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Perceptions of Occupationally Trained Technical College Faculty on their Preparedness to Teach and on the Need for Professional Development: A Phenomenological Study

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and on the Need for Professional Development: A Phenomenological Study

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ABSTRACT

Perceptions of Occupationally Trained Technical College Faculty on their Preparedness to Teach

and on the Need for Professional Development: A Phenomenological Study

by

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This qualitative, phenomenological study examines the perceptions of occupationally trained

Tennessee technical college faculty on their preparedness to teach after being hired directly from

industry and on the need for professional development and training on instructional and

classroom strategies. Twelve semi-structured interviews were conducted by Zoom with

instructors from three technical college program areas, Industrial Maintenance, Machine Tool

Technology, and Welding. Participants represented institutions from each grand division of

Tennessee, West, Middle, and East, plus Upper East. As a result of the data analysis, common

themes, including a "here are your keys" approach to instructor induction, a reliance on other

instructors for training, and the importance of timing when offering professional development

and training to technical college instructors, were identified. The findings of this study exposed

the perceived benefit and desire for professional development and the lack of formal training

offered to occupationally trained technical college instructors. Finally, the findings from this

study could be used to inform the development of professional development offerings offered by

technical college administrators in Tennessee and the Tennessee Board of Regents.

DEDICATION

I dedicate this work to my wife, Julia. Thanks for your patience and understanding. There

is no way I could have done this without you. I also dedicate this to my family and my best pals.

Thanks for always being there for me.

ACKNOWLEDGEMENTS

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Chapter 1. Introduction

Tennessee's higher education landscape changed in 2010 with the passing of the Complete College Tennessee Act by the Tennessee General Assembly (Tennessee Higher Education Commission, 2015). The Complete College Tennessee Act brought about the state's outcome-based funding formula, created the Tennessee Transfer Pathways, updated the Quality Assurance Funding formula, and developed the Seamless Alignment and Integration of Learning Support (SAILS) program (Tennessee Higher Education Commission, 2015). In 2013, then Governor Bill Haslam initiated the Drive to 55, the state's initiative to increase the number of Tennesseans with a postsecondary credential, and the resulting Tennessee Promise and Tennessee Reconnect initiatives. Tennessee Promise and Tennessee Reconnect are tuition programs that allow eligible residents to attend a community or technical college tuition-free.

These programs have increased postsecondary access and attainment opportunities to Tennesseans (Tennessee Higher Education Commission, 2020a). Tennessee's eligible institutions saw a first-time freshman enrollment increase of 13% between Fall 2014 and Fall 2016 (Tennessee Higher Education Commission, 2018). In Tennessee's colleges of applied technology (TCATs), first-time freshman enrollment rose by 20% from fall 2014 to fall 2015 and by 32% between fall 2014 and fall 2016 due in part to Tennessee Promise and Tennessee Reconnect (Tennessee Higher Education Commission, 2017a; Tennessee Higher Education Commission, 2018). These programs have helped increase the postsecondary attainment of Tennessee residents to 43% in 2019 from 33.8% in 2013 (Tennessee Higher Education Commission, 2020a). The makeup of the student population at Tennessee's postsecondary institutions have changed as well. The median age for enrollees at the Tennessee Colleges of Applied Technology dropped from 26 years old in 2015 to 23 years old in 2019 (Tennessee

Board of Regents, 2020). Tennessee's higher education institutions are further implementing

policies and programs to address racial and socioeconomical educational attainment gaps

through increased dual enrollment opportunities and targeted student support efforts (Tennessee

Higher Education Commission, 2020a). These policies will add to the diversity of higher

education institutions and increase the number of different learning styles on campuses.

Career and technical education (CTE) programs have evolved in recent years to include

more integration and inclusion of academic standards into increasingly expanding program

offerings (Jacques & Potemski, 2014). Secondary CTE faculty members are also tasked with

improving students' readiness for both postsecondary enrollment and entry-level careers

(Jacques & Potemski, 2014). Postsecondary CTE faculty must ensure career readiness while

maintaining accreditation requirements on completion, placement, and licensure pass rates

(Council on Occupational Education, 2019). However, CTE faculty often begin teaching with

little or no preparation in classroom strategies and are often not adequately supported (Jacques &

Potemski, 2014).

As enrollments continue to rise and with a continued emphasis on student outcomes, a

highly qualified faculty is needed. Career and technical education (CTE) faculty factor greatly in

student success (Jacques & Potemski, 2014). The hiring, developing, and training of a qualified

CTE faculty can ultimately have a great impact on a number of different outcomes, including

student articulation, completion, and placement. In the 2018-19 academic year, the technical

colleges had an overall completion rate of 81.7% and an overall placement rate of 88.7%

(Tennessee Higher Education Commission, 2020b). Technical colleges face the challenge of

sustaining the high percentage of completion and job placement while dealing with increased

enrollment. In order to keep these already high percentages and increase them, technical colleges

must ensure that every student is successful. To ensure student success, technical colleges must better meet the needs of all students, from recent high school graduates, to returning adult students, to students with learning disabilities. In order to do this, faculty members need adequate training on andragogy theories and practices. According to Jacques and Potemski (2014), CTE faculty need professional development opportunities to improve classroom instruction while imparting their technical knowledge.

In light of the COVID-19 pandemic of 2020, career and technical education is more important than ever. Institutions are focusing on workforce development to assist displaced workers in returning to work (Dembicki, 2020). Of those who lost their jobs during the COVID-19 unemployment crisis, the majority had a high school diploma or less and were African American or Hispanic (Georgetown University Center of Education and the Workforce, 2020). In November 2020, Tennessee Governor Bill Lee announced a partnership between the Tennessee Higher Education Commission and the Tennessee Department of Labor and Workforce Development to offer support to nearly 500,000 Tennesseans receiving unemployment benefits to work toward a postsecondary credential using Tennessee Reconnect (Gov. Lee Announces Reconnect to Workforce Partnership, 2020). Tennessee Reconnect allows eligible adults to attend Tennessee community and technical colleges without paying tuition (Locker, 2020). In addition, hiring practices by the federal government and other industries have placed an emphasis on skills rather than degrees. Blumenstyk (2020) noted that the federal government is no longer able to list minimum educational requirements, with some exceptions, for its job postings. Carnevale et al. (2020) found some certificate programs, like those offered by the Tennessee Colleges of Applied Technology, result in comparable salaries to some bachelor's degree programs. The emphasis on skills and certificates, in addition to those recently

unemployed and needing to upskill, could result in an increase in enrollment at Tennessee's technical colleges and other workforce development institutions.

To meet the needs of these new and returning students career and technical education, faculty need to be prepared and supported. Many faculty members do not receive the support and training needed to succeed and ensure student success (Rosen & Lester, 2020). During the continuing COVID-19 crisis, curriculum delivery methods will change. Many courses will move to a fully online model or will institute some form of hybrid learning (Darby, 2020). Faculty, especially career and technical education (CTE) faculty, will need training on how to transition to an online delivery system. Further, this type of training is an accreditation requirement for technical college courses offered via distance learning (Council on Occupational Education, 2019). Rosen and Lester (2020) suggested that higher education institutions rethink their professional development programs and make them an integral part of their strategic plan.

Career and technical education is facing a shortage of qualified instructors (Jacques & Potemski, 2014). With increased emphasis on student outcomes, minimal support and development, rigorous requirements from federal and accrediting agencies, and the importance of upskilling unemployed workers due to the COVID-19 pandemic, it is difficult to recruit and retain qualified CTE faculty. Therefore, it is important that states and local institutions have a plan to develop and support CTE faculty in meeting personal, institutional, and student success goals.

Statement of the Problem

Tennessee's technical college faculty are tasked with ensuring student completion and job placement as required by the Council on Occupational Education, the accrediting agency of all Tennessee Colleges of Applied Technology (TCATs). To receive and maintain accreditation,

programs must accomplish a 60% completion rate, a 70% job placement rate in the occupational

field in which students are trained, and a 70% licensure pass rate on state required testing

(Council on Occupational Education, 2019). In addition to these accreditation requirements, the

admission requirements at TCATs allow for the enrollment of students of differing educational

and technical abilities. TCATs have the ability to develop admission policies and procedures for

programs with enrollment limitations and/or specialized curricula (Tennessee Board of Regents,

2019a). These selective policies and procedures must apply to all students and could be impacted

by accreditation standards, capacity, faculty availability, and concern for appropriate student

progress (Tennessee Board of Regents, 2019a). However, most Tennessee technical colleges do

not have required grade point average or ACT scores for enrollment in many of their programs,

excluding some Allied Health programs. TCATs admit students on a first-come, first-served

basis and require the following criteria. Students must:

- Be eighteen (18) years of age or have a high school diploma or equivalent;

- Select a program of study;

- Complete an admissions application;

- Submit program specific materials and complete additional requirements of the chosen
  program (if required) (Tennessee Board of Regents, 2019a, para. 1).

Because of these minimal admission requirements, the educational ability of the students

enrolled at the technical colleges is often lower than at other types of institutions. In a survey of

high school seniors graduating in 2017, 7.6% of those students earning a 1 to 17 on the ACT

planned on attending a technical college, while less than 3% of those scoring a 21-24 and 25-28

planned to attend a technical college (Tennessee Higher Education Commission, 2017b). Also,

8.7% of seniors with a 1.00 to 1.99 grade point average planned to attend a technical college, as

opposed to 3.6% with a 3.00 to 3.99 grade point average (Tennessee Higher Education Commission, 2017b).

The minimum requirements to be hired as a faculty member at Tennessee's colleges of applied technology are the following:

- Evidence of good ability in instruction;

- Evidence of potential ability in instruction;

- Evidence of good character, mature attitude, and stable personality;

- Credential indicating high school graduation or equivalent;

- Three years of employment experience in the occupation to be taught and appropriate occupational certification;

- Indication of a willingness to remain current in the occupation to be taught;

- Indication of a willingness to establish and maintain positive relationships with business, industry and government. (Tennessee Board of Regents, 2019b, para. 2).

With minimum requirements of three years of experience in the occupation to be taught and only a high school diploma or its equivalent, Tennessee technical college faculty may enter into the classroom with minimal education experience, either as a student or a faculty member. Industry experience can sometimes be the only experience a faculty member has upon entering the teaching profession. Therefore, the purpose of this qualitative, phenomenological study was to understand the perceptions of occupationally trained faculty members at Tennessee technical colleges about their preparedness to serve as instructors and their perceptions about the need for professional development activities.

Research Questions

My study focused on research questions that were designed to understand an occupationally trained faculty member's perceptions of their preparedness level to teach at a Tennessee technical college and their perceptions on the need for professional development activities.

The study's research questions are as follows:

Research Question 1. How do occupationally trained technical college faculty prepare for a career as an instructor?

Research Question 2. How do occupationally trained technical college faculty describe their preparedness to teach?

Research Question 3. How does industry experience prepare occupationally trained faculty to serve as instructors?

Research Question 4. Do occupationally trained faculty perceive a value in a development program on instructional and classroom strategies?

Research Question 5. What training topics would increase instructor preparedness upon entering the classroom?

Significance of the Study

This study is significant because it may result in a better understanding of the instructional preparedness levels of occupationally trained technical college faculty. It is also significant because it may also add to the understanding of the instructional training and professional development topics that occupationally trained technical college faculty desire. Including faculty input and existing topics suggested in existing research in the development of a

professional development program may positively influence the participation and outcomes of the trainings.

With increased demands placed on technical colleges due to accreditation requirements and the access and attainment initiatives set forth by the state, technical college faculty should be equipped with the aptitudes and abilities to influence student success and the accomplishment of these demands. There are very few studies on the preparedness levels of occupationally trained technical college faculty and very few, if any, studies on the professional development needs of occupationally trained technical college faculty. Also, there is little research on the professional development needs of non-agriculture career and technical education (CTE) faculty (Bartlett, 2002). The purpose of this qualitative, phenomenological study was to understand the perceptions of occupationally trained faculty members at Tennessee technical colleges about their preparedness to serve as instructors and their perceptions about the need for professional development activities. This study could add to the research of both topics and could possibly inform the development of institution-level and state-provided faculty professional develop and training for technical college faculty.

Definition of Terms

For clarity, the following terms are defined as follows. These terms are used consistently throughout the body of this study.

- Adjunct Faculty: The Tennessee Board of Regents defined adjunct faculty as "professional staff members of businesses, industries, and other agencies and organizations who are appointed by institutions on a part-time basis to carry out instructional, research, or public service functions" (Tennessee Board of Regents, 2014).

- Career and Technical Education: Advance CTE defined career and technical education (CTE) as education that provides students with both academic and practical training in preparation for future careers (Advance CTE, n.d.).

- Faculty: The Tennessee Board of Regents defined faculty as "regular, full-time personnel at institutions whose regular assignments include instruction, research, and/or public service as a principle activity" (Tennessee Board of Regents, 2014). Faculty does not apply to adjunct faculty members.

- Instructor: Instructor is defined as a faculty member at a Tennessee College of Applied Technology and is used to describe all full-time faculty members at Tennessee Colleges of Applied Technology (Tennessee Board of Regents, 2019b, Minimum Criteria for Initial Rank Appointment and for Promotion in Rank section, para. 1).

- Occupationally trained faculty: Occupationally trained faculty is defined as faculty that received training during employment in an occupation rather than through a postsecondary education program or through an educator preparation program offered at a university or college. Synonymous with alternatively certified faculty (Bonsu et al., 2013, p. i.).

- Professional development: The Tennessee Board of Regents defines professional development as "formal and informal learning opportunities situated in practice for the purpose of maintaining and improving professional competence and effectiveness" (Tennessee Board of Regents, 2018).

- Program of study: The Strengthening Career and Technical Education for the 21st Century Act of 2018 defines a program of study as "a coordinated, nonduplicative sequence of academic and technical content at the secondary and postsecondary level"

(Strengthening Career and Technical Education for the 21st Century Act, 132 Stat. 1572). Also referred to as program throughout the study.

- Technical college: the National Center for Education Statistics (NCES) defines a technical college as a two-year postsecondary institution that grants subbaccalaureate credentials such as certificates, diplomas, or terminal associate degrees in occupational education or career and technical education to individuals seeking to enter the workforce with specific skills and knowledge (National Center for Education and Statistics, 2019).

- Tennessee Colleges of Applied Technology: The Tennessee Colleges of Applied Technology (TCATs) are defined by the Tennessee Board of Regents as "the state's premier providers of state-of-the art technical training for workers to obtain the technical skills and professional training necessary for advancement in today's competitive job market" (Tennessee Board of Regents, n.d.b). There are 27 TCATs in Tennessee.

Delimitations and Limitations

This study was delimited to faculty from seven technical colleges in Tennessee. The study was delimited to faculty members that are occupationally trained. The research was delimited to include four regions of Tennessee. The study was further delimited to faculty from only three programs. The study was delimited to faculty of programs that are typically male-dominated and did not include program areas that are typically female-dominated. Therefore, the study was delimited to only male faculty. The study may also be delimited due to the small sample size of faculty members that were interviewed. The research is delimited to institutions falling under the governance of the Tennessee Board of Regents and those accredited by the Council on Occupational Education. Limitations of the research may include external variables on the days of the interviews. The study may also be limited due to the optional participation of

the faculty and the reliance of campus presidents and vice presidents to allow participation. The delimitations and limitations of the research may limit the transferability to other technical colleges.

Statement of Researcher Perspective

I am currently employed by the higher education coordinating body in Tennessee and have a working relationship with the Presidents and Vice Presidents of the institutions included in the study. I have previously been employed as a Vice President at a Tennessee technical college. Prior to that, I was in an administrative position at a different Tennessee technical college. I have communicated about career and technical student organization events with some of the faculty included in this study. I believe that increased professional development on instructional strategies for occupationally trained faculty is needed in Tennessee's technical colleges.

Overview of the Study

Chapter 1 of this study includes an overview of the study, including the statement of the problem, the research questions, the significance of the study, the definition of terms, and the statement of researcher perspective. Chapter 2 presents a review of literature on the requirements for CTE faculty; the shortage of qualified CTE faculty; existing professional development programs for CTE faculty and postsecondary faculty; topics of inclusion for CTE faculty professional development; and the effectiveness of industry in preparing CTE faculty to teach. Chapter 3 includes a description of the methodology used to study the research questions and collect and analyze data. Chapter 4 provides the findings of the research and includes an analysis of the data. Chapter 5 presents conclusions from the study and suggestions for additional research and practice.

Chapter 2. Review of Literature

There is a gap in existing research on postsecondary career and technical education (CTE) teaching requirements and professional development. Existing research focused on secondary CTE and the requirements for certification or licensure in that setting. The existing research on secondary CTE is also limited to mostly agriculture educators. Further, there is a research gap on the preparedness levels of postsecondary faculty that are occupationally trained or arrive into the teaching profession with little or no formal training on educational strategies. This study adds to the available research on postsecondary CTE faculty development and preparedness. The existing research on secondary CTE faculty development added to this study, but this work helps fill the gap on postsecondary CTE research.

Career and technical education faculty members at both the secondary and postsecondary levels come from a wide variety of backgrounds; the traditional route by an educator training program in a college or university bachelor's degree program, an alternative licensing program, or directly from industry. The requirements to teach differ from state to state. Therefore, educators arrive in the classroom with different skillsets, knowledge, and abilities to teach in a classroom or other educational setting. Because of these differences, states, governing bodies, and institutions often provide training and professional development to educators to provide an avenue for licensure or to strengthen their instructional abilities. These professional development programs can vary in delivery, length, content, and audience. Bartlett (2002) observed that most work on teacher preparation policies were in the secondary education space. Most CTE educators enter the teaching profession with different experiences and skillsets (Ruhland & Bremer, 2003). Because of these different skills, research must be conducted to determine the professional development needs of CTE educators. However, Kitchel et al. (2010) documented that minimal

research into the professional development needs of non-agricultural CTE educators had been conducted. The lack of research on the professional development needs of CTE faculty also includes postsecondary systems, where there are also minimal hiring expectations. Bartlett (2002) encountered that many community and technical colleges had no established standards for career and technical educators. Therefore, postsecondary CTE professional development programs should include similar content to those offered at the secondary level including providing experience in both pedagogy and andragogy (Bartlett, 2002). In addition to pedagogical and andragogical content, Cannon et al. (2011) summarized that classroom management, curriculum development, and working with diverse learners are some topics for professional development for career and technical education instructors, including those in a postsecondary setting.

I conducted a literature review to review requirements for teaching CTE courses and their impact on the shortage of CTE educators. I evaluated research on faculty development for CTE educators and postsecondary faculty, as well as the role of industry in preparing CTE educators. In the process of collecting information for the literature review, I examined scholarly articles, dissertations, presentations, and reports. This section is organized around the following topics: (a) requirements for CTE educators; (b) CTE teacher shortages; (c) existing professional development programs for CTE educators and postsecondary faculty; (d) topics for inclusion in CTE faculty professional development; and (e) the effectiveness of industry in preparing CTE faculty.

Requirements for CTE Educators

Each state has different requirements for earning a secondary teaching license, both for academic faculty and CTE faculty. For CTE faculty, these requirements can include a set

minimum level of education, enrollment in an educator preparation program, a certain number of

years of relevant work experience, industry certifications, or some combination of each. In

addition to these licensure requirements, there are also federal guidelines for professional

development for CTE faculty set forth in the Carl D. Perkins Act that states must adhere to in

order to receive funding. In postsecondary CTE, the requirements are set forth by the governing

bodies and accreditation organizations.

Federal Requirements

Federal requirements for CTE faculty date back to the Smith-Hughes Vocational

Education Act of 1917, which stated that career and technical education faculty who taught in

federally funded programs had to have work experience in the area in which they were to teach

(Gamoran & Himmelfarb, 1998). More recent federal legislation, including the Carl D. Perkins

Vocational and Applied Technology Education Amendments of 1998 (Perkins III) and the Carl

D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV), required that

career and technical education faculty were appropriately and adequately trained to help students

meet the agreed upon levels of performance and provide training on effective teaching skills

(Carl D. Perkins Vocational and Applied Technology Amendments of 1998, 1998; Carl D.

Perkins Career and Technical Education Improvement Act of 2006, 2006**).** Perkins IV legislation

also required the integration of academics into career and technical education classes, thereby

adding additional responsibilities to career and technical education faculty (Threeton, 2007). The

National Research Center for Career and Technical Education (2010) detected that the Perkins

IV Act made 14 mentions of professional development for CTE faculty. Perkins IV included

broad professional development requirements for career and technical education faculty,

including integrating rigorous and challenging academic and CTE instruction (Drage, 2010).

These professional development requirements included training on academic content into CTE programs; utilizing research and data to advance teaching; providing high quality, sustainable, rigorous, and classroom-focused trainings; providing training for collaboration with academic faculty; increasing academic and industry knowledge; and contributing to the academic and CTE knowledge of students through applied learning (Drage, 2010). The most recent iteration of the Carl D. Perkins Act, the Strengthening Career and Technical Education for the 21st Century Act (Perkins V), along with the requirements instituted by previous legislation, mandated professional development for CTE that is "sustained, intensive, collaborative, job-embedded, data-driven, classroom-focused, and evidence based" that assist faculty with ensuring students succeed in CTE (Association of Career and Technical Education, 2018).

Tennessee Requirements for Secondary Schools

Zirkle et al. (2007) found that most states have two routes to secondary CTE faculty licensure and certification: the traditional teacher preparation through a bachelor's degree program and an alternative certification route, which considers a person's work experience in the field in which the faculty member will be teaching. Tatto et al. (2016) revealed that alternative teacher licensing programs were often used to recruit teachers to schools that had difficulty filling positions while traditional preparation programs were most commonly used to fill staff. Ruhland and Bremer (2003) defined the traditional certification route as passing required tests, maintaining a minimum grade point average, and completing degree requirements from an educator training program offered by an accredited postsecondary institution. Ruhland and Bremer (2003) defined the alternative certification route as the professional preparation of people who do not hold an undergraduate degree in education who want to become teachers. The National Center for Education Statistics (2018) discovered approximately 18% of public school

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teachers entered the profession through an alternative certification path. Keily and Perez (2020) documented that there were five requirements needed by CTE faculty to become a teacher in addition to a state's other requirements to becoming a faculty member. These additional requirements include education, work experience, certification, assessments, and teacher training (Keily & Perez, 2020). Bonsu et al. (2013) discovered that for those faculty members that choose the alternative method for licensure/certification, the state must approve the entity providing the alternative certification program. Tennessee has its own requirements for the licensure and certification of teachers, including career and technical education faculty. Pechota et al. (2020) observed that Tennessee's requirements for licensure for career and technical education teachers are education, work experience, and industry certification. Bonsu et al. (2013) described the route to certification and licensure in Tennessee. A person can become licensed to teach CTE in Tennessee in three ways: traditional, alternative, and CTE-specific. The traditional route to an apprentice and professional CTE teacher license is by obtaining a bachelor's degree or higher, completing an educator preparation program in CTE, passing the content area's Praxis exam, and receiving recommendation for licensure. The alternative route included postsecondary training in the teaching area, an associate degree, or industry certification or a bachelor's degree, and "a minimum of five years of appropriate and current work experience in the field in for which the application is made" (Bonsu et al., 2013, p. 101).

The Tennessee Department of Education listed the following requirements for an initial occupational teaching license: "formally admitted to or have completed a state-approved educator preparation program; recommended by the state approved educator preparation program; high school graduate or higher; meet industry certification requirements; and meet the endorsement experience requirements" (Tennessee Department of Education, n.d.). There are

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several occupational endorsement areas, each with at least three different pathways for licensure (Tennessee Department of Education, n.d.). Most endorsements require at least a high school diploma or above and at least five years of full-time work experience in the field in which the faculty member will teach, an associate degree and three years of work experience, or a bachelor's degree in the area of endorsement (Tennessee Department of Education, n.d.). Some endorsement areas require an industry certification in addition to the education and work experience, and some endorsement areas allow a master's degree to substitute for work experience (Tennessee Department of Education, n.d.). Tennessee also offers academic endorsements for career and technical education faculty. The requirements for academic endorsements are the following: "hold a bachelor's degree from a regionally accredited college or university, be formally admitted to or have completed a state-approved educator preparation program, be recommended by the state-approved educator preparation program, or submit qualifying scores on the required assessment" (Tennessee Department of Education, n.d.). Tennessee listed requirements for professional development for CTE faculty to maintain and renew their license/certification. The professional development requirements for Tennessee CTE faculty, as described by Bonsu et al. (2013) included earning 90 renewal points from professional development or other activities outside of the state-funded in-service days. The Tennessee Department of Education held that those educators holding an initial license must earn 30 professional development points to proceed to a professional license while those holding professional licenses must have 60 professional development points to renew a license.

Tennessee Requirements for Postsecondary Schools

In addition to federal and state requirements, both governing bodies of postsecondary education and accrediting bodies have requirements for faculty. In Tennessee, postsecondary

technical colleges are governed by the Tennessee Board of Regents. The minimum requirements

for faculty employment at Tennessee technical colleges are the following:

- Evidence of good ability in instruction;

- Evidence of potential ability in instruction;

- Evidence of good character, mature attitude, and stable personality;

- Credential indicating high school graduation or equivalent;

- Three (3) years of employment experience in the occupation to be taught and appropriate

  occupational certification;

- Indication of a willingness to remain current in the occupation to be taught;

- Indication of a willingness to establish and maintain positive relationships with business,

  industry and government. (Tennessee Board of Regents, 2019b, para. 3)

Further, the Council on Occupational Education (COE), the accrediting agency for all technical

colleges in Tennessee, maintained the minimum faculty requirements are "at least a high school

diploma or its equivalent and expertise in the area of responsibility that is actively maintained,

and a record of performance that reflects work-based standards as interpreted by the institution"

(Council on Occupational Education, 2019, p. 76). For those institutions accredited by Southern

Association of Commission on Colleges, faculty who teach associate degree courses that are not

intended for transfer to a baccalaureate program should have a bachelor's degree in the teaching

area or an associate's degree and demonstrated competencies in the teaching area (Horn et al.,

2016).

CTE Teacher Shortages

Many states' secondary schools are experiencing teacher shortages in several areas.

McBrayer and Melton (2018) and Juarez (2019) found that around half of new teachers leave the

occupation within their first five years, which costs approximately $2.2 billion annually. Many states have included CTE teachers on their lists of urgent needs (Advance CTE, 2016). The Perkins Collaborative Resource Network (n.d.) stated that many states and local school systems, 34 in 2016-17, reported substantial shortages of CTE teachers. McCandless and Sauer (2010) claimed that CTE teachers entering the field and leaving after a short time contributes to the CTE teacher shortage. Zhang and Zeller (2016) observed that high teacher turnover creates negative impacts on teacher quality. Ruhland and Bremer (2003) observed that 15% of new CTE teachers quit teaching within the first year and greater than 50% quit within five years. Approximately 50% of all new CTE teachers quit teaching within five years (McCandless & Sauer, 2010). Stephens (2015) reported that some CTE teachers left the occupation because CTE instructors were not supported or properly trained by administration. Zhang and Zeller (2016) observed that "supportive leadership, time for collaboration, access to high-quality curriculum and resources, clean and safe buildings, and relevant professional development" were key factors to teacher satisfaction and retention (p. 75). Tatto et al. (2016) discovered that "teachers who receive less pedagogical training are more likely to leave teaching" (p. 15). Better preparation and training of teachers helped to lower attrition rates and increased student performance (McBrayer & Melton, 2018). Sass et al. (2011) stated that many school systems find it difficult to hire CTE teachers with industry experience to teach their offered classes. Advance CTE (2018) documented that some program areas, especially those with increased industry demand, find it difficult to recruit potential teachers from the field in order to train students for entry into those same fields. The National Association of State Directors of Career Technical Education Consortium (2010) observed that there was an increased shortage of CTE teachers as the economy was recovering from the 2008 Great Recession. Advance CTE (2018) claimed that manufacturing was the CTE

Career Cluster with the highest teacher shortage in 2017. Advance CTE (2016) described the decreased interest in entering the teaching profession as a reason for the shortage of CTE teachers and also the closing of many CTE-specific teacher preparation programs. Cardichon (2017) noted that the shortage of CTE teachers has a negative impact on the quality and quantity of CTE programs. McCandless and Sauer (2010) revealed that the extreme CTE teacher shortage could result in the elimination of programs of study.

McCandless and Sauer (2010) stated that CTE teacher preparation debates increased because of the CTE teacher shortage and the closing of CTE teacher preparation programs. In an effort to overcome the closing of CTE teacher preparation programs, many states offer an alternative pathway to certification. Tatto et al. (2016) discovered that alternative teacher preparation programs produced higher short-term teacher retention rates. These alternative teacher preparation routes resulted in short-term teacher retention rates that were comparable to teachers from traditional preparation programs (Zhange & Zeller, 2016). States and school systems use the alternative certification pathway to increase the number of industry trained CTE faculty entering the profession (Advance CTE, 2016). However, McCandless and Sauer (2010) held that those CTE instructors entering the field through an alternative pathway have a 60% attrition rate and are less likely to remain in the profession. There are also federal level requirements for states to address the recruitment and training of CTE teachers to attempt overcome these shortages. The Strengthening Career and Technical Education for the 21st Century Act of 2018 (2018) required a plan to improve recruitment, retention, and training of CTE teachers in each state's Comprehensive Local Needs Assessment. Ruhland and Bremer (2003) observed that professional development is a successful strategy for improving teacher

retention and student success. Drage (2010) claimed that teacher retention can be influenced by meaningful professional development.

Professional Development Programs for CTE Educators and Postsecondary Faculty

Existing Professional Development Programs for CTE Educators

Zhang and Zeller (2016) stated that studies show that the amount of training and preparation that a teacher receives in their content matter and in pedagogical and andragogical strategies determines the success of the teacher. Morales (2016) revealed that teachers need to partake in professional development to improve their instructional aptitude. Professional development is one way to increase teacher and instructional quality and as a result, student success (Sanford et al., 2011). The National Research Center for Career and Technical Education (2010) defined professional development as involving "comprehensive, sustained, and systemic learning experiences that are based on identified needs of teachers and result in improved instructional effectiveness and increased student achievement and performance outcomes" (p. 6). Elliot (2014) defined professional development as "a continuous, systematic, and integrated process to improving learning and practice through attendance at regular sessions that focus on a common theme" (p. 35). Cepic and Masic (2016) defined professional development as "a collaborative process that provides follow-up, implies continuity, individual and institutional responsibility, . . . and satisfying the needs of teachers and schools" (p. 151). Faculty professional development is to increase subject matter competence and the mastery of the instructor's teaching discipline (Elliot, 2014). Ambrosino and Peel (2011) observed professional development activities, including workshops, observations, student feedback, consultation, and reflection, influenced faculty members' instructional behaviors. Ruhland and Bremer (2003) noted that "professional development opportunities should be available to all beginning CTE

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teachers" (p. 53). Williams-McMillan and Hauser (2014) documented that professional development participants gained instructional and classroom management strategies, increased content knowledge, personal and student enrichment, personal advancement opportunities, and social and cultural benefits from participation in a faculty development program. Williams-McMillan and Hauser (2014) discovered that faculty members were "better informed on student-centered teaching, learning theories, and reformed teaching practices, and that they are more capable of leading, conducting, and reporting on important course, program and/or institutional assessment tasks" after participating in professional development (p. 625). Bussey et al. (2010) found that effective professional development programs use examples in participants' content areas, use individual and small group instruction, and use small group discussion for reflection. According to Williams-McMillan and Hauser (2014), a professional development program should provide training in active teaching and learning, assessment, and evaluation. Mosterdyke (2014) revealed that the goals of the institution and increased instructor confidence can be met by implementing professional development opportunities that fit the institution's culture and that of the industry it supplies. Morales (2016) concluded that because faculty development involves learning adults, it is important to include andragogical strategies in faculty professional development.

The National Research Center for Career and Technical Education (2010) described best practices associated with professional development. Professional development should be ongoing, not a one-time occurrence; should support inquiry and study of teaching and learning; should include practicable applications, feedback, and reflection on the training; should be an integral part of school development plans; and should be embedded in the job. The American Federation of Teachers provided recommendations for professional development (National

Research Center for Career and Technical Education, 2010). These recommendations are that professional development should provide opportunities for expanding content knowledge; build a basis of pedagogical strategies and practice; be researched-based; be aligned with state and local curriculum standards; and be designed with input from teachers.

Ambrosino and Peel (2011) concluded that faculty development activities were impactful to both students and faculty, as faculty development activities enhanced instructors' practices leading to enhanced student learning. Sass (2011) documented that professional development was needed in order to improve CTE teacher quality and by result, the quality of CTE programs and their image. Jacobson (2013) observed that although many new CTE instructors are experts in their content area, they are new to educational philosophies, strategies, and technologies. Jacobson (2013) noted the importance of exposing new CTE faculty to basic CTE teaching practices. Hamilton (2015) noted that those creating professional development for CTE teachers should be mindful of the duration and content of the training, specifically that trainings should be interactive and student-centered. The professional development of CTE teachers to improve pedagogical skills and technical knowledge is the responsibility of the school system, business and industry, the government, and the educator (National Research Center for Career and Technical Education, 2010).

As school systems and institutions work to meet the requirements placed on CTE educators from accreditation entities, governing boards, federal mandates, and state licensing agencies, they are also tasked with ensuring teachers are prepared to teach an increasingly diverse population of students. Bartlett (2002) revealed that local and national career and technical education organizations provide professional development programs and trainings designed to advance teaching and learning skills. As the demands of industry grow, so too are

accountability requirements from federal and state initiatives, more emphasis is being placed on classroom assessments to confirm students have the required skills and competencies (Bottoms et al., 2013). Bottoms et al. (2013) noted that fewer CTE teachers are completing educator preparation programs and are instead being recruited to the profession directly from business and industry.

Headrick and Bottoms (n.d.) found that approximately 75% of new CTE teachers enter the classroom with little or no training on instructional planning, teaching, evaluations, or managing classrooms. Many CTE educators know how to do it, but not how to teach it (Sanford & McCaslin, 2004). Bussey et al. (2010) concluded that CTE teachers were challenged when tasked with integrating academic content into their CTE courses because many did not have a mastery of the academic skills themselves. Bottoms et al. (2013) stated that many of these new CTE teachers had little or no pedagogical training and were not able to use technical skills to assist students in achieving high competence levels. Bottoms et al. (2013) documented that CTE teachers who are better trained upon beginning their teaching careers are more likely to continue teaching and improve their instructional aptitude as they progress. Boucher et al. (2006) showed that both the individual instructor and the institution have a responsibility for developing the skills needed to instruct students.

Headrick and Bottoms (n.d.) noted a model of professional development created by the NRCCTE and SREB to increase the teaching capacity of new CTE teachers and to assist in implementing quality CTE instruction. Headrick and Bottoms (n.d.) observed that the NRCCTE and SREB induction professional development model included lessons on four different modules that can be taught sequentially, modularly, or topically. The NRCCTE and SREB model included topics such as creating project-based learning, motivating students, teaching technical skills,

integrating academics into a CTE course, and ensuring college and career readiness to assist new CTE teachers in increasing student learning (Headrick & Bottoms, n.d.). Bottoms et al. (2013) described a professional development model for new CTE faculty to increase their instructional competence, commitment, and self-assurance. This model was developed to help improve the academic performance of CTE students by assisting new CTE faculty in creating academically rigorous instruction. The model included four modules: instructional planning, instructional strategies, classroom assessment, and classroom management. Bottoms et al. (2013) noted that the content offered in the modules directly relate to the needs of new CTE instructors to offer high quality instruction that includes demanding projects and activities, as well as incorporates academics into the lessons. The modules also include training on supporting all students, especially those that need academic or emotional supports. Sass (2011) concluded that the professional development induction model developed by the Southern Regional Education Board (SREB) and the National Research Center for Career and Technical Education (NRCCTE) introduced high quality training and support during a CTE teacher's first year through four modules: instructional planning, instructional strategies, classroom assessment, and classroom management and created a mentor and coaching program to increase instructor support.

The Curriculum for Agricultural Science Education (CASE), an instruction model that stresses STEM concepts, student-led learning, and professional learning communities, provides training for CTE instructors that are all-inclusive to their needs (Fritch, 2017). According to Bartlett (2002), some professional development opportunities are focused on the technical skills of the instructor and could result in industry certifications. Stephens (2011) found that teacher internships have emerged as an option for teacher professional development. These internships allow teachers to learn from industry professionals and use that experience to create relevant

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learning activities (Stephens, 2011). These internship experiences result in increased academic, technical, and personal skills in students (Stephens, 2011).

Petty et al. (2016) documented that the National Board for Professional Teaching Standards (NBPTS) created a certification process comprised of standards for teachers to ensure better learning outcomes for students. Petty et al. (2016) documented that the National Board for Professional Teaching Standards is based on "Five Core Propositions" that define quality teaching (p. 3). They are that teachers: are dedicated to their students; know the content of their subjects and how to teach it; are responsible for student learning; think about teaching and learn from experiences; and are members of learning communities (Petty et al., 2016). Hamilton (2015) revealed that the National Board Certification for CTE lists 10 standards for successful teachers. They are the following: "knowledge of students, responding to diversity, knowledge of content, learning environments and instructional practices, assessment, postsecondary readiness, program design and management, partnerships and collaborations, leadership in the profession, and reflective practice" (NBPTS, 2014, pp. 18-19). Teachers need a deep understanding of who their students are as learners and as people (NBPTS, 2014). The NBPTS (2014) showed that successful CTE teachers realize that their students come from varying backgrounds and beliefs, embrace that diversity, and create learning environments that allow all students to engage and learn. The NBPTS (2014) stated that successful and effective CTE educators are experts in their content area and work with industry partners to ensure their skills remain relevant and up to date. The NBPTS (2014) confirmed that CTE teachers should create and sustain learning environments that promote critical thinking and lifelong learning, while utilizing successful andragogical and pedagogical methods. The NBPTS (2014) observed that CTE faculty should use an assortment of assessment methods to accurately capture student learning. Secondary CTE

teachers should help prepare students for entry into postsecondary opportunities (NBPTS, 2014). According to the NBPTS (2014), proficient CTE educators take ownership of their curriculum, program design, and program management. The successful CTE instructor collaborates with other educators from different disciplines and with business and industry partners for the betterment of their program (NBPTS, 2014). Quality CTE educators are leaders in their profession, school, and discipline and advocate for career and technical education (NBPTS, 2014). Superior CTE faculty reflect on their work, student outcomes, lessons, and make changes when necessary (NBPTS, 2014). Petty et al. (2016) discovered that teachers that participated in the National Board for Professional Teaching Standards certification process found a positive impact on student learning and improved pedagogical and andragogical strategies.

Existing Professional Development Programs for Postsecondary Faculty

Sogunro (2017) documented that teacher effectiveness in higher education has been highly debated, focusing on the lack of expertise of faculty in either pedagogy or andragogy. In order to provide effective instruction, faculty need to be competent in andragogy, preparation and organization, content knowledge, and technology (Sogunro, 2017). Postsecondary institutions often face the similar challenges with CTE faculty as those entering secondary systems through alternative methods. The competence of the faculty is vital to the success of a community college (Van Ast & Mullen, 1999). Cepic and Masic (2016) observed that the lack of andragogical training for postsecondary educators and the lack of professional development is a weakness of higher education. The National Research Center for Career and Technical Education (2010) stated that the postsecondary CTE educator is responsible for preparing students for entry-level roles in a given field. Postsecondary CTE teachers, unlike their secondary counterparts, do not have to integrate career exploration or academics into their programs

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(National Research Center for Career and Technical Education, 2010). The National Research Center for Career and Technical Education (2010) noted that postsecondary CTE students often must take placement tests to determine college preparation and readiness. Latz and Mulvihill (2011) revealed that many new community college faculty members enter the profession without a background in teaching, and faculty development is not a top priority at many community colleges. Cormier and Bickerstaff (2020) discovered that many postsecondary instructors have limited training and pedagogy and andragogy, and community colleges have limited resources to invest in providing this type of training. Elliot (2014) documented that there was a decline in community college faculty with previous teaching experience. Bolitzer (2019) observed that adjunct faculty are less successful than their full-time colleagues because they are less available to students, spend less time planning to teach, assign less challenging work, have lower expectations of students, and use fewer instructional strategies in the class. Latz and Mulvihill (2011) noted that community colleges have struggled with hiring and developing competent faculty to reach students. Latz and Mulvihill (2011) revealed that because of open-access policies, community colleges have a very diverse student population in terms of academic preparedness and socio-economic backgrounds. Sanford et al. (2007) documented that there have been few, if any studies, on the professional development needs of part-time technical community college faculty, and these needs are not widely available. Sanford et al. (2007) found that many community college classes are taught by part-time faculty that have other job duties besides teaching. Many of these part-time faculty received no official training in instructional practices before beginning to teach at a community college. Ambrosino and Peel (2011) noted that professional development programs are valuable in supporting and educating postsecondary faculty. Murray (2002) revealed that with the increase in community colleges in the 1960s,

increased access to postsecondary education resulted in increases in nontraditional and underprepared students. Community colleges, with their open-entry policies, enroll more students that are socially and economically disadvantaged and academically underprepared (Elliot, 2014). Murray (2002) observed that even faculty members trained in the traditional graduate programs "are often unprepared for the pedagogical challenges of the open-door institution" (p. 50). Murray (2002) discovered that community colleges sometimes have difficulty teaching the increasingly nontraditional student body associated with changing demographics.

Higher education institutions can increase the quality of instruction by including adjunct faculty in professional development opportunities (Anft, 2018). Horton (2013) found that the timing of professional development offerings was crucial for community college adjunct faculty, as the faculty members would find it difficult to leave paid work to attend an unpaid training. Horton (2013) noted that adjunct community college faculty preferred professional development offerings to be held in the evening or delivered virtually so the training did not interfere with other obligations. Sanford and McCaslin (2004) also revealed that professional development should be offered at least one time per term and should be delivered via classroom discussions and group activities. The researchers also found that trainings should be held in the evening and that incentives should be offered to entice faculty members to attend professional development sessions (Sanford & McCaslin, 2004). Van Ast and Mullen (1999) observed that community college faculty desire their professional development opportunities to articulate to postsecondary credit. Sanford et al. (2011) documented that these faculty would participate in at least one professional development training per term, given that the trainings occurred in the evening, during the fall, and in consideration of distance and time traveled due to family obligations and

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other job commitments. Friedman et al. (2019) contended that higher education institutions need to heavily invest in faculty development to ensure that instructors are prepared to teach and are familiar with pedagogical methods. Friedman et al. (2019) revealed that institutions should be mindful on the duration and timing of professional development offerings while incorporating different strategies for meeting the diverse needs of faculty and offering them continued training and support. Faculty professional development should be ongoing rather than a one-time training in order to introduce a wide range of topics, allow new faculty to apply the training and provide context for their learning, and introduce new topics as dictated by evaluations and research (Friedman et al., 2019).

Murray (2002) noted that community colleges have implemented professional development programs for their faculty to develop pedagogical skills and deliver quality instruction. Cormier and Bickerstaff (2020) showed that some of this professional development include mentoring, conferences, workshops, and online resources. Sanford et al. (2011) demonstrated that professional development was needed for part-time community college faculty. "Teacher shortages, new technologies, budget shortfalls, increased enrollment and demands for career and technical teacher certification are directing more and more attention to the needs for the professional development of career and technical education faculty" (p. 49). Murray (2002) observed that community colleges should tie faculty development programs with the mission of the institution while including learning and teaching improvement as the goal. Boucher et al. (2006) found that faculty development programs "vary widely from institution to institution and encompass both formal and informal offerings" (p. 1). Murray (2002) observed that many community college faculty development programs are still using techniques and strategies from the 1970s and lack specifically defined outcomes, making evaluation of the

program difficult. Community college faculty development programs should focus on training faculty to address students' learning needs, increasing passion for the profession, and meeting the demands of the curriculum in order to better prepare students for success in business and industry or future education (Elliot, 2014). Elliot (2014) noted that community college faculty development should focus on adapting the learning environment to reach a growingly diverse student body. Elliot (2014) discovered that because community college faculty are more focused on teaching rather than research, they are better able to meet the mission of the institution and improve student learning.

Elliot (2014) observed that faculty professional development programs must include goals that are tied to the mission of the institution and an evaluation procedure to determine program success. "Effective learning and teaching in today's community college classroom is dependent on the flexibility of a college instructor's teaching repertoire and his or her readiness to draw on a range of teaching styles" (Murray, 2002, p. 51). Mosterdyke (2014) documented that school-provided professional development should model effective instruction and content, as well as be guided by institutional objectives. Boucher et al. (2006) noted that professional development offerings should include professional, instructional, leadership, and organizational content. Van Ast and Mullen (1999) noted that andragogical content is an especially vital topic as it focuses on creating lessons that are both able to deliver the content and to adapt to the different learning styles of community college students, many of whom are nontraditional. Mosterdyke (2014) noted that one observed technical community college's goal for professional development was "to expand teachers' awareness of more teaching methods and techniques to improve instructor effectiveness, leading to improved student comprehension in the classroom and more tools for creative thinking on the job" (p. 22).

Sanford et al. (2011) maintained that adjunct community college faculty needed professional development to sustain a balance between theory and practice in the classroom. Career and technical educators, especially those in community and technical colleges, must be experts in both the technical area and in academic knowledge (Sanford & McCaslin, 2004). Expertise in their content area is not enough to provide for quality teaching, and teachers should be provided with training in andragogical strategies (Sogunro, 2017). Professional development must be ongoing and should include more than a college course or in-service (Sanford & McCaslin, 2004). Sanford and McCaslin (2004) observed that CTE instructors in community colleges were teaching the way that they learned or wished they had been taught, with no regard to student learning styles or instructional strategies. Sanford and McCaslin (2004) stated that in order to increase student learning, institutions must invest in teachers' learning. The Council for Adult and Experiential Learning (CAEL) created ten principles for teaching adult students. They are the following: "adaptivity, assessment of learning outcomes, financing, life and career planning, outreach, strategic partnerships, student support systems, teaching learning process, technology, and transitions" (CAEL, n.d., p. 1). These principles assist institutions in developing strategic plans that focus on adult learner needs (Shi, 2017).

Topics for Inclusion in CTE Faculty Professional Development

Many CTE teachers, especially those entering the profession directly from industry with little or no formal educational training, need professional development in many areas to be better prepared to teach and impact student learning. Cannon et al. (2011) discovered that the instructor plays a vital role in classroom in indicating student success. Sass et al. (2011) described secondary CTE as facing unique challenges regarding faculty; CTE teachers must have qualifications gained only through years of industry experience, most do not have bachelor's

degrees and little or no training on instructional practices, but teach courses with a large number

of students that are academically underprepared or special needs and are expected to both

improve their academic skills and impart technical skills to the students. Zhang and Zeller (2016)

found that a considerable number of alternatively licensed faculty lack an "understanding of

pedagogy, andragogy, instructional strategies, classroom management, and students' social and

academic developmental issues" (p. 78). This issue occurs in the postsecondary setting, as well.

The student population of community colleges have become more diverse and places additional

demands on faculty (Sorcinelli, 2007). Sorcinelli (2007) also noted that according to the

Association of American Colleges and Universities (AAC&U) "about half of students entering

our colleges and universities are academically underprepared—lacking basic skills in at least one

of the three fundamental areas of reading, writing, or mathematics" (p. 6).

Topics for Inclusion in Secondary CTE Faculty Development

Advance CTE (2016) documented that while alternative certification pathways make it

easier for faculty with industry experience to enter the classroom, the instructors often lack

instructional expertise that is gained through traditional certification methods. If teachers enter

the profession via alternate pathways that do not include training on instructional practices, they

may not possess the ability to plan and deliver quality lessons and experiences to students (Sass

et al., 2011). Sass et al. (2011) observed that teachers entering the teaching profession from

business and industry had more problems and more concerns than those CTE teachers that were

traditionally certified. Only half of CTE teachers that were alternatively certified stated they

were equipped to serve as instructors, versus greater than 80% that felt prepared after completing

a traditional certification pathway (Sass et al., 2011). Sass et al. discovered that those faculty

members that entered the teaching profession through traditional routes believed they were better

prepared in pedagogy while those faculty members who entered via alternative routes felt better prepared in their knowledge of the content area. Many of these CTE teachers do not have the academic preparation or skillset often needed by instructors. There could be a disconnect between the academic and instructional skills of career and technical education teachers and the requirements dictated by federal rule (Cramer, 2004). Cramer found that "candidates for certification in vocational fields are not as academically or pedagogically prepared as are candidates for certification in secondary fields" (p. 15). Cramer showed that candidates for vocational licensure scored lower on licensing exams than secondary candidates on pedagogical knowledge, specifically on the Principles of Teaching and Learning assessment. Cramer revealed that vocational licensure candidates were not as prepared academically as elementary licensure applicants. Cramer concluded that because the scores of vocational licensing candidates remained consistent over several years, vocational candidates know less about pedagogical theories and how to incorporate those theories into their teaching. While research indicates that CTE teachers need training in both technical and pedagogical skills, Cramer noted that impact of the pedagogical knowledge of the career and technical education instructor is uncertain and that the teachers' technical skills may impact student success more than their academic or pedagogical skills.

One method of improving teacher preparation, pedagogical knowledge, and academic skills is to offer professional development. Professional development and preparation can increase teacher quality, aiding in improving student academic and technical achievement (Sass et al., 2011). CTE teachers, especially those coming from an alternative certification pathway or directly from industry, have a unique set of needs. However, Cannon et al. (2011) noted few studies on the professional development needs of non-agricultural CTE faculty.

Stachler et al. (2013) stated that few CTE teachers receive content-focused and sustainable professional development that is needed to improve student learning. Sorcinelli (2007) experienced that professional development trainings and orientations for faculty often include common teaching issues such as preparing a syllabus, assessment strategies, and departmental policies. Sass et al. (2011) revealed that CTE teachers who entered the profession via an alternative certification route knew very little about their curriculum and needed assistance on preparing lessons. Sass et al. (2011) discovered that alternatively certified CTE teachers need professional development in planning, instructional strategies, evaluation, and supporting students. Mosterdyke (2014) documented professional development opportunities for CTE faculty included trainings on syllabus, lesson plan, and presentation plan creation, as well as teaching methods, learning styles, motivation, problem-based learning, different types of communication, and grading system design. Sorcinelli (2007) found that faculty professional development programs should include training on promoting teaching practices that grow student abilities in problem solving, teamwork, and collaboration.

Cannon et al. (2011) studied research on agricultural education that utilized the Borich Model to identify the needs of secondary CTE teachers. Those needs are the following: "motivating students to learn; classroom management/student discipline; using the internet as a teaching tool; teaching students problem solving skills; using computers in classroom teaching; using multimedia equipment in teaching; teaching recordkeeping skills; and assisting students to increase critical thinking skills" (p. 34). Bottoms et al. (2013) uncovered that CTE faculty that entered the profession through alternative certification pathways listed their top professional development needs as "curriculum development, classroom resources, teaching strategies,

techniques for handling difficult students, and classroom management" (p. 4). Bottoms and McNally (2005) documented that CTE teachers must be prepared to:

- Design instruction to support development of technical knowledge and skills, the field's underlying academic competencies, social development and workplace readiness;

- Advance student learning through a repertoire of research-based instructional strategies;

- Assess student knowledge and skills to inform students and teachers; and

- Reflect on and revise their teaching practice, as necessary. (p. 14)

Boser and Daugherty (1994) documented that CTE teachers need to be provided with current information on curriculum, strategies, and technology in order to advance career and technical education. Cannon et al. indicated that professional development for CTE teachers must assist in understanding content, teaching methods, and learners. Bottoms et al. (2013) noted that alternatively licensed CTE instructors desired professional development in planning, instructional methods, assessment, classroom management, and supporting students, especially those with learning disabilities. Stachler et al. (2013) noted that there is an evident need for professional development for CTE faculty on integrating STEM content into CTE coursework.

Further, "identifying the learning characteristics of students, alternating teaching methods to accommodate different learning styles, participation in web-based instruction, and participation in distance learning" were also areas of need (Sanford & McCaslin, 2004). Stachler et al. (2013) documented that professional development should include quality content; practical applicability; observations, feedback, and reflection; and internal commitment from the teacher. Daugherty (2009) observed professional development for new technology education teachers should include participatory activities, collaboration with other teachers, and credible facilitators. Compton and Jones (1998) concluded that technology education faculty development should

include concepts of technology education, pedagogy, and technological application**.** Training on grant writing, locating funding opportunities, developing curriculum-based work-based learning activities, and providing guidance and career explorations activities are needed by CTE faculty (Cannon et al., 2011). According to DiBenedetto et al. (2018), CTE teachers need professional development on technology and computer use in the classroom, as well as training on providing support for special needs students. Ruhland and Bremer (2002) encountered a need for professional development on working with special needs students, designing curriculum, instructional planning, managing classroom budgets, working with school administration, and classroom management. Odell (1992) stated that new CTE teachers needed training in mental health, instructional strategies, locating resources, classroom management, and communicating with parents and other stakeholders. New CTE teachers are concerned with instructional management, including planning classes, classroom management, and working within district policies; personal issues related to starting a new career; and instructional methodologies (Drage, 2010). Drage (2010) documented that new teachers were most concerned with creating assessments, student motivation, curriculum development, lesson planning, and state standard requirements. Another research study recognized the needs of new business and marketing teachers. The National Research Center for Career and Technical Education (2010) noted that in addition to increased academic integration into CTE courses, CTE faculty must also include workplace readiness skills into their curriculum. These skills include: "knowledge and skills in related academics; communications; problem solving and critical thinking; information technology applications; safety and health; leadership and teamwork; ethics and legal responsibilities; employability and career development; and technical skills" (p. 30). The National Research Center for Career and Technical Education (2010) concluded that CTE faculty

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must remain current on industry standards in their content area, as well as new, emerging, and evolving occupations within that area. CTE faculty desire professional development on standards-based instructional planning, assessment strategies, the use of data to direct program improvement, third party technical skill assessment, management of a diverse classroom, and incorporating project and problem-based activities into the classroom (National Research Center for Career and Technical Education, 2010).

Topics for Inclusion in Full-time Postsecondary CTE Faculty Development

Postsecondary CTE faculty have similar needs as those of their secondary counterparts. Latz and Mulvihill (2011) noted that very little research had been conducted on the professional development needs of community college faculty. Latz and Mulvihill stated that because of the diverse needs of the student population, community college faculty need both an understanding of pedagogy and course content. Latz and Mulvihill found that community college instructors need to be skilled in teaching, learning, and assessing to reach their students. Anft (2018) observed that some higher education institutions are offering faculty development programs that focus on assessment and planning. Van Ast and Mullen (1999) determined that in order to train community college faculty to improve their teaching skills, it is important for those providing the training to determine the needs of the faculty and provide the training in a way that fits those needs, both in content, delivery, and timing. Elliot (2014) found that community college faculty desired training on assessing their curriculum for strengths and weaknesses, writing learning outcomes, aligning courses, creating rubrics, and communicating across disciplines. Horton (2013) observed that adjunct community college faculty were most concerned with their ability to work with underprepared students and to teach to different learning styles in one classroom. Community college faculty desired training in technology, pedagogy, content, and

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degree/certification progress (Latz & Mulvihill, 2011). Community college faculty want to

increase teaching skills, overall betterment, and student success through professional

development and training (Latz & Mulvihill, 2011). Baker et al. (2016) uncovered that classroom

management is an obstacle for many new teachers and is often cited as a reason for burnout.

Further, according to Baker et al. (2016), many existing faculty development programs do not

adequately prepare teachers for classroom management issues. Bussey et al. (2010) stated that

CTE faculty desired training on how to manage their classrooms and motivate students.

Ruhland and Bremer (2003) documented that new CTE teachers need ongoing

professional development and training in classroom management and meeting the needs of

special needs students. Becker and Palladino (2016) revealed that many faculty members may

not be familiar with the requirements of the Americans with Disabilities Act but must fulfill with

those standards. Many instructors have not received training on "accommodating students with

disabilities" (Becker & Palladino, 2016, p. 69). Becker and Palladino (2016) showed that

professional development opportunities should include resources and strategies for determining

students' needs, assessing teacher knowledge, and building a network of resources to assist with

the implementation of accommodations for students with disabilities. Park et al. (2017) observed

that postsecondary institutions must provide accessible instruction that meets the needs of

students with disabilities. In order to provide this quality instruction to students with disabilities,

faculty need professional development (Park et al., 2017). This professional development should

include "knowledge of assistive technology, responsiveness to diverse learning styles and

abilities, and the provision of course materials in varied formats" (Park et al., 2017, p. 124).

Topics for Inclusion in Part-time Postsecondary CTE Faculty Development

Sanford et al. (2007) found that part-time community college CTE faculty need professional development in instructional planning, teaching skills, classroom management, the use of media, assessment, and communication, with increased focus on learning styles and teaching methods. Part-time community college CTE faculty needed training on adjusting teaching methods to accommodate different learning styles and different learning levels (Sanford et al., 2007). Sanford et al. (2007) discovered that the practical skills of the part-time faculty should be recognized and applied with the teaching aptitude in order for higher education institutions to keep a balance between theory and practical learning. Sanford et al. documented that training on identifying student learning styles, pacing lessons, and classroom management were needed by part-time community college CTE faculty. Sanford et al. noted that part-time faculty needed training that addressed the implementation of media and other technology into the classroom. Sanford et al. stated that part-time community college CTE faculty required training on the evaluation of student work, including evaluating hands-on work, assessing student outputs in comparison with entry-level industry standards, and creating written assessments to gauge learning and comprehension.

Effectiveness of Industry in Preparing CTE Faculty

Advance CTE (2016) noted that CTE faculty that have industry experience provide students with a unique viewpoint into career opportunities that academic teachers may be unable to offer. Stephens (2015) noted the ability of CTE faculty with industry experience to share real world examples is a benefit to their students. Stephens documented that CTE teachers with industry experience were better able to prepare students for entry-level positions. Both work experience in the content area and pedagogical knowledge are vital to teacher success (Stephens,

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2015). Sanford et al. (2007) concluded that instructors that were industry-based possessed the technical skills needed in industry, but many did not have the knowledge and expertise to encourage student learning and classroom management. Stephens documented that there is a strong relationship between the number of years taught of alternatively certified CTE faculty and the rate in which they collaborate with their peers. Ruhland and Bremer (2003) observed that while industry experience did have benefits to students, it had not quantifiable influence on teaching quality. Ruhland and Bremer discovered that while those CTE faculty that entered the profession through alternative pathways did not feel as ready in pedagogy than those with baccalaureate degrees in education, they felt more prepared in their knowledge of their content area.

Bottoms et al. (2013) discovered that many alternatively certified CTE instructors had difficulty meeting the demands of the teaching profession. Alternatively certified CTE teachers are better prepared in their subject area knowledge than in pedagogy (Bottoms et al., 2013). Stephens (2015) detected that many uncertified or alternatively certified CTE faculty lacked pedagogical knowledge. According to Advance CTE (2016), alternatively certified CTE faculty enter the teaching profession with less education training than others, raising questions to instructor quality. Bottoms et al. documented that CTE faculty who entered the teaching profession directly from industry and that had received little pedagogical training had more difficulties and issues that those CTE faculty who were certified through the traditional route. Bottoms et al. found that alternatively certified CTE faculty had little knowledge on their curriculum or preparing lessons. These faculty were also revealed to be less knowledgeable on career and technical student organizations, classroom management, and other administrative

requirements of classroom instruction. Bottoms et al. stated that alternatively certified instructors were concerned about their ability to motivate students.

Stephens (2015) revealed that more than 60% of CTE instructors in high demand and high wage fields had not completed an undergraduate degree program. Stephens uncovered that many uncertified or alternatively certified instructors last experienced a secondary classroom environment as adolescents. There is a substantial relationship between the educational experiences of the teacher and the likelihood that they will practice at least three different types of instructional activities (Stephens, 2015). There is also a strong relationship between age of the CTE instructor and the use of different educational activities. Bottoms et al. (2013) found that CTE teachers entering through an alternative certification pathway may not be equipped to provide a meaningful learning experience for students.

Andragogy

Much of the literature on postsecondary CTE faculty development and preparation includes the theoretical framework of andragogy. Qualitative researchers use theories "as a broad explanation for behavior and attitudes" (Cresswell & Cresswell, 2018, p. 129). Theoretical frameworks provide the basis of how the research problems are examined (Walden University, n.d.). Creswell and Creswell (2018) also stated that qualitative studies use theoretical lenses to "guide researchers as to what issues are important to examine and the people who need to be studied" (p. 129). A theoretical framework "connects the reader to existing knowledge" (University of Southern California, n.d.). The theoretical framework defines the theory that clarifies the need for a study and why the research problems are presented (University of Southern California, n.d.). Theoretical frameworks have been used in previous phenomenological studies as a guide for interview questions (Norlyk & Harder, 2010, p. 425).

Andragogy is the theory of adult learning and informs the basis for most postsecondary faculty development programs, and, therefore, is necessary for inclusion in this study.

Malcom Knowles first presented the concept of andragogy in the 1970s to differentiate between the learning styles of children and adults. Andragogy has been described as a "set of guidelines, a philosophy, a set of assumptions, and a theory" (Knowles et al., 2005, p. 1). Knowles et al. (2005) labeled andragogy as a set of learning principles for adults. Kara et al. (2019) defined adult learners as those "who continue their education by balancing their family and work and are generally older than 22" (p. 6). Yarbrough (2018) characterized adult learners as students who are also full-time employees, have dependents, and are 25 years old or older. Andragogy is defined as the "theory of teaching adults" (Matthews & Smothers, 2017, p. 196). Arifin et al. (2020) defined andragogy as "cultivation of competence" (p. 444). Juarez (2019) defined andragogy as the "use of real-world scenarios as means to engage students" (p. 84). Morales (2016) described andragogy as more process-focused and less concept-focused. "The six principles of andragogy are the learner's need to know, self-concept of the learner, prior experience of the learner, readiness to learn, orientation to learning, and motivation to learn" (p. 3). Andragogy is a learner-focused theory. Knowles et al. (2005) described learning as placing emphasis on the person changed or expected to change, not the educator. However, as Sogunro (2017), described, instructors of adult education must be equipped to handle the challenges associated with adult learners.

There have been more studies completed on how children learn than on adult learning (Knowles et al., 2005). "Until fairly recently, there has been relatively little thinking, investigating, and writing about adult learning" (Knowles et al., 2005, p. 35). The focus on children's learning resulted in a strategy of teaching named pedagogy, defined as "the art and

science of teaching children" (Knowles et al., 2005, p. 36). Matthews and Smothers (2017) defined pedagogy as the "theory of teaching children" (p. 196). Pedagogical ideas and strategies are often implemented in adult learning settings, but studies have shown that adult learners have different motivations and experiences than children do. The term andragogy was created to distinguish adult learning theory from pedagogy, the theory of children's learning (Knowles et al., 2005).

Knowles et al. (2005) described pedagogy as a "set of beliefs" that the entire model of education was based, including higher education (p. 61). Vann (2017) described both pedagogy and andragogy as philosophies that educators may look to for guidance. Rismivanto et al. (2018) described pedagogy and andragogy as "contributing philosophical orientation to the kinds of teaching method" (p. 113). According to Sogunro (2017), most instructors of higher education follow pedagogy as their basic educational principle, which challenges quality teaching in a postsecondary setting due to limited exposure to andragogical ideologies. Pedagogy is often defined as "the study of the method and practice of education" with no distinction between child and adult learners (Coffman et al., 2018). In the pedagogical model, the teacher is responsible for making all decisions on learning, including "what will be learned, how it will be learned, when it will be learned, and if it has been learned" (Knowles et al., 2005, p. 61). Pedagogy is a teacher-focused theory and makes the following assumptions about learners: learners only need to learn what the teacher covers; learning is dependent on the teacher; the learner's experience has minimal significance as a learning resource; the learner is equipped to gain knowledge when the teacher tells them they are ready; learners are subject-centered; and learners are motivated to learn solely by outside factors like teacher approval or grades (Knowles et al., 2005). McGrath (2009) found that in a pedagogical model, students will learn what they have been told.

Cook and Card (2018) stated that higher education institutions have traditionally utilized pedagogical assumptions and models. Cepic and Masic (2016) revealed that andragogy is understood as a pedagogical idea. Rismivanto et al. (2018) discovered that higher education faculty members often still treat adult students as children. Pedagogy is still practiced in adult learning environments, although sometimes erroneously, as students' ages and their dependency increases, andragogy would be the better theory of learning to prescribe (Knowles et al., 2005). According to Matthews and Smothers (2017), pedagogical strategies are not always successful when teaching adult learners. Strategies that are successful with adult students are sometimes different from those that are successful with younger students (Dieterich & Hamsher, 2020). Sogunro (2017) observed that the limitations of adult educators in andragogical principles severely limits the motivation of adult students and increases dissatisfaction in the training program, which could result in withdrawal. It is significant to understand that pedagogy does not observe the same assumptions of learners as andragogy, but "the andragogical model is a system of assumptions that includes pedagogical assumptions" (Knowles et al., 2005, p. 72).

Knowles et al. (2005) claimed that Lindeman (1926) identified ideas about adult learners that would help shape andragogy, the theory of adult learning. Those assumptions were that adults are motivated to learn by their needs; adult learning concepts should be organized around life situations, not subjects; adults are guided by their experiences; adults want to be self-directing; and adult education must plan for differences in learning styles. In stark comparison to the assumptions of learners in pedagogy, the andragogical model assumes the following:

- Adults need to know why they are learning a topic;

- Adults are in charge of their own choices;

- Adults have more and different experiences than children do, so their experiences should be valued as a learning resource;

- Adults are ready to learn based on real-life situations;

- Adults are motivated to learn things that will help them with tasks or challenges in their daily lives;

- Adults are motivated to learn by both external factors like job promotions and internal factors like quality of life (Knowles et al., 2005) pp. 64-68.

Shi (2017) discovered that it is important to understand the "characteristics of adult learners because of non-traditional characteristics create needs and priorities which should be paid special attention when planning educational programs" (p. 80). Seyoum and Basha (2017) documented that adults learn differently than children because "their personality structure is almost fully developed at this stage in their lives" (p. 49). Parker (2020) showed that it is important for postsecondary institutions to move from a more pedagogical outlook to an andragogical one due to the differences between adult and child learners. Ornelles et al. (2019) documented that adult learners are more likely to be engaged and to learn if the content can be directly applied to the learner's life. Adult educators must ensure that learners both gain knowledge and gain the ability to apply their knowledge (Sisselman-Borgia & Torino, 2017). Adult students have different viewpoints than children because of their work and life experiences (Matthews & Smothers, 2017). Kara et al. (2019) found that adult learners progress through their educational journey while continuing with work and family responsibilities, which varies their experiences. Adult learners are drawn to flexible training programs that allow them to meet their familial, work, and other personal obligations while completing their training (Dieterich & Hamsher, 2020). Shi (2017) stated that in addition to these familial and work responsibilities,

adult learners also have financial, time, transportation, and confidence barriers to education. Giannoukos et al. (2016) detected that that these experiences, such as working a full-time job and familial obligations, create more difficulties and obstacles for adult learners than for their younger counterparts. Sisselman-Borgia and Torino (2017) detected that adult learners sometimes have financial, familial, and work-related challenges that can limit their engagement. According to Kara et al. (2019), the "unique characteristics of adult learners cause unique challenges" in their pursuit of education (p. 5). Ornelles et al. (2019) revealed that adult learners' experiences may lead to greater application of the material and enhanced critical thinking. McGrath (2009) revealed that adult students will learn more if they can apply their personal experiences to the content being learned.

Matthews and Smothers (2017) observed that adults need to know why they should study certain things and how those learning objectives will add value to their life. Kara et al. (2019) documented that adult learners often know what they need to learn and why they need to learn it because of their experiences. Ornelles et al. (2019) stated that "learners' engagement is enhanced when learning is purposeful, and the utility of knowledge and skills drives their need to know" (p. 548). Adult learners are motivated by intrinsic factors like "personal goals, interests, attitudes, and beliefs" and that this motivation encourages knowledge seeking and problem-solving skills (Ornelles et al., 2019, p. 549). Shi (2017) showed that adult learners are motivated to learn by "improving their working skills, developing their careers, and making a better life" (p. 79). McGrath (2009) showed that adult students could be more motivated in the classroom if they were more involved in the planning of the course. Kara et al. (2019) discovered that adult learners need to be provided an educational environment that "allow them to determine their own

educational processes; to share their ideas comfortably; and to sustain their educational process alongside their private lives" (p. 6).

Knowles et al. (2005) found that the andragogical model for learning is different than other educational models. In traditional models, such as pedagogy, the teacher decides what needs to be learned, organizes the content, determines the delivery method, and creates the plan for delivery (Knowles et al., 2005). As Allen et al. (2016) observed, andragogy promotes "communication and interaction among faculty and students" (p. 55). Cook and Card (2018) detected that collaboration between instructors and students is often missing from higher education classrooms. In the andragogical model, the teacher serves as a facilitator, and the student is the responsible party for their learning (Knowles et al., 2005). In andragogy, the facilitator involves the learners in the preparation process by:

preparing the learner; establishing a climate conducive to learning; creating a mechanism for mutual planning; diagnosing the needs for learning; formulating program objectives that will satisfy those needs; designing a pattern of learning experiences; conducting these learning experiences with suitable techniques and materials; and evaluating the learning outcomes and rediagnosing learning needs. (p. 115)

The facilitator in an andragogical modeled learning environment serves as a consultant and a guide (Giannoukos et al., 2016). Giannoukos et al. (2016) stated that the adult learning facilitator often encourage students to continue their educational endeavors despite the many obstacles. Facilitators of adult learning are tasked with encouraging their learners' active participation in their learning process (Giannoukos et al., 2016). The theory of andragogy is constructed around the student self-directing their own learning (Knowles et al., 2005). According to Dieterich and Hamsher (2020), adult learners have a desire to be self-directed, and their motivations to learn

can be influenced by "positive student-instructor relationships" (p. 9). Shi (2017) concluded that adult education programs should provide adult learners with the opportunity to create their own learning goals. However, because of the overuse of the pedagogical teaching model, many adult learners have not mastered the idea of self-directed learning and are still reliant on the teacher to direct the learning (Knowles et al., 2005).

Andragogical theory is shaping the way that teachers of adults are trained, the method in which adult education programs are organized, and the manner that adults are taught (Knowles et al., 2005). Knowles et al. (2005) discovered "the learning theory subscribed to by a teacher will influence his or her teaching theory" (p. 73). Andragogical concepts are being studied more frequently because more adults are enrolling in postsecondary education opportunities (Matthews & Smothers, 2017). Further, Knowles et al. (2005) confirmed the andragogical model is being used in other educational settings, including elementary and secondary schools, as well as institutions of higher education. However, in some instances, the pedagogical model was better suited for the type of learner, including some adult education programs (Knowles et al., 2005). Dieterich and Hamsher (2020) discovered that faculty members may consider changes to their facilitation and teaching strategies to meet students' needs. However, Lopez-Brown (2017) found that it may be difficult for some faculty to shift from being a "knowledge provider to a facilitator of learning" (p. 546). Juarez (2019) observed that andragogical principles were easier to implement in certain subjects or content areas than in others. Further, Sisselman-Borgia and Torino (2017) documented that it is sometimes difficult for adult educators to create learning activities to meet the needs of adult learners. Therefore, it is important for educators to determine the most appropriate theory to utilize in the best interest of student learning (Knowles et al., 2005).

Janchai et al. (2019) experienced that higher education institutions and other adult education programs are now utilizing teaching strategies taken from andragogy. As andragogy and its principles are now more widely used in adult education and training, there have been some additions and new perspectives to Knowles' original work. Knowles et al. (2005) found that in addition to adults needing to know why they were learning something before engaging in the process, they now should be share in the planning, facilitation, and learning strategies of their program. Studies have also shown that when adults share responsibility on how the learning is conducted, their fulfillment from the training increased, as did "organizational commitment, academic self-efficacy, physical self-efficacy, and motivation to use the training" (Knowles et al., 2005, p. 184). Further, Knowles et al. (2005) discovered that when adults were included in the planning of what learning would occur in a training program, "they were better able to profit from the workshop, showed more commitment to their decision to attend the training, and were more satisfied with the learning" (p. 184). Finally, when adult learners shared input and insight "into the training decision, they were more likely to perceive job and career utility" (pp. 184-185). Seyoum and Basha (2017) believed that without andragogy, adult learners would be less equipped to handle the challenges associated with the current workplace, as andragogy helps in the learning of problem-solving skills. The inclusion of adult learners in the planning process yields positive results (Knowles et al., 2005).

A learner's experience has a great impact on the student's learning. Knowles et al. (2005) stated that experiences generate biases, both positive and negative, that influence new learning. Prior experiences can hinder learning, as adult learners can reject new ideas that may be different from their personal beliefs or prior experiences (Ornelles et al., 2019). Kara et al. (2019) found that while the experiences of adult learners can increase their learning capabilities, they can also

create barriers to learning. Ornelles et al. (2019) noted that learning may only transpire when the individual recognizes the need for new knowledge that may help them navigate a real-world situation or challenge. Also, according to Knowles et al. (2005), the adult learner's readiness to learn is intimately tied with their need to know. As adults are situational learners, challenges and tasks facing an adult learner impact both their readiness and need to learn (Knowles et al., 2005). Sisselman-Borgia and Torino (2017) revealed that educators of adult learners should create learning activities to opportunities that allow for the practice and application of the knowledge in real-world situations. Further, Sisselman-Borgia and Torino (2017) discovered that experiential learning assists in the transfer of learning. As stated, adult learners are situational learners. Therefore, Knowles et al. (2005) documented that experiential learning is effective for adult learners in tying learning to real-life issues. "Applied learning is important to growth, especially in adult learners, as it connects concepts to current experiences or events" (Sisselman-Borgia and Torino, 2017, p. 5). Parker (2020) observed that "students gain more knowledge through experiential learning than through passive classroom environments" (p. 81). Sisselman-Borgia and Torino (2017) observed that while developing and implementing experiential learning opportunities for adult students can be difficult, they are important to incorporate because of the value added to the adult learning progress. Shi (2017) stated that adult education curriculum should be developed to address the adult learner's needs and to encourage continual, life-long learning. Further, Shi (2017) discovered that adult education instruction should increase the motivation and confidence of the learners. Ayvaz-Tuncel and Cobanoglu (2018) uncovered that adult education program developers should consider andragogical principles when developing and implementing the learning process and active learning activities, while acknowledging that instructor quality, learning environment, and program length are important variables in the

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success of the program. In summary, Knowles et al. (2005) described the need for those planning adult learning programs to "define what is most characteristic of adult learners, to establish core principles, and to define how to adapt those core principles to varying circumstances" and rely too heavily on only one learning model (p. 202).

Chapter Summary

There is a gap in the existing research surrounding postsecondary career and technical education (CTE) faculty and professional development. Most of the research is focused on secondary CTE and specifically, agriculture faculty. By adding to the existing research, this study provides a better understanding of postsecondary CTE faculty and their preparedness to teach. Further, this study provides insight on the faculty members' perceptions on the need for professional development on instructional strategies and practices.

Career and technical education faculty have different avenues for entry into the profession, both at the secondary and postsecondary levels. Secondary CTE instructors may enter the profession via a traditional licensing program or via an alternative licensing process, where teachers are licensed based on industry experience and experience. Postsecondary CTE faculty often arrive to the teaching profession directly from industry, with some having completed teacher education courses and others having received no formal training. States, local school systems and governing bodies, and institutions sometimes provide training to these instructors to address gaps in instructional abilities and to satisfy federal and state requirements.

Existing research has shown that many states have trouble finding and retaining secondary and postsecondary CTE faculty. One way of addressing this is to provide professional development and support to faculty on topics that will assist them in being successful in the classroom and ensuring student success. Topics such as instructional planning, instructional

strategies, classroom management, classroom assessment, integration of academic courses into the CTE curriculum, and technology should be included in ongoing and sustainable professional development opportunities for CTE faculty. Postsecondary faculty, especially those at the community college level, should be provided with professional development to meet the needs of academically underprepared students. Both secondary and postsecondary faculty development opportunities should include pedagogical and andragogical strategies and practices.

The theoretical framework of andragogy can provide a groundwork for understanding the preparation needed by postsecondary faculty, as well as a guide for professional development programming for CTE faculty. Andragogy is the theory of adult learning and includes principles of learning that adult educators look to for guidance. Andragogy suggests that teachers should serve as facilitators of learning, and that the adult students are responsible for their learning. Andragogy also advises that adult learners are more likely to successfully acquire knowledge if they can tie the lesson to their daily lives. Further, andragogy proposes that adult learners have experiences and challenges that can create biases and impact learning. Andragogical principles are now more often utilized in higher education and are shaping the way that adult educators are trained. Andragogy may provide guiding practices and frameworks for creating professional development programs.

Chapter 3. Research Methods

Introduction

The purpose of this qualitative, phenomenological study was to understand the perceptions of occupationally trained faculty members at Tennessee technical colleges about their preparedness to serve as instructors and their perceptions on the need for professional development activities. This research examined the lived experiences of technical college faculty that did not enter the teaching profession via a traditional educator preparation program or through a bachelor's program. The study focused on describing occupationally trained technical college faculty members' perceptions of the role of industry experience in preparing them to teach in a postsecondary setting, as well as instructor perceptions toward professional development activities and programs designed to enhance knowledge of instructional practices and concepts. The findings from this study may be used by technical college administrators to inform their own ideas around professional development programming and the preparedness of occupationally trained faculty members.

Research Questions

This study was guided by the following research questions:

1. How do occupationally trained technical college faculty prepare for a career as an instructor?

2. How do occupationally trained technical college faculty describe their preparedness to teach?

3. How does industry experience prepare occupationally trained faculty to serve as instructors?

4. Do occupationally trained faculty perceive a value in a development program on instructional and classroom strategies?

5. What training topics would increase instructor preparedness upon entering the classroom?

Qualitative Research Design

The qualitative research methodology allows the researcher to study phenomena from those that experienced it (Lapan et al., 2011). In this methodology, data collection is performed by the researcher in a variety of ways, including observations and interviews. The data are collected from multiple sources in a setting that is natural to the participant and as the participant experienced the phenomenon (Creswell & Creswell, 2018). For the purpose of this study, multiple occupationally trained technical college faculty members will be interviewed at the schools where they serve as instructors using open-ended interview questions, allowing them to freely share their experiences and perceptions in a non-constrained manner (Creswell & Creswell, 2018). Because this study is focused on the perceptions of occupationally trained technical college faculty on their preparedness to serve as instructors and on their perceptions of the need for professional development programs on instructional practices, the qualitative methodology is the most applicable option.

Phenomenology

This study on the perceptions of occupationally trained technical college faculty on their preparedness to teach and their perceptions on the need for professional development on instructional strategies is best conducted through a phenomenological qualitative study. A phenomenological study is a study of lived experiences (Adams & van Manen, 2012). "The basic purpose of a phenomenology is to reduce individual experiences with a phenomenon to a description of the universal essence" (Creswell, 2013, p. 58). Creswell and Creswell (2018)

described a phenomenological study as "culminating in the essence of the experiences for several individuals who have all experienced a phenomenon" (p. 57). Eberle (2013) described phenomenology as "a philosophy that called for an analysis of the things themselves" (p. 184). Creswell (2013) emphasized the philosophical nature of phenomenology as "the development of descriptions of the essences of experiences, not explanations or analyses" (p. 58). Adams and van Manen (2012) observed that phenomenological studies are often used in educational research studies. Phenomenological studies "describe the meanings for several individuals of their lived experiences of a concept or a phenomenon" (Creswell, 2013, p. 57). The researcher in a phenomenological study describes what all participants have in common regarding their shared phenomenon or experience (Creswell, 2013). Phenomenological studies require the researcher to develop a "rich, detailed description of a central phenomenon" (Creswell & Creswell, 2018, pp. 131-132).

The phenomenology method lends itself to understanding how occupationally trained faculty members from multiple Tennessee technical colleges perceive their preparedness to serve as instructors and their perceptions on the need for professional development opportunities focused on instructional and classroom practices by studying their responses to open-ended interview questions. Phenomenology is appropriate for this study because it will allow for understanding on the phenomenon of occupationally trained faculty entering the teaching profession from those that have experienced it. Data in phenomenological studies are often collected through in-depth interviews to gain first-hand descriptions from those that have experienced a phenomenon (Creswell, 2013). I will use interviews to collect data from occupationally trained faculty to gather insight on their perceptions on how prepared they were to teach upon entering the profession. Twelve occupationally trained faculty will be interviewed

to glean an understanding of common experiences of these individuals. Phenomenology provides an approach to understanding how these occupationally trained instructors perceive their preparedness to teach, as well as their perceptions on professional development on instructional practices by studying their common experiences as technical college faculty.

Role of the Researcher

In the qualitative research methodology, the researcher collects and analyzes the data (Creswell & Creswell, 2018). The researcher collects data from participants in a setting that is natural and convenient to them. The researcher in a qualitative study collects data "by actually talking directly to people and seeing them behave and act within their context" (Creswell & Creswell, 2018, p. 309). The researcher has direct contact with the research participants (Creswell & Creswell, 2018).

In this study, I wanted to describe the perceptions of occupationally trained technical college faculty on their preparedness levels to teach upon entering the profession and their perceptions on the need for professional development on instructional and classroom practices. This research was based in Tennessee's technical colleges, where I have previously served as an administrator in multiple institutions. As part of these administrative duties, I supervised and evaluated technical college faculty, many of whom were occupationally trained. The participating faculty taught in technical colleges in rural areas of Tennessee; I served in an administrative role in a rural Tennessee technical college. The participants in the research were all male, as am I. The research also presented different avenues of teacher licensure, including the traditional method toward teacher licensure through an educator training program at an accredited university and the alternative route through an occupational licensure program. I obtained my CTE teacher license through the traditional route and served as a CTE teacher in a

secondary school for six years. I also had a professional relationship with some of the study participants and their administrators through previous and current work experience. This relationship and experience allowed me to build trust with the research participants and maintain a deeper understanding of the experiences, perceptions, and opinions of the participants. My personal biases were checked through the implementation of safeguarding protocols, such as bracketing, to ensure the trustworthiness of the study.

Ethical Considerations

Prior to beginning research, I received approval from the East Tennessee State University Institutional Review Board to conduct a study on the phenomenon of occupationally trained technical college faculty perceptions on their preparedness to teach and perceptions of the need for professional development on instructional practices. The purpose of the study was clearly communicated to the research participants, and the voluntary nature of the participation was noted. Participants received an informed consent form to further add to the voluntary nature of their participation. Participants and their respective schools were kept confidential. Participants were assigned and presented as a letter and number to aid in confidentiality. To avoid harm and inconvenience to the participants, the interviews took place by Zoom. I asked for and received permission from both the governing body of the institutions and the administration at the respective technical colleges. Finally, my role with the coordinating body of the institutions was communicated, as was the professional relationship with some of the participants and administrators.

Instrumentation

Data were collected by interviewing 12 Tennessee technical college faculty members. Prior to beginning the interview, participants received an explanation on the purpose of the

study. The interview followed the protocol found in the appendix of this study that included open-ended questions to encourage more in-depth responses. Probing, clarifying, and follow-up questions were used as necessary and varied by participant. There were 17 questions on the interview protocol and began with some close ended questions, such as what program the instructor teaches, the number of years they have been teaching, and the number of years of industry experience they have. There were also questions on the education experience of the instructor, including the type and duration. The protocol included questions on what type of training, if any, the instructor had received on instructional and classroom strategies. Questions were asked around the instructors' perceptions on whether having that training would be helpful to them in their careers as an instructor. Instructors were also asked to describe the training they received, either from their career in industry, from education experiences, or training upon their hire to be an instructor, that helped prepare them for success in the technical college system. Participants were asked about the type of training that would increase preparedness for introduction to a role as a classroom instructor.

Table 1

Research Questions and Interview Questions Alignment

Interview Question	RQ 1	RQ 2	RQ 3	RQ 4	RQ 5
1. In what technical college program do you serve as instructor?		X	X		
2. How many years have you taught this program? How many years total have you taught in a technical college?		X	X		
3. Prior to serving as an instructor, how many years of experience did you have in industry in the field in which you teach? What was your role/job description?	X	X	X		
4. Please describe your education experience, including the highest level of credential earned.	X	X	X		
5. Would an associate, bachelor, master, or doctoral degree help you to become a better instructor at the technical college?		X			
6. What lead you to apply to teach at a technical college?			X		
7. What industry certifications do you possess?	X	X	X		
8. In what ways did your industry experience prepare you to be an instructor in a technical college?	X	X	X		
9. Was there anything that you feel that you were not prepared for upon entering the teaching profession? If so, what?		X	X		
10. Please describe any training you received, either formal or informal, prior to becoming an instructor at a technical college on how to be an instructor.	X	X			
11. Please discuss any additional preparation you practiced independently to prepare for your role as an instructor.	X	X			
12. How do you prepare to teach current and upcoming skills that students will need upon entering the workforce? In other words, how do you stay up to date in the field?	X	X			
13. Do you feel that you were prepared to be an instructor based on your industry experience?		X	X		

14. Please describe any professional development you have received after accepting your role as an instructor on instructional and classroom strategies. Who provided that training?	X			X	X
15. If any, did you find that training useful in your role as an instructor?	X			X	X
16. If any, what topics were included in this professional development? What other topics would you liked to have been covered?				X	X
17. Is there anything you would like to add that is relevant to these or related topics?	X	X	X	X	X

Population and Sample Selection

The participants for this study were 12 instructors from Tennessee technical colleges. These instructors had at least three years of occupational experience in the field in which they teach. The participants were selected from seven technical colleges throughout the state, representing each grand division of Tennessee plus Upper East Tennessee. Instructors were identified by their campus president or vice president and teach in one of the following program areas: Welding, Machine Tool Technology, or Industrial Maintenance. Twelve participants were sufficient for this study as they represented three different program areas and each grand division of the state. One instructor per program per school was selected for participation. These programs were selected because they represent some of the more popular programs at the technical colleges, as well as being in demand by industry. There are 27 technical colleges in the state, and most have the three programs listed.

Data Collection

This research employed interviews to gather data from the participants. The interviews occurred via Zoom at a time convenient for the instructor. The interviews took place in March 2021. Instructors were asked to pick a time that was convenient for their schedule and that would

not interfere with class time. Some interviews occurred before students arrived, on the instructor's lunch break, or after students departed. In some instances, the interviews took place during inservice week for the TCATs when no students were present.

Trustworthiness

To ensure the trustworthiness and validity of the study, I used multiple validity strategies. By interviewing 12 faculty members from different program areas and institutions in different parts of the state, I triangulated different data sources by building themes based on the participants' responses and perceptions (Creswell & Creswell, 2018). Also, I asked participants to review the transcripts of their interviews to confirm accuracy (Shenton, 2004). Thematic analysis was used to identify common themes after all 12 interviews had been completed. Further, through member checking, I asked participants to review the major themes and findings of the study to ensure an accurate representation of the instructors' perceptions (Creswell & Creswell, 2018). I used thick, detailed descriptions to convey the findings of the interviews (Creswell & Creswell, 2018; Shenton, 2004).

Data Analysis

After proper approvals, the interviews were conducted, recorded, and transcribed. The responses were analyzed by coding passages with terms related to the research questions (Belotto, 2018). The coded interview responses were then analyzed to identify patterns, and those patterns were grouped into categories of related content (Belotto, 2018). After categorizing the data, primary and secondary themes, when necessary, were created. Direct quotes from the interviews were used as needed to add clarity to the themes. The categorized themes were studied in comparison to the research questions to inform the research findings.

Chapter Summary

This chapter outlined the justification for a qualitative phenomenological study on the opinions and perceptions of occupationally trained faculty members on their preparedness to instruct in a postsecondary classroom and the need for professional development on instructional practices. The research questions, methodology, method, role of the researcher, ethical considerations, instrumentation, population and sample selection approach, data collection processes, and data analysis methods were also outlined in this chapter.

Chapter 4. Findings

Introduction

The purpose of this qualitative, phenomenological study was to understand the perceptions of occupationally trained faculty members at Tennessee technical colleges about their preparedness to serve as instructors and their perceptions about the need for professional development activities. Five research questions informed a semi-structured interview protocol to learn the perceptions of these instructors on how their experiences in industry helped prepare them to teach at Tennessee technical colleges.

Interviews were conducted with 12 Tennessee technical college faculty to collect the data of this research study. Instructors from seven different Tennessee technical colleges, representing each grand division of Tennessee plus Upper East Tennessee, were interviewed by Zoom due to the COVID-19 pandemic and discussed their perceptions on their preparedness to teach after entering the profession directly from industry. These interviewees voluntarily participated in these interviews and openly shared their perceptions and experiences. Instructors were free to elaborate on their experiences in industry, their experiences in the technical college classroom, their experiences on any training, if any, they received prior to or after becoming an instructor, and their perceptions on what training topics, if any, would have helped better prepare them to become a technical college instructor. The responses to the interview questions provided thick, rich descriptions of their experiences and perceptions. Chapter 4 includes an examination of the findings from these interviews.

The data collected from the interviews were coded into categories and themes. Data analysis included triangulation of the individual interviews, assessment of notes made during the interviews and during the transcriptions of the interviews, and member checks. These methods of

data analysis supported the trustworthiness and validity of the study. Thematic analysis was used to identify common themes after all interviews were complete and before the member checks. The study was conducted in accordance with the East Tennessee State University Institutional Review Board (IRB). Prior to the interviews, participants were provided an informed consent form and voluntarily participated in the study. The interviews took place in March 2021 via Zoom. After the interviews and subsequent transcriptions were completed, interviewees were provided with a copy of both the transcript and interview and were asked to examine them to ensure accuracy. In order to protect the confidentiality of the participants, interviewees were assigned a letter representing the program in which they teach. Industrial Maintenance instructors are identified with an I, Machine Tool instructors are identified with an M, and Welding instructors are identified with a W. Interviewees were also randomly assigned a number using a formula in Microsoft Excel. Participants in this study are identified as I34, I59, I68, M2, M51, M54, M85, M92, W4, W31, W46, and W47. Further, in order to aid in confidentiality, both number of years of teaching experience and industry experience are expressed by ranges. Five Machine Tool instructors were interviewed because only three Industrial Maintenance instructors met the inclusion requirements and volunteered to participate in the study.

<div align="center">**Data Collection**</div>

Data collection occurred in March 2021 during 12 interviews with Tennessee technical college faculty members. The interviews were semi-structured and conversational in style. The interview protocol can be found in the appendix of this study. I conducted all interviews, data collection, and transcriptions for the study. After the data collection and transcriptions, the data were analyzed to identify common themes and categories.

Participant Profiles

All 12 participants in this study were faculty members at a Tennessee technical college in one of three program areas. Each participant had at least three years of industry experience in the program area in which they teach and were hired into a technical college directly from industry and no prior classroom teaching experience. None of the participants had a level of education higher than an associate degree, technical certificate, or diploma. None of the participants had completed a traditional teacher preparation program prior to teaching at a technical college, and all participants were physically present in the United States. All participants were male. Technical college classroom experience for the participants ranged from one and one-half years to 20 years, and industry experience in the field in which the participants taught ranged from three years to 32 years.

Participant I34 taught in the Industrial Maintenance program at a Tennessee technical college and had between one and three years of technical college teaching experience. He graduated from the same technical college and program in which he now teaches. Participant I34 had three technical college diplomas and had several industry certifications related to his program area. Participant I34 entered the technical college teaching profession with between three and five years of industry experience. He was considering enrolling in a community college to work toward an associate degree and also earned university credit as a high school dual enrollment student. He entered the teaching profession at the advice of his former instructor but indicated that he had always considered the possibility of becoming a teacher. He knew he wanted to leave industry at some point. Participant I34 stated, "I wanted more out of it. I wanted more than just making parts. I wanted to actually be able to do something that would make a difference, ultimately."

Participant I59 taught in the Tennessee technical college Industrial Maintenance program and had been doing so between 11 and 15 years. Participant I59 started his educational career at a community college but decided to enter the workforce before obtaining an associate degree. He had since re-enrolled at a community college and was working towards his associate degree. He then worked in industry between 21 and 25 years before enrolling at a technical college. He earned a technical college diploma from the same institution in which he now teaches. Participant I59 had multiple industry certifications related to his program area, that also allowed him to certify his students in the same certification areas. Participant I59 said the timing just worked out in relation to becoming a teacher; he graduated with his diploma, and there was an opening at the institution, and the administration encouraged him to apply. Participant I59 stated that his industry experience, work ethic, attendance record, and graduating from the school helped him secure the role. Participant I59 enjoyed his time teaching and stated, "It's been a good experience; it really has. I've learned as much teaching as I did in industry."

Participant I68 had been teaching between one and three years in an Industrial Maintenance program at a technical college in Tennessee, but not at the same one from which he graduated. He held a technical college diploma and ultimately took two pathways to prepare him for his 16 to 20 years in industry. Participant I68 had one industry certification related to his program area. He entered the teaching profession after leaving industry because he always loved showing people how to do things and watching people learn. He said that he wanted to continue his education to earn an additional degree and that he became a teacher because he wanted to give back to his community. "I've done this [industrial maintenance] for a long time, and maybe I can show people how to do it the proper and safe way."

Participant M2 earned a diploma from a Tennessee technical college and an associate of applied science degree from a Tennessee community college. He graduated from the technical college, entered the industry where he stayed between six and 10 years, took some associate degree classes as part of his job, then was hired as a part-time instructor at the Tennessee College of Applied Technology (TCAT). He finished his associate of applied science degree while teaching at the TCAT. Participant M2 had been teaching in the Machine Tool Technology program between 16 and 20 years. He also held several industry certifications related to his program area. Participant M2 entered the teaching profession as a part-time instructor after a supervisor told him about the open position. He was interested in the part-time position because it gave him the opportunity to work on the machines and build his own skill level, while allowing him to "learn a little bit about teaching and share the knowledge" that he had gained in industry. He later was offered and accepted the full-time position. Participant M2 recommended teaching part-time before becoming a full-time instructor, if possible, to become better prepared for a full-time role and to figure out if teaching is the right fit.

Participant M51 had been teaching in a Machine Tool Technology program at a Tennessee technical college between six and 10 years. He earned his TCAT diploma in Machine Tool Technology from the same technical college at which he taught and had over 30 years of industry experience in his program area. He has also earned several industry certifications related to Machine Tool Technology. All of Participant M51's industry experience came with one organization. He wanted to become a teacher because "he has a heart for showing people" how to do their work.

Participant M54 had between one and three years of Machine Tool Technology teaching experience in a Tennessee technical college. He started his teaching career as a dual enrollment

teacher for the TCAT after earning his technical college diploma in Machine Tool Technology and working in the industry for three to five years. He was currently enrolled in an associate of applied science degree program at a Tennessee community college and was now a full-time instructor at the TCAT. He had several industry certifications related to Machine Tool, some earned while in industry and some earned during his tenure as instructor. He always wanted to be a teacher but didn't think that he would be able to become a technical college instructor so soon after graduating the program. He stated, "I never thought it would be this quick. I thought after I retired, then you go back and teach."

Machine Tool Technology instructor M85 had been teaching at a Tennessee technical college between six and 10 years. He graduated and earned two technical college diplomas, one from the same institution at which he taught, and one from another TCAT. He initially spent two years of his postsecondary education experience at a university before deciding to enroll at a TCAT. He also held an industry certification related to his program area. When asked why he decided to apply to become a teacher, he stated that he "never really planned on being a teacher, to be honest" and that it just sort of happened. He didn't think he had spent enough time in industry, with between three and five years of experience. However, he was encouraged to apply and was offered the role.

Participant M92 had been teaching Machine Tool Technology between 11 and 15 years, after graduating from the same school and program at which he taught. After earning his machine tool diploma, he spent between 21 and 25 years in the machining industry and owned his own machining business. He held several industry certifications related to Machine Tool Technology and had the ability to award the same certifications to his students. He wanted to become a technical college instructor while still enrolled in the program, telling his instructor, "I

want to have your job someday." He liked teaching at a technical college because he enjoyed watching students with zero experience or knowledge about machining and seeing them progress to making some pretty complex parts and achieving something that they never dreamed possible. He also appreciated the benefits and schedule that allowed him to spend time with his family and operate his own business.

Participant W4 had been teaching Welding at a Tennessee technical college between four and five years. He started his postsecondary education at a community college, looking to earn his associate degree but decided to enroll at a TCAT and enter the workforce. He worked in the welding industry between six and 10 years and owned his own welding business, in addition to teaching welding full-time. He started his teaching career as a part-time, adjunct instructor while the full-time instructor was having health issues. Participant W4 filled in for the full-time instructor and was ultimately offered the full-time position after the previous instructor retired. Among other things, he credited his time spent as an adjunct instructor with his success. He enjoyed teaching because he "likes working with these guys and seeing them get jobs." He stated, "That's my main goal; train them up, get them out of McDonald's, get them making good money."

Participant W31 taught in a Welding program at a Tennessee technical college and had been doing so between one and three years. He earned his welding diploma from the college at which he taught and then spent between 26 and 30 years in the welding industry before returning to teach. He previously held industry certifications related to Welding, but some had lapsed due to Participant W31 no longer being in the field. He decided to become a teacher because he wanted to become a mentor to students, just as some of his previous teachers served as mentors for him.

Participant W46 graduated from a TCAT Welding program and served as an adjunct and substitute instructor while working in the industry between three and five years before returning to another TCAT as a full-time instructor. During his time as a student, he was immediately drawn to the familial atmosphere and comradery showcased at his TCAT and wanted to be a part of that as an employee. Instead of working towards an associate degree, Participant W46 was working toward an industry certification that allowed him to certify his students' welds and to also achieve program accreditation as an Accredited Test Facility. He also held several other industry-specific certifications, while others had lapsed due to his time out of the industry. Participant W46 had been teaching the Welding program for between four and five years.

Participant W47 had been a Welding instructor between six and 10 years after serving between six and 10 years in the welding industry. He graduated from the same TCAT Welding program at which he taught and had also begun work on an associate degree, although he had paused that pursuit due to COVID-19 and the extra work associated with moving a technical training program online during the pandemic. He had several industry certifications related to welding, with some allowing him to certify his students. He was recommended for the full-time instructor position by his former instructor and decided to pursue it after traveling for work and deciding that was not a good fit for him. In the teaching profession, he enjoyed showing students how to do things, interacting with people, and working with his hands. Participant W47 also appreciated the work schedule when compared to that of a welder in the field. "I know what time I'm getting off every day; I know what time I'm going in. We take for granted a lot, especially working on the road, living out of a duffel bag. It's not made for everybody, and I soon realized it wasn't made for me."

Field Notes

After collecting the data for this qualitative study by interviewing 12 Tennessee technical college instructors, I made notes capturing my thoughts and observations during the process of transcribing the video recordings. Because of the COVID-19 pandemic, all interviews took place by Zoom. Therefore, it was difficult to observe the body language of the interviewees. However, the participants' voice tones could be identified. I made note of commonly used phrases and statements, as well as my thoughts on emergent themes gathered from the data. Further analysis of the categories and themes identified through the interviews are discussed later in this chapter.

The interviews were conducted in a conversational, semi-structured style, but all participants were asked the same questions, as indicated in the interview protocol. During the transcription process, several themes and commonalities were identified. In my opinion, all 12 interviewees were open and honest with me. They were willing to expand on their responses when prompted, and none were hesitant to answer any questions. Only one of the interviews lasted less than 30 minutes, with nine lasting 45 minutes or more. All 12 participants were friendly and helpful, as indicated by their positive voice tones. None of the 12 declined to answer any questions. The participants matched the conversational tone and were willing to discuss the intricacies of their technical college programs and their teaching styles and methods.

"Here are your keys" was a common statement used by several of the interviewees when describing any training they received upon their hiring to teach at a Tennessee technical college and preparedness levels based on industry experience. Three of the participants served as adjunct or part-time instructors prior to accepting a full-time position, the other nine interviewees indicated that they did not have similar experiences. Participant M85 stated that he was surprised with just how quickly he was given control of the classroom. He said:

I will say I was surprised at how quickly I was kind of thrown in. I found out that I was

going to have the job, and within two weeks [former instructor] was retiring, and it was,

"Here's your keys. Here's your desk. Go have fun."

A participant that was able to serve as an adjunct prior to becoming the full-time instructor did

not have the same experience but did indicate that he has seen several colleagues that have.

Participant W4 said:

You asking me these questions, all that's going on in my head is the couple new guys that

we've got on campus that have been knocking on my door. "Hey man, how'd you do

this? How are we supposed to do this? Or did you see this new email? What do I do

here?" It's kind of really, everybody scratches each other's back, you know? Like I said,

if it wasn't for them, "Here's the keys, good luck."

Another commonly used term was "structure". Structure was used in multiple ways by

multiple participants, including describing the difficulty of keeping things structured in an open

enrollment, open-entry, open-exit program, as offered by Tennessee technical colleges. The

lengths of the programs highlighted in this study range from three trimesters to five, and new

students enroll each term. This means that an instructor can have between three and five different

cohorts of students in one program. In addition, almost all of the interviewees emphasized that

Tennessee's technical college programs are self-paced, adding to the difficulty in structuring a

program. One participant stated, "You know, it's hard to be really structured with open

enrollment."

Structure was also used by several interviewees to describe the state of the programs they

inherited after the departure of the former instructors. Many of the respondents stated that they

inherited a program with little or no structure. Those that made this claim indicated that it took them several months to a year to change the atmosphere and culture around the program. A big challenge these instructors faced was changing the behavior and attitudes of the students inherited from the previous instructor. One interviewee, Participant W46, stated:

> There was no structure, so when I took this over, it was wild. It was crazy trying to get the reins, and it took a while. [The administrator] told me, "Get these students purged out and eventually, all that will be behind you. Until you get these other ones out of here, you're going to be fighting it."

Participant M51 had a similar experience, although he also had to change the perception of the program in the eyes of his industry partners. "Nobody was hiring my students. This was known as a laughing place. It was a place that, you know, people weren't doing anything." This instructor had to pay personal visits to his industry partners to ask for a chance to prove that his students would be better prepared than those of the previous instructor. On the other hand, Participant M2 was hired into a program that had two other instructors because of high enrollment. These previously existing instructors already had a syllabus and lesson plans created, which helped Participant M2 in the structure and organizational aspect of teaching at a technical college.

Another reoccurring theme identified in the transcription process was that the years of teaching experience held by an instructor dictated his thoughts on preparedness and professional development. Of the three instructors with between 11 and 20 years of teaching experience, all indicated that they felt prepared to teach based off of their industry experience, and only two, Participant I59 and Participant M2, indicated that further professional development on teaching strategies would be helpful. When asked if he felt prepared to teach based on his industry

experience, Participant M92 stated, "That's a hard question to answer, I guess. . . . I would probably say you shouldn't need any other training beforehand because I didn't have any, and I've turned out okay."

Another common theme found during the transcription process was that perceptions of preparation levels differed among participants depending on what their roles in industry were. Those that were in supervisory positions or responsible for training employees felt more prepared than those who did not hold similar roles. However, even those with training and supervision experience did face challenges upon entering the teaching profession, with many feeling underprepared in at least one aspect of teaching.

Additionally, I found that very few interviewees were familiar with common education terminology or practices, even if the ideals behind the terminology were present in their programs. For example, no interview participants used the term andragogy. However, most participants used self-paced or autonomous when describing their programs. Many also mentioned that because of the open-entry, open-exit nature of the Tennessee technical college programs, they do not do many whole group lectures because most of the students are at different points in the curriculum. Instead, the students are responsible for their learning, and the instructor serves as more of a facilitator and is available to help when needed. Further, when asked if a syllabus and rubrics were used in their program, all indicated that they did create a syllabus and provide it to students, but upon further discussion, many were using a course outline as their syllabus. In Tennessee technical colleges, the course outlines break the curriculum down into courses by trimesters and clock hours, but do not provide any other information on the makeup of each course. There seems to be a misunderstanding of the definition and makeup of a syllabus. Similarly, only two participants mentioned the use of rubrics, with only one currently

using them to assess student learning. Most claimed that a rubric was not necessary or could not be used in their particular program area.

Finally, many of the interviewees seemed not understand the interview question about whether an additional academic degree would help them to be a better technical college instructor. While many indicated either that an additional academic degree would or would not help them in becoming a better instructor at a technical college, all but three focused on the content of the courses associated within the academic degree and not necessarily the processes, strategies, or methods that could be gleaned by taking additional courses. Additionally, other respondents focused on the raise in rank and promotion they would earn by completing an additional academic degree, rather than the additional knowledge that could be gained in that pursuit.

The 12 interviews conducted in March 2021 yielded the qualitative data necessary to study the perceptions of occupationally trained Tennessee technical college faculty on their preparedness to teach and on the perceived need for professional development activities on instructional strategies and practices. Each participant provided information on their own experiences and perceptions and allowed me to analyze their responses to identify common themes. Additional analysis of the interviews is found in the study's interview results section.

Interview Results

The data collected in this qualitative, phenomenological study were categorized into categories and themes in relation to the study's five research questions. The findings from the interviews are discussed in the following section and include analysis and pertinent, direct quotes from the interviewees. Direct quotes are used to substantiate common themes that were identified for each research question.

Research Question 1

How do occupationally trained technical college faculty prepare for a career as an instructor?

Variety of Preparation Experiences Prior to Becoming an Instructor

During the study of the responses to the interview questions associated with research question 1, I noted that there were many similarities among the 12 participants, there were also different preparation experiences and beliefs prior to serving as instructors. One commonality among these 12 instructors was the lack of training prior to serving as instructor. When asked to describe any training they received, either formal or informal, before serving as technical college instructors, all 12 indicated that they received no formal training. Participant W47 stated, "I had no formal training, or really no informal training either, prior to starting here." Participant I59 claimed, "Not to be short on the answer, there was no training. . . . I didn't have any." This was a common response from the participants.

However, four of the participants were able to spend time with their program's outgoing instructor. Two of these shadowing experiences were said to be very helpful in their preparation as instructors. Participant W4 shared:

> Yeah, the job shadowing, absolutely. I think I maybe had a month, month and a half, to kind of shadow and some of that was during Christmas time so the students were on a break, so he kind of got to walk me through the shop and show me some things; how he kind of kept stock of things and inventory, putting together even down to like material data sheets and stuff, you know, keeping on top of things. But if it wasn't for that instructor, I would have had a long way to go. I mean he helped me out tremendously as far as what I'm teaching.

Participant I68 had a comparable experience. He said:

> I received training from the former instructor. I sat in with him the last two weeks he was
>
> here, and he showed me quite a bit. There were a lot of notes I took from that guy,
>
> [previous instructor name], but it was very helpful. There were hours and hours of
>
> conversations between the two of us on how to do certain things, and I still use this
>
> ability today. You know, you call him in a matter of seconds.

The third instructor who was able to shadow the previous instructor had a different experience.
Participant M85 said:

> Three days, maybe, with the previous instructor. And that was how to use the time clock
>
> and here's how you put hours in the system and stuff like that. It wasn't anything like,
>
> "Let's sit down and walk you through curriculum," and "Let's sit down and walk you
>
> through the way the syllabus is structured," or anything like that.

The fourth instructor, Participant W46, would have liked to have had the opportunity to spend
more time with the previous instructor. He said:

> They didn't have, I don't know if there wasn't the funds to do it or whatever, but there was
>
> no shadowing of the new instructor with the old instructor, at least get them somewhat
>
> prepared. So, I came here, I spent a couple hours with [previous instructor], and it was
>
> like a crash course going through SIMS, the curriculum, where he had some sticky notes
>
> in it, I mean, very vague, but it was better than nothing.

The 12 participants also provided a variety of experiences when asked about any
additional preparations pursued independently prior to beginning their role as technical college
instructors. Three participants did not pursue any independent preparation. Participant W46

stated, "No, I didn't know, and I was unaware of it. I was unaware of what we could do."

Participant W47 said, "I didn't. I didn't pursue anything."

One participant, Participant M2, began taking associate degree classes at a local community college while he was serving as a part-time instructor. He stated, "That's what I started doing in classes at [community college], you know, like drafting, you know, and things like that I thought would help me down the road as far as knowledge." Another participant, Participant M54, taught classes at his church, for which he attended training, and found that experience helpful in his role as an instructor. He stated:

> Well, I taught classes at my church for young adults and for kids and stuff. So, that kind of helped me out. I went to training classes on being a teacher through our church and stuff, but that was pretty much it.

Participant W31 found similar experiences beneficial in preparing for his role as an instructor. He said:

> Then later on in my life whenever I became a father, you know, and then becoming a scout master with the Boy Scouts, and then becoming a Sunday school teacher, and then a deacon on top of that, I think all that kind of helped with that.

Participants I59, I68, and W4 found the internet to be useful in their independent preparation. Participant I68 shared:

> I worked at it by doing a lot of Google. How to prepare lesson plans, how to properly deliver a message to the students, public speaking. It was it was quite a challenge, but then I realized that, you know, they're just like I am. They're scared to death. So, might as well show them that I'm a little afraid too, and I just went at it from there.

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Participant W4 similarly stated:

I've done some research absolutely. You know, I'm not going to sit here and tell you I

didn't lay in bed at night researching, watching my phone, seeing kind of how to do

things. Because at the end of the day, I wanted to be prepared and, you know, that feeling

like I wasn't very prepared in the classroom, you know, I just wanted to try to dial that in

a little bit. . . . Absolutely, you know, there's a couple YouTube channels. I mean,

weld.com, they can teach you a lot. . . . I actually even Googled different types of . . . I

mean Google's a really good friend of mine. So, it's helped me tremendously finding

templates and things like that.

Participant I59 echoed:

The amount of YouTube videos that I've watched just for teaching techniques, just to see

how they taught it, just to see how they presented something. I would change a dozen

things, you know, watching someone else. I thought, man, that's pretty good. I'm going

to change that.

Four participants reflected on prior educational and personal experiences. Participant W31 said:

I just reflected back to the high school and high school instructor and then [TCAT

welding instructors] whenever I was here, because I would constantly, if I would get

stumped on something on the job, I'd be like I'm trying to remember what they said, you

know? But some things would just continuously flow from past experiences from them.

Similarly, Participant M85 reflected on previous learning experiences but did not seek out any other resources. He stated:

> I took a little bit of what I learned from my other schooling from the [previous TCAT program]. I liked a lot of the ways that he taught his class. It was a little more structured than what I dealt with at [TCAT]. Not that it was bad, but just he had a whole lot more students. He was just harder on his students, which kind of needed to be done at this school. I took a little bit there, but as far as like, let me go to Google and look up how to do this or do that, no.

Participant I34 talked with his teacher wife and sought out resources that she mentioned.

> I would say prior to being here, the only training I had, extremely informal, was trying to discuss with my wife the things that she was learning and the things that she was going through. Even now, she's going back to school now for her master's degree, even now I try to be like a sounding board for her whenever she's working on these assignments, so the things that I've learned, as I said, have been very informal. There's definitely no certificate for that.

Likewise, Participant W4 used his familial experiences to help himself prepare.

> I kind of come from a teaching family. My mother taught high school, and my wife's a schoolteacher, as well. She's taught for nine years now. So, we'll go home and talk about things, and she's kind of gave me some helpful hints and tips to kind of relate to. You know, if I don't have a student picking up so well. So, that's helped out some; just kind of picking from here and there trying to figure it out.

Finally, Participant I59 shared his independent preparation to ensure he was ready upon entering the classroom.

So, when I found out that I was going to be an instructor here, like I said, the books that were being used at the time, we had some media that we used. A lot of videos. I made sure to go over every single thing. I took the books, as a student would, and went through the books, answered all the questions, made sure I had everything down pat. And, you know, I made some mistakes on that as well. So, I had to back up and figure that out. There was a lot of things that I found in the book that, they showed the students how to do it, but I still didn't understand it, so I had to back up and figure that out. I wanted to understand every little step. So, once I got all that down pat, that's when I thought I was prepared. And then, of course, the lectures come along, and I thought, man, it's going to kill me. But just preparing, all the media that we had here, I had access to everything before I became the instructor, and I made sure to go through everything that the students were going to go through. I wanted to experience all that as well before I, you know, I presented it to the students.

The participants' responses to the interview questions related to preparation experiences prior to being hired as technical college instructors show that none of the 12 were provided with any formal training. Four participants were able to spend some time with the outgoing instructor, but the length of time and the content discussed during those shadowing experiences varied. Independent preparation experiences also differed between participants, with most not pursuing any independent preparation and others seeking out input from family members with teaching experience or reflecting on previous educational experiences. Participant I59 was the only

participant to review the program's resources to familiarize himself with the content prior to entering the classroom.

Preparation Experiences after Beginning Teaching Career

A common theme that emerged from interview questions asking participants to describe preparation experiences after beginning their teaching careers was a reliance on other instructors. Seven of the 12 participants mentioned the help, or lack thereof, offered by other instructors, both at their own institutions and other TCATs, as a form of preparation. However, all twelve participants in this study mentioned preparation experiences offered by educational agencies, like the board office and the Tennessee Department of Education. The Tennessee Board of Regents (TBR), the governing body for the 27 colleges of applied technology (TCATs) in Tennessee, offers training for new instructors. Three interview participants offered thoughts on annual curriculum meetings offered by TBR as a form of preparation. Three participants stated local professional development offered by their institutions as a form of post-hire preparation. Finally, five participants mentioned training offered by certifying organizations as preparation experiences after their entry into the teaching profession.

Eleven of the 12 participants attended a new instructor training offered by TBR after beginning their technical college teaching careers. Only Participant M2, who has been teaching between 16 and 20 years, did not attend a new instructor training. The year in which the instructor attended the TBR training and the timing of which the training was offered played a role in the perceived effectiveness and experience associated with the training. Further detail on the perceived effectiveness will be addressed when discussing research question four.

After being hired by a TCAT as a dual enrollment instructor, Participant M54 attended a new teacher training workshop offered by the Tennessee Department of Education. In addition,

he later attended the new instructor training offered by TBR. Participant M2 entered the teaching profession with a more unique experience. He was first a part-time instructor, then entered a program with two existing instructors due to student enrollment. His part-time role was very beneficial. "So, yeah by experiencing that part time that's something that I could have quit doing, and yes, I would recommend that for all our positions at technical college if it was possible." The assistance offered by his co-workers while he was a part-time instructor was also beneficial to his preparation and development. "Any help that I needed with the program after hours, since the front office was out, he was able to help me with, you know? Like Word, Excel, PowerPoint." Upon becoming a full-time instructor, he was able to rely on his two co-workers for help and assistance. "Of course, when I came aboard, we had two other instructors because of the enrollment. You know, we have 60-day students, and so they had the syllabus and all the lesson plans already here."

Participant M92 has also learned a lot from his co-workers. "The other instructors here, we always help each other out, you know? Let them know what the best way to do things." He continued on, stating that his entire institution worked together to create syllabi so that they were consistent across programs and so instructors could help each other. Participant W46 echoed the importance of co-workers that are available and willing to help.

> You know, if it wouldn't have been for [instructors], to take me under their wing and kind of help me along with, oh shoot, the evaluations and stuff like that we need to do as instructors, you know, things I didn't see that [instructor] doing behind so-called enemy lines.

Participant W47 was offered a similar experience and shared the importance of a mentor teacher.

> When I started here, luckily, I had a very seasoned instructor right next door to me, so any time I had any issues whatsoever, if I didn't want to call him, I'd walk right across the hall. I'd talk, I'd run it by him. And I had him for two or three years, so I got off to a really good start having him right next to me. . . . So, if it wasn't for him, I'd have been a whole lot worse off as far as getting that stuff set up. . . . I had it a lot easier I'd say than some folks just because he was there.

When asked to describe other TBR-led training, Participant M51 shared that while TBR does offer curriculum meetings where instructors from similar programs meet to discuss their programs, they have not been as beneficial as he had hoped.

> One of the other things that I have learned, and I know we're being recorded, and I don't care to say this, but there's too much, there's too many instructors that will not share with other instructors. You know, we have 20 out of the 27 TCATs, we have 25 that teaches machine shop at 25 TCATs. I would say, for me, I don't know that I could count 10 that I could count on. I know I got five or six or seven that I could call right now, and they would help me, but everybody is like, "No," you know? They're all about themselves, and they're all about, you know, and they do things their way so we're not all on the same page. . . . You can't find everybody on the same page.

Participant W46 has not been able to attend a curriculum meeting in the past three years but noted a comparable experience when dealing with other Welding instructors from other TCATs.

> But as far as anything after that when I came in here, not even through our in-service, you know? I was telling [administrator] the other day that when I talked to [curriculum

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committee chair], I called him because he's our curriculum coordinator for welding. Now

we've not had a curriculum meeting going on three years, you know, and I think one of

the reasons we don't have a curriculum meeting is you know, it was instructors across the

board, east, middle, and west, all have a different mentality and they all want to

implement their mentality. No one wanted to give so it was like, "My thought process is

the way it needs to be done, and no one else matters," and that ain't going to work. So, I

think that's one of the reasons why we we've not even had a curriculum meeting. . . . But

if we all get together nothing's going to happen. It's going to be a big argument. There's

going to be a discussion, and it's never ever going to go anywhere.

Participant M85 had a different experience with the system-led curriculum meetings. He was

placed on the curriculum committee by a school administrator during the restructuring of the

program from five trimesters to four.

I went to Nashville a few times and met with four or five of the other, actually more

qualified instructors or senior instructors, and sat on that board and helped restructure the

curriculum to bring it down to four trimesters. But it really helped me walk through and

say, okay, this is what we need at these points, and this is how it should be done

compared to what we're doing here at the school, so that worked out really well for me.

Participant M51 was able to visit Machine Tool programs at other TCATs and found the

experiences to be beneficial.

Well, I will say that one thing that did help me is at that time we had [former president]

here, and I did go spend a day in Shelbyville with the instructor there. I spent a whole day

and got my eyes really opened to some things, and then I went and spent a day in

Murfreesboro. [Other TCAT instructor] has been, he's been a shoulder for me to call on here, you know? But I did experience some things by visiting that I don't agree with, and that's okay.

Likewise, Participant M92 also visited another TCAT's Machine Tool program and learned from the experience.

I immediately got in touch with one of the other TCATs in Shelbyville and arranged a visit there, and I just job shadowed him for a whole day and just kind of seen how he laid his class out and how to manage it. Just went from there and it and it takes two or three years before you get stuff rolling like you really want it going, and it all worked out.

Participant I59 recommended a similar experience for all incoming TCAT instructors, if possible. He said, "If they had the opportunity to visit five TCATs somewhere across the state and just see how they set their class up . . . oh, that that would be critical."

Participant W47's institution offers ongoing professional development to prepare instructors for their role. The campus president provides encourages instructors to share resources that may be of benefit to others on campus. Participants W31 and I59 shared similar experiences. Participant I59's administration promotes and encourages the use of an online professional development resource called Master Teacher. These online lessons are about 30 minutes in length and provide lessons in working with different situations and classroom management. Participant W31 stated that the Master Teacher courses are a good supplement to what he learned at the TBR new instructor training and finds them very helpful in his development.

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When describing professional development other than TBR-led trainings that they attended after being hired as a Tennessee technical college instructor, five of the 12 interviewees mentioned training offered by different industry credentialing organizations as preparation for their roles as instructors. Participants W46, M2, M51, M92, and I59 all participated in train-the-trainer workshops offered by organizations like the National Coalition of Certification Centers (NC3) and the National Center for Construction Education and Research (NCCER). These workshops allow the instructors to receive a certification and subsequently award certifications to students. When asked to describe his experience with the NC3 training, Participant M51 claimed, "I went to training in [city] back in 2019, which was great training. I loved it; absolutely I loved it. . . . I ran seven students through it, and it is the best thing." Participant I59 echoed these thoughts. "They've got some pretty good classes set up for that, and it has truly benefitted us because of the certifications you can apply and give the students an opportunity to receive as well." In addition, Participant M92 went through the program certification process by the National Institute for Metalworking Skills (NIMS) and learned a lot by going through the process.

The experiences of the participants after being hired to teach at Tennessee's technical colleges include a common dependence on other instructors. Instructors from other programs within their own TCATs provided participants with assistance regarding school policies, processes, and the sharing of resources. Some participants were able to visit other institutions and observe instructors from their related program areas. Eleven of the 12 participants attended a new instructor training offered by the Tennessee Board of Regents. Three instructors mentioned curriculum meetings held annually, though only one of the participants had a positive experience with those meetings. Three participants discussed the internal professional development

opportunities provided by their local institutions, and five participants stated that they had received training from third party organizations.

Ongoing Preparation

When asked how they stay up to date in their program area, all 12 instructors communicated the importance of developing and maintaining relationships with industry partners. This reliance on relationships with industry partners served as the common theme on how instructors stay up to date in their field. Two participants also mentioned owning their own business as a means of staying current in the field. Also, membership in professional organizations, personal research, and constant evaluation of the program and its resources were also commonly mentioned as methods of ensuring they are teaching to the needs of their local industry partners.

As part of the accreditation requirements set forth by the Council on Occupational Education, the accrediting body for 26 of the 27 TCATs, programs are required to develop a program advisory committee consisting of experts in the program area, meet at least twice a year, and review several aspects of the program, including curriculum, resources, and equipment (Council on Occupational Education, 2019). Five of the 12 participants commented on the importance of a programmatic advisory committee. Participant M51 mentioned his relationship with a local industry partner. "I've got my foot in the door at [industry partner], and they are pretty vocal in telling me what we need to be trained on." Participant W47 similarly stated, "I rely heavily on my advisory board, the people that are in the industry day in, day out. You know, we are talking about what's going on there, what are they doing in their shops?" Participant M2 provided more depth on the importance that his advisory committee plays in helping to keep his program current. He said:

One thing our shop has to do, our Standard 2, is we have to have a craft advisory

committee. We have to meet twice a year doing that, okay, and all these committees have

to be bona fide members. Those members are the ones that gives us input. They're the

ones that hire our students, you know, because it's supply and demand. You know, we're

a premier supplier for workforce development.

When discussing his advisory committee, Participant I68 said, "My advisory committee

meetings, they keep me up to date on a lot of changes." Participant I59 commented that when he

first began teaching, he didn't have enough media resources for his students, so he used his

advisory committee to review and evaluate his current and new resources. He stated:

And they helped me with, the advisory committee, to keep up to date with everything that

industry's doing right now. And that's ongoing. That happens twice a year. . . . One of

the questions that I have, hey, what's changing out there? What do we need to do here?

And the components that they add to this, then it's my job to get those components in

here and start making the students use those.

The advisory committee is one method that these instructors use to constantly evaluate their

program and make changes when needed. Two of the 12 instructors evaluate their programs,

resources, and teaching strategies on a consistent and ongoing basis in order to stay on top of the

industry trends. Participant I59 stated:

I'm always finding ways to make it easier on them. And that's the whole idea. The more

they get it, the easier it is on you once you go out there and apply it. And I can see that in

my class; if I really take all the time I need to explain every little detail, once we get out

in the shop, because they have to wire these up, it makes my job much easier.

He also said, "We're constantly finding change. . . . For example, the students were completing things too quickly. There was too much downtime, and so I finally sat down, and this didn't happen overnight, but I rebuilt the whole program using the same curriculum." Participant I59 continued, "You've got to have the best instructional videos, really good books, really good trainers. . . . They can use the components here of what they're going to be using out in industry. And that's what we try to do." Participant M92 echoed the need for constant evaluation, stating:

> And it's something that changes all the time too, you know? It's never finished. When I think I'm finished, I've added something else or taken something out, or we sold a piece of equipment that we're not using anymore and so, yeah, it's just a continuous deal.

The use of the advisory committee to constantly evaluate the program includes the review of the equipment used to train students for entry into the workplace. Four of the 12 participants mentioned the importance of ensuring that the equipment used in the program is current and applicable to the needs of local industry. Participant W4 stated that his industry partners often offer donations of similar equipment to what is used in the industry so that the students are better prepared upon entry into the workforce. If a donation is not possible, Participant W4 made plans to purchase the equipment, with the approval of the campus president, to ensure that students are appropriately trained. Participant M85 echoed the importance of current equipment.

> On the CNC side of it, staying up to date on the machinery. When I first got here, we had two CNC machines. Now we're up to five. I'm one of the only, one of two schools in the entire nation that has a [brand] Wire EDM that allows me to teach these guys in this area not only wire EDM but on a more up-to-date machine than most schools use, and that's really helped more than anything. Staying on top of the additive manufacturing field is something that I've been working on more. Teaching these guys 3D printing side of it,

how to go in and use computer-aided drafting programs or CAM programs to design their

parts, because that's where it's going. I can teach them how to do it old school and write

programs by hand, but they're not going to go do it [in the field].

Participants M2 described similar beliefs. Participant M2 stated he talks with local industry to

see what brand of machines they use in their facilities and tries to make sure that his program

offers similar equipment. Participant W46 maintained that even though COVID-19 had a

negative impact on some aspects of his program, a silver lining was the ability to purchase new

equipment through federal COVID relief funds. This updated equipment allowed him to use new

teaching strategies, while maintaining the proper social distancing required by COVID-19

protocols.

We're able to purchase an augmented arc made by Miller which is a, it's not really virtual

reality, but it's augmented which is a step above virtual. It's cutting technology. It's state

of the art. It gives them direct feedback of the weld while they're doing it and how to

correct, you know, their work angle and travel angle and arc length and travel speed.

They're able to go in here and set it up just like a welding machine. It's got real-time

video in the welding hood along with sound feedback, and it allows them to see the weld

as they're doing it without consuming any wire, without consuming any metal, without

getting burnt. They can do it without their PPE on. I think we're probably going to look

at, maybe even use it for recruiting some once the COVID lets up a little.

Four of the 12 participants of this study stay up to date in their fields by visiting industry

partners. Participant W4 commented that although the COVID-19 pandemic impacted his ability

to make as many visits to his partners as he had done in the past, he was able to maintain his

connections.

I have tons of connections in the field, and prior to this with my industry [experience]

that has helped me out tremendously. Knowing all these guys in the field and coming in

here, I get to relate to that. . . . Pick up the phone and just say, hey man, you guys running

new processes? You got new steels? You got different stuff going on? And their doors

are always open to me. They let me come in, check stuff out, stay up to date.

Participant W31 also makes a lot of visits to industry and uses his relationship with them to make

phone calls when he is unable to make an in-person trip to their facility. Participants W47 and

I68 uses their industry partnerships similarly. Participant W47 said:

I use the industry visits. . . . I did one last year on a new process that came out. Lincoln

came out with . . . I actually went and met the Lincoln rep at a company here in town that

I use and I actually hands-on welded with it. . . . I'll go and hit some of these factories up

and go in and look around and see what they're building, see how they're doing it, see

what processes they're using. You know it's very important for placing the students and

all that too, so I do the industry visits.

Participant I68 did not let COVID-19 impact his ability to visit his industry partners. He

remarked, "I have numerous contacts throughout the community. I go do plant tours. Even

during COVID, I was allowed to go to [local company], tour that to see what they've got

changing in the field. Just visiting local factories."

Interview participants also conduct personal research, including membership in

professional organizations, attending trade shows, and owning their own businesses as methods

of keeping current with the trends of the industry in which they teach. Participant I59 said, "The

amount of YouTube videos that I've watched just for teaching techniques, just to see how they

taught it, just to see how they presented something. I would change a dozen things, you know, watching someone else." Participant W46 also uses the internet and YouTube to prepare. "I'll use YouTube. I'll use Instagram." Participant M54 also uses the internet and personal research to stay current. He stated:

> I've got more machines in my living room than most machine shops have, so I'm constantly reading and studying. I'm on a ton of forums, Facebook pages on machining, even Tik Toks. I found machining Tik Tok pages that, with all the new technology. But I love staying on top of the stuff.

Participant M51 found that one of his equipment manufacturers offers online instructional videos.

> Haas has got a great program called Tip of the Day... Anyway, he puts these good videos on, and they average from 10 minutes to 20 minutes long, and I made it a point to go home and at least try to look at these things and try to teach myself, you know?

Participant M51 also attended a professional development program in another state offered by the same equipment manufacturer to help prepare to teach some of the machinery on which he was unfamiliar. This training program was four days long, trained on actual equipment rather than simulators, assigned homework, and evaluated participants on what they learned. On his time there, Participant M51 commented:

> I would advise any new instructor if they could work it out with their president. You know, that is a great place to go. I'm not so sure that TBR should look at that place as a training ground to send a bunch of us up there, maybe even on a yearly basis to keep us,

you know, more updated, maybe a little more advanced. . . . So, if I could give you any

kind of advice there that might be something that TBR could look at.

Participant I34 similarly uses the internet to stay current.

I do a lot of, like, webinars. I try to stay current with the things they are sending me and

read about it. If there is a topic that I'm particularly curious about, I'll just go and Google

it and research and try to find it on my own.

Another method of ongoing preparation communicated by instructors was membership in

professional organizations. Participants W4, W46, and I68 are all members of the American

Welding Society and use the journals and magazines that come with those memberships to gain

knowledge on the current industry trends. Participant I68 also partners with coworkers in related

disciplines to stay current. Welding is only a part of his overall program, but he has gone to other

instructors in his school for training. "[Instructor] has allowed me to utilize his welding booths,

and he's been helping me with that portion of it. But yes, I need to get more training and more

into the welding side of it." Participants M2 and W46 regularly traveled to trade shows to meet

with vendors, see new equipment, and network with other. Participant M2 said, "We used to go

to the trade show in Chicago every two years, but we haven't been able to do that because of

COVID." W46 similarly claimed, "Before COVID, I was able to attend FabTech. The FabTechs

are international shows that are usually held in either Chicago or Atlanta, and they have all the

state-of-the-art stuff." Finally, Participants M92 and W4 mentioned owning their own business

as methods to stay current in the industry. Participant M92 stated:

I guess the biggest part for me is it's my passion, and I have my own shop, so I have to

stay up to date for myself. You know, it's my job and my hobby, so anything you got a

hobby that you're really interested in, you're going to know everything about it. . . . That's all I think about is new technology and what I can do to make this better and faster.

All 12 instructors that participated in this study emphasized the importance of developing and maintaining relationships with business and industry partners to stay current in the field in which they teach. Instructors also continuously prepare by joining professional organizations, assessing their program's equipment and resources, and personal research through means like trade shows and the internet. Finally, some instructors own their own businesses, which helps them to stay current in their field.

Benefits of Further Academic Degrees

Participants were asked if the pursuit and achievement of additional academic degrees would provide benefits in their roles as instructors. A common theme identified from this interview question was that the actual degree would not benefit them, but the knowledge learned in some of the courses would be helpful. Another noted theme was that the additional course work required for an advanced degree would not help them teach the hands-on portion of their curriculum. However, three of the 12 participants noted that additional academic degrees would be a benefit to them in their roles as technical college instructors.

Participants I34, I68, I59, and M2 all communicated that earning an additional academic degree would either benefit them or is important. Participant I34 claimed:

I believe so, yes. I think it would help in a multitude of ways, honestly. I think it would benefit me, for one, that I have a higher level of education than what I'm imparting if that makes sense. Ideally, if you're taught by someone, I know experience is important and

having the experience of working in the field is important, but I think also having an

education to back up that experience is an important part of it.

Participant I68 also saw benefit in earning an associate degree or beyond.

In time, it would help me because I wanted to go into the educational field because there's

so many different types of personalities that come into this course. . . . So, I think it

would help me grow as an individual to actually continue on with my education to get

that.

Participant I59 agreed:

I absolutely think it would. I really do. It's just the, you know, when you go to college,

something I've learned from, and I've taken a lot of college classes, and I'm actually

taking some now at [community college], and I think that for the social aspect of it, and

you know, your social skills are everything when you're teaching. You've got to know

how to talk to people, how to treat people. Everybody's different. It doesn't matter who

you are, what you come from, you've got to be able to talk to them professionally, and I

believe in that. And I think college is a good place, you know, you learn that through

college, even if you don't get it out of the book, you'll get that from college.

Participant M2 did not believe that an associate degree should be required or is needed to teach

at a TCAT, he did state that after beginning work in the teaching field, a degree at least at the

associate level is important. "But after you do get into the TCAT, I think you need to get that, a

little professional development training, you know, hopefully at least the associate degree in

something." He continued, "I don't think it really helped me, but I think it's important."

While these four instructors found importance in the pursuit and achievement of the academic degree itself, seven instructors only saw benefit in some courses. Participant W46 understands that in order to gain a promotion, additional academic degrees are a requirement. However, he feels that may not necessarily be the best for students. He claimed, "But to help the students, truly to help the students, I don't feel that, maybe some classes would, but on the whole, I thank that classes that are geared towards welding helps the students more." Participant W4, while not earning his associate degree, has still put the lessons learned during his time at a community college to good use.

> I feel like that helped me some as far as you know staying organized and keeping on top of stuff, and yeah, I would say that I absolutely have used that education. I know that I don't have a piece of paper for that education, but that time spent in the classroom wasn't wasted in my opinion. . . . I think that the basics that I picked up when I was at [community college] absolutely helped me some because, you know, I got to learn Excel some. I got to learn some different forms of things on the computer which coming from industry my biggest thing was picking up all this paperwork.

Participant W31 believes that an additional academic degree would be valuable to some aspects of his teaching career.

> I think that on the hands-on I don't think it could that way but as far as educational research, program development, machine development, stuff like that, I think it could it definitely could open up a whole other realm of possibilities to other stuff as well.

Participant M85 held a comparable sentiment.

> Probably, if in the right course, I mean. If I go and do physical education, it ain't going to
> do anything for me, but if I go and do some kind of education requirements, which I
> thought about doing, I feel like for sure it could help me structure programs better, do
> things like that. So, absolutely.

Participant W47 held the belief that although the degree itself would not help him become a
better instructor, he would have more experience on the technology side of teaching, which
would be a benefit. "The degree as far as being an instructor, I don't know that it would. Some of
the technology sides would have been a better help starting out. Like Microsoft Excel,
PowerPoint; I hadn't done that in a long time."

When asked the same question, participant M51 stated that he does not believe that any
courses not geared toward machining would be a good use of his time.

> No sir, I don't. . . . If they had a course in college that was geared to machining, but to go
> take a business course or something just to get a degree, to get you another amount of
> money per year, you know, I just don't. I think it's a waste of time.

Participant M92 felt similarly:

> I don't know that it would help me teach this trade better, but it would definitely help on
> my pay. They base our raises on an associate degree, you know, which is kind of
> backwards, I think. You know, we advertise, "Yeah, come to technical school," but you
> want a raise you got to go to [community college] and get a degree in basket weaving,
> you know?

Only four participants in this study felt than an additional academic degree would benefit them or would be important to earn as a technical college instructor. The other participants of the study indicated that they perceive some benefit from some of the courses that would be required to gain the additional degree but felt that anything not directly or indirectly related to their program would not be beneficial.

Research Question 2

How do occupationally trained technical college faculty describe their preparedness to teach?

Prepared for Certain Aspects of Teaching

A common theme derived from the responses to the interview question asking participants to describe their perceptions on their preparedness to teach was that instructors felt prepared in some areas but not all. Three of the 12 instructors voiced that they felt fully prepared for the duties of a technical college instructor after being hired directly from industry. However, the other participants did not share the same confidence. Two instructors did not feel prepared for their roles as instructors coming directly from industry. The remaining participants felt somewhat prepared but noted that there were many areas for which they were not prepared at all.

Participants I59, M2, and M92 communicated that they were prepared to teach after being hired directly from industry. When directly asked if he was prepared to teach due to his industry experience, Participant M2 simply stated, "Yes, I think so." Participant I59 provided more depth when asked the same question. He claimed:

Yeah, I think of when I first took the job, I felt really confident that I could do the job. Like I mentioned before, if it wasn't for that, the [between 21 and 25] years in industry, I

think was critical. It really was. If I hadn't had that, I don't think I would have had the confidence to do anything that was needed here. So, yes, it definitely helped me.

Participant M92, although he felt prepared to teach based off of his industry experience, also understands how some training could be needed. He summarized:

That's a hard question to answer, I guess. Of course, I feel like that for this kind of work you're prepared for it, but, and being honest, you're probably not. You probably do need some kind of, you know, previous classes or something to tell you what to expect. . . . But I don't know how I would answer that for sure. I would probably say you shouldn't need any other training beforehand because I didn't have any and I've turned out okay.

In contrast to the three instructors who felt that they were prepared to enter the teaching profession directly from industry, two interview participants did not feel that their industry experience prepared them to teach. Participant W46, when asked to describe his preparation level, he bluntly stated:

Nope. I'll be blunt. No. I think the only reason I was able to get through that as an instructor is, I was passionate, and I wanted to, so I made myself do it. You know, I kind of force-fed myself to do it. No, was I already educationally? No, I wasn't.

Participant M54 shared a similar belief. "I don't know that you could be. I think with this machining, there are so many specialty fields. I think the more you learn, the more you realize you don't know."

The other interview participants all shared comparable perceptions on their preparedness to teach from their experience in industry. These participants felt prepared in some aspects,

commonly the hands-on aspect of the profession, but felt less prepared in other aspects. Participant W47 voiced his lack of preparedness, claiming:

So, starting out, that was different for me because I'm, I was a more hands-on guy in the shop side of it. Yes, I'd say definitely some on the technology side as far as my shop and my, what we had going on. Welding portion, the hands-on portion that's me. The bookwork side, the theory side, how to capture that stuff. . . . I didn't have a clue. . . . Part of it, yes. But as far as the paperwork side, the computer side, no. I was not prepared for that. That was a, that was a whole lot of getting used to, you know? Checking daily emails, you know what I mean? I didn't do, I didn't have to do a lot of that, you know?

Participant W4 had a similar experience when he first started teaching.

As far as being out in the shop with these guys and staying in a welding booth and training them up, do I feel confident in that stepping in the door? Absolutely. Did I feel confident with the paperwork side of things and keeping up with all the attendance and hours and Banner? Yeah, absolutely man that would have been my downfall, and I still would say that that's a little bit of my downfall, is all the computer stuff because I never was really trained on that.

He summed up his preparedness succinctly. "Can I go out here and build a battleship? Sure. Can I run an Excel program? Maybe."

Participant W31 felt that his previous experience prepared him in several areas, including organizational skills but did not feel that he was prepared to manage a classroom. When asked the same question, participant M85 frankly stated:

No. Like I said, on the side of it where, yeah, let's make a part, sure, whatever, not a

problem there. But on anything else, it was more of a, and I told them that when I was

hired. I said, you know, I've never dealt with this. I'm going to have to walk through it

and learn it myself and kind of figure out how to deal with students.

Participant M51, when asked if he thought he was prepared to teach after coming from industry,

stated, "Yes, I do. I think I was that way. I wasn't prepared for the paperwork end of it." He

continued:

Yeah, and so that's one of the drawbacks because, you know, I think that I needed to have

gone somewhere or took some kind of how to handle your class because, you know, I'm

pretty patient, but my patience are thin. I think that that's one of the things that was the

hardest for me. You know, another thing is because I'm one of the older guys, is the

computer era. You know, I'm not on the computer era as good, and that's been hard.

Participant I34 held that his industry experience was a benefit in preparing him to teach at a

technical college but didn't prepare him for everything. He felt that his industry experience

helped to further develop his skillset. He said:

It made me more knowledgeable about what I was doing. It made me more

knowledgeable about the skills that I had developed at the TCAT. I definitely know a lot

more than when I graduated. But at the same time, it didn't teach me how to teach. It

didn't teach me how to work with people as an educator.

Three of the 12 instructors that participated in this study felt fully prepared to teach based

on their industry experience. Two instructors did not feel prepared at all. The other participants

believed that they were prepared for certain aspects of their teaching roles, namely the hands-on

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portion of the curriculum. However, these participants also indicated that their time in industry did not prepare them for everything. These gaps included classroom management, instructional planning, instructional strategies, and the technology used in education.

Research Question 3

How does industry experience prepare occupationally trained faculty to serve as instructors?

Role in Industry Helps Determine Preparedness Levels

When evaluating the qualitative data from the interview questions pertaining to research question 3, I discovered a common theme of differing perceptions of preparedness levels based on the participants' roles in industry. Those participants who were in supervisory roles or roles that required them to train fellow employees stated that they felt prepared upon entering the teaching profession. Further, five of the 12 participants communicated that their industry experience prepared them for the hands-on side of the job. Also, even though some participants felt prepared through their industry experience, there were still aspects of their teaching role for which they did not feel prepared. These aspects included technology, paperwork, classroom management, planning for instruction, and instructional strategies. Another common theme that surfaced from the data review process was the prevalence of a "here are the keys" approach to training.

When asked how industry experience prepared them for their role as a technical college instructor, Participants M54, I34, M92, W4, M2, and I59 mentioned that they had been responsible for leading and/or training employees during their time in industry and that experience helped prepare them to teach at the technical college level. Participant M54 shared:

We had a high turnover rate at one of the companies I worked for, so I was always

training people, teaching new apprentices. That probably helped me out a lot. With just

being able to communicate what I want to the students.

Similarly, Participant I34 commented:

And then the other part that I think is mildly preparation is I did train employees to work

on equipment. . . . They would pair someone with me and say we need you to help get

this person to the next level. And so that did help to some degree on how to explain

something to someone who doesn't know about it. Because some of the people would be

from production, from assembly, and they would send them over to work in pre-

production, and they'd be working on machine set up now. They wouldn't know what the

machine even does, so I kind of learned a little bit of how to explain to someone in

layman's terms, what machines do, and why they do what they do, and what that process

looks like. Aside from that, and I don't think that's exactly, like educational philosophies,

but I think it helped at the same time. Knowing how to explain stuff. . . . I actually ended

up training a lot of people as well. I'd train people to do mold setting and to do

processing and to play with robots, to do all of that stuff in industry. That being said, it's

not the same thing. Teaching people in a classroom is not the same as teaching people in

an industry at a machine. But it was kind of like a steppingstone almost.

Participant W4 echoed, "Training on the job definitely helped me prepare for that." He continued

by stating that his role as a manager in his own business helped prepare him as well.

Another thing running my own business, you know, obviously hiring employees and

working with new employees, whether it be sitting down with them and going over a

print, you know, learning that which we do here or whether it be dialing in their machine, helping them dial it in and tweak it and see exactly what we're looking for.

Participant M92 claimed that his experience in a supervisory role and his responsibility to train fellow coworkers helped prepare him. He shared:

> Probably the being the foreman and training people helped me more than anything. You know, a regular worker you're going to be, you know, it's just all about you. Just take care of yourself and go on. But when you start having to be responsible for other people, you know, I'm responsible for these students getting a job with our placement requirements and all that, and that part helped me more than anything probably.

Participant M2 stated that he was a team lead and a department lead during his 6-10-year stint in industry. Participant I59 helped to train employees in his previous role. "I got used to talking to a group of people and explaining and training, depending on what particular job they were doing."

Participants mentioned their time working with people helped prepare them for their career as technical college instructors. Participant M51 was responsible for improving quality during his time in industry. Talking with his fellow employees played a part in preparing him for his life as an instructor.

> We had a program called [program name] to improve quality throughout the building, and I carried a video camera and went around and videoed people to find out what could make their job easier, safer, quicker, their needs. We did a big video presentation in front of the plant managers and all, and then we would put what we've learned into action.

Similarly, Participant M2 also talked with other employees to gather ideas on how to perform his job duties more effectively and efficiently.

I would go around, I had a personality to go four or five guys that's in the shop, you

know, how would you do this job some. I would, one I'd like better than the other one,

but sometimes I just do my own thing, so it was good training.

He continued, "The biggest thing was being able to help me with instructing is working with

others and kind of being a peacemaker there that I had the nature for then. That helped me more

become a good instructor, I think." Participant I34 also shared that his time working with people

helped to prepare him to teach.

I got to work with all kinds of different people from all different walks of life who had

gone through and gotten to where they were in all different manner of ways. So, I got a

lot of experience with people.

Participant I59 claimed that working with people was the most helpful preparation tool in his

industry experience, saying "Working with groups of people, that was the biggest thing."

Another commonly expressed notion shared by participants when asked how their

industry experience prepared them for their roles as instructors was that the hands-on nature of

their job prepared them to teach those skills to their students. Participant M85 stated:

On the hands-on side of it I can say that I could have walked in here and done anything as

far as making parts, showing a student how to make a part, how to run a machine of any

sort, anything like that, my industry helped do any of that.

Participant W47 also shared:

All the experience in the field, you know, the hands on, doing different stuff. You can

kind of relate a lot of the different things you're teaching here, you know, this is how we

do it in the field, and you know, and having the background in it is, you know, that's

when all of them ask you how did you do it, how do you do it, you know, have you done

it this way before? And there's reasons why you do things certain ways. So, having the

knowledge and doing it in the field definitely prepared me to be able to show it and pass

that on to somebody else.

Participant I34 noted a similar thought:

So, the industry experience gave me real life, situational experience. . . . But then on top

of that, I got a lot of experience with the machines and the processes and the things that I

ultimately would be teaching now. I've had hours and hours of real-world experience

with the things that I'm talking about. So, I have something to back up my statements

when I say this is the way that you'll do it for real, this is the way that you'll actually be

expected to perform in industry. I can actually say that because I've done it.

When asked how his industry experience prepared him to teach, Participant I68 claimed:

It showed me a lot more of the technical end of it. Not only did I have the theory, but I

had to put the skill to work. You know, I've seen things that most these students will

never see because technology has changed.

When asked the same question, Participant W4 said:

So, before teaching through American Welding Society, my certs and things and tickets

that I've earned on other jobs have really came into play as far as helping me get these

guys through. So as far as like the welding aspect, the fabrication of things, I feel like I

was very comfortable, and I mean I felt very comfortable with that. That was that was my

strong suit, you know, being out in the shop and showing these guys and training them up out there.

Several interview participants shared that their time in industry developed strong work ethic and problem-solving skills, which helped to prepare them for their roles as instructors. Participant M54 mentioned that his role in industry regularly required him to problem solve, rather than only work on one type of machine or part, which proved to be beneficial to him as he continued on to the teaching profession.

> I was lucky that I wasn't a normal operator machinist where I wasn't running the same part every day; 90% of the time I was given a problem, and I had to design and build a part to solve the problem. So, I think I had an advantage there, that I had way more different types of parts that I worked on. . . . So that's one thing I think I have an advantage. Just being able to do different stuff all the time.

Participant W31 shared that the welding industry was very quick-moving and required workers to meet deadlines, so that aspect of the teaching profession was made easier because of this time in the field.

> Learning how to cope with being busy because it is kind of a fast pace industry. It's fast moving. It's always evolving, and I think that is one thing that prepared me most, you know, deadlines, meeting deadlines on the job. We have to meet deadlines here as far as at the end of the tri-semester getting, you know, all the grades in, making sure all your paperwork lines up, stuff like that helped me more than anything.

Participant M51 claimed that his role in industry and the things he learned on site, helped him prepare to teach.

> What prepared me is I was in charge of every piece of steel that was brought into that tool room up there. Machine shop, you know, if it got behind, I mean if we ran out, I was in charge of ordering it and keeping it stocked, and I wanted to make sure that all the guys had plenty of work going on so I was, you know? I'm pretty good about keeping things organized to that effect. That helped me tremendously. Another thing that helped me is I'm old school if you want to call it, but, you know, getting there on time, getting there before work, you know, that kind of. . . . I really stress that to my students even today.

Likewise, Participant I68 shared that his industry experience taught him some worker characteristics that helps him in his role as instructor. "It showed me patience, understanding." Participant I59 also mentioned the work ethic he learned in industry as a beneficial instructor-preparation instrument.

> The training that I received there, my work ethic. . . . I try to teach that in class as well. The good work ethic, you've got to have that, you've got to go to work, and you don't miss. And I try not to do that. I've never done that in my life. So, I think it did. I think it made all the difference to do this job.

Finally, Participant W46 voiced that his industry experience prepared him to teach by helping him network with local business and industry and build relationships that would pay dividends in the future.

> One of the things that I gained from being in industry was contacts. I mean, you can teach students all day, but one of your requirements as an instructor is to evaluate them and to

place them. If you don't have those contacts and that rapport with the contacts, . . . you

have no place to place them and it makes it difficult as an instructor coming in here.

The study's participants indicated that certain roles in industry helped to better prepare

them than others. Those instructors with supervisory and managerial experience, as well as those

responsible for the training of fellow employees, perceived their industry experience was a

benefit in preparing them to teach. Participants also stated that working with other people also

benefitted them in their transition to teaching. Participants discussed that their industry

experiences helped prepare them on the hands-on side of teaching, and some mentioned that their

time in industry developed a strong work ethic needed to teach.

Here are the Keys

A common theme observed from review of the interview responses on whether there was

anything they were not prepared for upon entering the teaching profession was the mention of

how their technical college administrators handled their transitions to the teaching profession.

Five of 12 participants used the phrase "Here are your keys." This phrase was used multiple

times and indicated how some participants did not feel prepared for all aspects of teaching based

on their experiences in industry. Participant M85 was surprised at how quickly he was put into

the classroom after transitioning from industry.

I will say I was surprised at how quickly I was kind of thrown in. I found out that I was

going to have the job, and within two weeks [former instructor] was retiring and it was,

"There you go. Here's your keys, here's your desk, go have fun." It was, "Here's the keys

to the kingdom. Figure it out as you go," kind of thing.

Participant M51 had a similar experience to the start of his teaching career.

> When you take a man like me that's just went to work every day in a factory, that just has a high school diploma, and then you take him out this week and then next week you walk back out to your classroom and jingle a handful of keys and say, "There you go," then it was . . . I'll be honest with you. The second day I was here I was ready to quit. . . . You know, there's a lot of things that I had to learn right in the first two weeks I was here, you know? I was given a set of keys and said, "There you go," and you don't know how to turn the lights on even. You don't know how to do nothing, you know? . . . I could have quit really easily that first six months.

Participant W46 also mentioned how quickly he entered his teaching role. "I mean, you're thrown some keys, you're thrown a curriculum, you're thrown kind of a schedule of how and when this stuff is supposed to be done." Participant M92 continued, "But no, it was pretty much here's the keys to your room. Figure it out, you know." Finally, Participant W4 noted, "Like I said if it wasn't for them [fellow instructors], here's the keys, you know, good luck."

In combination with the "here are your keys" approach, many participants voiced that their industry experience failed to prepare them to teach in other ways. Commonly, technology and paperwork were mentioned as knowledge gaps. Participant M85 stated:

> As far as on the, let's say paperwork side of it, or on the knowing how to deal with a student side of it I wouldn't say it helped any at all. Especially with tool and die. I mean, it's really a one-on-one thing. A lot of times you are completely by yourself doing your job so you're not really having a whole lot of one-on-one or multi-person interactions, so not a whole lot there.

Participant W4 mentioned that he felt unprepared for paperwork and school processes.

> One of the biggest things was getting with our person up front as far as ordering parts . . .
> and getting equipment in here and kind of seeing how those things work. But really just
> the computer aspect of things and trying to grasp onto that.

Participant M51 also mentioned feeling unprepared for the technology used as a technical
college instructor.

> The other thing was the computer part. You know, I'm just not a computer person, and
> when they say, "Well, just make you a spreadsheet and lay it all out on." Well, see that's
> not my era, you know? When I went to high school, we had typing.

He continued, "I wasn't prepared for the paperwork end of it." He also mentioned that because
he was regularly working by himself, he felt underprepared in dealing with students. Participant
M2 also said:

> Just the computers itself. You know, . . . like the attendance and logging in all that
> information. . . . That part I wasn't familiar with. Of course, you learn it pretty quick so,
> and, of course, TCAT's great about giving you the computers and the knowledge and the
> time and skill.

> Participant W47 communicated that his time in industry did not prepare him for the slow

pace of the teaching profession, including school processes on ordering equipment and supplies.

> In the industry, you know, every day is a rush. Every day, . . . the industry I'm used to, . .
> . there's like a finish line that's never attainable, essentially in industry. You know, at a
> job shop you're working on this job to get it out as quick as you can to make the

company as much money as you can. So, everything we're doing is rushed. When I

started here, it's like slow down, slow down, you know, we've got to get approval for

this, and then it's got to go up to TBR, and then these people have to sign off on it, and

then we can submit the order.

In addition to feeling unprepared for the technology and paperwork portion of their new

roles, some interview participants felt underprepared in the classroom aspect of teaching. The

perceived lack of preparation in classroom management, planning for instruction, instructional

strategies, and student issues was a common theme taken from the interview results. When asked

if there was anything that industry did not prepare him for upon entering the teaching profession,

Participant I59 intimated that planning for instruction was an area in which he struggled.

> Now I'm going to be honest with you, that first year teaching was tough. It was, my
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> routine, there was no routine. I thought I had everything; I prepared, when I knew what I
>
> was going to do, when they moved me up here to electrical, you know, I took six months
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> to prepare for that. And I wasn't prepared, you know? . . . I wish I could have that first
>
> class back and just redo it.

In addition, Participant I59 verbalized that even though he thought he was prepared for

everything he may encounter, he soon realized that his lectures were not adequately planned.

> Well, I guess the biggest thing, when I started preparing, I remember working at home,
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> staying here at work, laying out lesson plans, and I felt like I really prepared for that. But
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> here's what happened. When you have a group of people in front of you, I didn't have my
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> lectures, you know, I didn't practice my lecture. And you really should. I remember
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> lecturing on something to the level like I knew it. And they didn't have a clue, and I turn

around and it would be like a bunch of deer in the headlights. So, I had to back up and really prepare on how to lecture on even the simplest of things. . . . So, I had to back up and really work on my presentation of anything during lecture.

Participant M51 claimed, "I wasn't prepared to, you know, how you even run a class properly, you know?" Similarly to Participant I59, Participant M51 declared that he wishes he could have a fresh start. "It's just, I wished I'd had a better jump start than I did. I feel like maybe my first few years that my first students maybe got a little shortchanged a little bit." He also felt unprepared to teach all of the hands-on aspects of his program due to his industry experience of only working on one type of machine. Participant W46 stated that he was unprepared for planning instruction for a program that had little existing structure.

When I came in here there was no structure, and I'm not knocking on nobody, but there was no structure. . . . There was no structure, so when I took this over it was wild. It was crazy trying to get the reins, and it took a while. [Administrator] told me, "Get these students purged out and eventually, I would say a year, at least three terms, maybe four terms, all that'll be behind you, and your students will be, they'll know you, and you'll have your own curriculum and it'll have your stamp on." Again, when I came in here there was no structure, so whatever I did was going to be a step in the right direction.

Participant M85 also mentioned feeling unprepared when tasked with changing the culture of a program lacked existing structure.

So, it was one of those things where I walked into a situation where the guys weren't really prepared for where they were, one. And two, didn't really have, I won't say respect

for an instructor, they just didn't have an instructor that was there to teach them anything or to really push them in any way.

Participant W4 felt unprepared in planning lessons for those students that may not have any knowledge or prior experience in the program area.

It took me a little adjusting to get used to and just kind of get a game plan together. I'm not going to lie, the first six or eight months I was teaching a blueprint class I was sitting up there thinking, will these guys even think I know what I'm talking about, but you know, because I'm relating everything to on the job. So, I really found myself having to dial things back because I might be speaking Greek to these guys and thinking they already know more than they do. So, I found myself really toning it back and dialing myself back when I get into things like that. . . . My low point would have been definitely learning the computer side of things and trying to get a syllabus and classroom stuff together and figuring that out because as far as being in the shop, you know, that's my comfort zone, keeping everybody safe, train them up. I felt very comfortable with that but managing a classroom took me some getting used to.

Participant W47 also had difficulty planning instruction for students that had no existing knowledge in the trade.

As an instructor now, you take for granted that they would know certain things. Some of the simpler things, you know, tape measure, a square, you know? You think that everybody should know what that is, but they don't. You know, a lot of people don't. And so, I'm kind of split on that part of it.

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Participant M92 faced a similar hurdle.

It took me a while to get used to people not being able to do it as fast as what I could. In industry time is money, you know, so if somebody is extremely slow and when I first started it was like I can't handle this, you know? Yeah, that was the hardest part to get to get past right there.

Participant I68 also stated that he was unprepared for planning out his instruction.

Well, the only thing I was not prepared for was I really didn't know how to lay out the assignments or program, you know, like daily assignments. I think it would have been more beneficial if I would have done more of that before I came here, but it didn't take long to catch on to being able to do assignments and, you know, lining up the lesson plans for the day, instructing.

Additionally, five interview participants voiced the difficulty and the feeling of unpreparedness of teaching in a program where many of the students are at different levels of ability and experience and teaching to students with different personalities. Participant W46 said:

Now obviously when I came out of industry it didn't teach me how to handle different personalities. It didn't teach me how to deal with the different learning techniques. You know, some people are visual, some people like hands-on, some people you can tell them what to do. . . . It was being able to handle these students and being able to, I knew what needed to be done, but how to convey the information and, you know, there's still challenges. I'll get students in here that have a, maybe a harder, maybe a block somewhere, where it's a little more difficult. You can draw pictures, you can take the metal, you can place it, you can do all that, but they still don't grasp it so that's one thing.

It didn't help me, you know, when I came in here that was one thing industry didn't get

me ready for.

Participant W4 also communicated his difficulty in differentiating his instruction to meet the

learning styles and needs of his students.

We're competency based, so I get some guys that come in here and just blow it out of the

water but learning that, differentiating for learning, and kind of how guys work a little

different. I might show a video for one guy, and he picks it up, or I might hop in a

welding booth, you know, monkey see monkey do, for another guy. Learning how these

guys learn themselves.

Participant W31 echoed these sentiments.

Just the different generational preparedness because as a kid I was always taught to work

for what you have, and you'll appreciate it more. That's something that I've seen a lot of

that they don't do a lot of. Not all of them, and then just dealing with the different

personalities.

He continued:

So, it is kind of a challenge because you have someone that, I ain't going to say old, but

you have somebody of that age taking your class, and you got to feel a little sympathy for

them because things have changed a lot. I don't treat him any different when it comes to

rules and regs of my shop, but I do show a little bit more leniency toward him because of

his experience, and I've actually learned a lot through him too.

Participant I34 stated that he was unprepared for teaching to a program full of students that were all at different parts of the curriculum and that without help from his wife, he would not have access to instructional terms and strategies to help him teach his students.

> I know one of the big things is, even like for this program, everything is at your own pace. Managing a room full of people who are all working on something different is not something that I feel like I was effectively prepared to do. It's something that would be difficult to prepare someone to do, I think, without firsthand experience. . . . Besides that, I just think a lot of it was educational things that I didn't have experience with. . . . There are some educational strategies that she's [wife] talked about that I wouldn't have had any idea about without having that kind of access point. . . . The word pedagogy I wouldn't have even known how to say if it hadn't been for her training. And then, I remember Bloom's Taxonomy. I've actually looked at that lovely little triangle about the words you're supposed to use in questions, and how to encourage like critical thinking, as opposed to just asking for like recall of information. It's a few things like that that are pretty much strictly things they use in education that I would have never heard anywhere else.

Participant I68 also mentioned his difficulty in teaching to students that were all in different courses in the curriculum.

> I just couldn't stand the fact that, you know, we have different students in different areas of training through this class, and the hardest thing was is trying to find something that pertained to them all, you know what I mean? It's like you've got to explain something that's in fourth trimester to a first trimester student. And that can be confusing and overwhelming.

Most commonly, when asked to describe things that they were not prepared for upon entering the teaching profession after transitioning from industry, seven participants indicated classroom management issues and dealing with student issues as their biggest gap areas. Participant W31 shared:

> I've had a few students with mental disabilities that have come through here. I had one student with [learning disability], and it was really a challenge. He ended up getting his combination welder diploma, but I also had to learn how to teach differently for him.

He continued, "Just being able to talk to the students that never really had much structure, I guess, in their life. Yea, that was really overwhelming." Participant W46 voiced that he was not prepared to appropriately handle all of the mental and emotional needs of his students.

> Again, the different disorders that students have when they come, you become a mentor when you're an instructor. . . . So, a lot of times you're their father. You're their listening block. They come in here, and they want to talk to you about problems, and you try to, you're not a counselor. I'm not, never went to school for this, but you try to kind of play Dr. Phil, so to speak. You try to help them through that. Sometimes they just want someone to talk to, but you're their mentor, you know.

He also mentioned his perceived inability to effectively teach students with disabilities.

> I had a guy call me one day and want to know if I can handle a deaf student. That's going to be a challenge for me to be able to do signing, you know, and I'm verbal. . . . You know, I like to talk so I want to explain, you know, I want to and if I can't do it verbally, I'm not going to help the student.

Participant M54 shared a similar experience:

> Yeah, my first high school class I had 20 students. Seventeen of them were raised by their grandparents. They had no mother or father present, and that blew my mind. And just the whole social structure of the area where we live is real low income, and I just was never prepared for some of the stuff those students have to face in their everyday life. . . . That's what I wasn't prepared for. . . . I wasn't prepared to be a counselor as well as a teacher.

Classroom management and handling student behavior was also mentioned as an area of unpreparedness for many of the participating instructors. Participant W46 felt that he was too easy on the students upon entering the teaching field, as he always aimed to get along with everyone during his time in industry.

> I would say probably the way I handled students when I first came in here. You know, one of the staff up front told me that you can always lighten up on them as an instructor, but you can't get harder on them. I didn't understand when I came in. . . . My mission on the job site was always to get along with everybody, I don't care. It was my mission. . . . Well, I came in here, and I had that same mentality, and you can't do that with students. Not to start with. You've got to have, students got to respect you. They don't need to really like you. If they decide to like you and you gain that, that's fine, but the main mission is for them to respect you as their mentor, as their instructor, as the one that's teaching them how to change their life. . . . So, I was a little lenient when I came in here. . . . The mistake I made was being a little too lenient, not being firm enough. You know, not trying to be accepted as the new instructor.

Participant M51 shared the issue of proper classroom management and handling student behavior. "I was not prepared to know how to handle students that coming in wanted to cuss you out or chew you out, and I was not prepared for that and how to handle the things of that, you know?" Participant W47 had a similar concern with handling student discipline and the differences in atmosphere between industry and education.

> Atmosphere is 180 degrees different. One hundred- and eighty-degrees difference in this atmosphere here than it is in the field. In the field, the way you talk to people, the way people talk to you, it is 100 percent different, you know? . . . But it's a culture shock to be honest with you, you know? Coming from that, coming from industry straight into here, it's very. . . . It takes some getting used to. . . . Yeah, you know in if industry people don't do what they're supposed to, we fire them. You know, you're getting paid to be there. If you don't do what you're supposed to do or not doing it correctly, you're gone after so many times, you know? Here, if you get a bad apple in there, man that dude can cause some damage before he gets gone. . . . You know, some of these folks get in here, mama's making them, mama said you can get off the couch and go to school for free. Go take something easy. Well, here they are. They're in welding because they said it's the less bookwork we can do. . . . How do you get on to somebody and try to dance around all the stuff we got today? You know what I mean? . . . Their feelings and them getting mad and them wanting to cuss you, and I can't cuss them back.

Participant I68 highlighted his under preparedness in teaching students that are not as engaged as the employees he trained on the job site.

I mean I've instructed before but never to a class of 30. You know, it's always been to 10

or 12 people, you know, and it's just been in a room that you don't have people wondering

well, what's on TikTok?

When asked to describe anything he was not prepared for upon entering the teaching profession

from his experience in industry, Participant M92 quickly stated:

Yes, dealing with high school students. High school boys are hard to deal with. They're

lazy. If they can do the whole class on their phone on a game, it'd be no problem, but

that's the hardest part right there.

When asked if there were any aspects of teaching at a technical college that they were not

prepared for based on their industry experience, participants indicated that they perceived they

were less prepared in instructional strategies, instructional planning, classroom management, and

dealing with students' mental health issues. In addition, these participants were unprepared for

how quickly they were thrust into the classroom, as indicated by the multiple mentions of the

phrase "here are your keys."

Research Question 4

Do occupationally trained faculty perceive a value in a development program on instructional

and classroom strategies?

Perceived Value in a Professional Development Program

When asked questions pertaining to whether they found a value in professional

development on instructional and classroom strategies, all 12 participants perceived a benefit to

professional development opportunities, but when asked if they found previously attended

training useful, responses varied. A common theme found was that content, timing, and delivery

method impacted the perceived benefit of the training. As previously discussed, the Tennessee Board of Regents (TBR) offers new instruction training to technical college faculty. Prior to 2019, the new instructor training was more focused on TBR policies than instructional practices. In 2019, however, TBR implemented more robust training on instructional strategies, methods, and practices (Hollins, personal communication, April 27, 2021). Therefore, the experiences offered from the new instructor training differed for instructors starting at a technical college prior to 2019. In addition, in light of the COVID-19 pandemic, the previously held in-person training was only offered in a virtual setting, further varying the experiences and perceived benefits to the instructors. Further, some participants did not attend the TBR new instructor training until well into their teaching careers, which also impacted their perception of the training's benefits. Eleven of the 12 participants had attended, either virtually or in person, a TBR new instructor training. One participant also attended a similar type of professional development offered by the Tennessee Department of Education.

Two participants mentioned that they were the type of person who always volunteered for any additional training or development opportunities to improve themselves, so it can be gleaned that these participants see value in professional development and training. Participant I34 said, "So if the opportunity ever came up to figure something else out about something that was going on, whether it be directly part of my job or not, I did it." Similarly, Participant I59 stated:

> . . . but again, I was that one that if anything ever just popped up, I'd be more than happy to take that training. I signed up for everything. I was that kind of guy, and I believe because you never should stop learning. Ever. You know, when you stop learning your class will stop. That's where it stops. So, preparing for that, anything that came up and was available, I was without resistance, I just did it, you know?

When asked if they perceived a benefit in professional development program for technical college faculty on instructional and classroom strategies, all 12 of the participants indicated that there is a value to professional development. Participant M2, who entered the teaching profession into a program with two existing teachers, stated that he could see how professional development could be useful. "If you're starting out from scratch a new program, then I could see that if you have to do it by yourself, you're behind eight ball." When asked if he would have been prepared to teach upon entering the profession if those other instructors had not been there, he stated, "I don't think so. I'd have to have some training. . . . Without training, you'd be in the dark." Participant M2, who has been teaching between 16 and 20 years, did not have the opportunity to attend any TBR new instructor training.

Participant W46, who has been teaching between four and five years, attended the TBR new instructor training. "It was during my first in-service where I went for new instructor training. How not to get fired, I think, was one of the ones we did." He maintained that there is a value in professional development and training.

> It needs to be some kind of formal training, even for old instructors. I mean, we're not too old to learn. I mean, the times are changing. These generations are changing. . . . We have to be reprogrammed to be able to help these young ones. I mean, you got to figure we're getting dual enrollment students. They're 16, 17 years of age, probably 17, all the way up to, I've had students over 60. . . . I agree, there needs to be formal training or some kind of training to help us.

He continued:

> If we don't push ourselves as instructors, how can we push the students if you don't lead
> by example? . . . So, when it comes to COE standards yeah, my numbers are good, but
> could they be better? I think we all can better ourselves. When it gets to the point where I
> can't better myself it's time for me to give the keys to somebody else.

Participant M51, a teaching veteran of between six and ten years, attended a new
instructor training led by TBR after teaching for only two weeks.

> I did get to go, to the best of my memory, I believe TBR had a training session for new
> instructors for a day, and I did go and sit through that. . . . I'll have to admit it did help,
> but I think they should have been some more extensive, you know? . . . We need more
> training.

He also found value in his training offered by NC3. "It was great training. I love it; absolutely
loved it." He found value in a different type of professional development. He attended training
out of state on teaching on the latest equipment in his field and would recommend that as a best
practice.

> I would advise any new instructor, if they could work it out with their president. You
> know, that is a great place to go. I'm not so sure that TBR should look at that place as a
> training ground to send a bunch of us up there, maybe even on a yearly basis to keep us,
> you know, more updated, maybe a little more advanced.

Participant M51 stated that continuing professional development, even for those instructors with
more experience, would be useful. "I do. Even when I started here seven years ago it's so much

different even in seven years, you know?" He also communicated his wish for training prior to becoming an instructor.

> My only regret I guess is I wish that, and maybe this is just common across Tennessee with the TCATs, but I wish that TCATs would have put some kind of, if you want to call it a crash course, of training on how to run your class.

Participant W31, with one to three years of teaching experience, found the TBR training very useful. "I learned a ton from that class as far as your syllabus, your rubric, classroom management, how to engage with students that's of different walks of life, stuff like that. That was very helpful." He had been teaching for eight months before attending training. He stated that the training would have been very helpful had he had it earlier in his teaching career. "Oh yeah. If I would have had that like week one or week two, that would have been really helpful." He has also found his local professional development to be helpful. "That's really been helpful about classroom management and how to deal with different situations. . . . Yeah, I think any kind of work-based training would be awesome for teachers." Participant I59 also found the TBR training useful. He has been teaching between 11 and 15 years. He also has found value in his NC3 training, which he uses every day in class, and with his local professional development. "Yeah, I think those classes are very helpful. . . . I mean, it's like things you already know, but its's the way they present it." He stated that training prior to beginning teaching would have also been useful.

> If I had anything at the beginning a class of having the situation with a large group of students and how to, for me, how to lay out a lesson plan for just one day and then how to prepare for that. . . . I guess if I had that, if I knew, if I had that knowledge of what I needed, it would have helped me right off the bat.

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Similarly, Participant I68, who has one to three years of teaching experience, also enjoyed the TBR training. He was able to attend the training within a month of starting teaching.

> I really enjoyed the TBR training that I went through on D2L. That actually helped a lot. It did, it helped a lot lining out a syllabus, and you know dealing with different aspects of it. That helped quite a bit. . . . I found it very useful. My notes are in my office because I still use them. . . . So, it was very, very beneficial, you know? I could sit down and lay out lesson plans, I could do all kinds of things that, you know, if I couldn't find on Google, I would always revert back to the TBR. . . . I learned a lot from it.

When asked if he believed there was a benefit to having this training prior to becoming an instructor, he voiced:

> Honestly, I think it would. I think it would be awesome to get it right, but even if that's part of your orientation and start being put through that training, it'll help you get a leg up. I mean, it was very beneficial to me. Very. So, any type of training before they come in would be beneficial in my opinion.

Participant M54, with teaching experience of one to three years, attended the professional development for occupationally licensed teachers offered by the Tennessee Department of Education and found the experience beneficial, especially as the training focused on classroom management techniques. "I found that useful. I learned a lot during those classes." He also attended the TBR new instructor training. However, he did not find this training as useful.

> Some of it [was useful]. The lesson plan, not so much because I have so many different people in so many different places. I didn't find that as useful, I don't think. I felt like it was kind of busy work they were having us do.

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Participant W4, who has been teaching between four and five years, attended the TBR training a year after starting teaching. He did not find the training useful but mentioned that he would have found value in training that helped him manage and run a classroom.

> I don't think I took a whole lot from it, to be honest with you, not towards like what I'm doing every day. We went over some policies and things like that and done the little online thing and the little egg hunt deal you go through.

He continued:

> You know that's probably not being real fair because part of that was probably on me some, but you know I didn't feel like, I feel like I enjoyed that, but I would have liked to went to something that really honed in on, like, how to run my classroom; the do's and don'ts and how I need to, you know, a little more structure in the classroom.

Participant M85, now with between six and ten years of teaching experience, attended the TBR new instructor training within two to three months of starting teaching. He did not find the experience useful.

> The TBR new hire training, which is what? Two days? Show up and you might get a couple lessons on teaching strategies and how different personalities need different teaching methods, things like that, but it wasn't really wasn't much, you know? You might have a good page of notes, but that was about it. It wasn't anything that you could really walk away from confident, but it kind of got you the thought processes of what you need to be thinking about to keep going from there.

However, he did indicate that professional development was needed and would provide value.

> I think a lot of us walk in with the understanding of how to do the hands-on skills sides of it; that's what our jobs are. What I needed to know walking in here was how to deal with difficult situations.

Participant M92, a teacher with between 11 and 15 years of experience, attended the TBR new teacher training in which the training was focused on the paperwork aspect of the role. "And they kind of help you with the paperwork part, you know, because that's, well from 2:30 to 3:30, that's what we sit in here and do is paperwork." He commented that the timing of the training could be improved. "You know, maybe that they could offer that that training more than once a year. Maybe they could do it twice a year so you can get in there quicker, you know."

Participant W47, who has been teaching between six and 10 years, attended the TBR training soon after starting teaching. He found benefit and value in both the TBR-led new instructor training and the local professional development offered by his institution.

> Yes, the local training for sure. . . . The TBR one's been several years ago, so thinking back on it, it answered a lot of questions that I had at the time. And, yeah, I think it would be beneficial, you know? . . . Some of them, some of the sessions we went to probably wasn't but the good outweighed the bad, you know?

He also stated that professional development prior to starting teaching would have been valuable. "Any kind of training going in, I feel like would be beneficial." Participant I34, who has been teaching between one and three years, only found parts of the TBR training useful.

> Parts of it were useful. I think part of the reason that I did not find a portion of it useful is because it was so late. Like I said, I was almost, I was here for almost a year before we

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did that training. And by that time, I had already made a lot of decisions, and I'd already

started doing a lot of things.

All 12 participants in this study indicated that there was a perceived benefit to

professional development on instructional and classroom strategies. However, the perceived

benefit depended on the timing of the training, the delivery mode, and the content covered.

Research Question 5

What training topics would increase instructor preparedness upon entering the classroom?

Instructional Planning, Instructional Strategies, and Mental Health Issues

All 12 interview participants indicated that they perceived a benefit in professional

development on instructional and classroom strategies. Participants were then asked for their

opinions on what topics would be most beneficial to them in these professional development

sessions. Common themes of planning for instruction, teaching to different learning styles,

dealing with student-related issues, and technology were found during the examination of the

responses to this question and also identified from the review of questions related to gaps in

instructor preparation. As previously mentioned, the Council on Occupational Education (COE)

has requirements for each accredited program. Included in these requirements is that each

program should have a syllabus (Council on Occupational Education, 2019, p. 56). Three

participants mentioned that going through the accreditation review process highlighted areas of

need in their training. Participant W46 said:

> Going through COE back in [year], . . . you know, a lot of stuff they asked for I had no
>
> clue about. It wasn't created. . . . So, I didn't know what a rubric was. . . . You know, I
>
> didn't know what a syllabus was. . . . I could have been a whole lot better prepared

training wise, how to create a rubric, what is a syllabus, you know, the stuff that we use daily now.

Participant M85 also mentioned that COE accreditation requirements played a role in creating a syllabus, but he was not trained on how to do so.

> I knew the basic structure of what some of them should look like, things like that. At the time that I decided finally decided to create a syllabus was the same time that we were fixing to go through COE training or COE recertification so it was something that I felt like I needed anyways, so I kind of went through and just designed one myself or what anything that said, hey, this is how it needs to be done. It needs this and this and this. I just kind of pulled up some of my old college syllabuses and kind of took their reference, their concepts, and put it into my course.

Participant I34 observed that he created a syllabus before he had training on how to do so but receiving training would have helped him in the creation process. "Oh yeah. Oh yeah. It would have been a whole lot easier to fill in the blanks." He also communicated that he would have liked to have been provided training in another COE requirement: building and maintain a programmatic advisory committee.

> And then something that I think is just kind of an expected skill is networking with business and things like industry and business partners around the county. . . . I think more specific training on that would also be good because you're kind of just expected to have those networks, I guess; you're expected to know how you're supposed to keep those up and how that best benefits you. And that is not always simple. When I came in, we have advisory councils, when I came in the members of the advisory councils did not

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meet the recommendations that our accrediting organization set forth. The individual members were not experts; one or two of them were not even related to the field. So how to pick those people, and how to communicate with them, and how to best network them into your school is something that wasn't, as far as I know, hasn't been touched on anywhere.

As COE requirements dictate the creation of a syllabus, other instructional planning strategies were mentioned as areas of training needs, especially planning for the instruction of students who are all in different parts of the curriculum. Several interviewees mentioned the terms open enrollment and self-paced when describing their programs. Participant M51 stated that training was needed on setting up a classroom. "I wish that we had a program to where all the new instructors could go in and learn what could happen in the classroom, and this is how you need to handle it." Participant M54, who attended both TBR and Tennessee Department of Education training, mentioned receiving training on instructional planning, with only some of his training being useful.

How to create a lesson plan, a rubric, a syllabus, all that stuff. But . . . we've done that here too, with that online class. We had to make a syllabus and all of that. Some of it [was useful]. The lesson plan, not so much because I have so many different people in so many different places. I didn't find that as useful, I don't think.

Participant W4 also attended TBR training but wanted more content on providing structure in the classroom and running a class. Participant I68 noted that his TBR training included lining out a syllabus, which was very useful to him. Participant M85 mentioned that the hardest part is planning for students that fall behind the other students in the open entry, open exit environment.

The hard part is when a guy gets a little behind more than anything else. Obviously, you know, we work at our own paces here. I got guys that get ahead. I've got extra stuff that I can obviously throw in. Let's push you. Let's see if you can, you know, go that extra step, but when a guy gets behind it becomes a little more difficult because we still need to push. You should not be here for seven trimesters, but at the same time, you know, how do I get you through and still get you that same level that is going to allow you to be competent when maybe you didn't get as much training as somebody else. That gets tough sometimes.

Participant M51 had another planning struggle.

My biggest thing was I was giving them too much book work. . . . Well, you got to get 34 chapters and then 12 on the blueprint before I even let you to shop. Well, about your second week or third week here you're ready to just walk out, and I had to rethink that. . . . That's my fault, you know, there again I didn't have the guidance, you know.

He also verbalized his desire for training on how to run a classroom. Participant M2 also noted the difficulty in planning in the open entry, open exit environment. "One of the challenges for a TCAT instructor is everybody's at a different position, place, every student, you know? Be nice if you can have everybody in page one today." Participant M92 similarly stated that he too finds it difficult to plan for instruction in the TCAT atmosphere. "That's very hard because every student that you have is at a different level where we're open enrollment. . . . Its' hard to be real structured with open enrollment."

Participant W47 remarked that the creation of the instructional planning documents was difficult for him and that training and shared resources would be welcomed.

Generating a lot of the documents on your own, you know, it's essentially reinventing

the wheel all the time, you know? To me, if they had some blanks to go from or some

examples from other TCATs, you know? . . . I feel like a lot of that stuff, you know, it

puts a lot of stress on the instructor to come up with something that is usable, and people

can use it, they can read it, you know, not just the grammar on it. I'm talking about, what

am I trying to say, the correct format and stuff like that, you know, that looks

professional. . . . It's like trying to invent this stuff as you go, and you know some of this

stuff, had we had templates to go by. . . . It'd have been a whole lot easier generating

some of that stuff, you know? And then having all the lesson plans typed up and page

numbers on it. . . . But like I said, if we had some sort of basic guideline to go by things

would have been a lot better off.

Continuing, he said that if an instructor inherited a program that had already been established,

they would not have to worry about lesson plans and syllabi. However, if they take over a

program that did not have those documents or if they start a new program, training on how to

create those items would be beneficial.

Participant I34 noted that the professional development trainings he has attended thus far

have done little to prepare him for the environment in which TCATs operate: one of open entry,

open exit where the students work at their own paces. He shared that he would like to see

professional development offerings on planning for instruction in a TCAT-type environment.

One of the things that I have not necessarily found highly effective is a lot of the training,

maybe not all of it, but portions of it are, or at least seemed to be, directed toward like

community college style learning or there are some programs here that do it, like the

nursing programs, where things are not that different from high school. Things are not,

like, asynchronous. Things aren't asynchronous, I'll say that. So, I do wish we had better

training on how to handle that type of a classroom, but that's kind of across the board. . . .

There are a whole lot more programs in the field of education that are, you know, able to

be lectured and taught and you plan a lesson every day, and you follow that lesson plan

every day. . . . But a lot of the TCAT programs are not that way. They are very much

asynchronous learning and they're very much everyone's working on something different

and you kind of have to learn how to balance that and manage that, and I don't feel like I

had an effective training on that. It was something that was more trial by fire type of

thing.

In his efforts to circumvent the difficulties of teaching students that working on different

components of the program, he utilizes several andragogical strategies, including serving as more

of a facilitator.

When I got here, . . . the instructor was doing everything. They were printing off the

papers for them, they were, they were doing every part of it. So, I've tried to automate a

little bit of the bookwork side of it. And that has helped quite a bit. . . . I can say it is a lot

of juggling right now. I have a lot of digitalized resources that allow the students to

continue their training even without my direct intervention. . . . But for the most part, the

parts that are not hands on, can be done without me. . . . I'm still there for the most part to

answer their questions when they need it, but a lot of it is more autonomous than it was

previously.

He also mentioned that he would like to see training on curriculum design. "I also think a

training specifically for like assessing and evaluating curriculum. And then, if not assessing and

evaluating, also creating a curriculum or updating curriculum would have been good."

Participant I59 declared that training on how to prepare lectures would have been very beneficial to him.

How to prepare your lectures, everything you want to talk about and make sure you give enough time for anyone that doesn't understand it, that's where I was slow. I was a little slow on that. I'll go in there, my lectures were, they weren't long enough, and the instruction wasn't detailed enough, but that's something I learned very quickly, and then I had to back up and just redo it. But class preparation, lecture preparation, daily lesson plans. It's funny, you know, I had the electrical down pat, you know? I could go out there and show them anything, but once you got in the classroom, it was, I found it hard to explain every little detail about a component.

Instructional strategies, especially recognizing and teaching to the different learning styles of students, were mentioned by five participants as desired topics for inclusion in professional development opportunities. Participant W46 saw a difference in the learning styles of students in his program, ranging from 16 years old to 60. "Every generation has a different mentality. . . . That's a big age disparity, so to be able to handle them different personalities from them different generations." He noted that he has instituted open book tests to bridge the gap between learning styles of different generations.

When I went to school, they [tests] were always closed book. I had a lot of closed book. I had a lot of postcards, you know? I had a lot of the cards where I take notes and have my flash cards, and . . . had to memorize that stuff, multiple books, but I knew this generation wasn't going to do it.

Participant M51 noted the difficulty in teaching students that may be more knowledgeable that he on some aspects of the program. "I've had a few students that will come in here, and I'm ashamed to say it, but they can literally teach my class, and they're that much better than I am, especially on CNC." Participant W47 received training on the different learning styles for students and found benefit to that training. Similarly, Participant I59 appreciated the training on different learning styles and working with different types of students. He also found benefit in the training that provided scenarios on working with someone "that may be a little bit, for example, a little bit different."

Participant W4 also described the difficulty in teaching students with different levels of ability and different learning styles.

> That's definitely tough. . . . It's tough but also what I tell guys coming in is I really like it when a student comes into my class and doesn't know anything at all because what I've found this far I'm having to break guys out of a lot of bad habits if they've been on a job site. . . . Like I said differentiating learning, I mean, just kind of finding what works for them.

Classroom management and dealing with student issues, including their mental health, were mentioned as areas of training need by interview participants. Participant I59 has seen value in his previous training on dealing with students and working through difficult situations. He mentioned that training on handling students with emotional issues have proven to be beneficial. "Not very often, but every once in a while, you'll have that student, and you don't know what they're going through, but if you show just a little bit of compassion, just reach out with them." He continued, "I think those classes are very helpful. . . . I could use that with the student to help him be more confident or not be so angry." Participant M54 also mentioned the

mental health of his students. "Just the mental health of the students. . . . The younger generations on how they're medicated, but they deal with a lot of mental health issues on a level that's not been seen before."

Participant M85 discussed his desire for training on working with students. He shared:

Yeah, anything that would have been able to give me a better idea of how to deal with student situations. I think a lot of us walk in with the understanding of how to do the hands-on skills sides of it; that's what our jobs are. What I needed to know walking in here was how to deal with difficult situations. Students that are depressed, are having home problems, showing up on drugs, you know? What do I need to do in those situations? I didn't know, and it was kind of one of those things where I just had to kind of rely on [an administrator] and people like that to kind of guide me through it and get me to the point I needed to be. I didn't really have any structure as far as, you know, this is what you need to do in these situations. So, that would have would have helped a little bit, you know, how to deal with those students.

Participant I68 posed a similar desire. In his teaching career, he has lost a student to suicide, and the aftermath presented a situation for which training would have been beneficial.

Maybe more of what if situations, you know? How do you come into your classroom that people have been with this student for say nine months or 12 months? How do you cope with instructing them and telling them? How do you deal with it? Maybe signs of depression, things of that nature. Stuff that you're going to see that you might not see in a factory. Just interpersonal skills with students. Basically, warning signs that you could see. More of that type of stuff.

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Participant M51 also mentioned the issues that students face that could impact their learning and desired training on how to handle it in the classroom.

> And so, but it's so much different today. You know, today it's sad, but we get the ones that's raised by grandma and grandpa because who knows where mom and daddy is, and they don't know nothing because they've been thrown from here to there, and I feel compassionate for them, you know?

In addition to training on the appropriate ways to work with students with mental health issues, classroom management in general was noted as a training need and a gap in preparation. Participant I68 found that working with students and different types of people were topics of value in previous professional development trainings. Participant I59 similarly noted that he too had found value in training on dealing with people and different types of student demeanors. Participant W4 mentioned, "I guess what I'm getting at is I would like to see more geared towards the instructor, as far as in classroom stuff and things more like that." Comparatively, Participant M92 described working with people and their different personalities as an area of training need. Participant M51 noted, "I wished that maybe on the discipline end of how to handle students. You know, I handle it the way I think, but is it the correct way?"

Finally, Participant I34 discussed the need for training on classroom management for adult students and motivating those students with differing life experiences.

> I think more professional development or training, I guess you could call it, either way, about how to manage adults, and how to manage students, . . . the classroom management side, but also the organization. How to keep everything running smoothly and how to effectively address the needs of the adults, and not necessarily just adults who have lived

a little bit and decided they wanted to come back to school, which I feel like we did learn

about that. . . . Learn how to motivate people who have lived a little bit, but the people

who just came out of high school, mixed in with those people who have lived a little bit.

Because there is a wide age gap. I have students who have just graduated, and I have

people who are in their sixties, both in my class at the same time. And so, it's kind of, . . .

how to, maybe utilize that as an advantage instead of a disadvantage. There was a little

bit of training over it; in the classroom management section they did say you can people

who have been through stuff talk about the things they've done in industry and things like

that, but I think a little bit more pointed, like what happens? . . . What do you do when

there is conflict with this wide of a difference in people and different views and different

levels of experience with life and how to manage them in that way?

The proper use of technology, including transitioning to online instruction in light of the

COVID-19 pandemic, was also voiced as potential training topics. Participant M51 noted his

desire for training by simply stating, "I wish I had more training on computers." Participant W47

vocalized his need for training on the technology frequently used in his program. "I feel like

definitely training. Some initial training on the technology side of it, . . . the basics of Microsoft

Word, Excel, PowerPoint, you know." He also mentioned that training on teaching in a virtual

environment would have been useful.

It was something I wanted to do years ago, but I didn't have the know-how. I didn't know

where even to start. . . . I didn't know where to go, what to do. So, yes, had I been trained

on it, we would've been using D2L since [date he started teaching].

Other instructors also found benefit to training on teaching online. Participant W31 said, "I think

it would. . . . I mean some would be helpful." Participant I68 felt similarly. "Yes, I would

because when we went online, that would really, really have been beneficial." Participant I34 stated, "I believe that in general, teaching about how to get things online would've been good."

This study's participants found a perceived value in professional development and training on instructional and classroom strategies. Desired topics for inclusion most commonly mentioned by the participants included classroom management, technology, planning for instruction, teaching to different learning styles, and understanding the mental health issues of the students. Regarding planning for instruction, participants indicated that they would find benefit in training that helped them plan when all students are at a different point in the curriculum.

Chapter Summary

The data in this qualitative, phenomenological study were gathered through 12 semi-structured, conversational interviews conducted in March 2021 by Zoom. The interview protocol consisted of 17 questions but also allowed for follow-up and clarifying questions. I transcribed the interviews. Before the coding process began, interview participants were asked to review the transcript of their individual interviews to confirm correctness. After the member checks of the transcripts were complete, I coded the interview transcriptions by using thematic analysis to identify categories and common themes. The coded data were analyzed in relation to the study's five research questions. Several common themes appeared from the analysis of the qualitative data and were discussed through the use of thick, rich descriptions provided by the interview responses. The analysis of these themes provided insight into how the 12 participants perceived their preparedness to teach at a technical college after being hired directly from industry and their perceptions on professional development and training. Conclusions developed from the findings, as well as suggestions for practice and additional research, are presented in Chapter 5.

Chapter 5. Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative, phenomenological study was to understand the perceptions of occupationally trained faculty members at Tennessee technical colleges about their preparedness to serve as instructors and their perceptions about the need for professional development activities. In the first chapter of this study, I introduced the topic and highlighted the significance of the study. I provided a list of definitions of terms used throughout the study, delimitations and limitations of the study, and a statement of researcher perspective. In Chapter 2, I provided an examination of related literature, including works on the requirements for career and technical education (CTE) educators, the shortage of teachers in CTE, existing professional development programs for CTE educators and postsecondary faculty, topics for inclusion in CTE faculty professional development, effectiveness of industry in preparing CTE faculty, and andragogy, the theoretical framework of the study. In Chapter 3, I discussed the phenomenology, the collection of qualitative data, my role as the researcher, ethical considerations, and the methodology used in the study. In Chapter 4, I provided results from the interviews, as well as described the common categories and themes identified through the analysis of the qualitative data and how those themes related to the study's five research questions.

The data collected from the interviews provided thick descriptions of the perceptions of the participants on their preparedness to teach at the technical college level after being hired directly from industry and on the need for professional development activities related to instructional and classroom strategies. The identified themes showed how participants prepare to teach, their perceptions on their preparedness to teach, how industry prepared the participants for their roles as instructors, if professional development on instructional and classroom strategies

would be valuable, and if so, what topics should be included in this professional development and training. Chapter 5 will provide a summary of the findings, recommendations for practice and further research, and conclusions.

Discussion

The data from this qualitative, phenomenological study were collected through 12 interviews of technical college instructors from seven different institutions in Tennessee. These participants represented three different program areas, Industrial Maintenance, Machine Tool, and Welding, and three different divisions of the state, West, Middle, East, plus Upper East. The interviews were semi-structured, with a 17-question protocol, but also allowed for a conversational flow and follow-up questions as needed. The interview protocol was guided by the study's five research questions. The analysis of the data provided the identification of several common themes that were used to describe the participants' personal experiences as technical college instructors hired to teach directly from industry.

The examination of this study's findings could be used by Tennessee technical college administrators or Tennessee Board of Regents staff in consideration of developing or modifying existing professional development and training opportunities. Further, the findings could be used by administrators in understanding their own faculty's perceptions and beliefs on their preparedness to teach and areas in which they feel best and least prepared. While the results of this study are not meant to generalize the perceptions of all Tennessee technical college faculty, each reader can use the thick, rich descriptions provided to transfer thoughts and ideas for their own institutions. The conclusions for each of the five research questions are discussed in the following section.

Interviews were used to gather the perceptions of 12 occupationally trained Tennessee technical college faculty who experienced the phenomenon of entering the teaching profession with no prior teaching experience or formal training on educational and instructional strategies. The interview responses provided rich, thick descriptions of the participants' experiences and led to the identification of several common themes. This study presents the findings of the perceptions of the occupationally trained technical college faculty who voluntarily participated in the study.

Chapter 1 of this study presented the need for this research by highlighting the programs and initiatives that have increased enrollment at Tennessee's technical colleges, as well as increasing the diversity of the student populations. Chapter 1 also described the requirements to teach at the Tennessee Colleges of Applied Technology and included the statement of the problem, the five research questions that directed the study, definitions of commonly used terms, and the limitations and delimitations of the study. Chapter 2 offered an assessment of related literature that contained reviews of the requirements for career and technical education (CTE) teachers at both the federal and state levels, the shortages of CTE teachers, existing professional development programs for CTE and postsecondary faculty, topics for inclusion in CTE faculty professional development, effectiveness of industry in preparing CTE faculty, and an analysis of andragogy, the theoretical framework of the study. Chapter 3 described the methodology used in the study and discussed why a phenomenological approach was the appropriate method for this study. Chapter 3 also presented the means of which the qualitative data was collected, my role as the researcher, and the ethical considerations associated with the study. Chapter 4 exhibited direct quotes from the 12 interview participants, as well as an analysis of the responses to the interview questions as related to the study's five research questions. Chapter 4 also included

notes taken during the transcription and coding process, as well as profiles of each of the 12 participants and commonly identified themes and categories resulting from the data analysis. Chapter 5, the final chapter of this study, finalized the study with a summary of the findings obtained through the data collection process and recommendations for practice and future research.

Qualitative research is not meant to be generalized. However, the conclusions drawn from this study can be transferred to other populations and samples within postsecondary career and technical education. The perceptions of this study's participants could be useful to other Tennessee technical college administrators that have faculty members with similar industry experiences and educational backgrounds. The rich, thick descriptions of lived experiences provided through the participants' responses can aid in the transferability of the results to other technical colleges and systems. The findings from this study can be used by readers, including Tennessee technical college administrators and representatives from the Tennessee Board of Regents, to inform the development and implementation of professional development opportunities for occupationally trained faculty. The findings from this research can assist the reader in concluding that there is a perceived benefit to occupationally trained technical college faculty in professional development and training on instructional and classroom practices, including planning for instruction, instructional strategies, classroom management, student mental health issues, and technology. The study can also be used to conclude that many Tennessee technical college faculty come to the teaching profession with no formal or informal training but desire training instead of the "here are your keys" approach. It is clear that occupationally trained technical college faculty do not feel prepared in all aspects of the teaching profession. In order to increase their perceptions of feeling fully prepared and to help maintain

the high completion and placement rates set forth by their accrediting agency in light of increased access and attainment initiatives, additional preparation programs should be implemented prior to or near the beginning of their teaching career.

Conclusions

Research Question 1

How do occupationally trained technical college faculty prepare for a career as an instructor?

A theme discovered through the data analysis of questions associated with research question 1 was that none of the 12 the interview participants received formal training prior to serving as technical college instructors. These responses directly align with the related literature focused on occupationally licensed and trained faculty entering the profession with limited or no formal education or training (Advance CTE, 2016; Bottoms et al., 2013; Bussey et al., 2010; Headrick & Bottoms, n.d.; Sanford & McCaslin, 2004; Stachler et al., 2013; Stephens, 2015). Four of the participants were able job shadow the outgoing instructor prior to starting their teaching career. However, only two of these four were able to spend significant time shadowing the instructor. These two participants saw great benefit from that experience and indicated that it helped prepare them to teach. The other two participants were only able to briefly shadow the outgoing instructor and did not see that time as a benefit. In addition, three of the 12 participants served as part-time instructors before being hired full-time and found that experience valuable. The data reveal that the duration of and content discussed during the job shadowing experience plays an important role in the preparation of occupationally trained technical college instructors. Further, the data found that those who were able to serve as part-time instructors prior to becoming full-time instructors had favorable experiences and found perceived benefits from those experiences.

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The 12 participants were asked what, if any, independent preparation they pursued prior to becoming an instructor. Three participants did not pursue any preparation, three participants researched teaching techniques and strategies on the internet, and four participants reflected on prior educational and personal experiences. Further, one participant, M2, began taking associate degree classes during his time as a part-time instructor. Two other participants taught classes at their churches as a form of preparation. Only one instructor, Participant I59, received access to program resources and reviewed them prior to becoming a full-time instructor. The data note that the independent preparation pursued by instructors was inconsistent.

A common theme relating to preparation experiences of the participants after beginning their teaching careers was a reliance on co-workers or instructors from different schools in the same program areas. All 12 participants indicated that they attended some form of Tennessee Board of Regents offered training, either the new instructor training or programmatic curriculum meetings. Seven of the 12 participants noted that co-workers and peers both positively and negatively impacted their preparation after being hired to teach as a full-time instructor. When working with co-workers, the perceived benefit was overwhelmingly positive. However, for the participants that worked with other faculty from other institutions, the perceived benefit varied greatly. The three participants who were able to travel to other institutions to shadow instructors perceived benefit from this practice. Those that specifically mentioned the curriculum meetings in which all instructors from a content area meet to train and discuss course content varied widely in the perceived benefit. The data show that instructors relied heavily on co-workers to help them navigate internal processes, including inputting grades and attendance into the student information system, as well as classroom strategies and instructional resources.

In addition, three participants in this study received professional development and training at their local institution as a form of ongoing preparation, and five of the 12 participants have attended training by other certifying agencies. Further, all 12 participants in the study indicated that relationships with business and industry partners were vital to their ongoing preparation and staying current in the field. Those participants whose local institutions offered ongoing professional development opportunities and those participants who attended training by industry credential certifying bodies found benefit in the trainings. Finally, the 12 participants commented on the importance of developing and maintaining relationships with industry partners in preparation to teach current and upcoming skills that students will need upon entering the workforce upon completion of the technical college program. Although this is a criterion required by the accrediting agency, the instructors indicated that the preparation provided from this practice is of great benefit. Therefore, the data indicate that developing and maintaining relationships with business and industry partners is an important preparation tool for occupationally trained technical college instructors. Also, the data reveal that there are inconsistencies in the preparation practices offered to instructors after they are hired. The data also surface that due to these inconsistencies, the perceived benefits vary greatly.

Another commonly theme identified related to instructor preparation was regarding the pursuit and completion of further academic degrees. All 12 of the participants hold a technical college diploma. Seven instructors have either begun additional academic work or have already earned that degree. However, only four of the 12 indicated that the additional academic degree would be a benefit to them or is important. Seven instructors commented that there would only be benefit in some of the courses associated with the pursuit of the additional credential. The

data demonstrate that most of these participants only found perceived value in courses directly related to education or to their specific program area.

Research Question 2

How do occupationally trained technical college faculty describe their preparedness to teach?

The data gathered from the interview questions related to research question 2 led to the identification of a common theme that occupationally trained technical college faculty felt prepared to teach in some ways, but not all, based on their industry experience. Three of the 12 interview participants, Participants I59, M2, and M92, stated that they felt fully prepared to teach after being hired directly from industry. Participant M92 found the question most difficult to answer. He said, "I feel like that for this kind of work you're prepared for it, but, and being honest, you're probably not. . . . I would probably say you shouldn't need any other training beforehand because I didn't have any and I've turned out okay." Two participants, M54 and W46, did not feel prepared. Seven participants indicated that they felt prepared in some ways but did not feel prepared in others. Most commonly, participants specified that they felt prepared in the hands-on side of teaching. Alternatively, these instructors indicated that they did not perceive that they were prepared for classroom management, technology, planning for instruction, teaching to different types of students, and paperwork. These findings are consistent with those presented in the related literature that occupationally trained faculty felt less prepared to teach than those who entered the profession via the traditional route (Bottoms et al., 2013; Ruhland & Bremer, 2003; Sass et al., 2011). The data establish that industry experience is a valuable tool in preparing occupationally trained technical college but does not fully prepare these instructors for their role as technical college faculty. The data also uncover that there are gaps in educational and instructional strategies in practice in those instructors hired directly from industry.

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Research Question 3

How does industry experience prepare occupationally trained faculty to serve as instructors?

The common theme that emerged from the analysis of the responses related to research question 3 was perceptions of preparedness levels differed based on the participants' roles in industry. Another emergent theme discovered from the review of participant responses was the use of the phrase "here are your keys" to describe their initial entry into the classroom upon hiring. Another common theme identified through the data analysis was that although industry experience was helpful in preparing them to teach, that same industry experience did not prepare them for everything that they encountered as a teacher. Six of the 12 participants noted that they were responsible, at least in part, for managing, leading, supervising, and/or training employees during their time in industry and that these experiences helped to somewhat prepare them for their roles as instructors. The experience of communicating with employees translated to their roles as instructors and helped in their transition into the classroom. Industry experience also aided in the preparation of participants in teaching the hands-on aspect of the curriculum for five of the 12 participants. Six participants also mentioned that their industry experience prepared them in other ways, namely work ethic and other soft skills needed for success in the curriculum. The data note that the instructors' role in industry had an effect on their perceived preparedness to teach.

The theme that industry experience did not prepare participants for every part of their role as a teacher was prevalent upon further analysis of the data. The data found that those participants that felt underprepared by their industry experience did so in areas such as technology, paperwork, school processes, planning for instruction, instructional strategies, and classroom management. These findings are consistent with the ideals discussed in the related

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literature, noting that career and technical education instructors are less prepared on the academic aspect of teaching (Advance CTE, 2016; Bottoms et al., 2013; Bussey et al., 2010; Cormier & Bickerstaff, 2020; Cramer, 2004; Elliot, 2014; Ruhland & Bremer, 2003; Sanford et al., 2007; Sanford & McCaslin, 2004; Sass et al., 2011; Stephens, 2015; Zhang & Zeller, 2016).

Finally, the qualitative data review yielded the theme that many participants in the study experienced a "here are your keys" approach to induction into the technical college teaching profession. Five of the 12 interview participants used the phrase "here are your keys" when discussing how their industry experience prepared them for entry into the teaching profession. When asked if there was anything they were not prepared for, some participants indicated that they were not prepared for how quickly they entered the classroom after being hired without any sort of formal training. Participants M51, W46, M92, W4, and M85 all mentioned their initial thoughts upon being hired and introduced to the teaching profession with no training. The data reveal that some participants' experience upon being hired to teach was perceived to be rushed and unsupportive.

Research Question 4

Do occupationally trained faculty perceive a value in a development program on instructional and classroom strategies?

The data collected from the interview results produced a theme that participants did perceive a value to professional development and training on instructional and classroom strategies. However, the data extract that the perceived benefit of the training depends on when the training is offered, the delivery of the training, and the content of the training. This is consistently aligned with the findings included in the related literature that the training's timing is important to those receiving the training (Friedman et al., 2019; Hamilton, 2015; Horton, 2013; Sanford et al., 2011; Sanford & McCaslin, 2004; Van Ast & Mullen, 1999). All 12

participants in the study indicated, either directly or indirectly, a perceived value in professional development opportunities. Eleven of the 12 participants had attended the new instructor training offered by the Tennessee Board of Regents (TBR), and one participant attended both the TBR training and training offered to new occupationally trained faculty by the Tennessee Department of Education. Even those participants who felt fully prepared to begin teaching based on their experience in industry indicated that even they could see the benefit of additional training, especially if they were coming into a setting with no structure or existing instructional planning resources. Also, those that felt fully prepared mentioned areas in which they were not prepared, which led to the interpretation of the perceived benefit.

When asked to describe if they found benefit in the TBR training that they attended, the participants' responses varied. Most indicated that they did find at least some benefit of the training. However, some indicated the timing of this training affected the trainings' perceived value to the participants. First, prior to 2019, the new instructor training did not focus on instructional and classroom strategies. Second, some instructors were delayed in attending the training due to when it was offered. For those instructors that attended the training prior to 2019, all six found at least some parts of the training useful. Three indicated that the training provided a benefit to them, while three were less happy with the content. These three participants mentioned that they wished they would have received more content that directly related to their day-to-day work. For those instructors that attended the training after 2019, two did not find the training beneficial. Notably, one indicated the online delivery due to COVID as the reason for the perceived lack of benefit, and the other indicated that the timing of the training, almost a year after he started, as the primary reason for the lack of perceived benefit. Of the two that found benefit in the training, one attended the training within a month of starting. The other attended

after teaching for eight months and indicated that the training would have been very useful closer to his start date. The data observe that timing, content, and delivery of the training is important to its perceived value to occupationally trained faculty.

Research Question 5

What training topics would increase instructor preparedness upon entering the classroom?

As discussed in the related literature, CTE faculty desire training in instructional planning, instructional strategies, classroom management, and technology (Baker et al., 2016; Bartlett, 2002; Bottoms et al., 2013; Bussey et al., 2010; Cannon et al., 2011; DiBenedetto et al., 2018; Drage, 2010; Elliot, 2014; Horton, 2013; Latz and Mulvihill, 2011; Mosterdyke, 2014; Murray, 2002; National Research Center for Career and Technical Education, 2010; Ruhland & Bremer, 2003; Sass, 2011; Sanford & McCaslin, 2004; Sorcinelli, 2007). The results from this qualitative study are aligned with these findings. In addition, the common themes that emerged from the qualitative data analysis showed that instructors desired training in dealing with student-related issues, including the mental health of students, as well as training in technology associated with being a technical college instructor. Also, as Tennessee's technical colleges are open-enrollment, instructors are tasked with teaching students that are all at different parts of the curriculum, as well as different skillsets and abilities. This necessitates the instructor serving as more of a facilitator than in a traditional classroom setting. Therefore, instructors, while not naming andragogical principles directly, voiced the need for training on handling students that are at different places in the program. This aligns directly with the theoretical framework of andragogy discussed in the review of related literature (Cepic & Masic, 2016; Knowles et al., 2005; Morales, 2016; Sogunro, 2017).

Three participants mentioned instructional planning related to the accreditation requirements set forth by the Council on Occupational Education as an area of perceived need. Syllabus creation was found to be a knowledge gap. Other instructional planning areas that were commonly mentioned were developing lesson plans when all students were training in different content areas within the program. Of the 12 participants, eight either directly or indirectly mentioned the difficulty in planning for instruction in the open enrollment environment.

Five participants mentioned a perceived benefit to training on instructional strategies, specifically in teaching to students with different learning styles and personality differences. With a more diverse student population entering postsecondary technical education, instructors are tasked with ensuring that all students learn the content in order to keep up with accreditation requirements. The data also demonstrate that classroom management, including issues surrounding the mental health of students, is a needed topic of discussion in faculty professional development opportunities. Eight of the 12 participants mentioned mental health and classroom management as areas of training needs. Finally, five participants mentioned a knowledge gap in technology, including training on developing and delivering course content in an online setting. The data gathered from questions related to this research question show that occupationally trained technical college faculty would find benefit and value in professional development on instructional planning, instructional strategies, classroom management, and technology.

Recommendations for Practice

This qualitative, phenomenological study resulted in data that offers justification for the following recommendations for practice in relation to the preparation of occupationally trained faculty and professional development for Tennessee technical college faculty:

- Partner with a university in Tennessee to develop a professional development program that focuses on career and technical education faculty and includes training on andragogical principles, instructional planning, instructional strategies, classroom management, mental health issues, and technology for postsecondary CTE faculty.

- Streamline the hiring processes at Tennessee Colleges of Applied Technology to allow for job shadowing and training of the incoming instructor.

- Schedule time for incoming instructors to visit comparable programs at other institutions to learn from more experienced instructors. In addition, assign all new instructors with a mentor instructor from a comparable program.

- Offer the new instructor training offered by the Tennessee Board of Regents (TBR) multiple times throughout the year, so that incoming instructors do not have to wait so long to attend the training.

- Within the new instructor training, continue to deliver content on instructional and classroom strategies, but also implement training on mental health issues, technology, and andragogical principles to account for the open enrollment environment of the TCATs.

- Provide specific scenario-based training of situations that new instructors could encounter in their classroom and provide definitive answers on the right ways to handle them during new instructor training.

- Provide a list of resources that new instructors can use to prepare independently for their roles as instructors. Further, provide resources so that institutions can offer their own professional development. Finally, provide common templates and documents that all instructors can modify to create instructional planning documents.

These recommendations for practice were created after analysis of the qualitative data. While most of these recommendations should be implemented at the system office level by TBR, individual institutions can offer many of these recommended practices.

Recommendations for Further Research

Postsecondary career and technical education has not been researched as extensively as secondary career and technical education to date. The findings of this qualitative, phenomenological study highlight the need for further research connected to the preparedness levels of occupationally trained technical college faculty and professional development and training on instructional and classroom strategies. The related literature discussed the need for professional development for career and technical education faculty, as well as topics for inclusion in the training of postsecondary faculty, both full and part-time. Further research is needed to compare Tennessee's training of technical college faculty to other states, both with institutions accredited by the Council on Occupational Education and those accredited by the Southern Association of Colleges and Schools Commission on Colleges. Further research into the comparison of other states' secondary and postsecondary career and technical education training in relation to Tennessee's method is warranted. Research on training and resources offered by regional and national career and technical education organizations, such as SkillsUSA, the Association of Career and Technical Education (ACTE), and the American Technical Education Association (ATEA) and their consideration of postsecondary faculty development would be valuable.

Additional research on Tennessee's approach to training occupationally trained technical college faculty is needed. Interviews with instructors from other program areas, including programs that are traditionally taught by female instructors, and interviews with technical college

presidents would provide more robust data regarding perceptions of preparedness levels of occupationally trained technical college faculty. Finally, further research into the perceptions of occupationally trained technical college faculty on their preparedness to teach and on the need for professional development opportunities could be broken up to include instructors with less than five years' teaching experience and another group with more than five years. Finally, research into the types of credentials required to teach at technical colleges and those that impact faculty rank and promotion would be beneficial.

<center>**References**</center>

Adams, C., & van Manen, M. (2012). *The SAGE encyclopedia of qualitative research methods*. SAGE.

Advance CTE. (2016). *The state of career and technical education: Increasing access to industry experts in high schools.* https://cte.careertech.org/sites/default/files/files/resources/State_of_CTE_Industry_Experts_2016_0.pdf

Advance CTE. (2018). *CTE teacher and faculty shortages*. https://cte.careertech.org/sites/default/files/CTE_Teacher_Faculty_Shortages_2018.pdf

Allen, P., Withey, P., Lawton, D., & Aquino, C. T. (2016). Andragogical teaching methods to enhance non-traditional student classroom engagement. *Journal of Education Technology, 13*(2), 47-59. https://doi.org/10.26634/jet.13.2.8163

Ambrosino, R., & Peel, J. (2011). Faculty development programs: Assessing the impact on instructional practices, and student learning and motivation. *Journal of Faculty Development, 25*(2), 33-38.

Anft, M. (2018). Colleges step up professional development for adjuncts. *The Chronicle of Higher Education, 65*(16), A8. https://www.chronicle.com/article/colleges-step-up-professional-development-for-adjuncts/

Arifin, Z., Nurtanto, M., Kholifah, N., Nurhaji, S., & Warju, W. (2020). The technology andragogy work content knowledge model framework on technical and vocational education and training. *Journal of Education and Learning, 14*(3), 442-448. https://doi.org/10.11591/edulearn.v14i3.15946

Association of Career and Technical Education. (2019). *A brief history of CTE*. History of CTE.

    https://www.acteonline.org/history-of-cte/

Association for Career and Technical Education. (2018). *Legislative summary and analysis*.

    https://www.acteonline.org/wp-content/uploads/2018/08/AdvanceCTE_ACTE_P.L.115-

    224Summary_Updated080618.pdf

Ayvaz-Tuncel, Z., & Cobanoglu, F. (2018). In-service teacher training: Problems of the teachers

    as learners. *International Journal of Instruction, 11*(4), 159-174. http://www.e-

    iji.net/dosyalar/iji_2018_4_11.pdf

Baker, C., Gentry, J., & Larmer, W. (2016). A model for online support in classroom

    management: Perceptions of beginning teachers. *Administrative Issues Journal:*

    Connecting Education, Practice, and Research, 6(1), 22-37.

    https://doi.org/10.5929/2016.6.1.3

Bartlett, J. E., II. (2002). *Preparing, licensing, and certifying postsecondary career and technical*

    educators. National Dissemination Center for Career and Technical Education.

    https://scholar.lib.vt.edu/ejournals/JVER/v27n1/bartlett.html

Becker, S., & Palladino, J. (2016). Assessing faculty perspectives about teaching and working

    with students with disabilities. *Journal of Postsecondary Education and Disability, 29*(1),

    65-82. http://www.ahead-

    archive.org/uploads/publications/JPED/JPED29_1files/JPED29_1.pdf

Belotto, M. J. (2018). Data analysis methods for qualitative research: Managing the challenges of

    coding, interrater reliability, and thematic analysis. *The Qualitative Report, 23*(11), 2622-

    2633. https://nsuworks.nova.edu/tqr/vol23/iss11/2

Blumenstyk, G. (2020, July 1). Could new U.S. moves give a boost to the skills-over-degrees movement? *The Chronicle of Higher Education*. https://www.chronicle.com/article/Could-New-US-Moves-Give-a/249096?cid=wcontentlist_hp_latest

Bolitzer, L. A. (2019). What we know (and don't know) about adjunct faculty as teachers at four-year institutions. *Review of Higher Education, 43*(1), 113-142. http://dx.doi.org/10.1353/rhe.2019.0092

Bonsu, P., Bowman, N., Francis, C. D., Larsen, E., & Polar, R. (2013, June). *Career and technical education teacher licensure requirements: 50 states and the District of Columbia*. Midwest Comprehensive Center, at American Institutes for Research. https://careertech.org/resource/CTE-teacher-licensure-requirements

Boser, R. A., & Daugherty, M. K. (1994). In-service activities for technology education: The role of colleges and universities. *Journal of Technology Education, 6*(1), 4-15. https://doi.org/10.21061/jte.v6i1.a.1

Bottoms, G., Egelson, P., Sass, H., & Uhn, J. (2013). *Improving the quality of career and technical alternative teacher preparation: An induction model of professional development and support*. National Research Center for Career and Technical Education. https://www.sreb.org/sites/main/files/file-attachments/cte_profile__year4_5_final.pdf?1459972357

Bottoms, G., & McNally, K. (2005). *Actions states can take to place a highly qualified career/technical teacher in every classroom.* Southern Regional Education Board. https://www.sreb.org/sites/main/files/file-attachments/05v73_career_tech_state_actions.pdf?1459972427

Boucher, B. A., Chyka, P. A., Fitzgerald, W. L., Hak, L. J., Miller, D. D., Parker, R. B., Phelps, S. J., Wood, G. C., & Gourley, D. R. (2006). A comprehensive approach to faculty development. *American Journal of Pharmaceutical Education, 70*(2), 1-6. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1636916/

Bussey, L. H., Sass, H., & Bottoms, G. (2010). *Findings from 2009-2010 field tests of an induction model for alternatively certified career and technical education teachers*. National Research Center for Career and Technical Education. http://www.nrccte.org/sites/default/files/uploads/2010acter_bussey_findingsfieldtest_paper.pdf

Cannon, J. G., Kitchel, A., Duncan, D. W., & Arnett, S. E. (2011). Professional development needs of Idaho technology teachers: teaching and learning. *Journal of Career and Technical Education*, *26*(1), 32-47. https://doi.org/10.21061/jcte.v26i1.492

Cannon, J. G., Kitchel, A., & Duncan, D. W. (2010). Identifying perceived professional development needs of Idaho secondary CTE teachers: Program management needs of skilled and technical science teachers. *Journal of Industrial Teacher Education, 47*(1), 42-69. https://scholar.lib.vt.edu/ejournals/JITE/v47n1/cannon.html

Cardichon, J. (2017). Perkins reauthorization: An opportunity to address career and technical education teacher shortages. *Learning Policy Institute.* https://learningpolicyinstitute.org/blog/perkins-reauthorization-opportunity-address-career-technical-education-teacher-shortages

Carl D. Perkins Career and Technical Education Improvement Act of 2006, Pub. L. No. 109-270 (2006). https://s3.amazonaws.com/PCRN/uploads/perkins_iv.pdf

Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998, Pub. L.

No. 105-332 (1998). https://s3.amazonaws.com/PCRN/uploads/PL105_332.pdf

Carnevale, A. P., Garcia, T. I., Ridley, N., & Quinn, M. (2020). *The overlooked value of*

certificates and associate's degrees: What students need to know before they go to

college. Georgetown University Center on Education and the Workforce.

https://cew.georgetown.edu/cew-reports/subba/

Cepic, R., & Masic, M. (2016, June 14). Initial and continuing professional development of adult

educators from an educational-policy perspective: Rethinking from Croatia. [Paper].

Annual International Conference of the Bulgarian Comparative Education Society.

https://bces-

conference.org/onewebmedia/BCES%20Conference%20Book%202016%20Vol%2014%

20No%201%20text.pdf

Coffman, K. E., Martinez-Galvez, G., Brown, A. K., Matchett, W. E., & Horazdoysky, B. F.

(2018). Providing pedagogy education for aspiring instructors at institutions without

formal pedagogy curriculum or undergraduate populations. *Journal of College Science*

Teaching, 48(2), 14-20. https://doi.org/10.2505/4/jcst18_048_02_14

Compton, V. J., & Jones, A. (1998). Reflecting on teacher development in technology education:

Implications for future programmes. *International Journal of Technology and Design*

Education, 8(2), 151-166. https://doi.org/10.1023/A:1008808327436

Cook, J. S., & Card, K. A. (2018, September 30). The oppression of adult learners: The impact of traditional pedagogy, banking theory, and university budget constraints on international learners. [Paper]. American Association for Adult and Continuing Education Commission for International Adult Education Annual Pre-Conference. https://pdfs.semanticscholar.org/e87e/861166813b1c0f4a427b4f95e77dc0aa25cf.pdf?_ga =2.108821889.225713314.1606502372-149122320.1606502372

Cormier, M. S., & Bickerstaff, S. (2020). *How can we improve teaching in higher education? Learning from CUNY start.* Columbia University Community College Research Center. https://ccrc.tc.columbia.edu/media/k2/attachments/improving-teaching-cuny-start.pdf

Council for Adult and Experiential Learning. (n.d.). *Ten principles for effectively serving adults*. https://www.cael.org/hubfs/AL360-10_principles_for_serving_adults.pdf

Council on Occupational Education. (2019). *Handbook of accreditation: 2019 edition*. https://council.org/wp-content/uploads/2019/04/2019-Handbook-Generic-w-Cover-Feb-14-2019c.pdf

Council on Occupational Education. (n.d.) *History, mission, and core values*. https://council.org/history-mission-core-values/

Cramer, K. (2004). *The vocational teacher pipeline: How academically well-prepared is the next generation of vocational teachers?* United States Department of Education. https://www2.ed.gov/rschstat/eval/sectech/nave/pipeline-2004.pdf

Creswell, J. (2013). *Qualitative inquiry and research design*. SAGE.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE.

Darby, F. (2020, June 16). Sorry not sorry: Online teaching is here to stay. *The Chronicle of Higher Education*. https://www.chronicle.com/article/Sorry-Not-Sorry-Online/248993

Daugherty, J. L. (2009). Engineering professional development design for secondary school teachers: A multiple case study. *Journal of Technology Education, 21*(1), 10-24. https://doi.org/10.21061/jte.v21i1.a.1

Dembicki, M. (2020, June 24). Heavy on workforce development. *Community College Daily*. https://www.ccdaily.com/2020/06/heavy-on-workforce-development/

DiBenedetto, C. A., Willis, V. C., & Barrick, R. K. (2018). Needs assessment for school-based agricultural education teachers: A review of literature. *Journal of Agricultural Education, 59*(4), 52-71. https://doi.org/10.5032/jae.2018.04052

Dieterich, C., & Hamsher, S. (2020). Maximizing online instructional pedagogy in teacher education courses for career changers. *Journal of Educators Online, 17*(1). https://www.thejeo.com/archive/archive/2020_71/dieterich_hamsherpdf

Drage, K. (2010). Professional development: Implications for Illinois career and technical education teachers. *Journal of Career and Technical Education, 25*(2), 24-37. https://doi.org/10.21061/jcte.v25i2.477

Eberle, T. S. (2013). Phenomenology as a research method. *SAGE Handbook of Qualitative Data Analysis*, 184-202. SAGE. http://dx.doi.org/10.4135/9781446282243

Elliott, R. W. (2014). Faculty development curriculum: What informs it? *Journal of Faculty Development, 28*(3), 35-45. https://www.questia.com/library/journal/1P3-3745471401/faculty-development-curriculum-what-informs-it

Friedman, D., Winfield, J., & Hopkins, K. (2019). Faculty development for the university of

    South Carolina's first-year experience course. *Journal of Faculty Development, 33*(2),

    11-18. https://www.questia.com/library/journal/1P4-2316406793/faculty-development-

    for-the-university-of-south-carolina-s

Fritch, J. (2017). CASE and professional development for nontraditional teachers. *Techniques,*

    91(8), 44-47. https://www.acteonline.org/publications/techniques/techniques-archives/#

Gamoran, A., & Himmelfarb, H. (Ed.). (1998). *The quality of vocational education: Background*

    papers from the 1994 national assessment of vocational education. United States

    Department of Education.

Georgetown University Center on Education and the Workforce. (2020). *Tracking COVID-19*

    unemployment and job losses. https://cew.georgetown.edu/cew-reports/jobtracker/

Giannoukos, G., Hioctour, V., Stergiou, I., & Kallianta, S. (2016). Andragogy: Prerequisites for

    adult educators. *World Journal of Education, 6*(4), 53-57.

    http://dx.doi.org/10.5430/wje.v6n4p53

Gov. Lee announces reconnect to workforce partnership. (2020, November 12). Office of the

    Governor. https://www.tn.gov/governor/news/2020/11/12/gov--lee-announces-reconnect-

    to-workforce-partnership.html

Hamilton, K. (2015). The teacher as a professional learner: What the national board standards

    say. *Techniques, 90*(8), 14-18.

    https://www.acteonline.org/publications/techniques/techniques-archives/#.

Headrick, N., & Bottoms, G. (n.d.) *Career/technical education: Teacher preparation project a*

    fast-track model. Southern Regional Education Board.

Hirsh, S. (2009). A new definition. *Journal of Staff Development*, 30, 10-16.

https://learningforward.org/wp-content/uploads/2009/08/hirshlede304.pdf

Horn, A. S., Reinert, L., & Jang, S. T. (2016). *Faculty qualification policies and strategies relevant to dual enrollment programs: An analysis of states and regional accreditation agencies*. Midwestern Higher Education Compact. http://www.ecs.org/wp-content/uploads/Faculty-Qualification-Policies-and-Strategies-Relevant-to-Dual-Enrollment-Programs-An-Analysis-of-States-and-Regional-Accreditation-Agencies-2.pdf

Horton, D. R. (2013). *Community college adjunct faculty perceptions of orientation, mentoring, and professional development* (Publication No. 3556925) [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing.

Jacobson, K. N. (2013). Building the roadmap to adjunct faculty success, *Techniques, 88*(4), 10-11. https://www.acteonline.org/publications/techniques/techniques-archives/

Jacques, C. & Potemski, A. (2014). *21st century educators: Developing and supporting great career and technical education teachers*. Center on Great Teachers & Leaders at American Institutes for Research.

https://www.air.org/sites/default/files/21CenturyEducators.pdf

Janchai, W., Siddoo, V., & Sawattawee, J. (2019). Andragogical teaching patterns appropriate for work-integrated learning in the information technology industry. *International Journal of Work-Integrated Learning, 20*(3), 283-299.

https://www.ijwil.org/files/IJWIL_20_3_283_299.pdf

Juarez, B. (2019). The intersection of theory and practice in teacher preparation course. *Journal of Instructional Research, 8*(2), 84-88. https://doi.org/10.9743/jir.2019.8.2.9

Kara, M., Erdogdu, F., Kokoc, M., & Cagiltay, K. (2019). *Open Praxis, 11*(1), 5-22. https://doi.org/10.5944/openpraxis.11.1.929

Keily, T., & Perez, Z. (2020, April 22). What's required to become a CTE teacher? *EdNote, Education Commission of the States*. https://ednote.ecs.org/whats-required-to-become-a-cte-teacher/

Kitchel, A., Cannon, J., & Duncan, D. (2010). Professional development priorities of Idaho business teachers: an examination of a set of competencies associated with teaching and learning. *Delta Pi Epsilon Journal, 52*(3), 138-151.

Knowles, M. (1980). *The modern practice of adult education: Andragogy versus pedagogy. Revised and updated edition.* Cambridge Adult Education.

Knowles, M. S., Holton, I. E. F., & Swanson, R. A. (2005). *The adult learner: The definitive classic in adult education and human resource development*. ProQuest Ebook Central. https://doi.org/10.4324/9780080481913

Lapan, S. D., Quartaroli, M. T., & Riemer, F. J. (2011). *Qualitative research: An introduction to methods and designs*. Jossey-Bass.

Latz, A. O., & Mulvihill, T. M. (2011). The community college faculty development matrix: A conceptual model for inquiry and understanding. *Journal of Applied Research in the Community College, 19*(1), 24-34. https://www.ingentaconnect.com/content/montezuma/jarcc/2011/00000019/00000001/art00003

Locker, R. (2020, November 20). *Tennessee's community & technical colleges ready to help Tennesseans reconnect to workforce tuition-free. https://www.tbr.edu/news/tennessees-community-technical-colleges-ready-help-tennesseans-reconnect-workforce-tuition-free*

Lopez-Brown, P. (2017). Theme: The 21st century adult learner. *Educational Research and Reviews, 12*(8), 540-548. https://doi.org/10.5897/ERR2016.2928

Matthews, W., & Smothers, A. (2017, July 20). The key to success in electronic learning: Faculty training and evaluation. [Paper]. International Association for Development of the Information Society (IADIS) International Conference on E-Learning. https://www.researchgate.net/publication/325332839_The_Key_to_Success_in_Electronic_Learning_Faculty_Training_and_Evaluation

McBrayer, J. S., & Melton, T. D. (2018). Transferability and alignment of program exemplars in alternative teacher preparation. *Journal of the National Association for Alternative Certification, 13*(2), 3-17. http://www.jnaac.com/index.php/JNAAC/article/view/246

Morales, M. P. E. (2016). Participatory action research (PAR) cum action research (AR) in teacher professional development: A literature review. *International Journal of Research in Education and Science, 2*(1), 156-165. https://doi.org/10.21890/ijres.01395

McCandless, D., & Sauer, A., (2010). Retention of construction teachers engaged in Missouri's secondary school system. *Journal of Career and Technical Education, 25*(2), 63-77. https://doi.org/10.32469/10355/6185

McGrath, V. (2009). Reviewing the evidence on how adult students learn: An examination of Knowles' model of andragogy. *Adult Learner: The Irish Journal of Adult and Community Education*, 99-110. https://www.aontas.com/assets/resources/Adult-Learner-Journal/AONTAS%20Adult%20Learner%20Journal%202009.pdf

Mosterdyke, T. (2014). Professional development means opportunity: Influencing instruction at occupational colleges. *Techniques, 89*(5), 20-23. https://www.acteonline.org/publications/techniques/techniques-archives/

Murray, J. P. (2002). Faculty development in SACS-accredited community colleges. *Community College Review, 29*(4), 50-66. https://doi.org/10.1177/009155210202900403

National Association of State Directors of Career Technical Education Consortium. (2010). *CTE teacher and faculty shortage*. https://www.ode.state.or.us/wma/teachlearn/cte/cte-stem-teacher-shortage.pdf

National Board for Professional Teaching Standards. (2014). *Career and technical education standards*. http://www.nbpts.org/wp-content/uploads/EAYA-CTE.pdf

National Center for Education Statistics. (2019). *Students entering and leaving postsecondary occupational education: 1995-2001*. https://nces.ed.gov/pubs2007/2007041/index.asp

National Center for Education Statistics. (2018). *Characteristics of public school teachers who completed alternative route to certification programs.* https://nces.ed.gov/programs/coe/indicator_tlc.asp

National Research Center for Career and Technical Education. (2010). *Professional development for secondary career and technical education: Implications for change.*

Norlyk, A., & Harder, I. (2010). What makes a phenomenological study phenomenological? An analysis of peer-reviewed empirical nursing studies. *Qualitative Health Research, 20*(3), 420–431. https://doi.org/10.1177/1049732309357435

Odell, S. J. (1986). Induction support of new teachers: A functional approach. *Journal of Teacher Education, 37*(1), 26-29. https://doi.org/10.1177/002248718603700106

Ornelles, C., Ray, A. B., & Wells, J. C. (2019). Designing online courses in teacher education to enhance adult learner engagement. *International Journal of Teaching and Learning in Higher Education, 31*(3), 547-557. http://www.isetl.org/ijtlhe/pdf/IJTLHE3585.pdf

Park, H. J., Roberts, K., & Delise, D. (2017). The effects of professional development on universal design for instruction on faculty perception and practice. *Journal of Postsecondary Education and Disability, 30*(2), 123-139. https://higherlogicdownload.s3.amazonaws.com/AHEAD/38b602f4-ec53-451c-9be0-5c0bf5d27c0a/UploadedImages/JPED/JPED_Volume_30_Issue_2/JPED_30_2_.pdf

Parker, J. L., (2020). Students' attitudes toward project-based learning in an intermediate Spanish course. *International Journal of Curriculum and Instruction, 12*(1), 80-97. http://ijci.wcci-international.org/index.php/IJCI/article/view/254/153

Pechota, D., Keily, T., & Perez, Z. (2020). *50-state comparison: Secondary career and technical education*. Education Commission of the States. https://www.ecs.org/50-state-comparison-secondary-career-and-technical-education/

Perkins Collaborative Resource Network. (n.d.) *High school CTE teacher pathway*. https://cte.ed.gov/initiatives/high-school-cte-teacher-pathway

Petty, T. M., Good, A. J., & Handler, L. K. (2016). Impact on student learning: National board certified teachers' perspectives. *Education Policy Analysis Archives, 24*(49). http://dx.doi.org/10.14507/epaa.24.2227

Rismivanto, S., Mursid, M., & Januarius, W. (2018). The effectiveness of andragogically oriented teaching method to improve the male students' achievement of teaching practice. *English Language Teaching, 11*(2), 113-121. https://doi.org/10.5539/elt.v11n2p113

Rosen, A., & Lester, J. (2020, July 2*).* Supporting faculty careers amid uncertainty. *Inside*

    Higher Ed. https://insidehighered.com/views/2020/07/02/supporting-faculty-careers-

    amid-season-uncertainty-

    opinion?utm_content=buffer6005e&utm_medium=social&utm_source=twitter&utm_ca

    mpaign=IHEbuffer

Ruhland, S. K., & Bremer, C. D. (2003) *Alternative teacher certification procedures and*

    professional development opportunities for career and technical education teachers.

    National Research Center for Career and Technical Education.

    https://pdfs.semanticscholar.org/0d91/9b6077b512fe852a7449bed31aaee9ef4f0b.pdf

Ruhland, S. K., & Bremer, C. D. (2002). Professional development needs of novice career and

    technical education teachers. *Journal of Career and Technical Education, 19*(1), 18-31.

    http://doi.org/10.21061/jcte.v19i1.656

Sanford, B., & McCaslin, N. L. (2004). *Assessment of professional development activities,*

    instructional needs, and delivery methods of part-time technical and occupational faculty

    in U.S. community colleges. National Research Center for Career and Technical

    Education.

Sanford, B. A., Belcher, G. G., & Frisbee, R. L. (2007). A national assessment of perceived

    instructional needs for professional development of part-time technical and occupational

    education faculty in the community colleges in the U.S. *Journal of Career and Technical*

    Education, 23(1), 97-108. https://doi.org/10.21061/jcte.v23i1.446

Sanford, B. A., Dainty, J. D., Belcher, G. G., & Frisbee, R. L. (2011). Perceptions of the willingness of part-time instructors in community colleges in the U.S. to engage in professional development opportunities and the best method(s) of delivering these experiences. *Journal of Career and Technical Education, 26*(1), 48-61. https://doi.org/10.21061/jcte.v26i1.514

Sass, H. B. (2011). Advancing a new image of CTE via teacher preparation. *Techniques, 86*(4), 24-27. https://www.acteonline.org/publications/techniques/techniques-archives/

Sass, H. B., Bottoms, G., Pritz, S. G., Kelley, P., Foster, J. C., Hodes, C., & Lewis, M. V. (2011). *Improving secondary career and technical education through professional development: Alternative certification and use of technical assessment data*. National Research Center for Career and Technical Education.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75. https://doi.org/10.3233/efi-2004-22201

Shi, H. (2017). Planning effective educational programs for adult learners. *World Journal of Education, 7*(3), 79-83. https://doi.org/10.5430/wje.v7n3p79

Sisselman-Borgia, A. G., & Torino, G. C. (2017). Innovations in experiential learning for adult learners. *Journal of Applied Learning in Higher Education, 7*(Spring 2017), 3-13. https://www.missouriwestern.edu/appliedlearning/wp-content/uploads/sites/116/2018/11/JALHE-7.pdf

Seyoum, Y., & Basha, G. (2017). Andragogical methods to sustain quality adult education in Ethiopia. *International Journal of Instruction, 10*(3), 47-62. https://doi.org/10.12973/iji.2017.1034a

Sogunro, O. A. (2017). Quality instruction as a motivating factor in higher education. *International Journal of Higher Education, 6*(4), 173-184. https://doi.org/10.5430/ijhe.v6n4p173

Sorcinelli, M. D. (2007). Faculty development: The challenge going forward. *Peer Review*, *9*(4), 4-8. https://www.aacu.org/sites/default/files/files/peerreview/PRFA07_Web.pdf

Stachler, W. M., Young, R. B., & Borr, M. (2013). Sustainability of professional development to enhance student achievement: A shift in the professional development paradigm. *Journal of Agricultural Education, 54*(4), 13-30. https://doi.org/10.5032/jae.2013.13

Stephens, G. E. (2011). Teacher internships as professional development in career and technical education. *Journal of Career and Technical Education, 26*(2). 68-76. https://doi.org/10.21061/jcte.v26i2.526

Stephens, G. E. (2015). Uncertified and teaching: Industry professionals in career and technical education classrooms. *International Journal for Research in Vocational Education and Training, 2*(2), 119-135. https://doi.org/10.13152/IJRVET.2.2.4

Strengthening Career and Technical Education for the 21st Century Act, Pub. L. No. 115-224 (2018). https://s3.amazonaws.com/PCRN/uploads/perkins_v.pdf

Tatto, M. T., Savage, C., Liao, W., Marshall, S. L., Goldblatt, P., & Contreras, L. M. (2016). The emergence of high-stakes accountability policies in teacher preparation: An examination of the U.S. department of education's proposed regulations. *Educational Policy Analysis Archives, 24*(21). http://dx.doi.org/10.14507/epaa.24.2322

Tennessee Board of Regents. (2014). *Definition of faculty*. https://policies.tbr.edu/policies/definition-faculty

Tennessee Board of Regents. (2018). *Faculty development.*

https://policies.tbr.edu/policies/faculty-development

Tennessee Board of Regents. (2019a). *Admission at the Tennessee colleges of applied*

technology. https://policies.tbr.edu/policies/admission-tennessee-colleges-applied-

technology

Tennessee Board of Regents. (2019b). *Faculty rank and promotion at technical colleges*.

https://policies.tbr.edu/policies/faculty-rank-promotion-tcats

Tennessee Board of Regents. (2020). *Fall TCAT enrollment demographics*.

https://app.powerbi.com/view?r=eyJrIjoiNmFjYWVkNDItZDRkOC00ZmU4LWEwYm

EtMDhhMThkMjExMjMxIiwidCI6Ijc4ZTkwNWIzLTE4ZWEtNGE5MS04YjlmLTMzZ

TRmZTNjYTQ4YSIsImMiOjN9

Tennessee Board of Regents. (n.d.a) *Who we are.* https://www.tbr.edu/board/tbr-syllabus

Tennessee Board of Regents. (n.d.b) *Colleges of applied technology*.

https://www.tbr.edu/institutions/colleges-applied-technology

Tennessee Department of Education. (n.d.) *CTE license and endorsement information*.

https://www.tn.gov/content/dam/tn/education/ccte/occ-

lic/cte_lic_occupational_license_info_101.pdf

Tennessee Higher Education Commission (2018). *Tennessee Promise 2018 annual report*.

https://www.tn.gov/content/dam/tn/thec/bureau/research/promise/TN%20Promise%20Re

port%202018%20Final.pdf

Tennessee Higher Education Commission. (2015). *Postsecondary attainment in the decade of decision: The master plan for Tennessee postsecondary education 2015-2025.* https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/master-plan/MasterPlanSummary.pdf

Tennessee Higher Education Commission. (2017a). *Tennessee Promise 2017 annual report.* https://www.tn.gov/content/dam/tn/thec/bureau/research/promise/2017_TN_Promise_Report.pdf

Tennessee Higher Education Commission. (2017b). *High school senior opinion survey: Class of 2017.* https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/all-other/hs-opinion/2017_HS_Senior_Opinion_Survey_Report_-_Final.pdf

Tennessee Higher Education Commission. (2020a). *Enabling the competitive edge: Tennessee higher education in the new economy: Master plan update.* https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/master-plan/finalmp.pdf

Tennessee Higher Education Commission. (2020b). *Tennessee higher education fact book: 2019-20.* https://www.tn.gov/thec/research/redirect-research/fact-book/fact-book.html

Threeton, M. D. (2007). The Carl D. Perkins career and technical education (CTE) act of 2006 and the roles and responsibilities of CTE teachers and faculty members. *Journal of Industrial Teacher Education*, *44*(1), 66-82. https://scholar.lib.vt.edu/ejournals/JITE/v44n1/threeton.html

University of Southern California. (n.d.) *Organizing your social sciences research paper: Theoretical framework.* https://libguides.usc.edu/writingguide/theoreticalframework

Van Ast, J., & Mullen, E. (1999). The professional development of community college applied

science and technology faculty. *Journal of Technology Studies, 25*(1), 36-42.

https://doi.org/10.21061/jots.v25i1.a.3

Vann, L. S. (2017). Demonstrating empathy: A phenomenological study of instructional

designers making instructional strategy decisions for adult learners. *International Journal*

of Teaching and Learning in Higher Education, *29*(2), 233-244.

http://www.isetl.org/ijtlhe/pdf/IJTLHE2560.pdf

Walden University. (n.d.). *Theories and frameworks: Introduction*.

https://academicguides.waldenu.edu/library/theory

Williams-McMillan, Y., & Hauser, G. M. (2014). The impact of a system-wide community

college professional development program on pedagogical practice: An assessment of

faculty perspectives. *International Journal of Arts & Sciences, 7*(2), 617-627.

http://www.universitypublications.net/ijas/0702/pdf/P4RS32.pdf

Yarbrough, J. R. (2018). Adapting adult learning theory to support innovative, advanced, online

learning—WVMD model. *Research in Higher Education Journal, 35*, 1-15.

http://www.aabri.com/manuscripts/182800.pdf

Zhang, G., & Zeller, N. (2016). A longitudinal investigation of the relationship between teacher

preparation and teacher retention. *Teacher Education Quarterly, 43*(2), 73-92.

https://www.jstor.org/stable/teaceducquar.43.2.73

Zirkle, C. J., Martin, L., & McCaslin, N. L. (2007, October). *Study of state certification/licensure*

requirements for secondary career and technical education teachers. National Research

Center for Career and Technical Education.

APPENDIX: Interview Protocol

Introduction

Thank you for taking the time to join me today. I am researching the opinions of occupationally trained faculty members at Tennessee technical colleges about their preparedness to serve as instructors and their perceptions on the need for professional development activities. You are in no way obligated to respond but be aware that all of your responses will be kept confidential. The purpose of this interview is to discuss your experiences as a technical college instructor, and how your experience in industry prepared you to be an instructor. Another purpose of the interview is to capture your opinions on professional development and training on instructional practices. With your permission, I will be recording the conversation and will transcribe it for future use in the study. The transcription and recording will be shared with you at a later date. If you agree to those terms, please fill out the paperwork and sign it for me and hand it back, and then we'll get started.

Research Questions

1. How do occupationally trained technical college faculty prepare for a career as an instructor?

2. How do occupationally trained technical college faculty describe their preparedness to teach?

3. How does industry experience prepare occupationally trained faculty to serve as instructors?

4. Do occupationally trained faculty perceive a value in a development program on instructional and classroom strategies?

5. What training topics would increase instructor preparedness upon entering the classroom?

<u>Interview Protocol</u>

1. In what technical college program do you serve as instructor?

2. How many years have you taught this program? How many years total have you taught in a technical college?

3. Prior to serving as an instructor, how many years of experience did you have in industry in the field that you teach? What was your role/job description?

4. Please describe your educational experience, including the highest level of credential earned.

5. Would an associate, bachelor, master, or doctoral degree help you to become a better instructor at the technical college?

6. What lead you to apply to teach at a technical college?

7. What industry certifications do you possess?

8. In what ways did your industry experience prepare you to be an instructor in a technical college?

9. Was there anything that you were not prepared for upon entering the teaching profession? If so, what?

10. Please describe any training you received, either formal or informal, prior to becoming an instructor at a technical college on how to be an instructor.

11. Please discuss any additional preparation you pursued independently to prepare for your role as an instructor.

12. How to you prepare to teach current and upcoming skills that students will need upon entering the workforce? In other words, how do you stay up to date in the field?

13. Do you feel that you were prepared to be an instructor based on your industry experience?

14. Please describe any professional development, such as training from the National Coalition of Certification Centers (NC3), the National Center for Construction Education and Research (NCCER), or TBR-led training, that you have received after accepting your role as an instructor on instructional and classroom strategies. Who provided that training?

15. If so, did you find that training useful in your role as an instructor?

16. If so, what topics were included in this professional development? What other topics would you liked to have been covered?

17. Is there anything you would like to add that is relevant to these or related topics?

Conclusion

Thank you again for your time. This concludes our interview. Again, I will use this recording to transcribe the interview and will share that with you. The responses will be used to study preparedness levels of occupationally trained technical college faculty and professional development opportunities. If you think of anything else to add or if you have any questions, please reach out to me. Thank you again for your participation and cooperation. I hope you have a great rest of the day.

Please note: Interviews will be semi-structured, meaning these questions may not be asked verbatim and conversation will be allowed to flow in a friendly style. The investigator will be led by the subject into areas that might not be touched upon here, but that will remain within bounds of minimal risk.

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