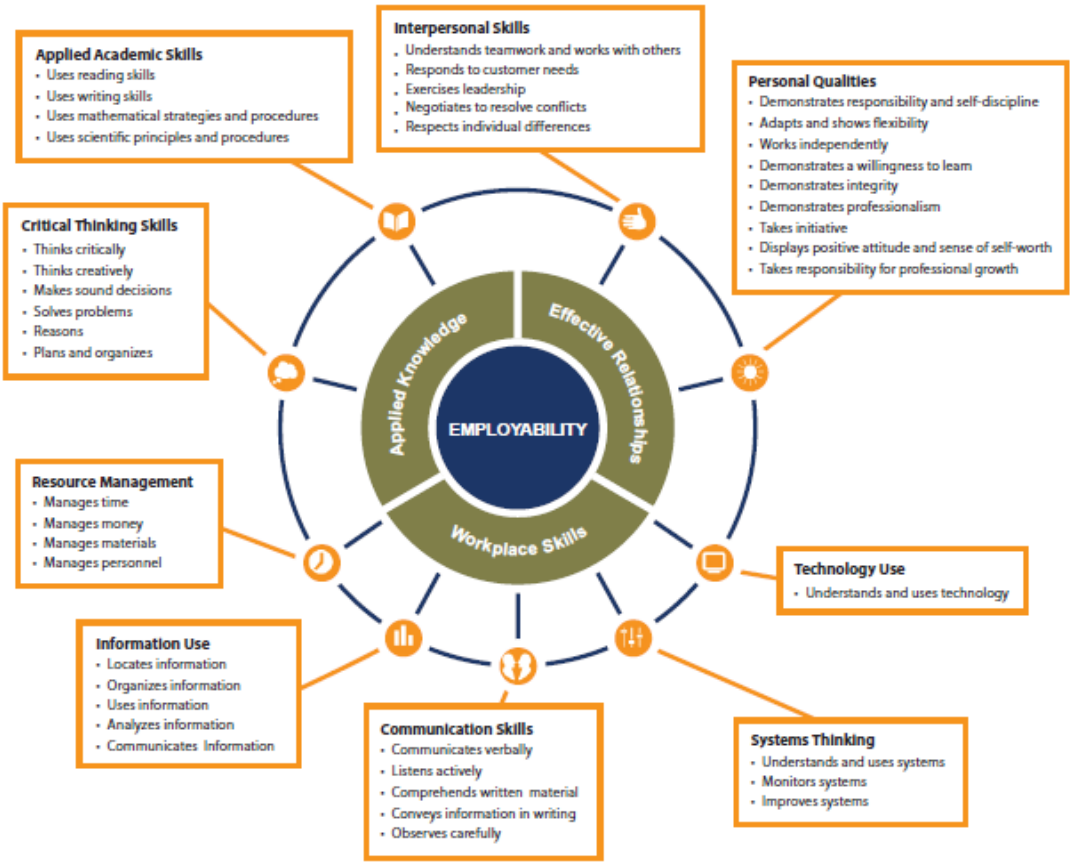

Figure 2. Employability Skills Framework, expanded.

An expanded view that includes detailed actions for each group and category of skills (OCTAE, n.d.). Reprinted with permission.

checklist for lesson planning, a variety of instructional materials are available on the website of the College and Career Readiness and Success Center (American Institutes for Research, 2018). These resources include facilitator's guide, handouts, workbook, PowerPoint presentation, and a sample agenda, built from the *Framework*, as part of the Center's learning module, *Integrating Employability Skills: A Framework for All Educators*, which supports state and local agencies in prioritizing employability skills. With the wide availability of Web-based resources, there is no concrete method to determine all the agencies that may use the *Framework* as part of training; however, a

Web search for "U.S. Dept of Education Employability Skills Framework" resulted in sites for myriad private organizations that train youth and adults.

Even though no formal research studies could be pinpointed that have incorporated this particular model, inclusion of the *Employability Skills Framework* in this research study's conceptual framework allows for visualization of the four soft skills within the whole concept of employability. Both communication and critical thinking are labeled as icons on the outer ring. Teamwork and work ethic are included in the Effective Relationships category. Specifically, teamwork is part of the Interpersonal Skills group, and work ethic can be interpreted from several actions listed under Personal Qualities in the form of professionalism, initiative, and integrity (Miller et al., 2002; Robles, 2012; Sullivan, 2005; Velasco, 2012). Visualizing these four skills further cements their priority for inclusion in a study related to adult learning in occupational education and, specifically, the ultimate transfer of these skills from classroom to workplace.

Transformative Learning Theory

Upon receiving instruction related to soft skills, potential exists for a transformation of adult learners' perspectives and habits with regard to communication, critical thinking, teamwork, and work ethic (Leberman et al., 2006; Merriam et al., 2007). Transformative (or transformational) learning was introduced by Jack Mezirow in 1978 as a type of adult learning that recognizes not only development but also change as a meaningful part of the educative process (Boucouvalas & Lawrence, 2010; Brookfield, 2010; Kolbergytė, Indrašienė, & Bardauskienė, 2014; Merriam et al., 2007; Taylor, 2008; Weimer, 2012). Mezirow (2012) defined transformative learning as a process that

transforms "our taken-for-granted frames of reference . . . to make them more inclusive, discriminating, open, . . . and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action" (p. 76). This type of learning changes one's knowledge, perspectives, beliefs, and ultimately—actions (Merriam et al., 2007; Weimer, 2012).

The potential for a changed perspective in learning transfer (Leberman et al., 2006) opens the door to transformative learning in the realm of soft skills, even if that change is not sudden or dramatic but is a slower, incremental change that leads to a transformed habit of mind (Merriam et al., 2007). According to Weimer (2012), this "profound and lasting kind of learning" should also be a goal of education (p. 442), an aspiration that was likewise indicated about learning transfer (Botma et al., 2013; Green, 2013). Although not all learning is transformational (Merriam et al., 2007), Mezirow's psychocritical lens of transformative learning incorporates the interests of adult education in that the theory assumes people can improve their understanding and actions through meaningful learning (Mezirow, 2012). A setting of higher education, including community colleges, provides an environment in which this type of learning can transpire (Kasworm & Bowles, 2012).

Transformative learning in an online environment must be intentionally fostered since this Web-based atmosphere does not facilitate social connections as well as a face-to-face setting (Merriam et al., 2007; Smith, 2012). It is not impossible, however, for students to experience the phases of transformative learning via online courses, including reflective discourse/discussion and reflection (Smith, 2012). Christie et al. (2015) illustrated the use of transformative learning from multiple aspects within the field of

education, arguing that disorienting dilemmas can be "triggered" during the educational process to facilitate transformative learning. In an effort to make space for students' transformative learning, instructors should create a learner-centered approach and allow for students' sustained interactions and self-reflection. These proposed activities, including discussion forums (Hall, 2015), could potentially serve as a basis for observing online students' characteristics of the four soft skills included in the current study—communication, critical thinking, teamwork, and work ethic.

Learning Transfer Theory

Upon transforming their habits of mind with regard to learned skills and behaviors, adult learners should then be able to apply concepts of the *Employability Skills Framework* to a workplace setting, a function referred to in related literature as learning transfer. Transfer of learning as related to behaviors has been studied and written about for many decades (Ellis, 1965; Leberman et al., 2006; Royer, 1979). Leberman, McDonald, and Doyle (2006) purported the interest to be ongoing for more than a century. Ellis (1965) declared learning transfer the most important topic in psychology. The concept has been defined as occurring when learning in one context influences performance in a different context (Ellis, 1965; Leberman et al., 2006; Perkins & Salomon, 1992). In order for learning to be transferred, the context in which the learned behaviors were performed must be different from that within which they were learned; otherwise, only ordinary learning has taken place (Perkins & Salomon, 1992).

In several studies that have used frameworks consisting of learning transfer theory, other theories were included such as active learning (Yang, Hanneke, & Carbonell, 2013); situated learning, communities of practice, and multiple intelligences

(Brent, 2011; Down, 2001); and self-efficacy and motivation (Alawneh, 2008). Some authors specified a focus on positive learning transfer (Butterfield & Nelson, 1991), though many did not implicitly state those intentions (Botma et al., 2013; Green, 2013; Yang et al., 2013). Transfer was also found to be related to an individual's characteristics (Alawneh, 2008; Butterfield & Nelson, 1991; Ellis, 1965); those of higher intelligence were more successful in transferring concepts (Butterfield & Nelson, 1991; Ellis, 1965).

In the field of adult education, transfer of learning is increasingly related to employability and job proficiency, even purported as a goal of education (Botma et al., 2013; Green, 2013; Leberman et al., 2006; Subedi, 2004) and an intentional aspect of adult education (Foley & Kaiser, 2013). Within the scope of the current study, transfer of soft skills from a classroom to workplace setting constitutes learning transfer. Some of the literature has used the term transfer of training (Alawneh, 2008; Leberman et al., 2006; Subedi, 2004). However, although occupational education is a form of training, learning is a broader term and includes not only skills but also cognitive and behavioral characteristics (Brent, 2011; Day & Goldstone, 2012; Leberman et al., 2006; Royer, 1978). To that end, learning transfer is the appropriate term with regard to a study of soft skills.

Theories in Related Research

The use of both transformative learning theory and learning transfer theory in a conceptual framework is prevalent within the field of adult education. Literature related specifically to transformative learning has been written and published from various aspects of both occupational education (Hodge, 2011; Lavrysh, 2015; Mason, 2018; Wang & Cranton, 2014) and online learning (McDougall, & Holden, 2017; McQuiggan,

2012), making them similar to the current study in that regard. However, of related studies, there is minimal discussion regarding transformative learning in skills needed for the workplace. Specifically, Wang and Cranton (2014) addressed technological skills in general, and McDougall and Holden (2017) analyzed communication within the realm of online learning. Another similarity with the current study was McQuiggan's (2012) discussion of online education from the teaching perspective and how online courses can be designed in a way that potentially transforms the instructor's face-to-face teaching methods. Through this transformation, these conversations, including the current study, have an opportunity to come full-circle when considering adult education from both sides of the teaching desk.

Likewise, both research studies and articles that incorporate an aspect of learning transfer have been published with regard to occupational education and distance learning, specifically online education (Botma, Van Rensburg, Coetzee, & Heyns, 2015; Chaves, 2009; Curran, 2014; Taylor, Ayala, & Pinsent-Johnson, 2009). As the current study took both occupational and online education into account, these studies are similar. However, with regard to learning transfer, several of the studies either serve as a model of online education or discuss the educational process from a continuing education aspect as opposed to the initial education being acquired for occupational training. Additionally, the study by Taylor, Ayala, and Pinsent-Johnson (2009) focused specifically on employment preparation of adults with low literacy skills, while the current study included all adult learners in occupational education programs and did not exclude any group based on skill level.

Although the majority of related literature discussed either transformative learning or learning transfer, one article incorporated both into a model for teacher education and leadership (Harris, Lowery-Moore, & Farrow, 2008). "Transfer to Transform" is described as the idea that future educational leaders will become "reflective practitioners" who view their practice (learning transfer) from a personal capacity that leads them toward social justice (transformative learning). The model uses both theories to promote teachers' leadership qualities. Through this article, the order of theories in a conceptual framework becomes relevant. The current study incorporated the same theories in a reverse order, thus indicating that transformation will occur prior to transfer. In both examples, however, it is apparent that education can be designed to promote learning transfer, as suggested by Botma, Van Rensburg, Coetzee, and Heyns (2015).

Career and Technical Education for Adult Learners

Occupational programs prepare students for employment (Association for Career & Technical Education, 2018; Cohen & Brawer, 2003; Gordon, 2008; Hirschy, Bremer, & Castellano, 2011; Rojewski, 2002). Since its inception in the form of apprenticeships, this facet of education has evolved extensively into its current structure (Gordon, 2008). As a form of adult education, career education at community colleges prepares adult learners for jobs that require more than a high school diploma yet, for some, not quite a two-year, associate's degree (Gordon, 2008; Pfahl, McClenney, O'Banion, Sullivan, & Wilson, 2010). Although social regard for CTE participation was viewed in past decades with mild disdain by some in academia, strides have been made to improve the image of not only CTE but also its credentialed graduates (Gordon, 2008; Hirschy et al., 2011). A

closer look at the history of CTE as well as its faculty and participants, specifically at community colleges, reveals the evolution of this change.

Career and technical education has previously been known by a variety of terms including career, industrial, occupational, semiprofessional, vocational, and vocational-technical education (Cohen & Brawer, 2003; Gordon, 2008; Pfahl et al., 2010). With the beginning of the 21st century, CTE leaders indicated that a new title was needed which would not only reflect modern education and workforce but also move away from the stigma associated with any use of the term vocational in regard to education (Gordon, 2008). The American Vocational Association formally changed its name to the Association for Career and Technical Association in December 1998; state associations followed suit. In a manner of cementing approval, the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) replaced *vocational education* with *career and technical education*.

History of CTE

CTE exists primarily because it is funded by the federal government, a provision that began with the Smith-Hughes Act of 1917 in an effort to prepare workers for industrial jobs (Cohen & Brawer, 2003; Gordon, 2008; Rojewski, 2002). Prior to this, however, the demands for vocational education in the 19th century resulted in land-grant institutions as part of the Morrill Act of 1862, for purposes of educating the public in practical occupations such as agriculture and home economics. It was at this point that the U.S. federal government began to consider career and technical education as a national interest, and the economy became a driving force for the Smith-Hughes Act.

The economic focus was expanded to include a social component with the Vocational Education Act of 1963 (Cohen & Brawer, 2003; Gordon, 2008; Rojewski, 2002). Major goals of this act were to improve existing programs while at the same time ensuring that persons of all "abilities" have equal opportunities to succeed in vocational programs. This piece of legislation marked the first time that vocational education was mandated to meet not only the needs of industry but also the needs of individual students. These changes also indicated a shift in focus from an essentialist approach, one designed to meet the needs of industry, to a pragmatic approach (Rojewski, 2002). Dewey's belief that public education should prepare people for work while meeting their individual needs developed the shift in philosophy noted as part of the Vocational Education Act, and pragmatism has been recognized as CTE's predominant philosophy since that time. Both economic (essentialist) and social (pragmatist) aspects were included in the Carl D. Perkins Vocational Education Act of 1984, which amended the Vocational Education Act of 1963 and also replaced its 1968 and 1976 amendments.

Perkins Act and the Current State of CTE

Several modifications have been made to the Perkins Act (Gordon, 2008; Rojewski, 2002). The Carl D. Perkins Vocational and Applied Technology Education Act of 1990 (Perkins II) included an emphasis on academic skills in addition to the existing emphasis on occupational skills. The Carl D. Perkins Vocational and Technical Education Act of 1998 (Perkins III) included stipulations for core performance indicators and authorized programs for five years. The Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) incorporated the national change from vocational education to career and technical education (Gordon, 2008).

Other themes in Perkins IV included program improvement and accountability as well as increased focus on business and industry (Gordon, 2008). Section 122(c)(5) states that educational agencies must indicate how they will "actively involve . . . local business (including small businesses), and labor organizations in the planning, development, implementation, and evaluation" of CTE programs (Carl D. Perkins Act, 2006, p. S. 250-37). In an effort to fulfill this involvement, all CTE programs in Mississippi have Advisory Committees through which they develop collaborations and partnerships for bridging the gap between school and work ("Mississippi State Plan," n.d.). These committees meet twice per academic year and serve to advise career and technical educators with regard to curriculum feedback and field-related trends (Mississippi Department of Education, 2014). Reauthorization of the Perkins Act passed the U.S. House of Representatives and the U.S. Senate in July 2018 under the Strengthening Career and Technical Education for the 21st Century Act; it was signed into law on July 31, 2018 (GovTrack.us, 2019).

CTE Faculty

CTE programs are offered at both secondary and postsecondary levels of education (Association for Career & Technical Education, 2018; Gordon, 2008). Although a certain amount of teacher preparation is needed for CTE faculty, however, greater emphasis is placed upon occupational experience when filling many of these positions (Gordon, 2008). To compare, CTE faculty may have less than a baccalaureate degree, whereas academic faculty at community colleges are required to have at least a master's degree (Southern Association of Colleges and Schools Commission on Colleges, 2006). Furthermore, in occupations that require licensure, such as cosmetology or health-

related fields, a requirement for this credential may supersede educational degree attainment (Gordon, 2008).

CTE faculty are typically older than academic faculty, especially at the secondary level, due to spending time in their respective industries prior to entering the classroom (Gordon, 2008). This is not the case for all CTE faculty, however. In fields such as business or marketing, teacher education programs at colleges and universities prepare individuals to teach related courses without the field-specific experience that would be necessary in a trade such as welding. For those CTE faculty who work in industry prior to entering a teaching career, alternative certification routes provide a viable option for obtaining teaching licensure in many states.

CTE Student Population

Secondary CTE programs are designed to prepare students to obtain entry-level employment or to enter counterpart postsecondary programs, which prepare completers for employment in field-related positions (Gordon, 2008; Rojewski, 2002). In many CTE programs at community colleges, however, participants are nontraditional students, many of whom did not continue from secondary CTE programs (Garza Mitchell et al., 2016; Gordon, 2008; Horvitz, 2017). When referring to adult learners, the use of *nontraditional* goes back many decades; according to Cross (1980), it specifically denotes part-time learners with full-time responsibilities. By definition, nontraditional students are older than typical college students, and they may be employed or have a family (Horvitz, 2017; Kim et al., 2010; Ma & Baum, 2016; Markle, 2015; Offerman, 2011). These adult learners may be planning for a career change or may be returning students who did not

obtain employment in their previously chosen career paths (Association for Career & Technical Education, 2019; Cummins, 2015; Hyslop, 2011; Merriam et al., 2007).

Furthermore, given the social aspect of CTE legislation, some of these learners may be members of special-needs populations—ethnic, disabled, disadvantaged, or limited understanding of the English language (Gordon, 2008; Rojewski, 2002). Adding these aspects with adults' other full-time responsibilities can lead to many barriers to participation (Merriam et al., 2007). Even though social issues are of concern in adult education programs such as CTE, however, the primary focus tends more toward individual learning as opposed to social movements (Alfred, 2002; Bierema, 2010). This is evident in CTE where, as a whole, the CTE student population at community colleges works toward goals of completion, whether a technical certificate or an applied science associate degree, and placement in field-related positions (Association for Career & Technical Education, 2018; Gordon, 2008; Roberts, 2016).

CTE Participants' Employability

Given the workforce preparation that is a main focus of CTE (Association for Career & Technical Education, 2018; Cohen & Brawer, 2003; Gordon, 2008; Rojewski, 2002), it stands to reason that students are exposed to a plethora of instructional content regarding the technical skills that will be used in related employment (Al-Alawneh, 2011; Makhathini, 2016; Jordan, Dechert, & Wainwright, 2012; Weeks, 2009). This focus on hard skills is imperative in order for program graduates to know how to do the tasks they will be asked to do in a work setting. As CTE programs do not consist of as many credit hours as higher degrees (i.e., baccalaureate), there is less time for students to learn, thus the requirement for in-depth concentration of training with regard to hard skills.

Conversely, employers increasingly emphasize soft skills when seeking to hire potential employees (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Rao, 2010; Robles, 2012; Schulz, 2008; Tulgan, 2015). These soft skills typically develop over time (Evers et al., 1998; King, 2010; Tulgan, 2015). In associate degree programs that are approximately half the credit hours of a baccalaureate degree, students must still be taught the importance of soft skills. Career and technical student organizations (CTSOs) have served to bridge this gap by offering students opportunities not only to develop leadership skills but also to enhance soft skills such as teamwork, problem solving, and critical thinking (Gordon, 2008). However, as evidenced by the decline in memberships of both student and professional organizations (Agarwal & Islam, 2016; Peeples, 2015), these opportunities are not being explored to the fullest potential.

For postsecondary CTE graduates looking to obtain employment, members of program Advisory Committees may have current job openings for which they would qualify, sometimes even if they are still enrolled in courses (M. Gruich, personal communication, February 15, 2018). Employment opportunities may also come from school counselors or career centers, if available. Due to the increasing numbers of CTE students taking their courses online, however, which limits students' exposure to development opportunities such as CTSOs and professional relationships with advisors and instructors, many students do not benefit from recommendations for such employment prospects (Garza Mitchell, 2017; Githens et al., 2012).

Online Learning in CTE

As academic courses at postsecondary institutions have transitioned to offering online options, CTE courses have followed suit (Garza Mitchell, 2017; Githens et al.,

2012; Tabatabaei & Gardiner, 2012). As a form of adult education, these online efforts have been especially fruitful in reaching those nontraditional adult learners who would otherwise not be able to attend college courses due to scheduling constraints and work-related or personal responsibilities (Archer & Garrison, 2010; Conceição, 2007; Horvitz, 2017; Merriam et al., 2007). By offering an online option for at least some of the courses in a CTE program, institutions have opened the door to reach more participants than they would have with only traditional course offerings, even if the entire program is not online, i.e., 50% or more of mandated coursework is available through online course delivery and the offering institution has labeled the program as being online (Githens et al., 2012).

Lack of faculty expertise as well as interest and willingness to participate in online education limits participation (Garza Mitchell et al., 2016; Pfahl et al., 2010), as is evidenced by institutions' small number of online CTE programs when compared to the number of CTE programs overall. For example, one community college lists approximately 40 CTE programs that are available (Mississippi Gulf Coast Community College, 2019c); however, information pertaining to online programs indicates only that "several" may be completed online (Mississippi Gulf Coast Community College, 2019a). One reason for this limited participation may be that online teaching requires more instructional resources than faculty have time and energy to give (Garza Mitchell et al., 2016). In order to meet the needs of CTE students fully, a culture shift is needed at the institutional level that supports and incorporates technology and training for online education as well as incentives for offering CTE courses and programs in an online environment.

Academically, past research studies have found no significant difference in student achievement between the online and face-to-face learning environments (Benson et al, 2005; Johnson et al., 2004; Meyer, 2002). With regard to CTE, this academic achievement means that students are able to learn their technical skills in either environment with the same relative amount of success. Soft skills development, on the other hand, has been found significantly higher when students participate in face-to-face, work-based learning programs (Ali et al., 2017). Due to the essentiality of soft skills in employability as a whole (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Robles, 2012; Schulz, 2008) and the fact that community college students are more likely to take online courses (Lederman, 2018), this crucial aspect of training must be included in online instruction for community colleges' CTE participants.

Community Colleges

Evolving extensively from their inception as an experimental technical college in 1901, community colleges have become learning-centered, as opposed to teaching-centered, institutions that promote the achievement and success of all students, including nontraditional, CTE enrollees (Cohen & Brawer, 2003; O'Banion, 2005; Pfahl et al., 2010). Due to federal interest in CTE and its inclusion as part of community colleges' workforce development programs, it is not uncommon for U.S. Presidential Administrations to promote community colleges as part of their economic growth initiatives in addition to the growth of education in general. This focus on community colleges has broadened the institutions' original purpose of being an extension of high school to a more comprehensive mission that includes not only student learning and

success but also community enrichment and support of local business and industry (Cohen & Brawer, 2003; Pfahl et al., 2010).

History of Community Colleges

In the early years of the 20th century, enrollment at secondary schools expanded, resulting in an increased number of high school graduates; in accordance with this growing population, demand for access to higher education increased as well (Cohen & Brawer, 2003; Geiger, 2011; Harcleroad & Eaton, 2011; Pfahl et al., 2010). In an effort to accommodate this growth, junior colleges were established as extensions of high schools and a means of offering Grades 13 and 14, in addition to training students for vocations found in the local communities. Although proposals by several prominent individuals were made to turn Grades 13 and 14 completely over to the lower-level institutions, this transition did not fully occur, relegating junior colleges to an adjunctive role (Cohen & Brawer, 2003).

The number of institutions grew exponentially throughout the first half of the 20th century (Cohen & Brawer, 2003; Geiger, 2011; Kane & Rouse, 1999). As part of the 1947 Higher Education for American Democracy report to U.S. President Truman, the recommended terminology used to describe these institutions was changed from junior colleges to community colleges (Cohen & Brawer, 2003). This change reflected the institutions' relationships with their respective communities as opposed to secondary or senior-level institutions. Growth in the number of community colleges continued past mid-century to the point that, on average, 90 to 95 percent of a given state's population lived within a reasonable distance, or approximately 25 miles, from a community college campus (Brock, 2010; Cohen & Brawer, 2003).

By definition, the community college is identified as any institution that is accredited to award credentialing up to the two-year, associate degree (Cohen & Brawer, 2003). The label of community college is inclusive of other labels such as technical, junior, two-year postsecondary, and business and trade colleges (Cohen & Brawer, 2003; Kane & Rouse, 1999; Pfahl et al., 2010). Institutions may be either public or private and may award either an Associate of Arts degree for students who plan to transfer and complete a baccalaureate degree or an Associate of Applied Science degree for CTE students who plan to enter the workforce (Cohen & Brawer, 2003).

Mission of Community Colleges

The mission of a public, comprehensive community college is complex and multi-faceted. Five areas are identified as components of an inclusive mission—preparation for academic transfer, career and technical education, remedial education, workforce training, and community enrichment, which includes continuing education and service to the local community (Cohen & Brawer, 2003; O'Banion, 2005; Pfahl et al., 2010). Although critics purport that the institutions are inefficient and lack focus, partnerships with local employers, school districts, and other supporting organizations have served to strengthen the community college system (Campbell & Love, 2016; Evers et al., 1998; Hainline, Gaines, Feather, Padilla, & Terry, 2010; Jordan et al., 2012; Pfahl et al., 2010; Weeks, 2009; Wilson, Hu, Basham, & Campbell, 2015). Challenges being faced by community colleges in general include offering the options students need, such as online and remedial courses, as well as supporting these options in the face of reduced funding. Nevertheless, these "incubators for adult learning" (Pfahl et al., 2010, p. 239) continue to

offer open access and affordable tuition for students who may otherwise be denied opportunity to participate in higher education.

Community College Students—CTE and non-CTE

Similar to the typical CTE student population, many community college students are nontraditional in that they are older than the average age of high school graduates and have responsibilities such as families or employment (Cohen & Brawer, 2003; Kim et al., 2010; Ma & Baum, 2016; Markle, 2015). This population is also diverse in socioeconomic background and race or ethnicity, including those who have a limited understanding of the English language (Kim et al., 2010; Ma & Baum, 2016; Pfahl et al., 2010). Furthermore, many of these students fall into a "lower-ability" category, requiring developmental coursework in order to be prepared for the college-level courses mandated for degree completion (Ma & Baum, 2016; Pfahl et al., 2010).

Although the two groups share similarities, there are several distinct differences between CTE students and non-CTE students. With regard to socioeconomic status, more students who are financially independent and from lower income levels participate in CTE (Hirschy et al., 2011; Palmer & Gaunt, 2007). As a result, higher percentages of CTE students receive some form of financial aid (Hirschy et al., 2011). Academically, CTE students tend to have lower GPAs than their non-CTE counterparts and also take fewer upper-level math courses than students on a non-CTE, academic track (Bae, Gray, & Yeager, 2007; Palmer & Gaunt, 2007).

When considering the age and employment aspects, however, a distinguishing representation of the CTE population emerges. A larger percentage of CTE students are older than the median age of community college students when compared to non-CTE

students (American Association of Community Colleges, 2019; Hirschy et al., 2011), thus allowing for garnering more life experiences prior to entering, or re-entering, the educational process. This sequence of events results in a self-identified, "employee who studies" perspective, which is reflected in a larger number of CTE students than non-CTE (Hirschy et al., 2011). Although a majority of community college students do not complete a credential (Ma & Baum, 2016), a study published by the National Center for Education Statistics found that a higher percentage of those completing an occupational credential were not only employed but also working in positions related to their fields of study when compared to the group earning an academic credential (Roberts, 2016). When considering these findings, the depiction of students who have learned what they do and do not prefer in a career path emerges as a notable contrast between the two populations.

Current Role of Community Colleges in Workforce Training and Development

The 2014 Workforce Innovation and Opportunity Act (WIOA) emphasizes postsecondary education in the development of a skilled workforce (Association for Career & Technical Education, 2014; Campbell & Love, 2016). It is the most current piece of federal legislation regarding education's role in workforce training and development, reauthorizing the Workforce Investment Act of 1998 (WIA), in which partnerships between agencies providing job training services were mandated, including postsecondary CTE programs. This landmark, bi-partisan Act places community colleges at the center of workforce development by focusing on the importance of postsecondary credentials for job-seekers. Given their open-access policies, low-cost tuition rates, and flexible scheduling, community colleges can provide these opportunities to individuals

who may be ineligible for or unable to afford alternative educational training programs (Cummins, 2015; D'Amico, Morgan, Katsinas, & Friedel, 2015).

The role of community colleges within their respective communities also lends itself to the successful partnerships that are required for training a local workforce (D'Amico et al., 2015; Hainline et al., 2010; Wilson et al., 2015). Community business leaders have better insight into the opportunities that may be available for program completers, especially older students who may be training for new career paths due to economic declines in occupational sectors such as manufacturing (Cummins, 2015). Likewise, community services for disabled populations are offered through vocational rehabilitation programs; provisions also extend to the field of adult education as part of the included Adult Education and Family Literacy Act (AEFLA), Title II of WIOA (OSERS, 2016). All of these are aspects of training and developing employable individuals for the 21st century workforce.

Although online education at the community college offers scheduling flexibility and expanded accessibility (Githens et al., 2012; Horvitz, 2017), it has presented challenges for institutions that are, as a result of providing these options, competing not only locally but also nationally (Wilson et al., 2015). In an effort to address these and other potential issues for the future of community colleges, the 2014 Community College Futures Assembly focused its emphasis on critical challenges in three areas, one of which was workforce development. In addition to more technology, funding, legislation, and advertising, two vital challenges were specified: increased need for K-12 partnerships to create postsecondary students who are prepared for college-level education and awareness of students who are more "sophisticated" consumers. The "2020 community

college" must adapt and engage students who wish to have an active voice in deciding how they will progress through their educational experiences (Wilson et al., 2015, p. 1195). Furthermore, a direct link between degrees and employment is requisite as employers continue to recognize the importance of community colleges in not only awarding credentials but also training necessary soft skills (Bowles, 2014; Hirschy et al., 2011). Both of these challenges can be faced and overcome only through community partnerships with educational, business and industry, and economic leaders.

Mississippi's Community College System

Almost a century old, Mississippi's is one of the first state-wide systems of community/junior colleges with a governing body in the United States, established just one year prior to the Great Depression (Howell, 1996). Many of the schools, however, were in operation before the state's establishment of the college system, founded as agricultural high schools in small towns where travel to the closest university was not convenient (Cohen & Brawer, 2003; Fatherree, 2010; Howell, 1996). The goal of these schools was to provide accessibility to a quality, yet affordable, education (Fatherree, 2010). These junior colleges offered courses for university transfer credit, but they were also required to offer curricula for agriculture, commerce, home economics, and mechanical arts (Cohen & Brawer, 2003; Howell, 1996). The names of most colleges changed to "community" instead of "junior" in 1987 (Fatherree, 2010) as a better reflection of not only the well-rounded program offerings but also their service to local communities, specifically with regard to employability skills and preparing adult learners for the workforce. In 2015, five of these schools were ranked in the top 100 community

colleges nationwide, and Mississippi's system was named the top state system in the U.S. (Kulo, 2015; Moak, 2015).

Even with its successes, however, the system has faced challenges and continues to do so. A reduction in state funding, mirroring that of many states and their institutions of higher education across the United States, has exacerbated community colleges' hardships with student retention and completion rates at a time when enrollment at public, four-year institutions remained fairly steady (Amy, 2016; Juszkiewicz, 2017; Ochs, 2018; Smith, 2018; Ward, 2018). The decrease in community college enrollment is linked to a stronger U.S. economy which, in turn, leads to lower numbers of students seeking employability skills, both hard skills and soft skills (Amy, 2016). To help offset some of these challenges, a partnership grant for two of Mississippi's colleges from Woodward Hines Education Foundation and Achieving the Dream was announced in March 2018 (Ochs, 2018). As of June 2018, these two colleges are receiving coaching and assistance in gaining deeper insight into their students' college experiences; the program is slated to last until 2020.

Postsecondary CTE programs in Mississippi are offered only at these two-year colleges, not four-year institutions (Fatherree, 2010; Mississippi Community College Board, 2019). According to Ward (2018), over 100,000 skilled workers were educated at community colleges statewide in 2017. The system boasts of over 130 unique CTE programs, many of which offer courses through the system's virtual community college, MSVCC, which was established in January 2000 (Mississippi Virtual Community College, n.d.). Despite the success in educating Mississippi's workforce and the variety of CTE programs being offered at community colleges, however, no set standard of

teaching and assessing soft skills exists as part of CTE curricula. Due to the importance employers are placing on soft skills (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Rao, 2010; Robles, 2012; Schulz, 2008; Tulgan, 2015) and given the wealth of resources for gaining input from postsecondary instructors of online CTE courses, as well as the established, comprehensive nature of its statewide curricula (Mississippi Community College Board, 2019), Mississippi's community college system is an inclusive fit for the proposed research study.

Mississippi's Student Population

Yet another justification for the use of Mississippi's community college system in research lies in its student population. Similar to community college students nationwide, a large percentage of Mississippi's students take at least one remedial course (Center for Community College Student Engagement, 2016; Chen, 2018; Mader, 2017; Smith, 2016). In 2014, efforts were made to streamline programs and direct these students into credit-bearing courses in an attempt to increase completion rates, a plan that has been supported through research (Amy, 2014; Bohlig et al., 2018). Even for students who require the lower-level remediation courses, proponents of this model state that it potentially allows students to complete as much as one semester sooner than they would have under the former model (Amy, 2014). As remedial education influences persistence and completion (Center for Community College Student Engagement, 2016; Chen, 2018; Hess, Krohn, Reichlin, Roman, & Gault, 2014; "Report: 40 percent," 2014), this characteristic of community college students is key.

Two factors strongly influenced by remedial education are gender and race (Bohlig et al., 2018; Center for Community College Student Engagement, 2016). Among

Mississippi's 15 community colleges, four of them fall under the categories of either historically Black colleges and universities (HBCUs) or predominantly Black colleges and universities (PBCUs) (Brown, Donahoo, & Bertrand, 2001). Additionally, the gender composition of Mississippi's student population at community colleges is comprised of more women (62%), a higher percentage than the national ratio of 57% (Hess et al., 2014). In a state with the highest poverty level (Skinner, 2014), these two factors become even more important. Women are less likely to be employed and thus unable to afford college expenses (Hess et al., 2014; Skinner, 2014). Even if they are able to gain assistance financially to pay for college-related costs, they cannot afford child care. These factors were clearly seen in a study reporting issues associated with students' need to withdraw from Mississippi's community colleges; work was cited as a primary reason for women (12.4%) at a lower rate than men (25.3%), whereas personal reasons were cited by more women (49%) than men (39.5%) (Scoggin & Styron, 2006). Among women who have either dropped out or taken time off from school, 59% of those with children under age 10 indicated that child care was an issue (Hess et al., 2014).

When taking both gender and race into account, another barrier to participation emerges—transportation. African American students in Mississippi were found to be more likely to commute at least an hour to and from the college (Hess et al., 2014). This finding is confirmed in the study regarding reasons for withdrawal; 18.9% listed transportation issues as compared to 6.9% of White students (Scoggin & Styron, 2006). Online classes have helped to ease this burden (Hess et al., 2014), though perhaps not completely since all online classes housed through MSVCC must offer at least one proctored exam. Although there are now online options for completing proctored exams,

those options come at a price, whereas completing the proctored exam on campus is included in the cost of the course (Mississippi Gulf Coast Community College, 2019b).

Challenges facing Mississippi's CTE students were also indicated in the study of students' reasons for withdrawal. Work was listed as interfering with class attendance by a higher percentage of CTE students than those who were pursuing an Associate of Arts degree (Scoggin & Styron, 2006). Even though participation in and completion of CTE programs has been shown to increase wages (Association for Career & Technical Education, 2018), students must remain in class in order to complete these credentials. Likewise, relocation was listed as a primary challenge for students in an Associate of Applied Science degree-granting program (Scoggin & Styron, 2006). With the increase in online learning over the last decade (Lederman, 2018), however, there is potential for both work and relocation to become less prohibitive to degree completion, specifically for those seeking occupational training.

Community Colleges' Role in Mississippi

After the end of World War II, the mission of Mississippi's community colleges expanded beyond preparing students for university transfer to include occupational education (Howell, 1996). With the focus on workforce development that is now listed as a critical challenge by the 2014 Community College Futures Assembly (Wilson et al., 2015), this aspect of the mission becomes even more noteworthy. Employability skills are an imperative aspect of workforce preparation, including CTE, if not only Mississippians but also Americans as a whole are to see the benefits of increased wages and earnings purported to come from participation in community colleges' CTE programs (Association for Career & Technical Education, 2018). In addition to simply

knowing about these skills, adult learners must be transformed through the learning process so that they can then apply soft skills in a workplace environment since application of soft skills is key to retaining employment (National Soft Skills Association, n.d.; Rao, 2010).

Summary

A review of literature establishes the essentiality of soft skills and the importance of CTE in adult learners' preparation for the current workforce (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Miller et al., 2013; Sitompul et al., 2016). It also verifies community colleges as a driving force in employment-readiness of CTE participants (Cummins, 2015; D'Amico et al., 2015; Wilson et al., 2015), specifically within the realm of online education. The *Employability Skills Framework* allows for visualization of soft skills and serves as a guideline for students, instructors, and employers alike (Knowles, 2014; OCTAE, n.d.). In order for these employability skills to be effective in helping adult learners not only gain but also maintain employment, a transformation of students' mindset with regard to communication, critical thinking, teamwork, and work ethic is needed that will then lead to transfer of learning from the classroom to workplace environment.

Considering its statewide curricula for community colleges' CTE programs along with a recognized virtual community college, Mississippi offers an established, well-governed system for research (Mississippi Community College Board, 2019; Mississippi Virtual Community College, n.d.). The lack of requirements for teaching soft skills in any CTE setting (face-to-face or online) also provides justification for investigating this important aspect of employability, specifically in an impoverished state where both

female and African American students are, for the most part, economically disadvantaged (Hess et al., 2014; Skinner, 2014). Efforts of the current study to ascertain instruction and assessment methods of soft skills in online courses in order to optimize adult learners' potential employability are described in the next chapter.

CHAPTER III – METHODOLOGIES

Implementation of soft skills into online occupational education is necessary in order to fulfill employers' needs (Al-Alawneh, 2011; Ali et al., 2017; Associated Press, 2015; Ellis et al., 2014; Makhathini, 2016). In an effort to ascertain the extent to which instructors of online CTE courses at community colleges incorporate soft skills into their courses, the research study explored instructional and assessment methods that instructors were using. The purpose of the study was to investigate four specific, employer-desired soft skills of community college students who were enrolled in online CTE courses—communication, critical thinking, teamwork, and work ethic. Research questions for the study were as follows:

Among community college instructors of online CTE courses,

RQ1. When courses begin, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic;

RQ2. What instructional methods are being used to teach the soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic;

RQ3. What methods are being used to assess students' soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic; and

RQ4. When courses end, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, (d) work ethic, and (e) overall employment readiness?

Research Design

The study employed a mixed methods study design in that it consisted of both quantitative and qualitative research measures. This mixed approach "combines statistical trends (quantitative data) with stories and personal experiences (qualitative data)" (Creswell, 2015, p. 2), providing for a better understanding of how online instructors' teach and assess CTE students' soft skills than either approach would afford if used exclusively. As an investigation of students' learning transfer of soft skills from classroom to workplace, the research design (see Figure 3) was a combination of Creswell's (2015) explanatory and exploratory sequential designs in that qualitative measures (focus groups and interviews) were incorporated both before and after the quantitative measure (questionnaire).

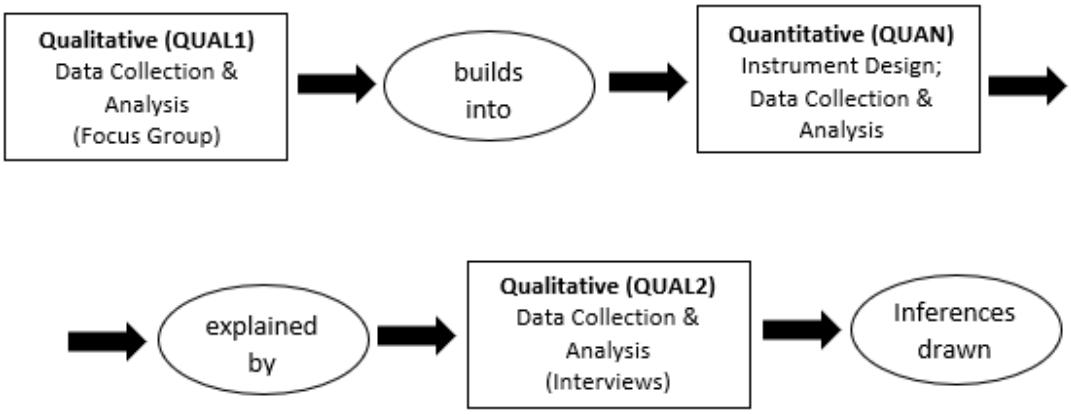

Figure 3. Research design.

Created following guidelines from Creswell (2015).

Participants

Participants were drawn from convenience samples consisting of instructors who teach online CTE courses at Mississippi community and junior colleges. Convenience

sampling allows the researcher to take advantage of a sample that is easily accessible (Kemper, Stringfield, & Teddlie, 2003; Merriam & Tisdell, 2016; Teddlie & Yu, 2007), yet gain insight from those individuals as part of the study. Due to the mixed methods research design, multiple samples were used, one for each segment of the study for a total of three samples. As indicated by Teddlie and Yu (2007), samples varied in size depending upon their purpose.

For the initial qualitative phase (QUAL1), a focus group was organized by convenience sampling of voluntary participants who teach online CTE courses through one of the participating institutions. These instructors were invited by email to provide input for creating the questionnaire that was used during the quantitative phase (QUAN) of the study. The recommended number of participants in a focus group varies in related literature with 4 as the minimum and 12 as the maximum (Kitzinger, 1995; Onwuegbuzie & Collins, 2007). Eight instructors participated in the focus group for this study, which ensured that these parameters were fulfilled. To show appreciation, light refreshments were provided to the instructors who participated.

For the quantitative phase of the study (QUAN), a convenience sample was taken from all instructors who teach online CTE courses at Mississippi community and junior colleges, excluding those who participated in the focus group. Two-year colleges in Mississippi were selected for the study specifically due to the fact that their CTE program offerings are supported by statewide curricula and regulations and also because the community college system is well-established, being more than 100 years old (Mississippi Community College Board, 2019). Furthermore, these two-year colleges are not simply “technical” schools; they are well-rounded in offering not only CTE but also

academic programs of study, offering both applied science associate degrees as well as associate degrees for students who plan to continue working toward baccalaureate programs. Additionally, these institutions offer extracurricular activities such as athletics, band, and a myriad of student organizations, allowing for a diverse student population.

Based on G*Power (v. 3.1.9.2, 2014) calculations for the most complex data analysis to be performed on research data, a minimum sample size of 53 participants was recommended for medium effect size ($f^2 = .25$) and standard power ($\beta = .80$). With this estimate in mind, voluntary participants were recruited from the pool of instructors of online CTE courses at Mississippi community colleges via a statewide consortium through which online courses are offered, the Mississippi Virtual Community College (MSVCC), as well as a statewide professional organization of business and technology instructors. Emails regarding the study were sent to all participating community colleges in the manner requested as part of each college's approval process, generally via departments of Institutional Effectiveness or eLearning, and to the president of the professional organization. These messages contained the study's description, approval, and link to the questionnaire. Recipients assisted in distributing/forwarding the emails to instructors who teach online CTE courses at community colleges.

For the second qualitative phase (QUAL2), interviews were conducted with participants in an effort to understand and make meaning (Seidman, 2013) of instructors' experiences with soft skills in online CTE courses. Semistructured interviews were performed in which a list of questions guided the session yet allowed flexibility for ideas that emerged from participants (Merriam & Tisdell, 2016). As the researcher was

gathering interview data to provide a brief follow-up to the quantitative results, only six interviews were conducted. Interviewees were determined through the questionnaire via an open-ended question indicating their willingness to participate in this second qualitative phase. No incentives were offered for this phase; however, handwritten thank-you cards were sent to all interview participants.

Approvals

Approval for the study was required from the Council on Institutional Research and Effectiveness subcommittee on External Research Approval for the Mississippi Community College Board (MCCB), supervising boards of all participating Mississippi community colleges, and the Institutional Review Board at The University of Southern Mississippi (USM) (see Appendix A). Due to the nature of work for the focus group (QUAL1), two approval processes were required from USM's IRB—first for only the focus group with projections for the remainder of the study, and then for the quantitative phase (QUAN) and second qualitative phase (QUAL2) after creation and completion of the questionnaire and interview protocol. The application for MCCB was approved prior to applying for USM's IRB; modified IRB applications containing individual agreements with the participating community colleges were also submitted and approved by USM.

Positionality

As a CTE instructor at a community college, I have taught online courses for well over a decade. My goal in this research study was to understand other instructors' experiences with online students and how they face the challenge of teaching and assessing soft skills in an environment that has very little, if any, face-to-face interaction. At the current time, I am able to provide minimal information to online students'

prospective employers with regard to soft skills. By learning how other instructors' experiences are both similar to and different from my own, we may together be able to provide a tangible starting point for meeting these hiring needs as set forth by employers of CTE students, given that soft skills are vital in workforce preparation.

Instrumentation

During the initial qualitative phase (QUAL1), a focus group protocol (see Appendix B) was used to guide the group in providing input regarding pertinent questions that gave insight into students' soft skills characteristics as well as instructors' teaching and assessment of soft skills in online CTE courses. The script and prompts were created by the researcher in an effort to ensure that all four research questions were addressed during the session. The session was recorded, and a transcript was keyed and coded to find themes for creating the questionnaire as well as the interview protocol.

During the quantitative phase (QUAN), a questionnaire (see Appendix C) developed by the researcher, based on input from the focus group, was used for data collection regarding students' soft skills characteristics as well as instructors' teaching and assessment of soft skills. With permission, related sections from an instrument for employers (Pope, 2017) were adapted to an instructor's perspective and incorporated into the questionnaire design (see Appendix D). Survey items were organized according to the following categories: Instructor Methods and Approaches (IMA), Student Behaviors/Communication (SBC), Student Behaviors/Critical Thinking (SBCT), Student Behaviors/Teamwork (SBT), Student Behaviors/Work Ethic (SBWE), and Student Behaviors/Overall Employment Readiness (SBO). All items were based on a five-point frequency scale for which 5 = Always, 4 = Often, 3 = Sometimes, 2 = Rarely, and 1 =

Never. Informed consent was included as the first survey item, with continuation of the survey being subject to participants' agreement. Optional demographic questions were incorporated into the instrument after the six categories listed above. Qualtrics (Provo, UT) provided avenues for both creating and distributing the questionnaire.

A pretest of the questionnaire was administered to ensure content validity—adequate measurement of the research topic (Gay, 1996)—as well as clarity of instructions and questions. Revisions were made based upon feedback from this group of three participants, including length of the instrument and wording of several questions. A pilot test was then conducted to determine internal consistency; a group of 20 participants completed the instrument, and Cronbach's alpha was used to ensure that constructs' scores were consistent and reliable. Results of the pilot test are detailed in Chapter 4.

In order to obtain participants for the second qualitative phase (QUAL2), an open-ended question was included on the questionnaire so that participants could indicate their willingness to take part in the interview process. The purpose of collecting this additional data was to follow up for clarification and deeper insight into instructors' perspectives of online CTE students' soft skills characteristics as well as the instructional and assessment methods being used in online courses. Semistructured interviews were guided by an interview protocol (see Appendix E) that, along with the questionnaire, was created based upon feedback from the focus group. Each interview lasted no longer than one hour, was recorded, and then was transcribed, coded for themes, and analyzed for reporting. Results of these analyses are also reported in Chapter 4.

Procedures

The research study began with the requisite approval processes to obtain permission for engaging community college instructors in participation. After these approvals were granted and the project was approved by USM's Institutional Research Board, the process continued according to the three phases described below.

Initial Qualitative Phase (QUAL1)

For the first phase of this mixed methods research study, data collection was performed through a focus group. The exploratory sequential design of this segment allowed for an initial investigation through which qualitative findings were then used to guide the middle, quantitative (QUAN) phase of the study (Creswell, 2015). Use of findings from these "group interviews" to create a questionnaire is well-documented in the literature (Gill, Stewart, Treasure, & Chadwick, 2008; Kitzinger, 1995; Krueger & Casey, 2015; Morgan, 1988). Insight from eight CTE instructors at one Mississippi community college provided the foundation for building not only the questionnaire but also the interview protocol by supplying the instructors' perspectives on how soft skills are approached in their online courses as well as issues that should be addressed in the second and third phases of the research project.

An email was sent to CTE faculty from the institution's academic dean's office soliciting volunteers for the focus group. Attached to the email were a description of the research study, approvals, and an informed consent form (see Appendix F) indicating anonymity, confidentiality, and voluntary participation. The email also included a request that interested individuals should contact the researcher for meeting date, time, and location. This requested response aided the researcher in ensuring a sufficient

number of participants for the focus group. The researcher then responded to interested individuals informing them of the date, time, and location for the focus group session and secured a facilitator who took notes and assisted in recording the session.

Informed consent forms were signed prior to the start of the focus group session. The session lasted one hour, and refreshments were then served to the participants to show appreciation. Handwritten, thank-you cards were also sent to each of the eight instructors who provided invaluable insight for the researcher. The recording was transcribed and coded for themes to use in creating the questionnaire and interview protocol. After these were built and approved by the dissertation committee chair and methodologist, a modified IRB application was submitted for approval. This IRB application process also consisted of requesting and receiving authorizations from individual community colleges in the state of Mississippi; ultimately, 12 of the 15 colleges granted permission to conduct research at their institutions. Upon receipt of the approved modification, research continued with the second phase of the study.

Quantitative Phase (QUAN)

The quantitative phase served a two-fold purpose in addressing the study's research questions. As follow-up for the exploratory sequential design portion of this study, the questionnaire was created from themes and categories in feedback provided by the focus group (QUAL1). Additionally, results from the questionnaire were explained by the interviews (QUAL2) as part of the explanatory sequential design portion (Creswell, 2015). The use of questionnaires to obtain quantitative data in educational research has been referenced at length in literature; effective examples of survey research with specific regard to soft skills are also readily available (Aworanti et al., 2015;

Loughry et al., 2014; Mitchell et al., 2010). Instructors of online CTE classes from 12 of the 15 community/junior colleges in Mississippi participated in this phase of the research study. The QUAN phase consisted of three parts, and details regarding completion of each are described in the following subsections.

Pretest. After the questionnaire was created from feedback provided by the focus group, three CTE faculty performed a pretest of the instrument to ensure readability as well as face and content validity, including whether the instrument was clear and was attempting to measure the constructs of the study. Feedback from this group of subject matter experts included revising many questions to include the term "online" so that this focus was not lost during the survey process. Additionally, concern was presented regarding the length of the instrument; this feedback was addressed during the pilot test, which is explained in the next section.

Pilot test. A group of 20 instructors of online CTE courses from one of the institutions was targeted for the pilot test. An email was sent to these faculty from the institution's eLearning office to solicit volunteers for the pilot test, which was conducted over a period of two weeks—August 10-24, 2018. In all, 20 responses were submitted, 18 of which were complete responses. The results were tested for internal consistency using Cronbach's alpha to ensure that the survey instrument was reliable both as a whole and within each subscale. Results of the pilot test and subsequent modifications to the instrument are detailed in Chapter 4.

Research project. Upon finalization of the questionnaire, the study description, approvals, and link to the survey instrument were emailed to 11 of the participating Mississippi community colleges via contact persons who had been provided as part of the

institutions' permission letters or emails. These individuals then forwarded the email, with attachments, to instructors of online CTE courses at their respective institutions. The president of the statewide professional organization for business and technology instructors also received and distributed an email to recruit study participants. Of the three community/junior colleges that did not participate in the study, one did not submit institutional approval in time to be included prior to the end of data collection. The contact person at a second institution never responded with institutional approval, and the third indicated an unwillingness to participate due to the low number of faculty teaching online CTE courses at his institution.

The survey link was available for a period of six weeks, beginning on September 10, 2018, and ending on October 24, 2018. A total of 52 participants answered the questionnaire, 31 of which were complete responses. At the end of quantitative data collection, research data were exported from Qualtrics to SPSS (v. 25, 2017) for analysis using MANOVA and regression tests as well as reporting of descriptive statistics. Findings from these reports and analyses were interpreted and recorded, the details of which are provided in Chapter 4.

Second Qualitative Phase (QUAL2)

During the third phase of the research study, qualitative data collection was once again used to follow Creswell's (2015) explanatory sequential design in which quantitative results were explained in more detail by qualitative methods, which in this phase involved the use of semistructured interviews. The process of interviewing participants provided insight into the story each faculty member has with regard to the soft skills of students in online classes, and the use of a semistructured interview process

allowed for flexibility in the order questions were asked, depending upon how each conversation flowed (Creswell, 2013; Merriam & Tisdell, 2016; Seidman, 2013). This third phase of the study also ensured validity through triangulation, a process in which multiple methods and sources of data were used during the study in an effort to corroborate findings (Creswell, 2013; Merriam & Tisdell, 2016). Participants in this phase volunteered to be interviewed via an open-ended question on the survey instrument. Once indicating their interest, these individuals were then prompted to provide contact information for follow-up. A total of six interviews were conducted in both face-to-face and telephone settings from September 20, 2018, through October 12, 2018.

The researcher contacted volunteers using the information they provided, through either email messages or telephone calls, in order to verify their participation in the QUAL2 phase. Once verified, an interview meeting (face-to-face or telephone) was scheduled with each participant. Approximately one day prior to each interview meeting, another copy of the study's description and approval, along with the informed consent form (see Appendix G) for interviews, were emailed. For face-to-face meetings, the informed consent form was brought to the interview for the participant and researcher's signatures. Individuals who participated in telephone interviews printed and signed the emailed copy and then scanned and returned the form by email for the researcher's signature. All emails were sent individually in order to ensure interview participants' confidentiality, and each participant chose a pseudonym to ensure anonymity in reporting.

Interview meetings lasted no more than one hour and were recorded and transcribed by the researcher. Once transcribed, the researcher emailed transcripts of recordings to respective participants for verification and approval in order to ensure that their comments were appropriately reflected in the data collection process. After receiving approvals of the transcripts from all respective interviewees, transcripts were coded for themes and analysis using Quirkos (v. 1.5.2, 2018). Results of the analysis as well as germane quotes from these participants are detailed in Chapter 4.

After the Research Project

All electronic versions of research-related data were saved to the researcher's external hard drive which, along with any notes written on paper, will be kept in a locked filing cabinet for a period of one year following the study. Results of data analysis were presented in the dissertation document and as part of a PowerPoint presentation during the dissertation defense. They were also provided to participating institutions as requested and could potentially be included in topic-related presentations that are given by the researcher at conferences or other appropriate meetings.

Data Analysis

Due to the nature of the research design, which was a combination of Creswell's (2015) exploratory and explanatory sequential designs, analyses of data occurred at multiple points during the project. Additionally, descriptive statistics of the sample were recorded for participants of all three phases. For the two qualitative phases, demographics consisted of gender and race as well as participants' CTE subject areas, teaching status, and number of years teaching CTE courses. Quantitative participants' demographics also included age, total number of years teaching (including but not limited

to CTE courses), and questions regarding field-related work experience. These questions specifically addressed whether participants had previously been or were currently employed in a supervisory role that included management responsibilities such as hiring and/or terminating employees.

After the focus group that was conducted during the initial qualitative phase (QUAL1), the resulting transcript was analyzed using open coding; themes that emerged were then used to create the questionnaire (QUAN) and interview protocol (QUAL2). As part of the quantitative phase (QUAN), data were first analyzed for descriptive statistics for each of the four research questions and then analyzed for RQ1 and RQ4 using statistical testing. Descriptive and inferential statistics were recorded when analyzing results. Three regression models were tested using overall employment readiness as the dependent variable. In the regression model for RQ1, scores from the beginning of courses were used in the model as independent variables. Next, scores from the end of courses (RQ4) were used as independent variables. During the third regression model, scores from the remaining questionnaire items pertaining to student behaviors were used to test the model. Then a repeated-measures, within-subjects MANOVA with two timepoints was performed to compare corresponding skills in RQ1 and RQ4.

During the second qualitative phase (QUAL2), transcripts of responses from the semistructured interviews were analyzed using open coding as a follow-up to the quantitative data in order to gain insight and clarity from participants with regard to data collected during the quantitative phase. A summation of the analyses performed on each research question is provided in Table 1. Results of all statistical tests, including

demographics and descriptive statistics, as well as qualitative themes are reported in Chapter 4.

Table 1

Data Analyses by Research Question

Research Question (RQ)	Quantitative Analysis[a]
RQ1. Among community college instructors of online CTE courses, when courses begin, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?	Descriptive, MANOVA, and Regression
RQ2. Among community college instructors of online CTE courses, what instructional methods are being used to teach the soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?	Descriptive
RQ3. Among community college instructors of online CTE courses, what methods are being used to assess students' soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?	Descriptive
RQ4. Among community college instructors of online CTE courses, when courses end, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, (d) work ethic, and (e) overall employment readiness?	Descriptive, MANOVA, and Regression

Note. All research questions were addressed through both quantitative and qualitative methods. For purposes of final analyses, qualitative data were collected during the QUAL2 phase.
[a]Three regression models were tested.

Summary

Included in this chapter are methodologies and procedures used to conduct this mixed methods research project that investigated soft skills of community college students who were enrolled in online CTE courses as well as instructional and assessment methods used in those courses. Integrating both exploratory sequential and explanatory sequential designs, the following phases and their corresponding approaches are detailed:

Initial Qualitative Phase (QUAL1) – focus group; Quantitative Phase (QUAN) – questionnaire; and Second Qualitative Phase (QUAL2) – interviews. Descriptions of the study's participants and instruments are also provided, along with a statement of the researcher's positionality as it relates to the qualitative phases of research. The chapter concludes with details of data analysis for each of the three phases grouped respectively by the research questions. An in-depth look at results of the analyses is provided in the next chapter.

CHAPTER IV – PRESENTATION AND ANALYSIS OF DATA

The purpose of the study was to investigate four specific, employer-desired soft skills—communication, critical thinking, teamwork, and work ethic—of students who were enrolled in online CTE courses at Mississippi's community colleges. Provided in this chapter are detailed descriptions of the data collected during all segments of the research project. Consisting of three phases (QUAL1, QUAN, and QUAL2), the project was a combination of Creswell's (2015) explanatory and exploratory sequential designs and included a focus group, a questionnaire, and interviews. After a review of participants' demographics for each phase, results of the focus group (QUAL1) discussion used to develop the questionnaire for this study as well as pilot testing of the questionnaire are discussed. Results of the questionnaire (QUAN) and interviews (QUAL2) are then presented in order of the research questions below, followed by a discussion of emergent themes. A summary concludes the chapter.

Among community college instructors of online CTE courses,

RQ1. When courses begin, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic;

RQ2. What instructional methods are being used to teach the soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic;

RQ3. What methods are being used to assess students' soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic; and

RQ4. When courses end, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, (d) work ethic, and (e) overall employment readiness?

Demographics of Participants by Phase

All participants were teaching online CTE courses at a community college in Mississippi during the time of the study. Both full-time and adjunct instructors were included in the research project, and at the time that research was conducted, they had taught for a range of less than one year to more than 25 years. Descriptions of the demographics from each group by phase are provided in the sections that follow. As a whole, however, 57.14% (QUAL1 (n = 6), QUAL2 (n = 2)) of the qualitative participants were female, and 80% (n = 24) of the quantitative participants reported a gender of female. Likewise, 92.86% of the qualitative participants were White (n = 13, collectively), and 90% of the quantitative participants reported their race as White. With regard to the race of all participants collectively, one participant was Black or African American (QUAL1), and three chose "Prefer not to answer" on the questionnaire.

QUAL1 Phase – Focus Group

Demographic data of focus group participants are provided in Table 2. In order to protect their identities, each member was assigned a number—Focus Group Member 1, Focus Group Member 2, etc. All of these instructors were full-time CTE faculty at one participating institution. As indicated in Table 2, a wide variety of subject areas was represented, although only technical instructors were included; no career programs at the institution were being taught in an online setting at the time of the study.

Table 2

QUAL1 Participants – Demographics

Focus Group Member	Race	Gender	Program Subject Area	Teaching Status	Years Taught
1	Black/African American	Male	Business	Full-time	4
2	White	Female	Business	Full-time	17
3	White	Female	Public Safety	Full-time	9
4	White	Female	Hospitality	Full-time	3
5	White	Female	Human Services	Full-time	13
6	White	Female	Marketing	Full-time	20+
7	White	Female	Law	Full-time	15
8	White	Male	Construction	Full-time	15

QUAN Phase – Questionnaire

Demographic data of questionnaire participants who completed this section of the instrument are provided in Table 3. As illustrated by the percentages, a substantial portion of the sample was female (80%), White (90%), and teaching full-time (80%). Nearly half (43.33%) were in their 40s. Also noteworthy, some had years of teaching experience prior to teaching in a technical field, as indicated by the differences in Years of Teaching in Program Area and Total Years of Teaching. A larger portion of the sample had over 10 years of total teaching experience (71.96%) when compared to teaching experience in the program (62.06%). For both groups, however, the majority had taught from 6-20 years at the time of the study.

Table 3

QUAN Participants – Demographics

Characteristics/Attributes	Frequency	Percentage of Participants (n = 30[a])
Gender		
Males	4	13.33%
Females	24	80.00%
Prefer not to answer	2	6.67%
Race[b]		
Black or African American	0	0.00%
White	27	90.00%
Prefer not to answer	3	10.00%
Age		
20-29	0	0.00%
30-39	3	10.00%
40-49	13	43.33%
50-59	4	13.33%
60-69	6	20.00%
70+	1	3.33%
Prefer not to answer	3	10.00%
Employment Status		
Full-time	24	80.00%
Adjunct	6	20.00%
Years of Teaching in Program Area[c]		
Less than 5 years	2	6.90%
6-10 years	9	31.03%
11-15 years	4	13.79%
16-20 years	6	20.69%
21-25 years	4	13.79%
More than 25 years	4	13.79%
Total Years of Teaching[c]		
Less than 5 years	2	6.90%
6-10 years	6	20.69%
11-15 years	6	20.69%
16-20 years	6	20.69%
21-25 years	4	13.79%
More than 25 years	5	17.24%

[a]All participants did not complete this section of the questionnaire, and all participants did not answer every question regarding demographics. [b]Other races were not represented in the sample. [c]n = 29.

As illustrated in Table 4, participants were also asked questions regarding program-related work experience, excluding years of teaching. An overwhelming majority of the sample had worked in industry (93.33%). Almost two-thirds of these participants (65.39%) had over 15 years of related experience, and almost three-fourths of them (73.08%) had supervisory experience. Well over half (59.86%) had worked in a management capacity that included the responsibilities of hiring and/or terminating employees. These characteristics of the sample serve to validate their knowledge of and experience with soft skills as well as their responses to questions related to implementation of soft skills in occupational education.

Table 4

QUAN Participants – Program-related Work Experience

Questionnaire Item and *n*	Frequency	Percentage of Participants
Did/Do you work in the field you are currently teaching? (*n* = 30)		
Yes	28	93.33%
No	2	6.67%
If so, total years of work experience in technical field (*n* = 26)		
Less than 5 years	4	15.38%
6-10 years	2	7.69%
11-15 years	3	11.54%
16-20 years	8	30.77%
21-25 years	1	3.85%
More than 25 years	8	30.77%
Were/Are you employed in a technical, field-related supervisory role? (*n* = 26)		
Yes	19	73.08%
No	7	26.92%
Were/Are you responsible for managing employees (hire, lay off, etc.)? (*n* = 27)		
Yes	16	59.86%
No	11	40.74%

QUAL2 Phase – Interviews

Demographic data of interview participants are provided in Table 5. In order to protect their identities, each interviewee chose a pseudonym and no identifying institutional data were reported. Among interviewees, a variety of subject areas was once again represented. As seen with the focus group participants, however, only technical instructors participated in this group with no representation from career programs. Although there appears at first glance to be an overrepresentation of one subject area (Business), it is noteworthy that one of those instructors was adjunct; additionally, of the two full-time Business instructors, one had taught less than five years whereas the other had taught for over 20 years at the time of the study. This variety in demographics allowed for differing perspectives in their interview responses, which are discussed in the results and analyses sections.

Table 5

QUAL2 Participants – Demographics

Pseudonym	Race	Gender	Program Subject Area	Teaching Status	Years Taught
Barney	White	Male	Information Technology	Full-time	1
Chewie	White	Male	Marketing	Adjunct	1
Fred	White	Male	STEM	Full-time	20+
Jonathan	White	Male	Business	Adjunct	9
Monica	White	Female	Business	Full-time	20+
Susie	White	Female	Business	Full-time	3

As was the case with QUAN participants, several of the interviewees had prior work experience related to the programs they were teaching. Barney worked in the

information technology field for over 15 years prior to teaching full-time; Susie worked in the human resources industry for over 20 years. Chewie was employed full-time in e-commerce during the study while also teaching part-time as an adjunct instructor. All of these individuals brought valuable insight into their classes, as is detailed in the final results and analyses. Interestingly, the range of years taught for QUAL2 participants is not reflective of the QUAN participants; half of this group had taught for less than five years at the time of the study as compared to only 7% of the QUAN group (Table 3).

Preliminary Results and Analyses

Input from the focus group was used in creating the questionnaire (see Appendix C) and interview protocol (see Appendix E); therefore, results are reported separately for the QUAL1 phase of the study, which is the first topic discussed in this section. Afterward, a discussion of the pilot test is provided including reliability testing and use of correlation scores in not only improving reliability but also reducing the length of the questionnaire. After collecting quantitative data for the research project, Cronbach's alpha was used once again to ensure that only reliable items were included in statistical testing. Results of these tests, including items that were removed after the pilot test as well as prior to testing the research project data, are then reported.

Initial Qualitative Phase (QUAL1)

Eight participants who were instructors of online CTE courses at one of the participating institutions formed the focus group that comprised the initial qualitative phase of the study (QUAL1). The purpose of the focus group was to determine themes for the questionnaire and interview protocol. A lively discussion of online CTE students' soft skills among this group of colleagues was moderated by the researcher. According

to Merriam and Tisdell (2016), focus groups are best conducted under circumstances in which the participants do not know each other and thus feel free to discuss opinions with less concern for peer judgment. However, the familiarity that these focus group members had with each other, and the comradery they exhibited when discussing their online courses and students, contributed to the discussion in ways that would not have occurred in a group of strangers. Many of them opened up as they expressed the same concerns and challenges which, in turn, provided transitions from one topic of conversation to the next. The one-hour discussion proceeded seamlessly for the most part as group members bounced ideas off each other with minimal intervention by the researcher/moderator.

Upon conclusion of the focus group, the researcher transcribed the session and then used open coding to identify categories and themes in the transcript. Results of this analysis are evidenced by the statements and questions included in the quantitative (QUAN) and second qualitative (QUAL2) phases of the study. After coding, three major categories emerged: introducing and teaching soft skills, assessing soft skills, and student behaviors. The subcategories for student behaviors were based on the four soft skills—communication, critical thinking, teamwork, and work ethic—as well as overall employment readiness. These categories and subcategories led to the development of six sections on the questionnaire: Instructor Methods and Approaches (IMA), Student Behaviors/Communication (SBC), Student Behaviors/Critical Thinking (SBCT), Student Behaviors/Teamwork (SBT), Student Behaviors/Work Ethic (SBWE), and Student Behaviors/Overall Employment Readiness (SBO). Questions on the interview protocol also mirrored the focus group's categories and subcategories.

Quantitative Phase (QUAN)

Pilot study. All categories identified by the focus group (QUAL1) were incorporated into the survey, and all research questions were addressed. Questionnaire statements were based on a frequency scale in which 5 = Always, 4 = Often, 3 = Sometimes, 2 = Rarely, and 1 = Never. Prior to publication of the survey instrument, a small group of CTE faculty who were teaching online courses reviewed the questionnaire for readability as well as face and content validity. These subject matter experts provided feedback that was used to improve the questionnaire which included revising many questions to specify "online" so that the project's focus was not lost. Their concern regarding the instrument's length was addressed through results of the pilot study as discussed in this section.

In an effort not only to ensure reliability of the questionnaire but also to address its length, tests for Cronbach's alpha were performed on each section of the instrument with the exception of *Teamwork.* Five items from the *Work Ethic* section were also recoded into new variables so that scoring was reversed. These items are as follows:

SBWE4. Online students attempt to submit assignments after set deadlines.

SBWE6. To my knowledge, online students access instructional materials less than a day before assignment deadlines.

SBWE8. Online students access assignments less than a day before posted deadlines.

SBWE10. Online students submit assignments less than 2 hours before deadlines.

SBWE11. Online students submit assignments that are copied directly from course and/or Web-based resources.

All items having either negative correlation or a score less than 0.30 were removed from the test group (see Appendix H); a revised test was then conducted. These results are reported in Table 6, including original alpha scores for each section, the number of items removed from each section, and alpha scores for each section after removing items scoring less than 0.30 in the original test. As illustrated in Table 6, original Cronbach's alpha values for all sections that were tested exceeded the acceptable level of 0.70; however, removal of items from each section resulted in alpha values that were higher than the original alphas, thus indicating greater reliability.

Table 6

Pilot Test: Reliability/Cronbach's alpha and Removal of Items by Section

	Total Items	Original α	Items Removed	Revised α	New Total
Instructor Methods and Approaches (IMA)	40	.90	6	.93	34
Student Behaviors/Communication (SBC)	19	.91	2	.94	17
Student Behaviors/Critical Thinking (SBCT)	15	.72	6	.89	9
Student Behaviors/Teamwork (SBT)	15	--	0	--	15
Student Behaviors/Work Ethic (SBWE)	17	.89	3	.91	14
Student Behaviors/Overall Employment Readiness (SBO)	16	.90	1	.92	15

Due to the low number of responses for the *Teamwork* section, no tests were run on these items, and no items were removed. Questions in this section were answered only if respondents first indicated that they used group activities in their online courses. An answer of "No" for this question instructed Qualtrics to skip this block of questions and continue with the next section of the instrument. Only three respondents in the pilot

test answered this section. As this response rate failed to give an accurate view of reliability tests, they were not conducted and no values are reported.

Research project. Prior to obtaining descriptive statistics as well as conducting statistical testing of the quantitative data, Cronbach's alpha was once again used to test each section of the questionnaire for reliability. Any items with a negative correlation were removed from their respective sections, and revised Cronbach's alpha values increased in each case. Results of this final testing for reliability are reported in Table 7, and the following items were removed:

SBT13. Online students attempt to complete group projects at "the last minute."

SBWE4. Online students attempt to submit assignments after set deadlines.

SBWE11. Online students submit assignments that are copied directly from course and/or Web-based resources.

SBO16. As an instructor, I feel confident that I know my online students' abilities to lead a team project.

Final Results and Analyses

All research questions were addressed through the use of quantitative and qualitative methods. For the questionnaire data (QUAN), descriptive statistics were recorded. Additionally, two statistical tests were conducted. First, a MANOVA was run in order to ascertain possible differences in the soft skills at two timepoints—beginning of the course and end of the course. Next, regression models were run to determine whether the two timepoints, or possibly skills-related behavioral data not linked to time, would predict online students' overall employment readiness. For the interview data (QUAL2), open coding was once again performed to identify categories and themes

within the interview transcripts. Results of descriptive statistics, statistical testing, and coding of interview transcripts are reported below in order of the research questions with the exception of MANOVA results, which included both RQ1 and RQ4 and are thus reported separately after RQ4. All results are then analyzed for interpretation.

Table 7

Research Project: Reliability/Cronbach's alpha and Removal of Items

	Original α	Items Removed	Revised α	Final Total Items
Instructor Methods and Approaches (IMA)	.93	0	--	34
Student Behaviors/Communication (SBC)	.84	0	--	17
Student Behaviors/Critical Thinking (SBCT)	.86	0	--	9
Student Behaviors/Teamwork (SBT)	.77	1	.85	14
Student Behaviors/Work Ethic (SBWE)	.70	2	.79	12
Student Behaviors/Overall Employment Readiness (SBO)	.80	1	.85	14

It should be noted that the study was underpowered for regression testing, and results that were not significant could be due to the small sample size. Additionally, efforts were made to avoid skewed results with regard to the questionnaire items related to students' behavioral characteristics for teamwork. Respondents were first prompted to answer "Yes" or "No" to the following question, labeled SBTA on the questionnaire: "Do you use group assignments or other 'teamwork' projects in your online class?" If answering to the affirmative, respondents were then directed to the questionnaire items related to behavioral characteristics for teamwork; otherwise, this section of the

questionnaire was skipped. Only seven respondents completed the items in the *Student Behaviors/Teamwork* section.

RQ1. Among community college instructors of online CTE courses, when courses begin, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?

Five questionnaire items referenced students' behaviors at the beginning of online courses (Table 8). Means for both items related to communication (SBC1 and SBC2) as well as the item related to teamwork (SBT3) fell in the "Sometimes" range. Means for the two items related to critical thinking (SBCT2 and SBCT3) were lower, falling in the range of "Rarely." No items were included that measured students' work ethic behaviors as courses began.

The extent to which behavioral characteristics of students taking online CTE courses were observed at the beginning of the semester was measured quantitatively through both MANOVA and regression tests. Due to the low number of respondents for questionnaire items related to teamwork (Table 8) and the lack of questionnaire items measuring work ethic at the beginning of the course, only communication and critical thinking were included in statistical testing. Results of the regression to determine whether communication and critical thinking behaviors at the beginning of the course would predict students' overall employment readiness were not significant ($F(2, 27) = 2.92$, $p = .07$).

Some of the interview participants (QUAL2) also commented on students' behavioral characteristics, specifically with regard to how they changed over the semester. Results of the repeated-measures MANOVA to compare behavioral

characteristics at the beginning and end of the course as well as comments from interviewees regarding students' behaviors at both timepoints are reported after RQ4.

Table 8

Descriptive Statistics for Student Behaviors at Beginning of Semester

Questionnaire Item	*N*	*M*	*SD*
Communication			
SBC1. At the beginning of the semester, online students communicate ideas and information well.	38	3.11	0.73
SBC2. At the beginning of the semester, online students compose written communication that is easily understood.	38	3.18	0.77
Critical Thinking			
SBCT2. At the beginning of the semester, online students compare/contrast effectively.	32	2.59	0.84
SBCT3. At the beginning of the semester, online students effectively argue both sides (for and against) of an issue.	31	2.26	0.89
Teamwork			
SBT3. At the beginning of the semester, online students exhibit a willingness to learn from others.	7	3.29	1.11

RQ2. Among community college instructors of online CTE courses, what instructional methods are being used to teach the soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?

Instructional methods were initially pinpointed by the focus group (QUAL1). During the second phase (QUAN) of the study, occurrences of those instructional methods being used in online CTE courses to teach each of the four soft skills were identified separately through questionnaire items from the Instructor Methods and Approaches (IMA) section. Quantitative data for the four skills are provided collectively

(Table 9) and also individually in the paragraphs below. Tables indicate the relevant questionnaire items, the number of responses to each item, means, and standard deviations. These descriptive statistics are then further illustrated through qualitative data collected during the six interviews (QUAL2). Supporting quotes from interview participants are included as appropriate.

Table 9

Descriptive Statistics for Instructional Methods

Questionnaire Item	*N*	*M*	*SD*
Communication			
IMA2. I provide instruction regarding online communication.	48	4.52	0.83
IMA3. I inform students of what is appropriate in communicating online for my class.	48	4.56	0.74
IMA4. I inform students of what is not appropriate in communicating online for my class.	46	4.28	1.09
IMA5. I teach my online students how to use English grammar and punctuation.	47	3.26	1.42
IMA6. I teach my online students how to paraphrase text.	46	2.57	1.13
IMA8. I provide examples of acceptable student responses to classmates' online discussion posts.	47	3.36	1.33
Critical Thinking			
IMA10. I assign work in my online class that prompts students to reflect on course-related performance.	47	4.49	0.66
IMA11. I assign work in my online class that prompts students to reflect on course content.	47	4.68	0.56
IMA12. I assign work in my online class that prompts students to use problem-solving skills.	47	4.45	0.69
IMA13. I teach online students how to analyze reading materials.	47	3.47	1.23
IMA14. I teach online students how to reflect upon different perspectives of an issue.	46	3.17	1.20

Table 9 (continued).

Questionnaire Item	*N*	*M*	*SD*
Teamwork[a]			
IMA15. I require group work in my online course(s).	46	2.37	1.27
IMA16. I teach online students how to work as part of a team.	46	2.35	1.14
IMA17. I teach online students how to complete a peer evaluation.	45	2.09	1.20
IMA18. I teach online students how to provide truthful feedback when completing an evaluation.	45	2.40	1.42
Work Ethic			
IMA19. I teach online students how to manage their time effectively.	45	3.73	1.23
IMA21. I do not accept assignments that are submitted after the posted deadline in my online class.	45	3.58	1.01
IMA22. I inform online students of the importance of meeting deadlines.	44	4.84	0.37
IMA23. I provide online students with a list of excuses that are acceptable for missing assignments in my course.	44	3.34	1.71
IMA24. I provide online students with a list of excuses that are unacceptable for missing assignments in my course.	43	3.28	1.71
IMA26. I inform online students of what I consider to be acceptable performance.	44	4.68	0.56

[a]Items in this group had modes of 1.

Communication. Among participants from all phases of the research project, communication was a key focus in online CTE courses. The means for questionnaire items pertaining to this skill (Table 10) were all within the "Often" to "Sometimes" range with the exception of teaching students how to paraphrase text (IMA6). The importance of communication was also depicted through modes for these questionnaire items; apart from IMA6, the mode for all questions related to communication was 5 "Always."

Table 10

Descriptive Statistics for Instructional Methods: Communication

Questionnaire Item	*N*	*M*	*SD*
IMA2. I provide instruction regarding online communication.	48	4.52	0.83
IMA3. I inform students of what is appropriate in communicating online for my class.	48	4.56	0.74
IMA4. I inform students of what is not appropriate in communicating online for my class.	46	4.28	1.09
IMA5. I teach my online students how to use English grammar and punctuation.	47	3.26	1.42
IMA6. I teach my online students how to paraphrase text.	46	2.57	1.13
IMA8. I provide examples of acceptable student responses to classmates' online discussion posts.	47	3.36	1.33

Interviewees further expounded upon communication, specifically grammatically correct communication. Monica stated, "They want to write like they talk." This sentiment was mirrored in comments by others as well. Barney mentioned that he explains to his students how inappropriate it is to use "that type of diction" in the workplace, referencing specifically the use of jargon and incorrect grammar in work-related documentation and email messages; he also stated that he discusses communication in his courses specifically as a soft skill. Jonathan described his process of sending a grammar tip to his students each week of the course, "driving that grammar piece" in his classes. Susie discussed her instructional method of pointing out explicitly what students could have improved in their writing, such as punctuation and parallelism. She described rewriting their sentences to illustrate what would have been "a better

response." Susie summarized the topic of communication by focusing her students on workplace expectations: "You will be judged on your ability to communicate, and that's not just orally but written as well."

Critical thinking. After communication, critical thinking was the soft skill given a substantial focus in online CTE courses. Means for questionnaire items pertaining to this skill (Table 11) were within the "Often" to "Sometimes" range, and the mode for all questions related to critical thinking was 5 "Always" with the exception of teaching students how to reflect upon different perspectives of an issue (IMA14).

Table 11

Descriptive Statistics for Instructional Methods: Critical Thinking

Questionnaire Item	*N*	*M*	*SD*
IMA10. I assign work in my online class that prompts students to reflect on course-related performance.	47	4.49	0.66
IMA11. I assign work in my online class that prompts students to reflect on course content.	47	4.68	0.56
IMA12. I assign work in my online class that prompts students to use problem-solving skills.	47	4.45	0.69
IMA13. I teach online students how to analyze reading materials.	47	3.47	1.23
IMA14. I teach online students how to reflect upon different perspectives of an issue.	46	3.17	1.20

Several interviewees explained their use of discussion forums as an instructional method for critical thinking by stipulating requirements such as a minimum number of words per response, a minimum number of responses (e.g., an initial post plus two unique responses to other students), and the inclusion of supporting details for their responses.

Other methods were incorporated into the discussions as well. Monica provided documents for students to critique by answering questions regarding items that were "wrong" or "lacking" in the illustration. Fred assigned a discussion in which his students watched a safety video and then offered examples of violations they observed.

Susie described the use of simulations in critical thinking activities. For example, she incorporated a hiring simulation into her human resources course. Students were introduced to three candidates and then instructed to select the best person for the position. The publisher-based system even provided students with immediate reinforcement by telling them if they had selected the correct candidate.

Although he did not indicate the use of simulations for critical thinking, Barney also incorporated an emphasis on the workplace in his comments. He discussed the issue of students who are "textbook-oriented" but unable to apply those concepts. As a first-year teacher, he acknowledged drawing on past experience in industry "working in multiple environments, multiple sectors, multiple personalities, multiple genders, [multiple] race[s] also," when working with students on their critical thinking skills. Additionally, Barney indicated a direct link between critical thinking and communication, a potential explanation for the extensive use of discussion boards in teaching both of these skills.

Teamwork. Both quantitative and qualitative data for this soft skill depicted its lack of inclusion in online instruction. As noted in Table 12, the mode for all IMA items on the questionnaire related to teamwork was 1 "Never." Furthermore, all of the standard deviations in this group were greater than 1, the only group of items regarding instruction that had this characteristic. The extremes of either including or not including teamwork

in online classes were also evidenced by the small number of participants who answered the *Student Behaviors/Teamwork* section of the questionnaire; as discussed previously, only seven individuals indicated that they used teamwork in their online courses and then answered the items related to students' behaviors in teams or groups.

Table 12

Descriptive Statistics for Instructional Methods: Teamwork

Questionnaire Item	*N*	*M*	*SD*
IMA15. I require group work in my online course(s).	46	2.37	1.27
IMA16. I teach online students how to work as part of a team.	46	2.35	1.14
IMA17. I teach online students how to complete a peer evaluation.	45	2.09	1.20
IMA18. I teach online students how to provide truthful feedback when completing an evaluation.	45	2.40	1.42

Note. Items in this group had modes of 1.

Comments from interviewees also reflected this finding. Although most of them expressed a desire to include teamwork in their online courses, only Jonathan was actually doing so at the time of the study. He found that some students were resistant, and he had to be very explicit in his expectations.

> More of my students wanted to do it individually, but I said, "I'm teaching you teamwork, so I want you to be in these teams." But I had to go in there and tell them my expectations. I had to lay it out for them in the beginning.

Many of the interviewees indicated that they were able to use teamwork in face-to-face courses, but incorporation into online classes was described as "hard" and "challenging." Monica mentioned the fact that the online students "don't know each

other, and they don't see each other." Chewie questioned whether "the educational sector has kept up in some ways" with collaboration tools that are available in industry. He expressed the desire to use a tool that was outside his college's learning management system to show students how remote meetings and collaboration such as teams or groups were possible in the business world. Susie described how she was "constantly searching the Internet and doing webinars with other colleges and [publishers]" to find creative ideas that would work in an online setting. Although they recognized the importance of teamwork as a soft skill in preparing students for the workplace, most were at a loss on how to use teams and groups effectively in their online courses.

Work ethic. As was the case with communication and critical thinking, instructors were able to incorporate methods that teach work ethic quite readily in their online courses. Questionnaire items related to this skill had means in the range of "Often" to "Sometimes," with IMA22 having the highest mean of the entire Instructors Methods and Approaches section, indicating that most of instructors focused on the importance of meeting deadlines (Table 13). The mode for all items related to work ethic was 5 "Always" with the exception of IMA21, which was 3 "Sometimes," signifying that most instructors allow students to submit assignments after posted deadlines. Although it would appear at first glance that the highest mean for IMA22 yet lower mode for IMA21 may contradict each other, this finding is explained by the qualitative data.

A large focus of the interviews was emphasis on employment, preparing students not only to enter the workforce but also to remain in the workforce. All interviewees discussed this preparation in some form during their respective interviews. Much of these conversations revolved around detailed, course-related instruction such as

instructors' expectations for following the course plan and assignment instructions, students' personal responsibility, academic honesty, and adherence to deadlines. Although instructors indicated having course policies regarding late work, most of them also had acceptable reasons for students to submit assignments they had missed.

Table 13

Descriptive Statistics for Instructional Methods: Work Ethic

Questionnaire Item	*N*	*M*	*SD*
IMA19. I teach online students how to manage their time effectively.	45	3.73	1.23
IMA21. I do not accept assignments that are submitted after the posted deadline in my online class.	45	3.58	1.01
IMA22. I inform online students of the importance of meeting deadlines.	44	4.84	0.37
IMA23. I provide online students with a list of excuses that are acceptable for missing assignments in my course.	44	3.34	1.71
IMA24. I provide online students with a list of excuses that are unacceptable for missing assignments in my course.	43	3.28	1.71
IMA26. I inform online students of what I consider to be acceptable performance.	44	4.68	0.56

Several of the interviewees mentioned "an emergency" as a valid excuse for allowing students to submit work after the posted deadlines. Barney and Monica listed medical emergencies, including situations in which a student was admitted to the hospital, although documentation would be required in those cases. Monica also mentioned death of a family member as being a "legit" excuse, but again, the student would have to submit documentation. Jonathan's response regarding his policy on late

work, specifically when students face emergencies, exhibited suggestions of an internalized reflection on personal character: “That’s just my integrity; I will allow that.” These sentiments were the consensus across interviewees, thus explaining the seeming contradiction found in the quantitative data.

RQ3. Among community college instructors of online CTE courses, what methods are being used to assess students’ soft skills of (a) communication, (b) critical thinking, (c) teamwork, and (d) work ethic?

Methods of assessing soft skills in online CTE courses were initially identified by the focus group (QUAL1). During the second phase (QUAN) of the study, those assessment methods were addressed through questionnaire items from the Instructor Methods and Approaches (IMA) section. As with the results of RQ2, quantitative data for the four skills are provided collectively (Table 14) as well as individually in the paragraphs below. Tables indicate the relevant questionnaire items, the number of responses to each item, means, and standard deviations, and the descriptive statistics are once again further illustrated through qualitative data collected during the six interviews (QUAL2).

Communication. In assessing communication (Table 15), both quantitative and qualitative data revealed that all instructors evaluated this soft skill in some form. Means for this group of items fell under the “Sometimes” category, and modes were inconsistent (IMA27 = 5, IMA28 = 4, and IMA29 = 3). Higher standard deviations also illustrated the wide range of responses for these items. Comments during the interviews further depicted these differences.

Table 14

Descriptive Statistics for Methods of Assessing

Questionnaire Item	*N*	*M*	*SD*
Communication			
IMA27. I grade online students' assignments on the use of English grammar.	42	3.36	1.34
IMA28. I grade online students' assignments on the use of punctuation.	42	3.31	1.35
IMA29. I grade online students' assignments on the use of sentence structure.	42	3.14	1.32
Critical Thinking[a]	42	2.45	1.33
IMA30. I give online students at least one assignment in which they must compare/contrast ideas.			
IMA31. I give online students at least one assignment in which they must defend both sides (for and against) of an argument.	41	1.93	1.21
Teamwork[a]			
IMA33. As part of a group assignment, online students complete peer evaluations.	41	1.73	1.07
IMA34. In online group assignments, all students in the group earn the same project grade.	41	2.17	1.48
IMA35. In online group assignments, each student's grade is based on peer evaluations.	40	1.78	1.10
Work Ethic			
IMA38. I exempt online students from certain assignments if they have a high class average.	39	1.23	0.74
IMA40. I congratulate online students who submit assignments prior to posted deadlines.	39	3.08	1.48

[a]Items in this group had modes of 1.

Although a majority of interviewees indicated that their assessment of communication included checking students' discussion posts and/or written assignments for grammar and punctuation, Fred stated that he assessed grammar on only the final assignment. Similarly, Chewie never assessed students' work for grammar, sentence

structure, or other technical skillsets related to written communication, choosing instead to focus on what students were saying rather than how they were saying it. For those who did assess grammar, punctuation, and sentence structure, the following examples were provided: misspelled words, lowercase "I" for the pronoun, use of commas, and organization. Barney and Monica explained specific assessment techniques such as deducting points in the range of 10-25% of the assignment grade. Monica also mentioned the use of oral presentations in her online courses, stating that she used rubrics to grade both written and oral communication.

Table 15

Descriptive Statistics for Methods of Assessing: Communication

Questionnaire Item	*N*	*M*	*SD*
IMA27. I grade online students' assignments on the use of English grammar.	42	3.36	1.34
IMA28. I grade online students' assignments on the use of punctuation.	42	3.31	1.35
IMA29. I grade online students' assignments on the use of sentence structure.	42	3.14	1.32

Critical thinking. As indicated in Table 16, means for this group of items fell in the range of "Rarely" to "Never," and the modes were 1 "Never." The minimal use of assessment for critical thinking was also reflected to some extent in the qualitative data. Although interviewees stated that they were looking for thoughtful responses to discussion posts and relevant application of course concepts, none of them provided details on how those assessment methods translated into grades. Susie discussed the use of simulations in which students were provided feedback on whether they chose the

correct options; however, she did not specify whether choosing incorrect options affected their grades on the assignment or if they were simply given grades for completing it.

Table 16

Descriptive Statistics for Methods of Assessing: Critical Thinking

Questionnaire Item	*N*	*M*	*SD*
IMA30. I give online students at least one assignment in which they must compare/contrast ideas.	42	2.45	1.33
IMA31. I give online students at least one assignment in which they must defend both sides (for and against) of an argument.	41	1.93	1.21

Note. Items in this group had modes of 1.

Teamwork. As seen with critical thinking, means for questionnaire items related to teamwork fell between "Rarely" and "Never," with modes for all items at 1 "Never" (Table 17). These results were once again reflected in the qualitative data as only Jonathan was incorporating teamwork into his online courses at the time of the study. He discussed using rubrics to grade the teams' projects, which were submitted in the form of a PowerPoint presentation. He also expressed the desire to add a self-evaluation for students, which would be in the form of a rubric as well. No other details for assessing teamwork were provided by the interviewees.

Work ethic. Data for assessing work ethic were mixed, both quantitatively and qualitatively. Results of the questionnaire items related to work ethic were dissimilar (Table 18), with the mean for IMA38 in the "Never" range and IMA40 in the "Sometimes" range. Additionally, the mode for IMA38 was 1 "Never"; however, there were two modes for IMA40—5 "Always" and 3 "Sometimes." From these, it would appear that instructors are much more likely to congratulate online students for

submitting assignments prior to deadlines than they are to exempt them from assignments if they have class averages at or above a certain level. Interestingly enough, neither of these practices was discussed during the interviews.

Table 17

Descriptive Statistics for Methods of Assessing: Teamwork

Questionnaire Item	*N*	*M*	*SD*
IMA33. As part of a group assignment, online students complete peer evaluations.	41	1.73	1.07
IMA34. In online group assignments, all students in the group earn the same project grade.	41	2.17	1.48
IMA35. In online group assignments, each student's grade is based on peer evaluations.	40	1.78	1.10

Note. Items in this group had modes of 1.

Table 18

Descriptive Statistics for Methods of Assessing: Work Ethic

Questionnaire Item	*N*	*M*	*SD*
IMA38. I exempt online students from certain assignments if they have a high class average.	39	1.23	0.74
IMA40. I congratulate online students who submit assignments prior to posted deadlines.	39	3.08	1.48

As was the case with instructional methods, interviewees focused largely on adherence to deadlines, following instructions, and academic honesty when discussing online students' work ethic. Failure to abide by any of these three resulted in either reduction of grades or, in some cases, grades of zero. Monica stated that full credit for assignments was not given in cases where students missed deadlines, but "anything beats

a zero." Fred reduced students' grades for not following instructions due to the fact that he was "very clear" on what he required. Chewie also used point reduction in assessing students' discussion posts if they failed to explain concepts fully. Fred discussed giving grades of zero in certain cases, such as when students submitted the wrong type of file; however, he allowed them to resubmit for full credit: "I'm giving them that zero to wake them up, so they look at the assignment."

When asked how comfortable he was in assessing online students' work ethic, Fred indicated that he was "very comfortable because students that cheat don't do it well." Jonathan and Monica both discussed giving grades of zero to students who cheat, although Monica also mentioned giving one grade and dividing it in half so that each student received half of the original grade. Methods of determining if students were cheating included the use of electronic resources such as Turnitin® for plagiarism (Susie) or file properties in Microsoft® Word® for students who submitted the same work (Fred and Jonathan). With regard to exams, all instructors offered at least one proctored exam in their courses; however, exams that were not proctored were considered, for the most part, to be open-book, thus eliminating the cheating aspect with regard to exams taken outside a proctored setting.

RQ4. Among community college instructors of online CTE courses, when courses end, to what extent are behavioral characteristics being observed in students' (a) communication, (b) critical thinking, (c) teamwork, (d) work ethic, and (e) overall employment readiness?

Similar to RQ1, five questionnaire items referenced students' behaviors at the end of online courses (Table 19). These were the same five items (Table 8) with the

exception of timepoints. Means for all items remained in similar ranges; both items related to communication (SBC1 and SBC2) as well as the item related to teamwork (SBT3) fell in the range of "Sometimes," whereas means for the two items related to critical thinking (SBCT2 and SBCT3) were in the "Rarely" range. However, all means were higher than the respective means of questionnaire items related to students' behaviors when the semester began. Once again, no items were included that measured students' work ethic behaviors.

Table 19

Descriptive Statistics for Student Behaviors at End of Semester

Questionnaire Item	*N*	*M*	*SD*
Communication			
SBC18. At the end of the semester, online students communicate ideas and information well.	34	3.50	0.62
SBC19. At the end of the semester, online students compose written communication that is easily understood.	33	3.55	0.62
Critical Thinking			
SBCT14. At the end of the semester, online students compare/contrast effectively.	31	2.90	1.04
SBCT15. At the end of the semester, online students effectively argue both sides (for and against) of an issue.	30	2.73	1.05
Teamwork			
SBT15. At the end of the semester, online students exhibit a willingness to learn from others.	7	3.71	0.76

Questionnaire items that were used to measure the construct of students' overall employment readiness yet again reflected instructors' lack of confidence related to observing students' teamwork behaviors. As indicated in Table 20, means for all items in

Table 20

Descriptive Statistics for Student Behaviors/Overall Employment Readiness

Questionnaire Item	*N*	*M*	*SD*
SBO1. Online students take responsibility for their own actions.	30	3.27	0.64
SBO2. Online students adhere to class deadlines.	30	3.57	0.77
SBO3. Online students' interactions with the instructor are professional.	30	3.90	0.55
SBO4. Online students' interactions with the instructor are polite.	30	3.97	0.56
SBO5. Online students' interactions with the instructor are respectful.	30	4.00	0.59
SBO6. Online students' interactions with classmates are professional.	30	4.00	0.46
SBO7. Online students' interactions with classmates are polite.	30	4.03	0.49
SBO8. Online students' use of English grammar and punctuation is consistent among assignments and personal communication (i.e., electronic messages).	30	3.47	0.57
SBO9. Online students' written assignments are on-topic.	30	3.50	0.57
SBO10. Online students' written assignments are relevant to content.	30	3.77	0.68
SBO11. Online students' comments during class discussions are ethical.	30	4.00	0.64
SBO13. Online students' representation of themselves is consistent among written assignments, recorded online presentations, and face-to-face meetings.	30	3.87	0.51
SBO14. As an instructor, I feel confident that I know my online students.	30	3.40	0.81
SBO15. As an instructor, I feel confident that I know my online students' abilities to work as part of a team.	30	2.43	0.86

this group were in the range of "Sometimes" to "Often" with the exception of the sole item related to teamwork. Instructors' self-reported confidence in knowing their online students' teamwork abilities averaged in the "Rarely" range. Interestingly, the mode for this item was 3 "Sometimes"; however, only two respondents answered 4 "Often," and no one answered 5 "Always."

The extent to which behavioral characteristics of students taking online CTE courses were observed at the end of the semester was measured quantitatively through both MANOVA and regression tests. Due to the low number of respondents for questionnaire items related to teamwork (Table 19) and the lack of questionnaire items measuring work ethic at the end of the course, only communication and critical thinking were included in statistical testing comparing behaviors at timepoints. Results of the repeated-measures MANOVA to compare behavioral characteristics at the beginning and end of the course as well as related comments from interviewees (QUAL2) are reported after RQ4. Results of the regression to determine whether communication and critical thinking behaviors at the end of the semester would predict students' overall employment readiness are detailed below (end-of-semester regression). A second regression model was then run to determine whether the remaining questionnaire items for communication, critical thinking, and work ethic ("Other" regression) would predict students' overall employment readiness; these results are detailed after results of the first model.

End-of-semester regression. Results of the regression to determine whether communication and critical thinking behaviors at the end of the semester would predict students' overall employment readiness were significant ($F(2, 27) = 4.05$, $p = .03$), and 23.1% of the variance in students' overall employment readiness can be explained by the

model (R^2 = .231). All assumptions were met, and the model's distribution was normal in skewness (pseudo z = -0.095 / 0.427 = -0.22) and kurtosis (pseudo z = 0.430 / 0.833 = 0.52). Outcomes of the standardized coefficients revealed that students' communication behaviors at the end of the semester had the greater impact on overall employment readiness (β = .50, $t(26) = 2.85$, p = .01). The standardized coefficient for critical thinking behaviors was not significant (β = -.14, $t(26) = -0.77$, p = .45).

"Other" regression. A second regression model was run to determine whether students' behaviors other than those at the beginning and end of the semester (Table 21) would predict their overall employment readiness. "Other" items for students' communication behaviors resulted in means within the range of "Sometimes" with the exception of SBC10, which was in the range of "Rarely." Means for Other items for critical thinking behaviors were mixed but also falling in the range of "Rarely" to "Sometimes." Means for Other items related to work ethic showed greater variety, falling in the ranges of "Rarely" to "Often." Some of these work ethic items were also recoded into new variables in order to reverse scoring, providing a consistent reflection of work ethic behavior for the model. Due to the low number of respondents, Other items for teamwork behaviors were not included in the model.

Table 21

Descriptive Statistics for Student Behaviors – "Other"

Questionnaire Item	*N*	*M*	*SD*
Communication			
SBC3. Online students compose written communication using correct spelling.	37	3.24	0.72

Table 21 (continued).

Questionnaire Item	*N*	*M*	*SD*
SBC4. Online students compose written communication using correct punctuation.	37	3.08	0.60
SBC5. Online students compose written communication using the rules of proper English grammar.	37	3.00	0.62
SBC7. Online students respond appropriately to messages from others.	37	3.49	0.56
SBC8. Online students respond to several discussion posts from classmates.	36	3.50	1.13
SBC9. Online students ask questions that exhibit an interest in two-way communication.	36	3.08	0.84
SBC10. Online students tailor language, tone, style, and format to match the audience.	35	2.77	0.91
SBC11. Online students demonstrate openness in sharing information.	34	3.12	0.69
SBC12. Online students are courteous in communicating with others.	34	3.88	0.64
SBC13. Online students demonstrate knowledge of having read instructor's posted announcements.	34	3.18	0.63
SBC14. Online students communicate with peers in the course site and/or learning management system.	34	3.18	0.90
SBC15. Online students communicate effectively with the instructor in the course site and/or learning management system.	33	3.61	0.66
SBC16. If instructor does not answer the phone, online students leave a voice mail.	34	3.38	0.92
Critical Thinking			
SBCT1. In responding to discussion board prompts, online students demonstrate their analysis of reading materials by making perceptive comments.	32	3.31	0.64
SBCT6. Online students' responses to classmates' discussion posts consist of thorough responses.	31	2.97	0.88
SBCT7. Online students provide several possible explanations or alternatives for a situation.	31	2.58	0.96
SBCT9. Online students show initiative to find out something they do not know.	31	3.19	0.60

Table 21 (continued).

Questionnaire Item	*N*	*M*	*SD*
SBCT10. Online students undertake a complex task by systematically breaking it down into manageable, detailed steps.	31	2.87	0.67
Teamwork			
SBT1. Online students work collaboratively with classmates to achieve goals.	7	3.86	0.90
SBT2. Online students solicit input from teammates.	7	3.71	0.95
SBT4. Online students support the final group decision.	7	3.71	0.76
SBT5. Online students act in accordance with the final group decision.	7	4.14	0.90
SBT6. Online students share credit for team accomplishments.	7	4.43	0.54
SBT7. Online students accept joint responsibility for team shortcomings.	7	3.71	0.76
SBT8. If there is conflict among team members, online students resolve it with minimal intervention from the instructor.	7	3.71	0.76
SBT9. Online students exhibit maturity in awarding credit on peer evaluations.	7	3.29	0.76
SBT10. Online students exhibit professionalism in awarding credit on peer evaluations.	6	3.33	0.82
SBT11. Online students are spiteful when completing peer evaluations.	7	2.00	0.58
SBT12. When working in teams, online students allow sufficient time for completing group projects.	7	3.29	0.76
SBT14. Online students are cooperative when working in groups.	7	4.00	0.00
Work Ethic			
SBWE1. Online students demonstrate that they have read the instructor's attendance, late/make-up work, academic honesty, and other policies as expressed in the course syllabus.	30	3.67	0.80
SBWE3. Online students offer valid excuses when missing assignments. ("valid" – as specified in the course syllabus)	30	3.17	0.83

Table 21 (continued).

Questionnaire Item	*N*	*M*	*SD*
SBWE5. To my knowledge, online students access instructional materials more than a day before assignment deadlines.	30	3.60	0.68
SBWE6. To my knowledge, online students access instructional materials less than a day before assignment deadlines.[a]	30	2.83	0.59
SBWE7. Online students access assignments more than a day before posted deadlines.	30	3.57	0.68
SBWE8. Online students access assignments less than a day before posted deadlines.[a]	30	2.87	0.68
SBWE10. Online students submit assignments less than 2 hours before deadlines.[a]	30	2.77	0.73
SBWE12. Online students follow the instructor's class rules.	30	3.83	0.38
SBWE14. Online students demonstrate that they have read instructional materials.	30	3.47	0.68
SBWE15. Online students are courteous toward others in their discussion board posts.	30	4.10	0.61
SBWE16. Online students are respectful toward others in their discussion board posts.	30	4.20	0.55
SBWE17. Online students express a desire to know how to correct assignment errors.	30	3.50	0.68

[a]Item was recoded for reverse scoring.

Results of the second regression, determining whether students' behaviors for communication, critical thinking, and work ethic other than at the beginning and end of the semester would predict their overall employment readiness, were significant ($F(3, 24) = 5.33$, $p = .01$), and 40% of the variance in students' overall employment readiness can be explained by the model ($R^2 = .400$). All assumptions were again met, and this model's distribution was also normal in skewness (pseudo z = -0.009 / 0.441 = -0.02) and kurtosis (pseudo z = -0.528 / 0.858 = -0.62). Although not individually significant, outcomes of the standardized coefficients revealed that students' work ethic

behaviors had the greatest impact on overall employment readiness (β = .36, $t(23) = 1.66$, $p = .11$). Communication (β = .35, $t(23) = 1.38$, $p = .18$) was next, and critical thinking behaviors (β = -.30, $t(23) = -0.15$, $p = .88$) ranked third in this model.

Qualitatively, results were similar to the second regression model in that communication and work ethic behaviors were discussed by interviewees to a greater extent than critical thinking, although all four skills were considered to be important in the workplace. Students' behaviors for each of the four skills are outlined individually in the paragraphs that follow. After the soft skills, behaviors observed by interviewees regarding online students' overall employment readiness are provided as well.

Communication. Positive, and perhaps even encouraging, behaviors of students communicating with both classmates and instructors included correct interpretation of others' comments as well as an atmosphere of respect when opinions differed. Most of the interviewees discussed this to some degree, and all of them indicated that their students were able to disagree respectfully when necessary. Only Jonathan quantified his online students' ability to interpret meaning: "I would say maybe 70% of the time." The sole deviation from this positive feedback came in Monica's discussion of students' reading comprehension, specifically with regard to assignments and the textbook: "They're not comprehending what it's telling them to do."

The other side of students' communication behaviors showed characteristics that were not as positive, such as students' use of "text" language and overall incorrect grammar in course-related communications. Additionally, certain aspects of communication were not fostered through online learning. For example, Monica stated

that she was unable to observe online students' nonverbal communication. A lack of nonverbal communication could also contribute to Chewie's dilemma:

> It's hard to get my students to do much more than basic commenting on each other's . . . you know, I want a discussion going. I want them to feed off each other.

One last behavior that was discussed by many of the interviewees was students' methods of communicating, especially with their instructors. A majority of online students chose electronic messaging through either their institutions' email systems or the learning management system's messaging feature. Although some of the interviewees instructed students to use electronic messaging as their first option of contact, others expressed the desire for more students to call them on the telephone. Monica's comments were particularly expressive:

> When the ones pick up the phone and call me, and they can hear my voice, my demeanor, or my tone, and we laugh and we joke, they realize, "Oh yeah, she is human!" But I make them feel more at ease, and I think I make 'em feel more comfortable. And then they know, "Yeah, I can call her. I can call her again when I do have questions, and she's genuinely sincere."

Critical thinking. Although specific critical thinking behaviors were not discussed in much detail, several of the interviewees commented on students' maturity levels when considering how they responded to course-related critical thinking. Monica referred to the differences between first-year and second-year students when observing how they understood and applied course concepts. Chewie's experience with younger college students was similar: "I have the 18- to 20-year-olds who think [critical thinking]

is hard." Susie's observation was likewise comparable; however, she took her comments a step further than Monica and Chewie:

> I think one of the disservices that we do is that we have students come right out of high school, and some choose to go directly into fully online college. . . . I don't feel like an immature student should be in an online class.

Teamwork. Although teamwork behaviors were not observed by most interviewees due to the challenges they faced when attempting to incorporate this skill into their online classes, one characteristic mentioned by Jonathan is noteworthy: "More of my students wanted to do [the group project] individually." He stated that many students complained about working in teams. Furthermore, he had originally included the peer evaluation as a bonus assignment but then had to require it because very few students were completing that piece of the project.

Jonathan also mentioned instances when all team members did not participate at the same level. There have been cases in which he has had to intervene. The warning to those students usually motivates them into action; however, he has experienced students who then blamed other team members for not contributing as well. Nevertheless, "most of the time, it's okay."

Work ethic. Online students' work ethic behaviors, as discussed by the interviewees, fell into one of three primary categories: academic honesty, adherence to the instructor's plan for the course, and effort in completing assignments. All interviewees mentioned at least one of these categories when describing their students' behaviors and how those characteristics then related to work ethic. Academic honesty included cheating, something that most of these instructors said did not happen regularly.

When they did come across instances of dishonesty, usually a warning from the instructor was enough. According to Fred, "So far, I have not had to dismiss anybody for it."

Many of the interviewees discussed the plan they had for students' to progress through their courses. For some, their plan included the order in which students should complete course-related tasks. In Jonathan's courses, assignments were set to open on Monday morning and close on Sunday night. Students' initiative in knowing and following his plan was one way that he observed work ethic. Although instructors allowed some leeway at the beginning of the course for students to learn their plan, they agreed that students followed their progression for the most part after that learning period.

Students' level of effort when participating in the course and completing their assignments showed a different side of work ethic, however. Many of the interviewees expressed frustration at their students' lack of effort. Barney stated, "Sometimes I'm a little frustrated because the students don't put forth the effort." Monica indicated that she ties this aspect back to the ultimate goal—employment:

> I tell 'em a lot of times that this is their job. School is their job. You know, the percentage that they're giving me. "If you're giving me 90-100%, then that's what you're gonna give on your job."

Overall employment readiness. Although a couple of the interviewees expressed their confidence in using students' grades to determine their overall employment readiness, other behavioral characteristics were also mentioned. Chewie brought students' effort level back into the discussion, stating that students who did not put much effort into their classes "probably wouldn't put any effort into the employee relationship

either." Fred listed punctuality and ability to follow instructions as behaviors that he observed when considering students' overall employment readiness. He then went a little further:

> Was their homework neat and complete? Did they follow instructions in the correct order? How much coaching did I have to do?

Several of these instructors felt that their industry-based work experience gave them insight into students' readiness for the workforce. Susie stated, "I know what employers are looking for, and I wanna make sure that [students] are grasping that." Barney also pulled from his industry background, indicating that companies no longer hire expertise but instead "want the right 'fit' for the right position." He further included students' social skills in their overall employment readiness, explaining that today's employees need to be able to interact effectively in settings outside the office as well.

MANOVA: Comparing Behaviors at Beginning and End of Semester

A repeated-measures, within-subjects MANOVA was used to analyze the data for any difference in students' behaviors at the beginning and end of the semester. As with the regression models, only students' communication and critical thinking behaviors were included due to the low number of respondents for questionnaire items related to teamwork and the lack of items related to beginning and ending work ethic behaviors. All assumptions were met, and results of the repeated-measures MANOVA were significant ($F(2, 29) = 5.19$, $p = .01$, $\eta_p^2 = .26$) when referencing Wilks' Lambda. Descriptive statistics (Table 22) for each timepoint of both behaviors showed higher means at the end of the semester; pairwise comparisons (Table 23) indicated that those differences were indeed significant for both communication and critical thinking. These

significant differences were also seen in univariate tests for students' communication ($F(1, 30) = 5.60$, $p = .03$, $\eta_p^2 = .16$) and critical thinking behaviors ($F(1, 30) = 10.52$, $p = .003$, $\eta_p^2 = .26$).

Table 22

Repeated-measures MANOVA: Descriptive Statistics

Comparisons of Student Behaviors	*M*	*SD*
Communication		
At beginning of semester (SBCbeg_mean[a])	3.18	0.68
At end of semester (SBCend_mean[b])	3.50	0.59
Critical Thinking		
At beginning of semester (SBCTbeg_mean[c])	2.42	0.82
At end of semester (SBCTend_mean[d])	2.84	1.03

Note. $N = 31$.
[a]Questionnaire items SBC1 and SBC2. [b]Questionnaire Items SBC18 and SBC19. [c]Questionnaire items SBCT2 and SBCT3.
[d]Questionnaire items SBCT14 and SBCT15.

Table 23

Repeated-measures MANOVA: Pairwise Comparisons

						95% CI for Difference	
Measure	(I) time	(J) time	Mean Difference (I-J)	*SE*	Sig.[a]	*LL*	*UL*
SBC	1	2	-0.32	0.14	.025	-0.60	-0.04
	2	1	0.32	0.14	.025	0.04	0.60
SBCT	1	2	-0.42	0.13	.003	-0.68	-0.16
	2	1	0.42	0.13	.003	0.16	0.68

Note. Based on estimated marginal means.
[a]Adjustment for multiple comparisons: Bonferroni.

Qualitative results matched those found in the quantitative testing. Both Chewie and Monica observed improvements in students' communication from the beginning to

end of a course. Chewie specified the improvement as being in students' comments, such as discussion board activities. Monica expressed that second-year students exhibited more growth than first-year students, speculating that the differences could be from the aspect of maturity. She found this growth to be especially true in her online business letter-writing course, a second-year course where she could see not only maturity but also a firm understanding of course content: "They finally grasp the whole writing concept."

As related to critical thinking, Jonathan also weighed in, stating that students at the beginning of the semester "know how to get by in their work." However, by the end of the semester, he said that some of them are appreciative and thank him for how much they learned throughout the course. Monica confirmed these thoughts, indicating that her letter-writing students "put more thought into it" and wrote with "more common sense" as the semester wore on. Chewie likewise expressed that students began "really putting more effort into it" over the semester:

> It seems that they are starting to think along the e-commerce topic; they're thinking more like marketers.

Emerging Qualitative Themes

In coding, categorizing, and finally interpreting the qualitative data (Seidman, 2013), several themes were consistent across students' behavioral characteristics, introducing and teaching soft skills, and assessing soft skills. Following is a synopsis of emergent themes. The relationship between themes and related literature is discussed in Chapter 5.

Value in the workplace. Interviewees discussed at length the importance of soft skills in the workplace, many of them calling upon their experiences of working in

industry when relaying this message to their online students. This emphasis on employment included not only workforce preparation but also workforce retention as these community college instructors stressed the value employers place on employees who exhibit effective soft skills. This theme was the driving force behind a majority of the qualitative data collected throughout this study.

Grammatically correct communication. All interviewees discussed communication to some degree, and most of them taught and assessed this fundamental skill. That being said, even interviewees who did not always grade students' use of grammar effectually stressed its importance in the workplace. Chewie chose to "focus on the content and the discussion" instead of grammar in his assessments. However, he also stated that students "would need to clean it up a lot" in the business world. For example, students' use of "text" language was specifically mentioned as being an unacceptable form of communication in any professional setting. By indicating their expectations as part of course instruction, these interviewees brought to light the importance of using grammar correctly in not only their courses but also the 21st century workforce.

Adherence to deadlines. The topic of students' sense of responsibility for adhering to deadlines was integrated into all three phases of the study and deliberated at length in the two qualitative phases. Punctuality and meeting deadlines were consistently indicated as behaviors that focus group members and interviewees observed and incorporated into their instruction and assessment of students' work ethic behaviors as well as their overall employment readiness. Focus Group Member 8, who was preparing his students to deal with construction-related mishaps, described his emphasis on meeting

deadlines with a direct correlation to employment status; missing a deadline was grounds for termination:

> That's something I use in my class all the time. You would've just got fired over that. When I give 'em the zero, it's basically like me saying, "You just got fired." 'Cuz in the real world, you would've just lost your job.

Although other instructors were more forgiving, all stressed the behavior of adhering to set deadlines. Its importance was further observed and confirmed through the current study's quantitative data as work ethic behaviors were found to be significant predictors of students' overall employment readiness, thus completing triangulation of this emerging theme.

Summary

Detailed in this chapter were the results of this exploratory-explanatory, mixed methods study investigating soft skills of students enrolled in online CTE courses. Quantitative data (QUAN) explored data collected during the first qualitative phase (QUAL1), and data from the second qualitative phase (QUAL2) explained the QUAN phase's data. Both quantitative and qualitative data were then provided in answer to the study's four research questions; results of statistical testing were mixed with regard to significance. Finally, three emerging, qualitative themes that consistently appeared in data from all four research questions were noted. Relationships of these emergent themes with literature related to soft skills as well as other conclusions from the study are discussed in the next chapter.

CHAPTER V – DISCUSSION

The purpose of this study was to investigate specific, employer-desired soft skills of community college students who are enrolled in online CTE courses. The study first identified methods of introducing and teaching the concept of soft skills to online students as well as approaches for assessing students' development of those skills. After identifying instructional and assessment methods, the study then explored instructors' perspectives of online CTE students' behavioral characteristics and skill level in the four specified soft skills—communication, critical thinking, teamwork, and work ethic—and instructors' perspectives of online CTE students' overall readiness for employment in their respective CTE focus areas. This discussion of the study provides a brief summary of the results as well as conclusions and implications of those results as related to both soft skills and the field of adult education. Limitations of the study and recommendations for future research on the topic of soft skills, specifically with a focus on CTE at community colleges, are also presented. The chapter concludes with implications of the study for instructors who are preparing online CTE students for field-related employment.

Summary of Findings

Quantitative answers to the research questions were both significant and not significant, and qualitative data provided a deeper explanation of the results. A summary of these findings is given below in order of the research questions, with the comparison of students' behaviors at beginning and end of courses explained last.

Research Question 1 questioned the extent to which students' behavioral characteristics were being observed when courses began. Only two of the four skills

were included in the regression model; it revealed that communication and critical thinking behaviors at the beginning of the semester were not significant predictors of students' overall employment readiness. The finding of no significance at this point actually validates occupational education in that students are in need of improvement with regard to their communication and critical thinking skills when classes begin. A finding of significance at this point could have created more questions than answers about education and its purpose.

Research Question 2 sought to identify instructional methods being used to teach the four soft skills. Examples of methods used in teaching each of the four skills were as follows: importance of grammatically correct communication; use of discussion forums and simulations for critical thinking; specific assignment instructions, especially with teamwork assignments; and adherence to deadlines for work ethic. Much emphasis was placed on the employment aspect in not only preparation for the workforce but also retaining positions once students have entered into employment. Interestingly, although most instructors stressed meeting deadlines in both qualitative phases as well as the quantitative phase, many of them allowed students to make up assignments that were missed due to emergency situations, as was explained by the interviewees.

Research Question 3 asked for methods that were being used to assess soft skills in online courses. Examples of assessment methods were as follows: use of rubrics for grading, writing assignments that were graded for grammar and thoughtful responses, grade reduction for not following instructions or adhering to deadlines, and use of electronic resources such as Turnitin® for assessing academic honesty. Most of the interviewees stated that they were comfortable assessing students' soft skills, even though

not all of them actually did. For example, although many assessed for correct grammar, some did not. Mixed responses on assessment of communication were likewise observed in the questionnaire, with a majority of instructors indicating that they always graded online students' use of grammar; however, punctuation and sentence structure were not always assessed.

Research Question 4 looked to determine the extent to which students' behavioral characteristics were being observed when courses ended. Along with the four soft skills, it included a component for students' overall employment readiness. Only two of the four skills were included in the first regression model, and these findings revealed that communication and critical thinking behaviors at the end of the semester were indeed significant predictors of students' overall employment readiness. A second regression model revealed that students' communication, critical thinking, and work ethic behaviors at other points during the semester (not the beginning or end) were also significant predictors of their overall employment readiness. Qualitative discussions similarly reflected communication, critical thinking, and work ethic skills primarily in relation to students' overall employment readiness. Examples of student behaviors that were provided by the interviewees were as follows: use of "text" language in written communication, respectfulness toward classmates and instructors, preference for working individually instead of in groups, ability to follow instructions, and punctuality.

A separate test was conducted to compare students' skill levels at the beginning of the semester and at the end. Once again, only communication and critical thinking were included in this MANOVA. Findings revealed that students improved significantly in these two skills from the semester's starting point to its ending point. This improvement

was further detailed through comments from the interviewees, which included an aspect of appreciation at the end of the semester in which students thanked one instructor for everything they had learned in his course.

Conclusions

The relationship between results of the research study and related literature was mixed, providing both consistencies and inconsistencies with regard to teaching and assessing soft skills. Previous studies concluded that soft skills were not easily taught or assessed in a classroom setting (Mitchell et al., 2010; Moore & Pearson, 2017), although results of the current study indicated that some skills were more easily taught and assessed than others. For example, the low number of questionnaire participants who answered the section regarding teamwork, as well as the sole interviewee who actually used teamwork in an online course, confirmed literature resoundingly in that this soft skill is challenging to teach and assess. On the other hand, most of the participants in this study expressed that they were able to teach and assess communication quite well, which contrasted with related literature regarding soft skills.

Methods of assessment used by participants in the study were also reflected in literature. Pretests and posttests, class projects, observations, and oral presentations were indicated as forms of assessing soft skills (Beard et al., 2008; Blaszczynski & Green, 2012; Chan, 2011; Mitchell & Durham, 2010; National Research Council, 2011), and all of these were discussed at some point during the interview phase (QUAL2) with the exception of observations. Simulations have also more recently been promoted as a current innovation in the assessment of soft skills (Lozar Glenn, 2018), and Susie spoke at length about her use of simulations in assessing online students' critical thinking skills.

Research findings further supported the idea that more than one method may be required to assess soft skills (Blaszczynski & Green, 2012). The current study reinforced this supposition, specifically when discussion forums in online courses provided insight into students' behavioral characteristics of communication, critical thinking, and even work ethic, yet did not diminish the importance of writing assignments, projects, pretests/posttests, and oral presentations as well in assessing these skills.

The Four Soft Skills

Communication was mentioned in the literature as a fundamental action of workplaces in the 21st century (Al-Alawneh, 2011; Ali et al., 2017; Guffy & Loewy, 2013; Makhathini, 2016; Rao, 2010; Tulgan, 2015), and findings from the current study supported its importance in online courses as well. A majority of participants agreed to the essentiality of communication skills. The use of discussion forums in teaching and assessing communication was widespread among participating instructors. However, these asynchronous methods do not cultivate the nonverbal piece of communication, which was also deemed noteworthy in the literature (Anders, 2015; Guffy & Loewy, 2013; Halbe, 2012; Rao, 2010).

As with communication, the significance of critical thinking in the current study with regard to changes in students' behavioral characteristics from the beginning to end of a course, as well as its status as a predictor of students' overall employment readiness, confirmed its importance as expressed by literature (Ali et al., 2017; Özyurt, 2015; Schulz, 2008; Tulgan, 2015). Interview participants also referred to critical thinking as a vital soft skill but cited maturity level as a potential confounder of students' abilities when relaying their thoughts on behavioral characteristics. Barney further indicated a

direct link between communication and critical thinking, confirming a relationship expressed by Tulgan (2015).

Teamwork was also linked to communication in related literature (Rao, 2010; Tulgan, 2015), as teams must communicate in order perform tasks effectively. In order to do so through a virtual or online setting, they must have access to requisite collaboration tools. The inability of the current study to find significance with regard to teamwork was not reflective of its importance as a soft skill (Ali et al., 2017; Hughes & Jones, 2011; Loughry et al., 2014; Rao, 2010; Robles, 2012; Schulz, 2008; Tulgan, 2015); it was more likely due to the low number of participants who used it in their online courses. As noted in Table 12, all items related to teams in the Instructor Methods and Approaches section of the questionnaire had modes of 1 "Never." An adjunct instructor who was working full-time in industry, Chewie lamented the fact that he felt constrained by the learning management system due to its lack of relevant, up-to-date collaboration tools. In order to be effective in teaching and using teamwork in his courses, he expressed intentions to "take it off Canvas and use something much like they would use in the business world," a practice which would indeed provide students with experience they did not have within Canvas, the learning management system used by community colleges across the state.

With regard to work ethic, personality traits of honesty, integrity, and sense of responsibility that were evident in literature (Miller et al., 2002; Robles, 2012; Velasco, 2012) were also seen in the current study. Students' behaviors regarding class-related issues such as missing assignments or cheating were explored through the questionnaire and validated by interviewees. The finding that work ethic is a significant predictor with

regard to overall employment readiness reinforced the importance of this soft skill in preparing these adult learners for the workforce.

Theoretical Conclusions

The conceptual framework that served as a foundation for research began with the *Employability Skills Framework* (OCTAE, n.d.) and then integrated the theories of transformative learning and learning transfer. All four of the soft skills being investigated—communication, critical thinking, teamwork, and work ethic—are considered in literature to be important to employers (Al-Alawneh, 2011; Ali et al., 2017; Makhathini, 2016; Rao, 2010; Tulgan, 2015) and are included in the *Framework*. A majority of the results of this research supported that importance. Due to these community college instructors' struggle to incorporate teamwork in online CTE courses, however, theoretical conclusions based on results of the current study were mixed.

Failure by the majority of study participants to include teamwork in online CTE courses produced a hypothetical gap in the *Framework's* Effective Relationships category. Although work ethic is also included under Effective Relationships and was found in the study to be a predictor of students' overall employment readiness, it focuses more on Personal Qualities and in no way compensates for a soft skill that concentrates on and requires Interpersonal Skills. The presence of this gap does not allow for a conclusion of the study's complete support for the *Framework*. It does, however, indicate a need for future research, which is discussed later in this chapter.

In considering transformative learning, the study's significant findings of students' improvement in behavioral characteristics of communication and critical thinking throughout their online courses proved that the potential for a changed

perspective in learning transfer, discussed by Leberman et al. (2006), was indeed a possibility. The findings also proved that the transformative learning piece in the study's conceptual framework was applicable and requisite. Although students' improvements in communication and critical thinking may not, in themselves, have been enough to constitute a disorienting dilemma, they could have served as the slower, incremental changes that result in a transformed habit of mind (Merriam et al., 2007) as well as an improvement of understanding and actions through meaningful learning (Mezirow, 2012).

The use of discussion boards, as referenced in the literature (Hall, 2015) and as considered by the interviewees, allowed for reflective discourse and reflection. Additionally, Fred's "Top 10 Things I Learned" assignment served as an example of his encouraging students' self-reflection on things they had learned throughout the semester. The fact that he graded this assignment for communication skill as well as incorporated students' critical thinking indicated that he was promoting at least some of the transformative learning phases. As a whole, these findings supported transformative learning in online CTE courses.

Lastly, the significant findings for communication, critical thinking, and work ethic as predictors of students' overall employment readiness supported the theory of learning transfer, specifically as related to employability and job proficiency, which have become known as goals of education and an intentional aspect of adult education (Botma et al., 2013; Foley & Kaiser, 2013; Green, 2013). Although being predictors of overall employment readiness would not necessarily indicate that transfer of learning will occur,

this piece of the conceptual framework is linked directly to the study's relevance to adult education, and specifically workforce development, as discussed in the next sub-section.

Relevance to Adult Education

Findings from the current study supported the fact that Web-based settings do not facilitate social connections as well as face-to-face settings, forcing these adult educators to be intentional when designing their online courses in an effort to foster transformative learning and learning transfer (Merriam et al., 2007; Smith, 2012). For adults who are preparing to enter the workforce and need a transformation of their soft skills behaviors, or maybe even just improvement of their skills, these conclusions were both relevant and timely. Furthermore, given the increasing numbers of postsecondary CTE students who are taking online courses, which limits their exposure to not only professional development opportunities provided through career and technical student organizations but also relationships with instructors and advisors, many of these adult learners are not being recommended for employment opportunities that become available (Garza Mitchell, 2017; Githens et al., 2012). With the focus on workforce development, now a critical challenge for community colleges (Wilson et al., 2015), the results of this study could potentially allow instructors to have faith in the educational process and believe that these online adult learners are indeed improving in the behaviors of soft skills as they are also improving in technical (hard) skills.

Only one of the interviewees (Monica) indicated that she would recommend an online student for employment, and she based her assumption on students' grades in her classes. Perhaps other instructors—including the researcher—should consider this approach more carefully if they have done their part in designing online courses to

incorporate as many soft skills as possible, as well as designed their courses to foster transformative learning and to assess students' behavioral characteristics adequately. More discussion on this implication of the study is provided later in this chapter when considering how these conclusions can be applied in practice.

Limitations

As noted in related literature, the concept of soft skills consists of a wide range of characteristics and abilities, and the demand for specific skills can vary due to time, occupation, or geographic location (Al-Alawneh, 2011; Lozar Glenn, 2018; Makhathini, 2016; Miller et al., 2013; National Soft Skills Association, n.d.; Rao, 2010; Tulgan, 2015). In an effort to manage this research project and allow adequate space for investigating specific, employer-desired soft skills, the researcher focused on four skills based on their relevance in current literature—communication, critical thinking, teamwork, and work ethic. Despite significant findings on three of the four skills, specifically communication, critical thinking, and work ethic, the study's deficiency of data collected, both quantitative and qualitative, regarding the skill of teamwork limited the scope of its investigation. Fuller development of the teamwork construct for investigation and/or exploration is discussed in detail later in this chapter under the section that considers recommendations for future research.

Participants in the study were instructors at Mississippi community colleges who taught online CTE courses, as this segment of adult education was the focus of research. The study did not include instructors teaching solely traditional CTE courses due to the fact that students' development soft skills has been found significantly higher in face-to-face settings (Ali et al., 2017). Furthermore, statewide CTE curricula (Mississippi

Community College Board, 2019) and the community college system's virtual community college served as common ground in exploring instructors' perspectives on students' behavioral characteristics across the state. That being said, instructors from other states could potentially have differing views and opinions which could, in turn, lead to different conclusions.

Finally, the conceptual framework presented for research limited the lens through which soft skills were viewed and excluded other potential theoretical lenses. Restricting the study to transformative learning and learning transfer theories reduced the focus on theories such as adult learning/andragogy, emotional intelligence, situated cognition, and situated learning, all of which have been used in studies that explored soft skills in the workplace (Brent, 2011; McDougall & Holden, 2017; Taylor et al., 2009). Once again, related literature, as well as the researcher's attempt to manage the project, dictated which theories were ultimately used to guide the study as not all possibilities could or would be relevant to this research. Potential exists, however, for different theoretical lenses to affect interpretation of the results, as varying perspectives could have come into focus that were outside the scope of this framework.

Recommendations for Future Research

Any research related to soft skills must take into account the enormity of this topic as well as the difficulties faced in attempting to assess these skills. It is also important to consider changing trends with regard to skills that are most or least desired by employers at the time of a study (Lozar Glenn, 2018). Although these may appear at first glance to be general admonitions, the researcher did not fully appreciate these facts

prior to embarking on this journey and would be remiss not to mention them in a discussion of future research.

More specifically, the topic of teamwork was not fully addressed in the current study. Any research on this topic could potentially be a project's sole focus due to the limited number of community college instructors in this study who were able to implement teamwork effectively into their online courses. As a rule, all employees are not comfortable or even like working in teams (Hughes & Jones, 2011), and Jonathan indicated that his students also preferred to work individually. These insights show that more focus needs to be given to this area of development when preparing students for the workplace, especially adult learners who have spent the majority of their preparation in the relatively secluded setting that is online education.

Additionally, an instrument that was developed more fully on the topic of teamwork would enhance research related to this particular soft skill. Although teamwork was included in this study as part of both the questionnaire and the interview protocol, there was insufficient exploration into why instructors were not able, or did not feel that they were able, to incorporate teamwork into their online courses. The small number of quantitative respondents for questions regarding teamwork during this project proved that this skill was not fully developed and thus, unfortunately, could not be fully explored. Further investigation into teamwork as a soft skill, quantitative as well as qualitative, is certainly merited.

Implications for Practice

The study's significant findings that these adult learners improved in communication and critical thinking over the course of the semester, and that behavioral

characteristics in communication, critical thinking, and work ethic skills were predictors of their overall employment readiness, are noteworthy for community college instructors teaching online CTE courses. Students' improvement in communication from the beginning to the end of a class is particularly important as communication remains a primary concern for employers (Ali et al., 2017; Lozar Glenn, 2018; Makhathini, 2016; Tulgan, 2015). Even though online students appear to be "missing out" on opportunities such as student organizations and professional relationships with instructors and advisers, results suggest that they are improving in both technical (hard) and soft skills, which is the ultimate goal of occupational education.

These conclusions should also be considered in light of the recommendation by Lozar Glenn (2018) to interpret assessment of soft skills as formative as opposed to summative. This interpretation should be from both the instructor and student perspectives. Whereas students are preparing for employment, instructors should continually seek ways to improve their courses with regard to students' knowledge of and improvement in both hard skills and soft skills. Improvements to course design as well as incorporation of existing resources used by industry could serve to enhance online courses and, ultimately, adult learners' workforce preparation.

Lastly, results of the current study might allow instructors of online CTE courses to be more confident when deciding whether or not to recommend online students for employment. Monica's use of grades to determine when she would or would not provide job recommendations for her online students could be one part of the solution to this dilemma, especially if those grades included assessment of soft skills. Although grades alone may not always show the whole picture, they could serve as a starting point from

which to build the case for either recommending or not recommending an online student. As employment is not only a goal of CTE programs but also part of their funding, and as more adult learners are choosing the route of online education, the results of the current study could assist in turning the tide on job recommendations for online students, something that until now has not been practiced by the majority of these community college instructors.

Concluding Thoughts

Soft skills continue to be an important aspect of employment, and online education is here to stay. Educators who teach occupational programs that include online course offerings must find a way to reconcile these seemingly disconnected truths. In this research project, instructional and assessment methods were presented to assist in the efforts of preparing online CTE students for the workforce. Even though it is incumbent upon instructors to implement these methods, using them can make a difference in students' soft skills which could, in turn, assist those students in gaining and retaining employment.

Instructors of online courses must look past the challenge of incorporating these instructional and/or assessment methods and see their potential benefits. They must also trust the educational process when they have done their best to ensure that their courses are designed in a manner that renders these methods effective, yet also influential in online students' grades. Ultimately, Barney's words could then become the declaration for this group of adult educators who have given their best efforts to preparing online students for the 21st century workforce:

I'm here to teach you a skill that will allow you to be employed, to get a job. That skill that you have, I'm hoping that will change you [and] your status economically in the . . . world.

APPENDIX A – IRB Approval Letter

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 18042001
PROJECT TITLE: Soft Skills in Community Colleges' Online Career and Technical Education Programs
PROJECT TYPE: Doctoral Dissertation
RESEARCHER(S): Joanna Alston
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Educational Research and Administration
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 05/02/2018 to 05/01/2019
Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX B – Focus Group Protocol

Welcome, and thank you for being here today. We will be here for about 45 minutes. The purpose of this gathering is to get your feedback on soft skills in online courses. Specifically, we will be discussing communication, critical thinking, teamwork, and work ethic as they are exhibited among students taking online CTE courses. You teach online CTE courses and have some insight into these characteristics. That insight is needed for a dissertation project in order to create a questionnaire that will be completed by CTE educators who teach online.

I am Joanna Alston, a doctoral student in the Adult Education program at The University of Southern Mississippi, and I will be the moderator of today's discussion. The format we are using is a focus group. A focus group is a conversation that focuses on specific questions in a safe and confidential environment. I will guide the conversation by asking questions that each of you can respond to. There are no right or wrong answers to these questions. Just be honest. If you wish, you can also respond to each other's comments, as you would in an ordinary conversation. It is my job to make sure that everyone here gets to participate and that we stay on track. Debbie Brandon is here to facilitate by recording and summarizing your comments.

Before we get started, I want to let you know that you do not have to answer any questions that you do not feel comfortable answering. This focus group is anonymous and confidential. Anonymous means that your names will not be used and that you will not be identified as an individual in any way. Confidential means that what we say in this room should not be repeated outside of this room. Obviously, I cannot control what you do when you leave, but I ask each of you to respect each other's privacy and not tell anyone what was said by others here today. Although I hope everyone here honors this confidentiality, please remember that what you say here today could be repeated by another focus group member. So please, do not say anything that you absolutely need to keep private.

As you can see, I will be recording this focus group session. The recording will allow me to revisit our discussion for the purpose of developing the questionnaire for my doctoral research dissertation project. It will not be heard by anyone outside the project. To allow our conversation to flow more freely, I'd like to go over some ground rules.

1. Only one person speaks at a time. This is doubly important as my goal is to make a written transcript of our conversation today. It is difficult to capture everyone's perspective and comments on an audio recording if there are multiple voices at once.
2. Please avoid side conversations.
3. Everyone doesn't have to answer every question, but I'd like to hear from each of you today as the discussion progresses.
4. There are no "wrong" answers, just different opinions and perspectives. Say what is true for you, even if you are the only one who feels that way. Don't let the group sway you.

5. Let me know if you need a break.

Are there any questions about any of these or about something I have not yet mentioned?

Let's begin with introductions. Please share your name and the program in which you teach.

Thank you. We will now begin the focus group questions.
Questions:

1. What are some of the methods you use to introduce and teach soft skills in your online courses?
2. What are some of the methods you use to assess soft skills in your online courses?
3. Specifically considering your online courses, what are some of the student characteristics you look for when observing their communication behaviors?
4. Specifically considering your online courses, what are some of the student characteristics you look for when observing their critical thinking behaviors?
5. Specifically considering your online courses, what are some of the student characteristics you look for when observing their teamwork behaviors?
6. Specifically considering your online courses, what are some of the student characteristics you look for when observing their work ethic behaviors?
7. Specifically considering your online courses, what are some of the student characteristics you look for when observing their overall readiness for employment?

Our time is up. Thank you for sharing and taking time to talk about soft skills in online CTE courses. The information you have provided will be quite helpful in creating a questionnaire for my research project. Please take a few moments to enjoy some refreshments as a small token of my appreciation.

APPENDIX C – Questionnaire

Consent to Participate in Research

Research Description

Purpose: The purpose of this study is to investigate specific, employer-desired soft skills of community college students who are enrolled in online CTE courses. Four skills are consistently identified in literature as being desired by employers—communication, critical thinking, teamwork, and work ethic. The study will identify methods of introducing and teaching the concept of soft skills to students enrolled in online CTE courses at community colleges as well as approaches for assessing students' development of those skills. Additionally, the study will explore instructors' perspectives of online CTE students' skill level in the four specified soft skills at the beginning and at the end of their courses as well as instructors' perspectives of online CTE students' overall readiness for employment in their CTE focus areas. In an effort to prepare online CTE students for employment, including technical knowledge and necessary soft skills, a closer look at instructional practices is needful. Results of data analyses will be presented in the dissertation document and as part of a PowerPoint presentation during dissertation defense. They will also be provided to participating institutions as requested. Results may likewise be included in topic-related presentations that are given by the PI at conferences or other appropriate meetings.

Description of Study: During the quantitative phase, approximately 125 participants (including pilot study and research project participants) will answer an online questionnaire regarding soft skills instruction and assessment as well as students' characteristics and overall employment readiness. A link to the questionnaire will be emailed to Mississippi community/junior colleges' eLearning directors for distribution to CTE instructors who teach online courses, along with a description of the study and approval attachments. Additionally, approximately 10 interviews will be conducted with participants who indicate their willingness to participate via an open-ended question on the questionnaire. The interviews will be scheduled at a date, time, and location appropriate to the researcher/interviewer and interviewee. Interview meetings will be recorded and transcribed so that the researcher can code for themes and analyze for discussion in the dissertation's results chapter. They will last for approximately one hour after participants have been informed of the procedures and have signed informed consent forms.

Benefits: Even though participants will not receive direct benefits, it is hoped that they will understand their contributions to this research in recognizing soft skills behaviors in online students as well as teaching and assessing these skills.

Risks: Minimal risks are expected for questionnaire respondents. Participants in the interview sessions may experience discomfort in discussing their classroom practices with regard to teaching and assessing soft skills in online courses. These risks will not in any way affect their positions with their respective institutions and are no greater than risks faced in normal life.

Confidentiality: Questionnaire answers are anonymous. No identifying information will be collected through the online questionnaire. For the interview participants, pseudonyms will be used when reporting results, not actual names. Audio recordings of interview sessions will be kept in a password-protected file.

Alternative Procedures: N/A. The research participants are able to withdraw their consent to

participant at any time without penalty or prejudice.
Participant's Assurance: This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Estimated Time of Completion: approximately 15-20 minutes

Any questions about the research should be directed to Joanna Alston at joanna.alston@usm.edu or 228-860-1850.

Consent
Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described above and agreed to by the participant, all personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information will affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to Joanna Alston with the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116, Hattiesburg, MS 39406-0001, 601-266-5997.

By selecting "Yes, I consent" below, consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purposes, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

Select "Yes, I consent" if you consent to this study, and then click the arrow to proceed. (Clicking the arrow will not allow you to advance the study, unless you have selected "Yes, I consent" indicating your consent.)

If you do not wish to consent to this study, please close your browser window at this time.

Yes, I consent

No, I do not consent

Instructor Methods and Approaches

Please respond to each statement by choosing the option that best describes your online teaching practices. For each statement, 5 = Always, 4 = Often, 3 = Sometimes, 2 = Rarely, and 1 = Never.

IMA1. I use discussion boards in my online course(s).	5 4 3 2 1
IMA2. I provide instruction regarding online communication.	5 4 3 2 1
IMA3. I inform students of what is appropriate in communicating online for my class.	5 4 3 2 1
IMA4. I inform students of what is not appropriate in communicating online for my class.	5 4 3 2 1
IMA5. I teach my online students how to use English grammar and punctuation.	5 4 3 2 1
IMA6. I teach my online students how to paraphrase text.	5 4 3 2 1
IMA7. I teach my online students how to reference their sources when writing.	5 4 3 2 1
IMA8. I provide examples of acceptable student responses to classmates' online discussion posts.	5 4 3 2 1
IMA9. I assign work in my online class that has step-by-step instructions.	5 4 3 2 1
IMA10. I assign work in my online class that prompts students to reflect on course-related performance.	5 4 3 2 1
IMA11. I assign work in my online class that prompts students to reflect on course content.	5 4 3 2 1
IMA12. I assign work in my online class that prompts students to use problem-solving skills.	5 4 3 2 1
IMA13. I teach online students how to analyze reading materials.	5 4 3 2 1
IMA14. I teach online students how to reflect upon different perspectives of an issue.	5 4 3 2 1
IMA15. I require group work in my online course(s).	5 4 3 2 1
IMA16. I teach online students how to work as part of a team.	5 4 3 2 1
IMA17. I teach online students how to complete a peer evaluation.	5 4 3 2 1
IMA18. I teach online students how to provide truthful feedback when completing an evaluation.	5 4 3 2 1
IMA19. I teach online students how to manage their time effectively.	5 4 3 2 1
IMA20. If the online student has an acceptable excuse, I accept assignments that are submitted late.	5 4 3 2 1
IMA21. I do not accept assignments that are submitted after the posted deadline in my online class.	5 4 3 2 1
IMA22. I inform online students of the importance of meeting deadlines.	5 4 3 2 1
IMA23. I provide online students with a list of excuses that are acceptable for missing assignments in my course.	5 4 3 2 1
IMA24. I provide online students with a list of excuses that are unacceptable for missing assignments in my course.	5 4 3 2 1
IMA25. I provide grading rubrics to online students.	5 4 3 2 1
IMA26. I inform online students of what I consider to be acceptable performance.	5 4 3 2 1
IMA27. I grade online students' assignments on the use of English grammar.	5 4 3 2 1

IMA28. I grade online students' assignments on the use of punctuation.	5 4 3 2 1
IMA29. I grade online students' assignments on the use of sentence structure.	5 4 3 2 1
IMA30. I give online students at least one assignment in which they must compare/contrast ideas.	5 4 3 2 1
IMA31. I give online students at least one assignment in which they must defend both sides (for and against) of an argument.	5 4 3 2 1
IMA32. I assign at least one group project in my online course.	5 4 3 2 1
IMA33. As part of a group assignment, online students complete peer evaluations.	5 4 3 2 1
IMA34. In online group assignments, all students in the group earn the same project grade.	5 4 3 2 1
IMA35. In online group assignments, each student's grade is based on peer evaluations.	5 4 3 2 1
IMA36. I give grades of zero for assignments not submitted by posted deadlines in my online class.	5 4 3 2 1
IMA37. Not submitting an assignment in my online course constitutes an absence.	5 4 3 2 1
IMA38. I exempt online students from certain assignments if they have a high class average.	5 4 3 2 1
IMA39. I limit quiz time in an effort to discourage online students' use of additional resources.	5 4 3 2 1
IMA40. I congratulate online students who submit assignments prior to posted deadlines.	5 4 3 2 1

Student Behaviors

Please respond to each statement by choosing the option that best describes your online students' behaviors. For each statement, 5 = Always, 4 = Often, 3 = Sometimes, 2 = Rarely, and 1 = Never.

Communication	
SBC1. At the beginning of the semester, online students communicate ideas and information well.	5 4 3 2 1
SBC2. At the beginning of the semester, online students compose written communication that is easily understood.	5 4 3 2 1
SBC3. Online students compose written communication using correct spelling.	5 4 3 2 1
SBC4. Online students compose written communication using correct punctuation.	5 4 3 2 1
SBC5. Online students compose written communication using the rules of proper English grammar.	5 4 3 2 1
SBC6. Online students use "text-messaging style" when composing written, course-related communication (lacking capital letters/punctuation; using popular acronyms).	5 4 3 2 1
SBC7. Online students respond appropriately to messages from others.	5 4 3 2 1
SBC8. Online students respond to several discussion posts from classmates.	5 4 3 2 1

SBC9. Online students ask questions that exhibit an interest in two-way communication.	5 4 3 2 1
SBC10. Online students tailor language, tone, style, and format to match the audience.	5 4 3 2 1
SBC11. Online students demonstrate openness in sharing information.	5 4 3 2 1
SBC12. Online students are courteous in communicating with others.	5 4 3 2 1
SBC13. Online students demonstrate knowledge of having read instructor's posted announcements.	5 4 3 2 1
SBC14. Online students communicate with peers in the course site and/or learning management system.	5 4 3 2 1
SBC15. Online students communicate effectively with the instructor in the course site and/or learning management system.	5 4 3 2 1
SBC16. If instructor does not answer the phone, online students leave a voice mail.	5 4 3 2 1
SBC17. Online students attempt to contact the instructor at times other than posted office hours.	5 4 3 2 1
SBC18. At the end of the semester, online students communicate ideas and information well.	5 4 3 2 1
SBC19. At the end of the semester, online students compose written communication that is easily understood.	5 4 3 2 1
Critical Thinking	
SBCT1. In responding to discussion board prompts, online students demonstrate their analysis of reading materials by making perceptive comments.	5 4 3 2 1
SBCT2. At the beginning of the semester, online students compare/contrast effectively.	5 4 3 2 1
SBCT3. At the beginning of the semester, online students effectively argue both sides (for and against) of an issue.	5 4 3 2 1
SBCT4. Online students "copy and paste" information from instructional resources into their discussion board posts.	5 4 3 2 1
SBCT5. Online students' responses to classmates' discussion posts consist of consent answers ("Yes, I agree").	5 4 3 2 1
SBCT6. Online students' responses to classmates' discussion posts consist of thorough responses.	5 4 3 2 1
SBCT7. Online students provide several possible explanations or alternatives for a situation.	5 4 3 2 1
SBCT8. Online students identify the information needed to solve a problem effectively.	5 4 3 2 1
SBCT9. Online students show initiative to find out something they do not know.	5 4 3 2 1
SBCT10. Online students undertake a complex task by systematically breaking it down into manageable, detailed steps.	5 4 3 2 1
SBCT11. Online students exhibit a need for step-by-step instructions in which they are told exactly what to do.	5 4 3 2 1
SBCT12. Online students perform better on assignments in which they are imitating completed projects.	5 4 3 2 1

SBCT13. Online students perform better on assignments in which they are creating or composing documents, models, spreadsheets, etc.	5 4 3 2 1
SBCT14. At the end of the semester, online students compare/contrast effectively.	5 4 3 2 1
SBCT15. At the end of the semester, online students effectively argue both sides (for and against) of an issue.	5 4 3 2 1
Teamwork	
SBTA. Do you use group assignments or other "teamwork" projects in your online class?	Yes No
(If participant answered “No,” the rest of this block was skipped.)	
SBT1. Online students work collaboratively with classmates to achieve goals.	5 4 3 2 1
SBT2. Online students solicit input from teammates.	5 4 3 2 1
SBT3. At the beginning of the semester, online students exhibit a willingness to learn from others.	5 4 3 2 1
SBT4. Online students support the final group decision.	5 4 3 2 1
SBT5. Online students act in accordance with the final group decision.	5 4 3 2 1
SBT6. Online students share credit for team accomplishments.	5 4 3 2 1
SBT7. Online students accept joint responsibility for team shortcomings.	5 4 3 2 1
SBT8. If there is conflict among team members, online students resolve it with minimal intervention from the instructor.	5 4 3 2 1
SBT9. Online students exhibit maturity in awarding credit on peer evaluations.	5 4 3 2 1
SBT10. Online students exhibit professionalism in awarding credit on peer evaluations.	5 4 3 2 1
SBT11. Online students are spiteful when completing peer evaluations.	5 4 3 2 1
SBT12. When working in teams, online students allow sufficient time for completing group projects.	5 4 3 2 1
SBT13. Online students attempt to complete group projects at “the last minute.”	5 4 3 2 1
SBT14. Online students are cooperative when working in groups.	5 4 3 2 1
SBT15. At the end of the semester, online students exhibit a willingness to learn from others.	5 4 3 2 1
Work Ethic	
SBWE1. Online students demonstrate that they have read the instructor’s attendance, late/make-up work, academic honesty, and other policies as expressed in the course syllabus.	5 4 3 2 1
SBWE2. Online students submit assignments no later than set deadlines.	5 4 3 2 1
SBWE3. Online students offer valid excuses when missing assignments. (“valid” – as specified in the course syllabus)	5 4 3 2 1
SBWE4. Online students attempt to submit assignments after set deadlines.	5 4 3 2 1
SBWE5. To my knowledge, online students access instructional materials more than a day before assignment deadlines.	5 4 3 2 1
SBWE6. To my knowledge, online students access instructional materials less than a day before assignment deadlines.	5 4 3 2 1
SBWE7. Online students access assignments more than a day before posted deadlines.	5 4 3 2 1

SBWE8. Online students access assignments less than a day before posted deadlines.	5 4 3 2 1
SBWE9. Online students submit assignments more than a day before deadlines.	5 4 3 2 1
SBWE10. Online students submit assignments less than 2 hours before deadlines.	5 4 3 2 1
SBWE11. Online students submit assignments that are copied directly from course and/or Web-based resources.	5 4 3 2 1
SBWE12. Online students follow the instructor's class rules.	5 4 3 2 1
SBWE13. Online students access assignments prior to viewing instructional materials.	5 4 3 2 1
SBWE14. Online students demonstrate that they have read instructional materials.	5 4 3 2 1
SBWE15. Online students are courteous toward others in their discussion board posts.	5 4 3 2 1
SBWE16. Online students are respectful toward others in their discussion board posts.	5 4 3 2 1
SBWE17. Online students express a desire to know how to correct assignment errors.	5 4 3 2 1
Overall Employment Readiness	
SBO1. Online students take responsibility for their own actions.	5 4 3 2 1
SBO2. Online students adhere to class deadlines.	5 4 3 2 1
SBO3. Online students' interactions with the instructor are professional.	5 4 3 2 1
SBO4. Online students' interactions with the instructor are polite.	5 4 3 2 1
SBO5. Online students' interactions with the instructor are respectful.	5 4 3 2 1
SBO6. Online students' interactions with classmates are professional.	5 4 3 2 1
SBO7. Online students' interactions with classmates are polite.	5 4 3 2 1
SBO8. Online students' use of English grammar and punctuation is consistent among assignments and personal communication (i.e., electronic messages).	5 4 3 2 1
SBO9. Online students' written assignments are on-topic.	5 4 3 2 1
SBO10. Online students' written assignments are relevant to content.	5 4 3 2 1
SBO11. Online students' comments during class discussions are ethical.	5 4 3 2 1
SBO12. Online students joke about unethical behaviors during class discussions.	5 4 3 2 1
SBO13. Online students' representation of themselves is consistent among written assignments, recorded online presentations, and face-to-face meetings.	5 4 3 2 1
SBO14. As an instructor, I feel confident that I know my online students.	5 4 3 2 1
SBO15. As an instructor, I feel confident that I know my online students' abilities to work as part of a team.	5 4 3 2 1
SBO16. As an instructor, I feel confident that I know my online students' abilities to lead a team project.	5 4 3 2 1
Follow-up	
Would you would be willing to discuss your experiences with preparing online CTE students for employment in an interview setting?	Yes No
(If participant answered "No," the next question was skipped.)	

Please provide your name and contact information below. (Your name will not be linked to your responses on the questionnaire.)	

Demographics

Please answer the following questions about yourself.

Gender

- Male
- Female
- Prefer not to answer

Race

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Prefer not to answer

Age

- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70+
- Prefer not to answer

Program cluster/area of teaching (drop-down selection list)

- Agriculture, Food, and Natural Resources
- Architecture and Construction
- Arts, A/V Technology, and Communications
- Business Management and Administration
- Education and Training
- Finance
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, and Security
- Manufacturing
- Marketing, Sales, and Service

Science, Technology, Engineering, and Math
Transportation, Distribution, and Logistics

Specific program(s): Please list all programs you currently teach online (e.g., Business Management Technology). _____

Employment status
Full-time
Adjunct

Highest level of education
High school diploma
Associate's degree
Bachelor's degree
Master's degree
Specialist's degree
Doctorate degree
Prefer not to answer

Do you hold a field-related, professional certification (e.g., MOS, OPAC, etc.)?
Yes
No

Years of teaching in program area
less than 5 years
6-10 years
11-15 years
16-20 years
21-25 years
more than 25 years

Total years of teaching
less than 5 years
6-10 years
11-15 years
16-20 years
21-25 years
more than 25 years

Did/Do you work in the field you are currently teaching?
Yes
No

Total years of work experience in technical field
less than 5 years
6-10 years
11-15 years

16-20 years
21-25 years
more than 25 years

Were/Are you employed in a technical field-related, supervisory role?
Yes
No

Were/Are you responsible for managing employees (hire, lay off, etc.)?
Yes
No

APPENDIX D – Permission Letter

Dear Ms. Alston:

This letter is in response to your recent request regarding permission to use parts of the survey instrument/questionnaire used in my dissertation title, "Perceptions of Soft Skills by Former Technical College Business Education Students & Their Employers". Although, you did not mention the title in your request, I am assuming the dissertation is the same in your request. I want to eliminate any misunderstanding.

I grant you the rights to use parts of the survey instrument/questionnaire requested. You have my permission to make revisions for an instructor's perspective instead of employers, and to revise the problem-solving section as needed for critical thinking in your study. My request is for you to please credit the used survey instrument/questionnaire to me in your study. Much success to the completion of your dissertation.

Sincerely yours,

Gwendolyn M Pope, Ed.D.

APPENDIX E – Interview Protocol

Please tell me in more detail about your methods of introducing and teaching soft skills in your online courses.

Please tell me in more detail about your methods of assessing soft skills in your online courses.

Do you allow students who consistently submit a majority of assignments throughout the semester the opportunity to make up a previously missed assignment?

How comfortable are you in assessing online students' use of English grammar, punctuation, and sentence structure?

In your opinion, do students correctly interpret messages from others?

Do you find that students communicate in course discussions with classmates they already know or some they have not previously known?

Do you feel that students are respectful of others' opinions?

Do students adhere to your preferred method(s) of communication as stated in the course site (email, telephone, Canvas Inbox, etc.)?

Please give me an example of a critical thinking activity in your online course.

How comfortable are you in assessing online students' critical thinking abilities?

If you utilize group assignments in your online courses, please explain that process.

Do you utilize self-assessments in group work?

Do you find that students support or act in accordance with the group's decision even when it does not completely reflect their own individual positions?

How comfortable are you in assessing online students' work ethic?

Do students indicate that they have read your course materials (syllabus, etc.) without actually doing so?

Do students follow your plan for the course (i.e., first reading instructional materials, then completing assignment(s), then attempting quizzes)?

Do students use course resources during exams although it is against your class rules?

How do you handle instances when students do not submit their own work?

How comfortable are you in assessing online students' overall employment readiness?

APPENDIX F – Informed Consent for Focus Group

ORI | Office of Research Integrity

INSTITUTIONAL REVIEW BOARD

STANDARD (SIGNED) INFORMED CONSENT

STANDARD (SIGNED) INFORMED CONSENT PROCEDURES

This completed document must be signed by each consenting research participant.

- The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval.
- Signed copies of the consent form should be provided to all participants.

Last Edited February 9th, 2018

Today's date:4/20/2018		
PROJECT INFORMATION		
Project Title: Soft Skills in Community College's Online Career and Technical Education Programs		
Principal Investigator: Joanna Alston	Phone: 228-860-1850	Email: joanna.alston@usm.edu
College: College of Education and Psychology	Department: Educational Research and Administration	

RESEARCH DESCRIPTION

1. **Purpose**:

The purpose of this study is to investigate specific, employer-desired soft skills of community college students who are enrolled in online CTE courses. Four skills are consistently identified in literature as being desired by employers—communication, critical thinking, teamwork, and work ethic. The study will identify methods of introducing and teaching the concept of soft skills to students enrolled in online CTE courses at community colleges as well as approaches for assessing students' development of those skills. Additionally, the study will explore instructors' perspectives of online CTE students' skill level in the four specified soft skills at the beginning and at the end of their courses as well as instructors' perspectives of online CTE students' overall readiness for employment in their CTE focus areas. In an effort to prepare online CTE students for employment, including technical knowledge and necessary soft skills, a closer look at instructional practices is needful.

Results of data analyses will be presented in the dissertation document and as part of a PowerPoint presentation during dissertation defense. They will also be provided to participating institutions as requested. Results may likewise be included in topic-related presentations that are given by the PI at conferences or other appropriate meetings.

2. **Description of Study:**

For the initial qualitative phase, a focus group comprised of 8-10 participants who are CTE instructors at MGCCC will provide input for creating the questionnaire and interview protocol. The focus group session will be recorded and transcribed so that the researcher can code for themes to be used in creating the questionnaire and interview protocol. The session will last approximately 45 minutes after all participants have been informed of the procedures and signed informed consent forms.

During the quantitative phase, approximately 125 participants (including pilot study and research project participants) will answer an online questionnaire regarding soft skills instruction and assessment as well as students' characteristics and overall employment readiness. A link to the questionnaire will be emailed to Mississippi community/junior colleges' eLearning directors for distribution to CTE instructors who teach online courses, along with a description of the study and approval attachments.

For the second qualitative phase, approximately 10 interviews will be conducted with participants who indicate their willingness to participate via an open-ended question on the questionnaire. The interviews will be scheduled at a date, time, and location appropriate to the researcher/interviewer and interviewee. Interview meetings will be recorded and transcribed so that the researcher can code for themes and analyze for discussion in the dissertation's results chapter. They will last for approximately one hour after participants have been informed of the procedures and have signed informed consent forms.

3. **Benefits:**

Even though participants will not receive direct benefits, it is hoped that they will understand their contributions to this research in recognizing soft skills behaviors in online students as well as teaching and assessing these skills.

4. **Risks:**

Participants in the focus group and interview sessions may experience discomfort in discussing their classroom practices with regard to teaching and assessing soft skills in online courses. These risks will not in any way affect their positions with their respective institutions and are no greater than risks faced in normal life. Minimal risks are expected for questionnaire respondents.

5. **Confidentiality:**

For the focus group participants, numbers (e.g., Focus Group Member 1, Focus Group Member 2, etc.) will be used when reporting results, not actual names. For the interview participants, pseudonyms will be used when reporting results, not actual names. Audio recordings of the focus group and interview sessions will be kept in a password-protected file.

6. **Alternative Procedures:**

N/A. The research participants are able to withdraw their consent to participant at any time without penalty or prejudice.

7. **Participant's Assurance:**

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

CONSENT TO PARTICIPATE IN RESEARCH

Participant's Name: _____

I hereby consent to participate in this research project. All research procedures and their purpose were explained to me, and I had the opportunity to ask questions about both the procedures and their purpose. I received information about all expected benefits, risks, inconveniences, or discomforts, and I had the opportunity to ask questions about them. I understand my participation in the project is completely voluntary and that I may withdraw from the project at any time without penalty, prejudice, or loss of benefits. I understand the extent to which my personal information will be kept confidential. As the research proceeds, I understand that any new information that

emerges and that might be relevant to my willingness to continue my participation will be provided to me.

Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form have been reviewed by USM's Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116, Hattiesburg, MS 39406-0001, 601-266-5997.

Research Participant	**Person Explaining the Study**
Date	**Date**

APPENDIX G – Informed Consent for Interview

ORI | Office of Research Integrity

INSTITUTIONAL REVIEW BOARD

STANDARD (SIGNED) INFORMED CONSENT

STANDARD (SIGNED) INFORMED CONSENT PROCEDURES

This completed document must be signed by each consenting research participant.

- The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval.
- Signed copies of the consent form should be provided to all participants.

Last Edited February 9th, 2018

Today's date:4/20/2018

PROJECT INFORMATION

Project Title: Soft Skills in Community College's Online Career and Technical Education Programs		
Principal Investigator: Joanna Alston	Phone: 228-860-1850	Email: joanna.alston@usm.edu
College: College of Education and Psychology	Department: Educational Research and Administration	

RESEARCH DESCRIPTION

1. **Purpose**:

The purpose of this study is to investigate specific, employer-desired soft skills of community college students who are enrolled in online CTE courses. Four skills are consistently identified in literature as being desired by employers—communication, critical thinking, teamwork, and work ethic. The study will identify methods of introducing and teaching the concept of soft skills to students enrolled in online CTE courses at community colleges as well as approaches for assessing students' development of those skills. Additionally, the study will explore instructors' perspectives of online CTE students' skill level in the four specified soft skills at the beginning and at the end of their courses as well as instructors' perspectives of online CTE students' overall readiness for employment in their CTE focus areas. In an effort to prepare online CTE students for employment, including technical knowledge and necessary soft skills, a closer look at instructional practices is needful.

Results of data analyses will be presented in the dissertation document and as part of a PowerPoint presentation during dissertation defense. They will also be provided to participating institutions as requested. Results may likewise be included in topic-related presentations that are given by the PI at conferences or other appropriate meetings.

2. **Description of Study:**

During the quantitative phase, approximately 125 participants (including pilot study and research project participants) will answer an online questionnaire regarding soft skills instruction and assessment as well as students' characteristics and overall employment readiness. A link to the questionnaire will be emailed to Mississippi community/junior colleges' eLearning directors for distribution to CTE instructors who teach online courses, along with a description of the study and approval attachments.

Additionally, approximately 10 interviews will be conducted with participants who indicate their willingness to participate via an open-ended question on the questionnaire. The interviews will be scheduled at a date, time, and location appropriate to the researcher/interviewer and interviewee. Interview meetings will be recorded and transcribed so that the researcher can code for themes and analyze for discussion in the dissertation's results chapter. They will last for approximately one hour after participants have been informed of the procedures and have signed informed consent forms.

3. **Benefits:**

Even though participants will not receive direct benefits, it is hoped that they will understand their contributions to this research in recognizing soft skills behaviors in online students as well as teaching and assessing these skills.

4. **Risks:**

Participants in the interview sessions may experience discomfort in discussing their classroom practices with regard to teaching and assessing soft skills in online courses. These risks will not in any way affect their positions with their respective institutions and are no greater than risks faced in normal life. Minimal risks are expected for questionnaire respondents.

5. **Confidentiality:**

Questionnaire answers are anonymous. For the interview participants, pseudonyms will be used when reporting results, not actual names. Audio recordings of the interview sessions will be kept in a password-protected file.

6. **Alternative Procedures:**

N/A. The research participants are able to withdraw their consent to participant at any time without penalty or prejudice.

7. **Participant's Assurance:**

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

CONSENT TO PARTICIPATE IN RESEARCH

Participant's Name: _____

I hereby consent to participate in this research project. All research procedures and their purpose were explained to me, and I had the opportunity to ask questions about both the procedures and their purpose. I received information about all expected benefits, risks, inconveniences, or discomforts, and I had the opportunity to ask questions about them. I understand my participation in the project is completely voluntary and that I may withdraw from the project at any time without penalty, prejudice, or loss of benefits. I understand the extent to which my personal information will be kept confidential. As the research proceeds, I understand that any new information that emerges and that might be relevant to my willingness to continue my participation will be provided to me.

Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form have been reviewed by USM's Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116,

Hattiesburg, MS 39406-0001, 601-266-5997.

Research Participant	**Person Explaining the Study**
Date	**Date**

APPENDIX H – Questionnaire Items Removed after Pilot Test

IMA1. I use discussion boards in my online course(s).

IMA9. I assign work in my online class that has step-by-step instructions.

IMA20. If the online student has an acceptable excuse, I accept assignments that are submitted late.

IMA36. I give grades of zero for assignments not submitted by posted deadlines in my online class.

IMA37. Not submitting an assignment in my online course constitutes an absence.

IMA39. I limit quiz time in an effort to discourage online students' use of additional resources.

SBC6. Online students use "text-messaging style" when composing written, course-related communication (lacking capital letters/punctuation; using popular acronyms).

SBC17. Online students attempt to contact the instructor at times other than posted office hours.

SBCT4. Online students "copy and paste" information from instructional resources into their discussion board posts.

SBCT5. Online students' responses to classmates' discussion board posts consist of consent answers ("Yes, I agree").

SBCT8. Online students identify the information needed to solve a problem effectively.

SBCT11. Online students exhibit a need for step-by-step instructions in which they are told exactly what to do.

SBCT12. Online students perform better on assignments in which they are imitating completed projects.

SBCT13. Online students perform better on assignments in which they are creating or composing documents, models, spreadsheets, etc.

SBWE2. Online students submit assignments no later than set deadlines.

SBWE9. Online students submit assignments more than a day before deadlines.

SBWE13. Online students access assignments prior to viewing instructional materials.

SBO12. Online students joke about unethical behaviors during class discussions.

REFERENCES

Agarwal, N. K., & Islam, M. A. (2016). How can professional associations continue to stay relevant? Knowledge management to the rescue. *Proceedings of the Association for Information Science and Technology, 53*(1), 1-10. Retrieved from https://www.asist.org/files/meetings/am16/proceedings/submissions/papers/2paper.pdf

Al-Alawneh, M. K. (2011). Vocational education graduates' generic skills as perceived by educators and employers in Jordan labor market. *The IUP Journal of Soft Skills, V*(2), 7-20. https://ssrn.com/abstract=2032871

Alawneh, M. K. (2008, February). *Factors affecting training transfer: Participants' motivation to transfer training, literature review*. Paper presented at the meeting of the Academy of Human Resource Development International Research Conference in the Americas, Panama City, FL.

Alfred, M. V. (2002). Linking the personal and the social for a more critical democratic adult education. *New Directions for Adult & Continuing Education, 2002*(96), 89-95. https://doi.org/10.1002/ace.82

Ali, A. B., Rosli, D. I., Sujadi, I., Usodo, B., & Perdana, F. A. (2017). Mastering the soft skills in the implementation of work based learning among community college students. *Journal of Physics: Conference Series, 795*. http://dx.doi.org/10.1088/1742-6596/795/1/012004

American Association of Community Colleges. (2019). *Fast facts*. Retrieved from https://www.aacc.nche.edu/research-trends/fast-facts/

American Institutes for Research. (2018). *Integrating employability skills: A framework for all educators*. Retrieved from https://ccrscenter.org/technical-assistance-networks/professional-learning-modules/integrating-employability-skills

Amy, J. (2014, February). Mississippi colleges reworking remedial education. *Community College Week*, *26*(14), 20. https://npaper-wehaa.com/ccweek/2014/02/17/#?page=20

Amy, J. (2016, October 24). Mississippi enrollment both increases and declines: University enrollment climbs, community colleges shrink. *Community College Week*. Retrieved from http://ccweek.com/article-5370-mississippi-enrollment-both-increases-and-declines.html

Anders, S. (2015). What are you really saying? *Physician Leadership Journal*, *2*(2), 82.

Andrews, J., & Higson, H. (2008). Graduate employability, 'soft skills' versus 'hard' business knowledge: A European study. *Higher Education in Europe*, *33*(4), 411-422. https://doi.org/10.1080/03797720802522627

Archer, W., & Garrison, D. R. (2010). Distance education in the age of the internet. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 317-326). Thousand Oaks, CA: Sage Publications, Inc.

Associated Press. (2015, July 8). Kan. educators told students lack soft skills required in workplace: Schools implored to stress soft skills alongside academics. *Community College Week*. Retrieved from http://ccweek.com/article-4640-kan-educators-told-students-lack-soft-skills-required-in-workplace.html

Association for Career & Technical Education. (2014). *WIOA implementation*. Retrieved from http://ctepolicywatch.acteonline.org/2014/07/wioa-implementation.html

Association for Career & Technical Education. (2018). *CTE works!* Retrieved from https://www.acteonline.org/wp-content/uploads/2018/03/CTE_Works_Research-January2018.pdf

Association for Career & Technical Education. (2019). *Basic facts*. Retrieved from https://www.acteonline.org/why-cte/what-is-cte/basic-facts/

Aworanti, O. A., Taiwo, M. B., & Iluobe, O. I. (2015). Validation of Modified Soft Skills Assessment Instrument (MOSSAI) for use in Nigeria. *Universal Journal of Educational Research, 3*(11), 847-861. doi:10.13189/ujer.2015.031111

Bae, S. H., Gray, K., & Yeager, G. (2007). A retrospective cohort comparison of career and technical education participants and non-participants on a state-mandated proficiency test. *Career and Technical Education Research*, *32*(1), 9-22. https://doi.org/10.5328/CTER32.1.9

Beard, D., Schwieger, D., & Surendran, K. (2008). Integrating soft skills assessment through university, college, and programmatic efforts at an AACSB accredited institution. *Journal of Information Systems Education*, *19*(2), 229-240.

Benson, A. D., Johnson, S. D., Duncan, J. R., & Shinkareva, O. N. (2005). Online and campus-based CTE courses: What's the difference? *Community College Journal*, *76*(2), 12.

Bierema, L. L. (2010). Professional identity. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 135-145). Thousand Oaks, CA: Sage Publications, Inc.

Blaszczynski, C. (2014). Developing workplace professional skills: Preparing students for real-world employment. *Business Education Forum*, *68*(4), 29-32.

Blaszczynski, C., & Green, D. J. (2012). Effective strategies and activities for developing soft skills, part 1. *Journal of Applied Research for Business Instruction, 10*(1), 1-13.

Bohlig, E. M., Bullock, C. M., Garza, M., Hartman, C., Lovseth, K., & Yu, H. (2018). Developmental education and community college student success: Are the odds ever in their favor? *Texas Education Review*, *6*(1), 53-74. http://hdl.handle.net/2152/64981

Botma, Y., Van Rensburg, G. H., Coetzee, I. M., & Heyns, T. (2015). A conceptual framework for educational design at modular level to promote transfer of learning. *Innovations in Education and Teaching International*, *52*(5), 499-509. https://doi.org/10.1080/14703297.2013.866051

Botma, Y., Van Rensburg, G. H., Heyns, T., & Coetzee, I. M. (2013). A conceptual analysis of transfer of learning in health sciences education. *African Journal for Physical Health Education, Recreation and Dance*, *19*(Supplement 2), 32-43. http://hdl.handle.net/2263/32421

Boucouvalas, M., & Lawrence, R. L. (2010). Adult learning. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 35-48). Thousand Oaks, CA: Sage Publications, Inc.

Bowles, D. R. (2014, June 25). Community colleges and workforce development in the 21st century. *Kennedy School Review, XIV*. Retrieved from

http://ksr.hkspublications.org/2014/06/25/community-colleges-and-workforce-development-in-the-21st-century/

Brent, D. (2011). Transfer, transformation, and rhetorical knowledge: Insights from transfer theory. *Journal of Business and Technical Communication*, *25*(4), 396-420. https://doi.org/10.1177%2F1050651911410951

Breuer, C., Hüffmeier, J., & Hertel, G. (2016). Does trust matter more in virtual teams? A meta-analysis of trust and team effectiveness considering virtuality and documentation as moderators. *The Journal of Applied Psychology*, *101*(8), 1151-1177. http://dx.doi.org/10.1037/apl0000113

Brock, T. (2010). Young adults and higher education: Barriers and breakthroughs to success. *The Future of Children*, *20*(1), 109-132. https://doi.org/10.1353/foc.0.0040

Brookfield, S. D. (2010). Theoretical frameworks for understanding the field. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 71-81). Thousand Oaks, CA: Sage Publications, Inc.

Brown, M. C., Donahoo, S., & Bertrand, R. D. (2001). The Black college and the quest for educational opportunity. *Urban Education*, *36*(5), 553-571. https://doi.org/10.1177%2F0042085901365002

Butterfield, E. C., & Nelson, G. D. (1991). Promoting positive transfer of different types. *Cognition and Instruction*, *8*(1), 69-102. https://doi.org/10.1207/s1532690xci0801_3

Campbell, C., & Love, I. (2016). *Leveraging community colleges in the Workforce Innovation and Opportunity Act: A blueprint for state policymakers*. Retrieved from Education Commission of the States website: http://www.ecs.org/ec-content/uploads/ECS_FundingReports_WIOA_F.pdf

Carbone, T. A., & Gholston, S. (2004). Project manager skill development: A survey of programs and practitioners. *Engineering Management Journal, 16*(3), 10-16. https://doi.org/10.1080/10429247.2004.11415252

Carl D. Perkins Career and Technical Education Improvement Act, 20 U.S.C. §2301 et seq. (2006). Retrieved from http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:s250enr.txt.pdf

Carreira, R. (2008). *Aligning tech prep programs with current and future labor market needs* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3336655).

Center for Community College Student Engagement. (2016). *Expectations meet reality: The underprepared student and community colleges.* Retrieved from http://www.ccsse.org/docs/Underprepared_Student.pdf

Chan, J. K. L. (2011). Enhancing the employability of and level of soft skills within tourism and hospitality graduates in Malaysia: The issues and challenges. *Journal of Tourism, 12*(1), 1-16. Retrieved from http://repo.turismo.gov.ar/bitstream/handle/123456789/3853/JOT%20Vol-XII-1,%202011.pdf?sequence=1&isAllowed=y#page=7

Chaves, C. A. (2009). On-line course curricula and interactional strategies: The foundations and extensions to adult e-learning communities. *European Journal of*

Open, Distance and E-Learning, *1*. Retrieved from http://files.eric.ed.gov/fulltext/EJ911758.pdf

Chen, G. (2018, August 7). *Why do 60% of community college students need remedial coursework?* Retrieved from the Community College Review website: https://www.communitycollegereview.com/blog/why-do-60-of-community-college-students-need-remedial-coursework

Clark, L. A., Karau, S. J., & Michalisin, M. D. (2012). Telecommuting attitudes and the 'big five' personality dimensions. *Journal of Management Policy & Practice*, *13*(3), 31-46. Retrieved from http://www.m.www.na-businesspress.com/JMPP/ClarkLA_Web13_3_.pdf

Cohen, A. M., & Brawer, F. B. (2003). *The American community college* (4th ed.). San Francisco, CA: Jossey-Bass.

Conceição, S. O. (2007). Understanding the environment for online teaching. *New Directions for Adult & Continuing Education*, *2007*(113), 5-11. https://doi.org/10.1002/ace.242

Coughlin, G. F. (2012). *Employer satisfaction with workforce development programs: A survey study* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3502684).

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Creswell, J. W. (2015). *A concise introduction to mixed methods research*. Thousand Oaks, CA: Sage Publications, Inc.

Cross, K. P. (1980). Our changing students and their impact on colleges: Prospects for a true learning society. *The Phi Delta Kappan, 61*(9), 627-630. Retrieved from https://www.jstor.org/stable/20385649

Cummins, P. A. (2015). The role of community colleges in career transitions for older workers. *Community College Journal of Research & Practice*, *39*(3), 265-279. https://doi.org/10.1080/10668926.2013.843144

Curran, M. K. (2014). Examination of the teaching styles of nursing professional development specialists, Part I: Best practices in adult learning theory, curriculum development, and knowledge transfer. *The Journal of Continuing Education in Nursing*, *45*(5), 233-240. https://doi.org/10.3928/00220124-20140417-04

D'Amico, M. M., Morgan, G. B., Katsinas, S. G., & Friedel, J. N. (2015). State director views on community college workforce development. *Career and Technical Education Research*, *39*(3), 191-211. https://doi.org/10.5328/cter39.3.191

Day, S. B., & Goldstone, R. L. (2012). The import of knowledge export: Connecting findings and theories of transfer of learning. *Educational Psychologist*, *47*(3), 153-176. http://dx.doi.org/10.1080/00461520.2012.696438

Dean, S. A. (2017). *Soft skills needed for the 21st century workforce* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10284382).

Donavant, B. W. (2009). The new, modern practice of adult education: Online instruction in a continuing professional education setting. *Adult Education Quarterly*, *59*(3), 227-245. http://dx.doi.org.lynx.lib.usm.edu/10.1177/0741713609331546

Down, C. (2001, March). *Learning for transfer—a theory of situational learning*. Paper presented at the Australian Vocational Education and Training Research Association Conference, Adelaide, Australia. Retrieved from https://files.eric.ed.gov/fulltext/ED456271.pdf

Ellis, H. (1965). *The transfer of learning*. New York, NY: Macmillan.

Ellis, M., Kisling, E., & Hackworth, R. G. (2014). Teaching soft skills employers need. *Community College Journal of Research and Practice*, *38*(5), 433-453. https://doi.org/10.1080/10668926.2011.567143

Evers, F. T., Rush, J. C., & Berdrow, I. (1998). *The bases of competence: Skills for lifelong learning and employability*. San Francisco, CA: Jossey-Bass.

Fatherree, B. H. (2010, March). The community and junior college system in Mississippi: A brief history of its origin and development. *Mississippi History Now*. Retrieved from http://www.mshistorynow.mdah.ms.gov/articles/333/the-community-and-junior-college-system-in-mississippi

Fisher, A. (2011). *Critical thinking: An introduction* (2nd ed.). Cambridge, UK: Cambridge University Press.

Foley, J. M., & Kaiser, L. R. (2013). Learning transfer and its intentionality in adult and continuing education. *New Directions for Adult & Continuing Education*, *2013*(137), 5-15. https://doi.org/10.1002/ace.20040

Galbraith, M. W., & Jones, M. S. (2010). Assessment and evaluation. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 167-175). Thousand Oaks, CA: Sage Publications, Inc.

Garza Mitchell, R. L. (2017). Online career and technical education in the community college. *Community College Journal of Research and Practice*, *41*(6), 336-340. https://doi.org/10.1080/10668926.2016.1270242

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

Gay, L. R. (1996). *Educational research: Competencies for analysis and application* (5th ed.). Upper Saddle River, NJ: Prentice-Hall, Inc.

Geiger, R. L. (2011). The ten generations of American higher education. In P. G. Altbach, P. J. Gumport, & R. O. Berdahl (Eds.), *American higher education in the twenty-first century: Social, political and economic challenges* (2nd ed., pp. 37-68). Baltimore, MD: Johns Hopkins University Press.

Githens, R. P., Sauer, T., Crawford, F., & Wilson, K. (2012). Online occupational education in community colleges: Prevalence, programming, and connection with workforce development needs. *Career and Technical Education Research, 37*(1), 35-56. https://doi.org/10.5328/cter37.1.35

Gonzalez, M. G., Abu Kasim, N. H., & Naimie, Z. (2013). Soft skills and dental education. *European Journal of Dental Education, 17*(2), 73-82. doi:10.1111/eje.12017

Gordon, H. R. D. (2008). *The history and growth of career and technical education in America* (3rd ed.). Long Grove, IL: Waveland Press.

GovTrack.us. (2019). *H.R. 2353 — 115th Congress: Strengthening Career and Technical Education for the 21st Century Act.* Retrieved from https://www.govtrack.us/congress/bills/115/hr2353

Green, J. H. (2013). Transfer of learning and its ascendancy in higher education: A cultural critique. *Teaching in Higher Education*, *18*(4), 365-376. http://dx.doi.org/10.1080/13562517.2012.719155

Grosjean, G., & Sork, T. J. (2007). Going online: Uploading learning to the virtual classroom. *New Directions for Adult & Continuing Education*, *2007*(113), 13-24. https://doi.org/10.1002/ace.243

Guffy, M. E., & Loewy, D. (2013). *Essentials of business communication* (9th ed.). Mason, OH: South-Western.

Gutman, L. M., & Schoon, I. (2013). *The impact of non-cognitive skills on outcomes for young people: Literature review.* Retrieved from https://v1.educationendowmentfoundation.org.uk/uploads/pdf/Non-cognitive_skills_literature_review_1.pdf

Hainline, L., Gaines, M., Feather, C. L., Padilla, E., & Terry, E. (2010). Changing students, faculty, and institutions in the twenty-first century. *Peer Review*, *12*(3), 7.

Halbe, D. (2012). "Who's there?": Differences in the features of telephone and face-to-face conferences. *Journal of Business Communication*, 49(1), 48-73. https://doi.org/10.1177/0021943611425238

Hall, R. A. (2015). Critical thinking in online discussion boards: Transforming an anomaly. *The Delta Kappa Gamma Bulletin: International Journal for Professional Educators*, *81-3*, 21-27.

Hansman, C. A., & Mott, V. W. (2010). Adult learners. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 13-23). Thousand Oaks, CA: Sage Publications, Inc.

Harcleroad, F. F., & Eaton, J. S. (2011). The hidden hand: External constituencies and their impact. In P. G. Altbach, P. J. Gumport, & R. O. Berdahl (Eds.), *American higher education in the twenty-first century: Social, political and economic challenges* (2nd ed., pp. 195-224). Baltimore, MD: Johns Hopkins University Press.

Hargis, K. B. (2011). *Career and technical education program alignment with local workforce needs* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3488204).

Harris, C. R. (2013). *Perceptions of students at a rural Mississippi community college regarding employability* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3603434).

Harris, S., Lowery-Moore, H., & Farrow, V. (2008). Extending transfer of learning theory to transformative learning theory: A model for promoting teacher leadership. *Theory into Practice*, *47*(4), 318-326. https://doi.org/10.1080/00405840802329318

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

Hendren, H. (2016). *A phenomenological study of employers' perceptions of Heating, Ventilation, and Air Conditioning (HVAC) graduates* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10195754).

Hess, C., Krohn, S., Reichlin, L., Roman, S., & Gault, B. (2014). *Securing a better future: A portrait of female students in Mississippi's community colleges* (Research Report No. C417). Retrieved from Institute for Women's Policy Research website: https://iwpr.org/wp-content/uploads/wpallimport/files/iwpr-export/publications/C417.pdf

Hirschy, A. S., Bremer, C. D., & Castellano, M. (2011). Career and technical education (CTE) student success in community colleges: A conceptual model. *Community College Review*, *39*(3), 296-318. https://doi.org/10.1177/0091552111416349

Hodge, S. (2011). Learning to manage: Transformative outcomes of competency-based training. *Australian Journal of Adult Learning*, *51*(3), 498-517. Retrieved from http://files.eric.ed.gov/fulltext/EJ954478.pdf

Horvitz, B. S. (2017). Future directions for research on online technical education. *Community College Journal of Research and Practice*, *41*(6), 381-385. http://dx.doi.org/10.1080/10668926.2016.1270241

Howell, W. G. (1996). The people's colleges: Mississippi's system of community and junior colleges. *Community College Journal of Research and Practice*, *20*(6), 545-555. https://doi.org/10.1080/1066892960200607

Hughes, R. L., & Jones, S. K. (2011). Developing and assessing college student teamwork skills. *New Directions for Institutional Research*, *2011*(149), 53-64. http://dx.doi.org/10.1002/ir.380

Hyslop, A. (2011). CTE's role in worker retraining. *Techniques: Connecting Education and Careers (J1), 86*(2), 16-19. Retrieved from https://files.eric.ed.gov/fulltext/EJ926042.pdf

Ingols, C., & Shapiro, M. (2014). Concrete steps for assessing the "soft skills" in an MBA program. *Journal of Management Education*, *38*(3), 412-435. https://doi.org/10.1177/1052562913489029

Jacobs, R. L., & Hawley, J. D. (2009). The emergence of 'workforce development': Definition, conceptual boundaries and implications. In R. Maclean & D. Wilson (Eds.), *International handbook of education for the changing world of work* (pp. 2537-2552). Dordrecht, Netherlands: Springer. https://doi.org/10.1007/978-1-4020-5281-1_167

James, R. F., & James, M. L. (2004). Teaching career and technical skills in a "mini" business world. *Business Education Forum*, *59*(2), 39-41.

Johnson, S., Benson, A., Duncan, J., Shinkareva, O., Taylor, G. D., & Treat, T. (2004). Internet-based learning in postsecondary career and technical education. *Journal of Vocational Education Research*, *29*(2), 101-119. https://doi.org/10.5328/JVER29.2.101

Jordan, J., Dechert, K., & Wainwright, H. (2012). Hiring the right person for the job: The key to CTE center success. *Techniques: Connecting Education and Careers*, *87*(8), 10-11.

Juszkiewicz, J. (2017). *Trends in community college enrollment and completion data, 2017.* Retrieved from American Association of Community Colleges website: https://www.aacc.nche.edu/wp-content/uploads/2018/04/CCEnrollment2017.pdf

Kane, T. J., & Rouse, C. E. (1999). The community college: Educating students at the margin between college and work. *Journal of Economic Perspectives*, *13*(1), 63-84. Retrieved from http://www.jstor.org/stable/2647137

Kasworm, C. E., & Bowles, T. A. (2012). Fostering transformative learning in higher education settings. In E. W. Taylor, P. Cranton, & Associates (Eds.), *The handbook of transformative learning: Theory, research, and practice* (pp. 388-407). San Francisco, CA: Jossey-Bass.

Kemper, E., Stringfield, S., & Teddlie, C. (2003). Mixed methods sampling strategies in social science research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 273-296). Thousand Oaks, CA: Sage Publications, Inc.

Kim, K. A., Sax, L. J., Lee, J. J., & Hagedorn, L. S. (2010). Redefining nontraditional students: Exploring the self-perceptions of community college students. *Community College Journal of Research and Practice*, *34*(5), 402-422. https://doi-org.lynx.lib.usm.edu/10.1080/10668920701382633

King, K. P. (2010). Informal learning in a virtual era. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 421-429). Thousand Oaks, CA: Sage Publications, Inc.

Kistler, M. J. (2011). Adult learners: Considerations for education and training. *Techniques: Connecting Education and Careers (J1)*, *86*(2), 28-30. Retrieved from https://files.eric.ed.gov/fulltext/EJ926047.pdf

Knowles, G. (2014, July 21). A common framework for employability skills [Web log post]. Retrieved from American Institutes for Research, College & Career

Readiness & Success Center website: https://ccrscenter.org/blog/common-framework-employability-skills

Knowlton, J. L., Halvorsen, K. E., Handler, R. M., & O'Rourke, M. (2014). Teaching interdisciplinary sustainability science teamwork skills to graduate students using in-person and web-based interactions. *Sustainability*, *6*(12), 9428-9440. http://dx.doi.org/10.3390/su6129428

Kolbergytė, A., Indrašienė, V., & Bardauskienė, R. (2014). Self-directed learning in a perspective of transformative learning theory. *Journal of Educational Review*, *7*(4), 649-658. https://depot.ceon.pl/handle/123456789/8290

Kulo, W. (2015, September 2). Study: Mississippi has nation's top community college system. *Alabama Live LLC*. Retrieved from http://www.gulflive.com/news/index.ssf/2015/09/study_mississippi_has_nations_1.html

Kyllonen, P. C. (2013). Soft skills for the workplace. *Change: The Magazine of Higher Learning*, *45*(6), 16-23. https://doi.org/10.1080/00091383.2013.841516

Lavrysh, Y. (2015). Transformative learning as a factor of lifelong learning by the example of vocational education in Canada. *Comparative Professional Pedagogy*, *5*(4), 62-67. http://dx.doi.org/10.1515%2Frpp-2015-0067

Leberman, S., McDonald, L., & Doyle, S. (2006). *The transfer of learning: Participants' perspectives of adult education and training*. Burlington, VT: Gower Publishing.

Lederman, D. (2018, January 5). Who is studying online (and where). *Inside Higher Ed*. Retrieved from https://www.insidehighered.com/digital-

learning/article/2018/01/05/new-us-data-show-continued-growth-college-students-studying

Lindsey, N. S. (2014). *Online education, emotional intelligence, and interpersonal skills for the 21st century workforce* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3620127).

Loughry, M. L., Ohland, M. W., & Woehr, D. J. (2014). Assessing teamwork skills for assurance of learning using CATME team tools. *Journal of Marketing Education, 36*(1), 5-19. https://doi.org/10.1177/0273475313499023

Lozar Glenn, J. M. (2018). Measuring the soft skills: Issues and innovations. *Business Education Forum, 72*(4), 22–30.

Ma, J., & Baum, S. (2016, April). *Trends in community colleges: Enrollment, prices, student debt, and completion*. Retrieved from The College Board website: https://trends.collegeboard.org/sites/default/files/trends-in-community-colleges-research-brief.pdf

Mader, J. (2017, March 7). Are Mississippi's students prepared for college? *The Hechinger Report*. Retrieved from https://hechingerreport.org/mississippis-students-prepared-college/

Makhathini, T. P. (2016). Work integrated learning competencies: Industrial supervisors' perspectives. *Perspectives in Education, 34*(3), 56-71. http://dx.doi.org/10.18820/2519593X/pie.v34i3.5

Mann, C. R. (1918). *A study of engineering education: Prepared for the joint committee on engineering education of the National Engineering Societies, Bulletin No. 11*. Boston, MA: The Merrymount Press.

Markle, G. (2015). Factors influencing persistence among nontraditional university students. *Adult Education Quarterly*, *65*(3), 267-285. https://doi.org/10.1177/0741713615583085

Mason, S. (2018). The impact of transformational learning for mature adults studying a foundation degree. *Widening Participation and Lifelong Learning*, *20*(2), 8-27. https://doi.org/10.5456/WPLL.20.2.8

McDougall, J., & Holden, H. (2017). The silence about oral presentation skills in distance and online education: New perspectives from an Australian university preparatory programme. *Open Learning: The Journal of Open, Distance and e-Learning*, *32*(2), 163-176. https://doi.org/10.1080/02680513.2017.1316187

McGarry, K. B. (2016). *An examination of perceived employability skills between employers and college graduates* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10241724).

McQuiggan, C. A. (2012). Faculty development for online teaching as a catalyst for change. *Journal of Asynchronous Learning Networks*, *16*(2), 27-61. http://files.eric.ed.gov/fulltext/EJ971044.pdf

Meeks, G. A. (2017). *Critical soft skills to achieve success in the workplace* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10618029).

Merriam, S. B., & Brockett, R. G. (2007). *The profession and practice of adult education: An introduction*. San Francisco, CA: Jossey-Bass.

Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide* (3rd ed.). San Francisco, CA: Jossey-Bass.

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

Meyer, K. A. (2002). Quality in distance education. *ASHE-ERIC Higher Education Report, 29*(4). San Francisco, CA: Jossey-Bass.

Mezirow, J. (2012). Learning to think like an adult: Core concepts of transformation theory. In E. W. Taylor, P. Cranton, & Associates (Eds.), *The handbook of transformative learning: Theory, research, and practice* (pp. 73-95). San Francisco, CA: Jossey-Bass.

Miller, M. J., Woehr, D. J., & Hudspeth, N. (2002). The meaning and measurement of work ethic: Construction and initial validation of a multidimensional inventory. *Journal of Vocational Behavior, 60*(3), 451-489. https://doi.org/10.1006/jvbe.2001.1838

Miller, L., Biggart, A., & Newton, B. (2013). Basic and employability skills. *International Journal of Training and Development, 17*(3), 173-175. http://dx.doi.org/10.1111/ijtd.12007

Miranda-Wolff, A. (2017, November 21). Here's why soft skills are more important than technical skills: Why we need to "hire the heart and train the brain" [Web log post]. Retrieved from https://blog.usejournal.com/heres-why-soft-skills-are-more-important-than-technical-skills-6a1a5ea5540a

Mississippi Community College Board. (2019). *Workforce, career, and technical education*. Retrieved from http://www.sbcjc.cc.ms.us/workforceEdu/divdefault.aspx

Mississippi Department of Education. (2014). *Mississippi career technical education counselor handbook.* Retrieved from https://www.mdek12.org/sites/default/files/Offices/MDE/OAE/CTE/OCSS/Counselor/mississippi-career-and-technical-education-counselor-handbook.pdf

Mississippi Gulf Coast Community College. (2019a). *Online classes*. Retrieved from https://mgccc.edu/programs/online-classes/

Mississippi Gulf Coast Community College. (2019b). *Testing-proctored exams*. Retrieved from https://mgccc.edu/elearning/13735-2/

Mississippi Gulf Coast Community College. (2019c). *2018-2019 college catalog*. Retrieved from http://catalog.mgccc.edu/

Mississippi state plan for vocational and technical education: Program year 2008 to program year 2013. (n.d.) Retrieved from the Mississippi Community College Board website: http://www.mccb.edu/pdfs/ct/perkinsstateplan.pdf

Mississippi Virtual Community College. (n.d.). *Mississippi Virtual Community College*. Retrieved from https://msvcc2.squarespace.com/about-the-msvcc/

Mitchell, G. W., & Durham, S. K. (2010). Effective management communication for success in the twenty-first century workforce. *Business Education Forum, 65*(1), 29-31.

Mitchell, G. W., Skinner, L. B., & White, B. J. (2010). Essential soft skills for success in the twenty-first century workforce as perceived by business educators. *Delta Pi Epsilon Journal, 52*(1).

Moak, B. (2015, September 2). Mississippi's 2-year college system rocks. *The Clarion-Ledger*. Retrieved from

https://www.clarionledger.com/story/money/business/2015/09/02/moak-mississippis-year-college-system-rocks/71572208/

Moore, K. A., & Pearson, B. J. (2017). Soft skills in an online class. *HortTechnology, 27*(5), 583-585. doi:10.21273/HORTTECH03672-17

Muzio, E., Fisher, D. J., Thomas, E. R., & Peters, V. (2007). Soft skills quantification (SSQ) for project manager competencies. *Project Management Journal, 38*(2), 30–38. https://doi.org/10.1177%2F875697280703800204

National Research Council. (2011). *Assessing 21st century skills: Summary of a workshop*. Washington, DC: The National Academies Press. Retrieved from https://www.learntechlib.org/p/159080/

National Soft Skills Association. (n.d.). *Welcome to the National Soft Skills Association*. Retrieved from http://www.nationalsoftskills.org/

O'Banion, T. (2005). Creating more learning-centered community colleges. In L. R. Lattuca, J. G. Haworth, & C. F. Conrad (Eds.), *College and university curriculum: Developing and cultivating programs of study that enhance student learning* (pp. 301-313). Boston, MA: Pearson Custom Publishing.

Ochs, A. (2018, March 2). A new push to get community college students in Mississippi across the finish line. *Inside Philanthropy*. Retrieved from https://www.insidephilanthropy.com/home/2018/3/2/higher-education-in-mississippi-whos-funding-it-and-why-community-colleges-are-top-priority

Offerman, M. (2011). Profile of the nontraditional doctoral degree student. *New Directions of Adult and Continuing Education, 2011*(129), 21-30. http://dx.doi.org.lynx.lib.usm.edu/10.1002/ace.397

Office of Career, Technical, and Adult Education (OCTAE), United States Department of Education. (n.d.). *Employability skills*. Retrieved from https://cte.ed.gov/initiatives/employability-skills-framework

Office of Special Education and Rehabilitative Services (OSERS), United States Department of Education. (2016). *Workforce Innovation and Opportunity Act (WIOA) final rules.* Retrieved from https://www2.ed.gov/about/offices/list/osers/rsa/wioa-final-rules.html

Olson, J. D. (2016). *Teaching employability skills to post-secondary students through e-learning: A case study of online curriculum* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10134338).

Onwuegbuzie, A. J., & Collins, K. M. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report*, *12*(2), 281-316. Retrieved from http://nsuworks.nova.edu/tqr/vol12/iss2/9

Özyurt, Ö. (2015). Examining the critical thinking dispositions and the problem solving skills of computer engineering students. *Eurasia Journal of Mathematics, Science & Technology Education, 11*(2), 353-361. https://doi.org/10.12973/eurasia.2015.1342a

Palmer, L. B., & Gaunt, D. (2007). Current profile of CTE and non-CTE students: Who are we serving? *Journal of Career and Technical Education*, *23*(1). http://dx.doi.org/10.21061/jcte.v23i1.441

Pant, I., & Baroudi, B. (2008). Project management education: The human skills imperative. *International Journal of Project Management*, *26*(2), 124-128. https://doi.org/10.1016/j.ijproman.2007.05.010

Partnership for 21st Century Learning. (n.d.). *FAQ*. Retrieved from http://www.p21.org/about-us/p21-faq

Patriquin, W. M. (2016). *Developing intercultural competence in community college career and technical programs* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10193559).

Peeples, M. E. (2015). From the president. *American Scientist, 103*(6), 429.

Perkins, D. N., & Salomon, G. (1992). *Transfer of learning*. Retrieved from https://pdfs.semanticscholar.org/fb86/245e6623502017940c796c01ed508c3d8208.pdf

Perreault, H. (2004). Business educators can take a leadership role in character education. *Business Education Forum, 59*(1), 23-25.

Pfahl, N. L., McClenney, K. M., O'Banion, T., Sullivan, L. G., & Wilson, C. D. (2010). The learning landscape of community colleges. In C. E. Kasworm, A. D. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education, 2010 edition* (pp. 231-241). Thousand Oaks, CA: Sage Publications, Inc.

Pope, G. M. (2017). *Perceptions of soft skills by former technical college business education students and their employers* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10267976).

Randolph, M. L. (2016). *The need for soft skills in a medical assistant program* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10150269).

Rao, M. S. (2010). *Soft skills—enhancing employability: Connecting campus with corporate*. New Delhi, India: IK International Publishing House Pvt. Ltd.

Reese, S. (2011). An education for all seasons of life. *Techniques: Connecting Education and Careers (J1), 86*(2), 20-23. Retrieved from https://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=EJ926045

Reese, S. (2012). Today's adult students. *Techniques: Connecting Education and Careers (J3), 87*(7), 30-35.

Report: 40 percent Ohio grads not college-ready. (2014, February). *Community College Week, 26*(14), 20. https://npaper-wehaa.com/ccweek/2014/02/17/#?page=20

Roberts, A. (2016). *Employment status of postsecondary completers in 2009: Examination of credential level and occupational credentials* (Data Point No. NCES 2016107). Retrieved from National Center for Education Statistics website: https://nces.ed.gov/pubs2016/2016107.pdf

Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly*, *75*(4), 453-465. https://doi.org/10.1177/1080569912460400

Roepe, L. R. (2017, August 18). *Why soft skills will help you get the job and the promotion*. Retrieved from Forbes website: https://www.forbes.com/sites/lisaroepe/2017/08/18/why-soft-skills-will-help-you-get-the-job-and-then-promoted/#79c4d5be54b8

Rojewski, J. W. (2002). Preparing the workforce of tomorrow: A conceptual framework for career and technical education. *Journal of Vocational Education Research, 27*(1), 7-34. Retrieved from https://files.eric.ed.gov/fulltext/ED461771.pdf

Royer, J. M. (1979). Theories of the transfer of learning. *Educational Psychologist, 14*(1), 53-69. https://doi.org/10.1080/00461527909529207

Schulz, B. (2008). The importance of soft skills: Education beyond academic knowledge. *Journal of Language and Communication*, 146-154. http://hdl.handle.net/10628/39

Scoggin, D., & Styron, R. A. (2006). Factors associated with student withdrawal from community college. *The Community College Enterprise, 12*(1), 111-124. Retrieved from http://www.schoolcraft.edu/cce/12.1.111-124.pdf

Seidman, I. (2013). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (4th ed.). New York, NY: Teachers College Press.

Sitompul, S. S., Kustono, D., & Suhartadi, S. (2016). Various aspects affecting work quality of Medan tourism academy graduates. *AIP Conference Proceedings, 1778,* 030055-1–030055-8. https://doi.org/10.1063/1.4965789

Skinner, K. (2014, July 24). Report: Better health and child care could boost Miss. graduation rates: Persistent poverty undermines efforts of women to obtain degrees. *Community College Week*. Retrieved from http://ccweek.com/article-4048-report-better-health-and-child-care-could-boost-miss-graduation-rates.html

Smith, A. A. (2016, February 23). Experiencing developmental education. *Inside Higher Ed*. Retrieved from https://www.insidehighered.com/news/2016/02/23/broad-study-community-college-students-who-take-developmental-education-courses

Smith, A. A. (2018, June 21). No bottom yet in 2-year college enrollments. *Inside Higher Ed*. Retrieved from https://www.insidehighered.com/news/2018/06/21/community-college-enrollment-rates-expected-keep-falling

Smith, R. O. (2012). Fostering transformative learning online. In E. W. Taylor, P. Cranton, & Associates (Eds.), *The handbook of transformative learning: Theory, research, and practice* (pp. 408-422). San Francisco, CA: Jossey-Bass.

Southern Association of Colleges and Schools Commission on Colleges. (2006). *Faculty credentials*. Retrieved from http://www.sacscoc.org/pdf/081705/faculty%20credentials.pdf

Subedi, B. S. (2004). Emerging trends of research on transfer of learning. *International Education Journal, 5*(4), 591-599. Retrieved from https://files.eric.ed.gov/fulltext/EJ903882.pdf

Sullivan, W. M. (2005). *Work and integrity: The crisis and promise of professionalism in America* (2nd ed.). San Francisco, CA: Jossey-Bass.

Tabatabaei, M., & Gardiner, A. (2012). Recruiters' perceptions of information systems graduates with traditional and online education. *Journal of Information Systems Education*, *23*(2), 133-142.

Tan, J. P., McGough, R., & Valerio, A. (2010, January 10). *Workforce development in developing countries: A framework for benchmarking*. Retrieved from The World Bank Group website: http://siteresources.worldbank.org/EDUCATION/Resources/278200-1290520949227/WfD_Benchmarking_Framework.pdf

Taylor, E. W. (2008). Transformative learning theory. *New Directions for Adult and Continuing Education, 2008*(119), 27-36. https://doi.org/10.1002/ace.301

Taylor, M. C., Ayala, G. E., & Pinsent-Johnson, C. (2009). Understanding learning transfer in employment preparation programmes for adults with low skills.

Journal of Vocational Education and Training, *61*(1), 1-13. https://doi.org/10.1080/13636820902819834

Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, *1*(1), 77-100. https://doi.org/10.1177/2345678906292430

The 21st century and the 3rd millennium: When did they begin? (2011, June 14). Retrieved from The United States Naval Observatory website: http://aa.usno.navy.mil/faq/docs/millennium.php

Tulgan, B. (2015). *Bridging the soft skills gap: How to teach the missing basics to today's young talent*. Hoboken, NJ: John Wiley & Sons, Inc.

Velasco, M. S. (2012). More than just good grades: Candidates' perceptions about the skills and attributes employers seek in new graduates. *Journal of Business Economics and Management*, *13*(3), 499-517. https://doi.org/10.3846/16111699.2011.620150

Wang, V. C., & Cranton, P. (2014). Transformative learning and technology in adult and vocational education. In M. Khosrow-Pour et al. (Eds.), *Adult and Continuing Education: Concepts, Methodologies, Tools, and Applications* (pp. 1102-1113). Hershey, PA: IGI Global.

Ward, R. (2018, March 20). Mississippi community college leaders rally for state funding. *The Meridian Star*. Retrieved from http://www.meridianstar.com/news/local_news/mississippi-community-college-leaders-rally-for-state-funding/article_40e4550e-88dd-5fb2-a430-46490db117ce.html

Weeks, P. (2009). The outlook in engineering-related technology fields. *New Directions for Community Colleges*, *2009*(146), 69-76. https://doi.org/10.1002/cc.367

Weimer, M. (2012). Learner-centered teaching and transformative learning. In E. W. Taylor, P. Cranton, & Associates (Eds.). *The handbook of transformative learning: Theory, research, and practice* (pp. 439-454). San Francisco, CA: Jossey-Bass.

Williams, A. (2015). *Soft skills perceived by students and employers as relevant employability skills* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3721695).

Wilson, T. J., Hu, X., Basham, M., & Campbell, D. F. (2015). 20 years of best practices: 2014 community college futures assembly raises questions on 2020 community colleges. *Community College Journal of Research & Practice*, *39*(12), 1192-1195. https://doi.org/10.1080/10668926.2014.993442

Yang, L., Hanneke, S., & Carbonell, J. (2013). A theory of transfer learning with applications to active learning. *Machine Learning*, *90*(2), 161-189. https://doi.org/10.1007/s10994-012-5310-y

Yen, D. C., Sooun, L., & Seokha, K. (2001). Critical knowledge/skill sets required by industries: An empirical analysis. *Industrial Management & Data Systems*, *101*(8/9), 432-442.