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What Really Works in Teacher Preparation Programs: Teachers' Self-Efficacy and Perceived Successful Methods After Participation in Mississippi's Career And Technical Education Alternate Route Program

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technical education alternate route program

By

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The debate over the effective preparation of pre-service teachers is not new. Often this debate concerns what might be considered successful methods for all pre-service teachers. However, preparation for career and technical education (CTE) teachers could look quite different than that of academic teachers, whether they are prepared through traditional or alternative routes to education. In this qualitative study, the researcher examined two iterations of the alternative-route program designed to prepare new CTE teachers in Mississippi and considered the level of self-efficacy of the teacher participants, the perceived effectiveness of the specific elements of each program, and the perceived significance of teacher/administrator and teacher/mentor relationships. The results of this study indicate that participants in the most recent iteration of the alternative-route program have a higher level of self-efficacy in teaching. The study also found that the specific elements of the newer version of the program are perceived as more relevant than those of the older version of the program and that teacher/administrator and teacher/mentor relationships play a key role in self-efficacy and job satisfaction among new CTE teachers. The results of this study also revealed that new

CTE teachers desire opportunities to grow their pedagogical content knowledge by interacting and learning from veteran teachers in their respective content areas. Additionally, some of the more effective teachers who participated in this study rated themselves lower than their less effective colleagues on a self-efficacy survey and vice versa, indicating the presence of the Dunning-Kruger effect, which posits that, when an individual is unskilled in a certain task, they not only make poor choices in that area but also lack the metacognitive ability to realize it.

DEDICATION

I would like to dedicate this dissertation to my husband, Stephen, and to my children, Luke and Lauren, without whose support I could not have accomplished this task. Thank you, Stephen, for being a supportive husband and father through the many late nights and long weekends. Thank you, Luke and Lauren, for learning the value of education early in life and never complaining when I had to be away. I will always find it endearing to think about my 7-year-old and 8-year-old discussing my dissertation. Although I feel as though I did this for our family, I could not have done it without you all. Thank you all so very much.

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CHAPTER I

INTRODUCTION

The debate over the most effective ways to prepare pre-service teachers is not new. Research has suggested that teachers who are prepared via the traditional route, a four-year degree program in the field of education, have better classroom management skills and student achievement scores than their alternative-route colleagues, who are licensed to teach in other ways besides the traditional route (Allen, 2003; Darling-Hammond, 2000). Yet almost half of the high school teaching population is prepared for the profession through alternate route programs (Feistritzer, 2011). The challenges associated with alternatively prepared teachers are compounded in career and technical education (CTE), historically known as vocational education, because many teachers in this area arrive to the education profession by way of industry, with little to no instruction in how to teach in a traditional classroom setting (Ruhland & Bremer, 2002). These teachers bring to the classroom a wealth of knowledge, but not necessarily in the field of pedagogy. According to the Bureau of Labor Statistics, becoming a CTE teacher usually requires a bachelor's degree in some field, but not always (National Board for Professional Teaching Standards [NBPTS], 2014). Consequently, the individuals hired to teach CTE courses may not have the same education credentials enjoyed by their traditionally prepared counterparts. The number of alternatively prepared teachers in CTE is very high nationally, particularly due to the decreasing number of colleges that offer

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traditional CTE teacher education programs (Asunda, 2011). Many CTE teaching positions require only a high school diploma or an associate's degree and several years of work experience (NBPTS, 2014). The verifiable years of work experience and enrollment in an alternative-route program allow prospective teachers to enter the teaching field with no college degree and no classroom experience. This is not the case for academic teachers who are required to have a bachelor's degree whether they are traditionally or alternatively prepared.

Though not entirely unique to CTE, with fewer traditional routes and fewer requirements in place, CTE teachers often begin their career in education with little to no pedagogical knowledge, as well as no pre-service field experience. Subsequently, they likely have no other foundation on which to build their confidence in these areas aside from their own personal experiences with what worked and what did not work in classrooms they observed or experienced when they were students themselves. It is reasonable, then, that teachers' self-efficacy, or their belief that they can be successful, may be threatened by a lack of pedagogical background and what might be perceived as a more extensive pedagogical background enjoyed by their peers. Bandura (1997) defined self-efficacy as the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Therefore, in order for teachers, and particularly CTE teachers, to believe in their own capabilities to execute the courses of action required to be successful teachers, it is reasonable to assume these new educators need significant support in order to build their self-efficacy in teaching.

Certainly, teachers with limited classroom methods instruction begin their teaching career at a disadvantage. Researchers have found evidence that the method of

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teacher preparation affects how prepared a teacher feels to enter the classroom (Andrew, 1990; Darling-Hammond, Chung, & Frelow, 2002). Where self-efficacy is concerned, those who complete teacher preparation in traditional teacher education programs seem to feel more prepared than those who choose alternative routes to education (Darling-Hammond et al., 2002; Forsbach-Rothman, Margolin, & Bloom, 2007). A sense of self-efficacy is a factor that determines the amount of effort a person puts into his or her job and how long he or she will persevere when faced with challenges or failures (Bandura, 1997). If alternative-route education is to be successful in preparing confident, competent teachers, it is vitally important that the alternative-route program builds the self-efficacy of teachers so they will be more likely to persevere when faced with the daily challenges that are common to teaching.

There is a significant body of educational research comparing the many routes to teaching certification (Shen, 1997; Wayman, Foster, Mantle-Bromley, & Wilson, 2003). Zeichner and Schulte (2001) suggested that these research efforts would be more productive if the attention currently placed on comparing the routes to teacher education shifted to focusing on the methods within each route that are the most effective in preparing successful teachers. Therefore, instead of continuing to compare traditional and alternative routes to education, this study is focused on the components and outcomes of two alternative-route programs to determine which methods of each are successful for preparing confident and competent teachers.

Three concepts play a significant role throughout the course of this study. Those concepts are pedagogy, content knowledge, and pedagogical content knowledge. Pedagogy is often defined as the art and science of teaching (Fassbinder, 2007). Content

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knowledge refers to the facts, concepts, theories, and principles that are taught and learned ("Content Knowledge," 2013). Building on this, pedagogical content knowledge is defined as the methods and best practices a teacher uses to effectively teach his or her content (Shulman, 1986). As will be discussed throughout this dissertation, CTE teachers often have a wealth of content knowledge when they enter the classroom. However, they historically lack knowledge of pedagogy, which alternative-route-to-teaching methods have attempted to address. This study, however, revealed that at least some CTE teachers desire instruction in pedagogical content knowledge. Many wanted to know not only how to teach in general, but also, more specifically, how to teach their content to others.

In this study, the researcher examined two alternative-route programs designed to prepare new CTE educators in Mississippi. One route involved a three-year commitment with training in pedagogy and methods of teaching that continues through all three years. The other route allowed participants three years to complete all requirements, but the teaching-methods portion was reduced to one intensive, comprehensive year. The latter method also required specific assignments and communication to foster teacher/administrator and teacher/mentor professional relationships, neither of which were required in the former method. Both methods are referred to as Mississippi's Vocational Instructor Preparation (VIP) program, and each of them had active participants at the time of this study. For the purposes of this study, the one-year program is referred to as VIP1, and the three-year program is referred to as VIP3. VIP3 is no longer accepting new teacher candidates; all new CTE teachers are now enrolled in VIP1.

Through the context of these two preparation methods, the researcher attempted to evaluate teachers' sense of self-efficacy regarding their teaching ability, as well as to

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examine each element of the teacher preparation programs, including teacher/mentor and teacher/administrator relationships, to capture perceived effectiveness.

Statement of Purpose

The purpose of this research was to compare the self-efficacy of beginning CTE educators enrolled in each of Mississippi's two VIP programs and to determine the value of the elements of the programs themselves. The researcher examined how teachers' self-efficacy was impacted by their teacher preparation program and how the elements of each program contributed to the teacher's confidence in teaching. Additionally, the researcher investigated how novice CTE teachers' professional relationships with mentors and administrators influenced their perceived teaching efficacy and job satisfaction. The results of the research may inform the alternative-route process in order to effectively prepare beginning CTE teachers in Mississippi.

Research Questions

The research in this study examined the following three research questions:

1. How do CTE teachers completing one of two different delivery methods of Mississippi's VIP program perceive the value of their teacher education program in preparing them to teach with confidence?

2. Which specific program elements associated with Mississippi's VIP programs do CTE teachers perceive as the most effective in preparing them for their first year(s) of teaching?

3. How do novice CTE teachers' professional relationships with mentors and administrators influence their teaching efficacy and job satisfaction?

Theoretical Framework

When considering a teacher's ability to teach with confidence, the theory of self-efficacy, or belief in oneself, comes to the forefront. In this study, the researcher examined two specific alternate-route programs for CTE teachers, and the research questions alluded to the teachers' confidence or efficacy. Therefore, the researcher framed this study in the self-efficacy theory as a platform to examine how CTE teachers acquire confidence in teaching while simultaneously uncovering what factors may inhibit the acquisition of confidence.

Foundations of Self-Efficacy

Bandura (1997) defined self-efficacy as the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). The idea of self-efficacy lies at the center of Bandura's social cognitive theory, which suggests all human actions are merely repetitions of other human actions (Bandura, 1986). These human actions can then grow and be expounded upon, but this theory suggested that actions, as well as the belief that one can perform these actions, are learned from others' behavior (Bandura, 1986). Based on this theory, it is reasonable to assume that novice CTE teachers may look to veteran CTE teachers to inform their own teaching practice. Likewise, they may rely on their own experiences as students to draw the same conclusions. Bandura (1977b) also stated that people bring out the best or the worst in each other. When these social interactions are applied to teaching, it seems that teachers likely look to one another, to their mentor teachers, and to their administrators to form their own teaching habits, and they depend on observations of colleagues to make decisions about any topic that arises.

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Self-Efficacy as a Theoretical Basis for Quality Teaching

As stated earlier, many CTE teachers do not become teachers through traditional approaches and quite often do not have the instruction in social constructivist ideals, skills, or methods that traditionally-prepared teachers possess (Ruhland & Bremer, 2002). Researchers have posited that a teacher's self-efficacy is most vulnerable in the early years of teaching (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2007; Wolters & Daugherty, 2007). Additionally, a person with a high level self-efficacy challenges themselves, sets high goals, and meets them, while a person with low self-efficacy tends to exhibit anxiety and helplessness (Schwarzer & Hallum, 2008). Therefore, identifying critical factors that promote a high level of self-efficacy is vital for the novice teacher. Support for these beginning teachers is critical to promote success and teacher retention.

Teacher Self-Efficacy Based on Path to Teaching

In 2002, Darling-Hammond et al. suggested that sense of preparedness is the strongest predictor of teaching efficacy. In their study, they found that teachers prepared through traditional methods were more self-efficacious concerning curriculum and teaching strategies and meeting students' needs than those who were alternatively prepared. Additionally, teachers who began teaching on emergency credentials with no classroom experience (as many CTE teachers do) felt less prepared to design curriculum and instruction, teach subject matter, and use effective instructional strategies (Darling-Hammond et al., 2002).

Other studies had similar findings (Flores, Desjean-Perrotta, & Steinmetz, 2004; Isaacs et al., 2007), while others found that there are no significant differences among teachers prepared through alternative methods or through graduate programs (Forsbach-

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Rothman et al., 2007; Tournaki, Lyublinskaya & Carolan, 2009). Regardless of the path to education, the need for a high level of self-efficacy regarding the topics of curriculum, instruction, and meeting student needs is great. Indeed, this need could inform designers of alternative routes to education of the importance of effectively addressing issues of self-efficacy that are possibly absent from many alternative-route preparation programs.

Self-Efficacy of Teachers in the Early Years

Hoy and Spero (2005) suggested that self-efficacy among preservice teachers differs from that of first-year or beginning teachers (those within their first three years of teaching). Traditionally prepared preservice teachers tend to cultivate their self-efficacy as they progress through teacher preparation, while first-year and novice teachers are faced with unexpected challenges and expectations that diminish their feelings of efficacy (Hoy & Spero, 2005). Further, Mulholland and Wallace (2001) found that some of the most powerful influences on the development of teachers' senses of self-efficacy are based upon experiences during student teaching. Because many CTE educators receive their teacher preparation during their first year of teaching, without first gaining student teaching experience, they do not get the same opportunity to grow their teaching self-efficacy as do traditionally prepared preservice teachers (Darling-Hammond et al., 2002; Forsbach-Rothman et al., 2007; NBPTS, 2014). As previously stated, traditionally prepared teachers seem to exhibit higher levels of self-efficacy (Darling-Hammond et al., 2002; Forsbach-Rothman et al., 2007). In attempting to emulate the perceived positive experiences that traditionally prepared teachers receive, it seems critical to identify those strengths to address the issue and thereby foster teaching self-efficacy for new CTE teachers.

Self-Efficacy of Career and Technical Teachers

Although it can be assumed that the self-efficacy of CTE teachers might mirror that of any new teacher, there are many factors that arise with CTE teachers that may not occur among other new teachers. For instance, many CTE teachers come to the field of education as a second career, having left the industry in which they will now prepare students to work (Ruhland & Bremer, 2002). This is not typically the case with academic teachers who are teaching a subject area that is not primarily geared toward any occupational end. A report from the National Research Center for Career and Technical Education (NRCCTE) noted several reasons why teachers leave the field of education: retirement, staffing actions, personal reasons, pursuing another job, poor salary, lack of student motivation, inadequate administrative support, student discipline problems, inadequate time to prepare, and lack of faculty influence and autonomy (Joerger & Bremer, 2001). However these results referred to teachers in general, not the CTE teaching population. A new CTE teacher's willingness or perceived ability to succeed in the industry they abandoned coupled with the intimidation of entering a career where they are now considered an expert (while simultaneously leaving said industry) are two issues that might affect a CTE teacher's self-efficacy. Based on what is known about self-efficacy of teachers in the early years of teaching, the researcher in this study attempted to compare the self-efficacy of beginning CTE educators enrolled in each of Mississippi's two VIP programs and to determine the effectiveness of the elements of the programs to prepare teachers to teach with confidence. Additionally, the researcher studied how each element of the programs and the administrator and mentor relationships contributed to the teachers' confidence in teaching.

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Overview of the Methodology

The research questions associated with this study required conversations with participants; therefore qualitative methods were used to complete the study. In order to answer the research questions and support triangulation, surveys, interviews, and observations were used to collect data. Because VIP1 participants obtain all methods instruction in one year, and VIP3 participants obtain all methods instruction in three years, theoretically, all participants were equally prepared at end of each program. For this study, a cohort was chosen from each group who would be completing the program at the same time: the VIP1 participants at the end of year one and the VIP3 participants at the end of year three. Participants were identified from each group and, upon obtaining permission from each district involved, contacted to request participation. Participants agreed to be surveyed, interviewed, and observed for the purposes of this study. The data collected were then analyzed and are presented in this dissertation.

This qualitative study involved a sample of participants enrolled in the VIP1 and VIP3 programs. Using the Teachers' Sense of Efficacy Scale (TSES) and the Mississippi Statewide Teacher Appraisal Rubric (M-STAR), participants were surveyed, interviewed, and observed. Relevant artifacts (i.e., lesson plans) were also collected when available in order to discover how confident participating CTE teachers feel in their teaching abilities based on the following methods learned in their respective teacher-preparation programs (either VIP1 or VIP3): instructional planning, instructional strategies, classroom management, and classroom assessment. Additionally, data were collected from the participants to identify perceived relevant and successful components of the VIP teacher-education program, including mentor and administrator relationships.

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Significance of the Study

Research indicates that teacher preparation can aid in novice teachers' initial effectiveness as well as increase the likelihood that they stay in the profession (Darling-Hammond, 2010). However this research referred to teachers in general, not specifically to the focus of the current research: CTE teachers. In 2002, Ruhland and Bremer acknowledged that CTE teachers are a unique population because many of them enter the education profession through an alternative route, often after having spent years working in their vocational field. These researchers recommended further research to examine alternatively certified secondary CTE teachers to determine their professional development needs (Ruhland & Bremer, 2002). In response to that recommendation, this study examined each element of the teaching-methods instruction in each of the VIP programs to determine if each is valuable, meaningful, and relevant to the preparation of CTE teachers.

Recognizing the need for quality CTE teacher preparation, many alternative-route programs have been established. These programs produce varying levels of self-efficacy among teachers, with some participants feeling very confident and others feeling overwhelmed and incompetent (Raudenbush, Rowan, & Cheong, 1992). The current study compared teacher self-efficacy between teachers enrolled in two separate, but related, alternative-route programs. The research added to the literature by identifying (1) factors of a CTE alternative-route program that prepare teachers to teach with confidence, (2) successful methods of a CTE alternative-route program, and (3) the significance of beginning CTE teachers' professional relationships with administrators and mentor teachers.

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Definition of Terms

Alternate/alternative route: Refers to any path to teaching that does not include a

four- or five-year undergraduate teacher-education program (Zeichner &

Schulte, 2001, p. 266).

Self-efficacy: Belief in one's capabilities to organize and execute the courses of

action required to produce given attainments (Bandura, 1997). For this

study, "teacher self-efficacy" refers to teachers' belief in their capabilities

to organize and execute the courses of action required in order to make a

positive difference in students' education.

Traditional teacher-preparation program: Refers to a college or university's

four-year or five-year teacher-education program (Zeichner & Schulte,

2001). This includes all pedagogical, content knowledge, and methods

preparation as well as the field experience embedded in the college or

university teacher-education program.

Vocational Instructor Preparation (VIP) program: The program by which CTE

teachers in Mississippi obtain teaching certification (Research and

Curriculum Unit, 2006).

Vocational Instructor Preparation 1 (VIP1): For the purposes of this study, the

intensive and comprehensive one-year CTE teaching methods program in

Mississippi is referred to as VIP1 (Research and Curriculum Unit, 2015).

Vocational Instructor Preparation 3 (VIP3): For the purposes of this study, the

three-year CTE teaching methods program in Mississippi is referred to as

VIP3 (Research and Curriculum Unit, 2006).

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CHAPTER II

REVIEW OF LITERATURE

When considering the multiple routes to teaching, many factors of teacher success emerge. Of particular interest are how teachers are prepared, how teachers impact student performance and achievement, how confident teachers are in their abilities, and whether or not teachers stay in the field. Although the assumption could be that any or all of these factors could be examined and the results applied to all teachers, there is value in examining these factors separately for CTE teachers. Many CTE teachers enter the field of education through alternative routes, as do many academic teachers. There are differences, however, in the population of these alternatively trained teachers, who are generally older than academic teachers because they typically enter the teaching field after they have obtained industry experience (Levesque, Lauen, Teitelbaum, Alt, & Librera, 2000). Contrary to the way many academic teachers are trained—learning content in order to teach content—CTE teachers often learn their craft to perform work-related tasks in industry situations, and then they learn the craft of teaching in order to teach their content to others. These differences among the academic- and CTE-teaching population could result in differences among the factors often examined in alternate-route teachers.

The current study focused on factors contributing to CTE teacher self-efficacy, the elements of two related CTE teacher-preparation programs, and administrator and

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mentor relationships among new CTE teachers. Each of these aspects could possibly influence teacher satisfaction and ultimately teacher retention. Therefore, the review of literature begins with a look into teacher retention and attrition to explore how the results of the current study could possibly impact these areas.

Teacher Retention

A lack of teaching self-efficacy could eventually result in teacher attrition. Research has shown that 25% of all new teachers leave within the first three years (Chang, 2009; Marvel, Lyter, Peltola, Strizek, & Morton, 2006), with some researchers claiming the percentage is closer to one-third of the new teacher population (National Commission on Teaching and America's Future, 2008). Even more alarming is that the number increases to over 40% when considering new teachers who leave within the first five years (Chang, 2009; Perda, 2013). Though these percentages indicate a large amount of teachers exiting early in their career, there are also many who leave later in their career but before retirement age (Macdonald, 1999). It is important to attempt to uncover some of the possible causes of such a low rate of teacher retention.

Researchers have cited many reasons for low teacher retention, including stress, tension, lack of support, low pay, and low morale (Carroll, 2005; Johnson, 2006; Kyriacou, 2001; Macdonald, 1999; Skaalvik & Skaalvik, 2011). Additionally, teachers may leave the field due to low confidence or sense of efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). As discussed previously, there are many aspects of teaching self-efficacy. It can be derived from a teacher's preparation method, administrative support, student engagement, and many other areas. After entering the workforce, many teachers have found that the environment is not what they envisioned, and the daily tasks of

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working in a school interfere with their initial expectations of student/teacher interaction (Klassen & Chiu, 2011).

These conclusions signal a need for possible examinations of teacher education and the support for teachers in the early years of a teaching career. It is possible that, given the proper preparation and support, teachers could consider themselves, and indeed become, more effective, and could thereby be more likely to stay in the field. Researchers have suggested that attempts to prevent teacher attrition should include interventions that focus on building teacher efficacy, thereby increasing teacher commitment and teacher belief that they can deal with everyday challenges (Ware & Kitsantas, 2007).

Each of the aforementioned findings represent the teaching population as a whole and include teachers who teach all grade levels and disciplines and who were prepared through both traditional and alternative routes. CTE teachers comprise a much more concentrated, specific subset of the teaching population, with the vast majority of them being alternatively prepared and teaching primarily Grades 10-12. Connely (2009) reported that there has been an increase of almost six million students in CTE courses in just seven years, yet there is a critical CTE teacher shortage. It is important to capture what factors might affect teacher attrition within this population of educators.

Career and Technical Teacher Education

As of 2007, there were 105 different routes to certification for CTE teachers in the United States, with entry requirements varying from state to state (Zirkle, Martin, & McCaslin, 2007). Up to 75% of new CTE teachers arrive in classrooms through alternative-route programs that provide little to no preparation for how to plan instruction, teach, use assessment for student learning, or manage classrooms (Bottoms &

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McNally, 2005). The remaining 25% who receive their education through traditional routes gain advantages in pedagogy preparation and in student teaching. However, they do not necessarily gain technical content knowledge through the participation in industry, which is necessary for CTE (Bottoms & McNally, 2005).

History of CTE in the United States

Though traditional education is grounded in multiple theories, a theoretical underpinning for CTE is all but missing from the current literature. In its infancy, CTE was not based on a learning theory, but rather was designed in response to concerns of the day (Doolittle & Camp, 1999). Skilled laborers were scarce, and industries were having a difficult time filling essential positions. There was a need for educated workers, but there was no form of job training available, short of learning on the job. The job market was floundering, and while educational philosophers such as John Dewey were concerned with educating the whole child, others like David Snedden and his protégé Charles Prosser were focused on responding to the needs of the current social economy (Tröhler, Schlag, & Osterwalder, 2010). Dewey, a vocal opponent of Snedden and his philosophy, was concerned about the richness of a student's educational experience, while Snedden and Prosser were concerned about quickly meeting the needs of society with little concern about how this education was experienced by the student (Hyslop-Margison, 2000). Snedden and Prosser believed that although some students were intellectually capable of academic work, others were destined for skilled labor, and separate high schools devoted to this type of training were best (Hyslop-Margison, 2000).

Dewey's ideas continue to have lasting impact on education reform today. He suggested CTE should be a part of all students' comprehensive high school experiences,

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while Snedden's and Prosser's plan provided more immediate resolutions to problems of the current day, such as the efficiency of factory labor. Snedden and Prosser championed the idea of "social efficiency," which provided skills-based education for the future workforce in separate vocational schools, which were not necessarily situated on high school campuses. While their hope for completely separate high school entities did not fully materialize, and their ideas were not always accepted by education experts and philosophers, their model for CTE is evident in comprehensive high schools that provide vocational opportunities for most students (Hyslop-Margison, 2000; Tröhler et al., 2010).

Snedden's and Prosser's ideals of social efficiency for CTE are grounded in the learning theory known as behaviorism (Dobbins, 1999; Doolittle & Camp, 1999; Wirth, 1972). Though it was not their intent, the tenets of behaviorism—a theory that professes human and animal behavior can be explained in terms of conditioning, without appeal to thoughts or feelings—provided a logical theoretical framework for CTE. This connection was made because the foundations of CTE tended to focus on learning one task at a time, subsequently building new knowledge upon prior knowledge. In keeping with behaviorism, over time, students were conditioned to perform tasks, but often only in controlled environments (Dobbins, 1999). As time passed, technology advanced, resulting in more intellectually challenging products required of CTE students. The theoretical framework evolved into more of a social constructivist theory, one in which students learn as a result of their interactions in group settings (Doolittle & Camp, 1999). CTE students no longer merely assimilate new technical skills through a process of learning one task and then another (behaviorism); they now work together in more social settings, learning, deciding, and problem-solving with their peers and building knowledge

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together (that is, social constructivism)—ideas more closely related to John Dewey's philosophy.

Contemporary CTE Teacher Education in the United States

As CTE changed, so did the paths to teaching in CTE. As stated earlier, there are approximately 105 routes to CTE teacher certification in the US (Zirkle et al., 2007). Multiple avenues toward certification create a variety of entry requirements for teachers, as well as a host of teachers who are prepared by many different methods. These CTE teacher-preparation programs produce a wide array of CTE teachers with varied teaching ability. To combat this, experts attempted to standardize CTE teacher preparation.

In 2011, the Southern Regional Educational Board (SREB), a nonprofit organization that works with states to improve public education at all levels, began an effort to provide a national model for quality CTE-teacher preparation. Funded by a grant from the NRCCTE, SREB researched and created the Career and Technical Teacher Education Project. The project was designed to be a "fast-track model for alternative-route CTE teachers" (Bottoms, 2011, p. 1) and included four basic elements of teaching: instructional planning, instructional strategies, classroom management, and classroom assessment.

SREB's model began with a 10-day summer institute prior to the teachers' first year in the classroom. This session included topics necessary for beginning teachers, such as beginning the school year, instructional planning, classroom management, classroom assessment, common paperwork and logistical procedures, and setting the tone of the classroom (Bottoms, 2011). In this session, the new teachers also planned the first nine weeks of instruction. These sessions were intended to be taught by experienced, qualified

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teachers committed to the year-long mentoring and guidance of the new teachers as they navigate through their first year of teaching.

After the school year began, the teachers returned to three 2-day teacher-preparation workshops in the fall, winter, and spring. These workshops continued to focus on the four main areas of teacher preparation, but the content was geared heavily toward instructional strategies using literacy and mathematics (Bottoms, 2011).

Throughout the school year, the teachers were given support in multiple ways. They received coaching visits from their induction program instructors three times each year before each of the teacher-preparation workshops. These visits served as opportunities for the instructors to see how well the beginning teachers were implementing the strategies learned during the previous professional development session (Bottoms, 2011).

Additionally, throughout the school year, the beginning teachers participated in three supporting webinars scheduled between each of the three teacher-preparation workshops (Bottoms, 2011). Because teachers may benefit from participating in communities of practice (Heath-Camp, Camp, Adams-Casmus, Talbert, & Barber, 1992; Joerger & Bremer, 2001), these webinars included additional support for the beginning teachers by offering them opportunities to share their implementation of the methods from the workshops, as well as allowing them to hear new ideas from their peers (Bottoms, 2011).

Another critical piece of the model was the support provided to the beginning teachers by their local administrators and assigned teacher mentors. Mentor and administrator relationships are among the critical factors that contribute to teacher

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retention (Latham & Vogt, 2007). Another study described mentors as parent figures, troubleshooters, colleagues, and scaffolders (Abell, Dillon, Hopkins, McInerney, & O'Brien, 1995). This research suggested that having a reliable relationship at the building level is critical to the new teacher, allowing them to feel that he or she can go to that person for a variety of reasons. Bottoms (2011) posited that beginning teachers' level of commitment and instructional competence is in the hands of the local school district. Therefore, the teacher-preparation model prescribed experiences for the beginning teachers to interact with administrators and mentors throughout the year.

Finally, during the summer following the teachers' first school year, the teachers participated in another 10-day institute. Here the teachers reflected on the past year and revised their practices for the following year (Bottoms, 2011).

Quality and Content of Career and Technical Teacher Education

Darling-Hammond (2000) stated that the extent and quality of teacher education is related to teacher effectiveness. Education-based organizations often attempt to influence or guide the content of teacher education. While the SREB created a national model for CTE teacher preparation, a task that had never before been completed, the National Board for Professional Teaching Standards (NBPTS) has its own set of standards they suggest are necessary for successful CTE teachers: 1) knowledge of students, 2) responding to diversity, 3) knowledge of content, 4) learning environments and instructional practices, 5) assessment, 6) postsecondary readiness, 7) program design and management, 8) partnerships and collaborations, 9) leadership in the profession, and 10) reflective practice (NBPTS, 2014).

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Though some of their requirements were similar to the NBPTS, the SREB suggested that CTE teachers have knowledge in four areas: 1) classroom assessment, 2) classroom management, 3) instructional planning, and 4) instructional strategies, as well as professional relationships with the administrator and a mentor teacher (Bottoms, Egelson, Sass, & Uhn, 2013). Conceptually, the SREB's ideas for improving alternative route teacher education centered around this formula: Professional Development + School Support = Increased Teacher Success (Bottoms et al., 2013).

Best Practices for Career and Technical Education Teacher Preparation

Both the SREB and the NBPTS have clear expectations for quality CTE teachers. In the following section, the ten standards considered essential by the NBPTS are explained in relation to "accomplished CTE teachers" and are used as headings to support best practices in CTE teacher preparation (NBPTS, 2014, p. 11).

Knowledge of Students

The NBPTS emphasized the importance of teachers having a deep understanding of their students, specifically where they are developmentally and how to differentiate their learning to meet individual needs (NBPTS, 2014). This standard also focused on developing rapport with students, noting that students who received this type of personalized attention will likely be more engaged in learning. Supporting this statement, Wentzel (2016) described effective teachers as those who "develop relationships with students that are emotionally close, safe, and trusting," adding that positive relationships have an effect on a child's motivation in the classroom (p. 211). These relationships seem to be mutually beneficial. It has been reported that a teacher's emotional wellbeing can be

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somewhat attributed to positive student-teacher relationships as well (Milatz, Lüftenegger, & Schober, 2015). Therefore, knowledge of students, such as their likes and dislikes and their strengths and weaknesses, creates relationships between students and teachers that develop trust, motivation, student engagement, and overall teacher well-being, which can create a more productive classroom environment.

Additionally, these types of student/teacher relationships can assist students with their professional goals. The NBPTS suggested the more a teacher knows about a student, the more they can guide them toward a profession that will be satisfying to the students (NBPTS, 2014).

Responding to Diversity

This standard focused on being aware of the many differences students bring to the classroom and is related to the concept of knowledge of students. Diversity manifests itself in many ways in a classroom. Powell (2005) noted that students can exhibit diversity through attributes such as gender, skin color, height, weight, academic ability, learning style, motivation, family make-up, socioeconomic status, and disabilities. Though not an exhaustive list of differences, teachers are faced with the task of teaching standards that are received in many different ways. Although most all schools experience diversity among their students, sometimes demographics change in a school. This can be one of the most challenging circumstances to deal with as oftentimes more than just instruction must change. Policy and sometimes laws are enacted or changed as a result of a changing demographic (Diarrassouba & Johnson, 2014) Accomplished CTE teachers learn to demonstrate tolerance and equity to all students by providing a safe and productive learning environment for all, no matter what changes occur. They are

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expected to monitor their instruction and classroom conversations in order to be inclusive and supportive in all situations. Additionally, CTE teachers should make attempts to provide opportunities to expose students to diverse cultures and conditions in order to foster personal growth for students (NBPTS, 2014).

Knowledge of Content

Although even expert skill in a field does not necessarily ensure that one is able to teach another how to perform these skills, knowledge of content is vitally important in CTE. Many CTE instructors come to the education profession from the industry in which they were hired to teach (Ruhland & Bremer, 2002). The subject matter knowledge they bring to the classroom is critical in effectively teaching the subject. This knowledge helps CTE teachers make real-world connections to careers and to the needs of the workforce. They are able to "design authentic challenges" and "achieve performance-based results that align with industry needs" (NBPTS, 2014, p. 29). Teachers with no industry experience would likely be less able to provide this type of support.

CTE has a rich history of responding to the needs of industry (Doolittle & Camp, 1999). Knowledge of CTE content is intended to help frame teachers' thinking when planning to teach their own craft in a CTE setting. Knowing how CTE has evolved over the years and how it contributed to society in the past as compared to now, can have powerful impact on lesson planning and delivery.

Learning Environments and Instructional Practices

The CTE classroom provides a student's first introduction to industry. Therefore, if the goal is to prepare students for the workforce, the CTE classroom may well need to

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mirror the industry it represents. In CTE learning environments, students ideally experience relevant classroom instruction alongside direct and indirect supervision in a lab setting. This type of learning environment gives teachers the opportunity to "contextualize learning experiences by focusing on student investigation and discovery in authentic work situations" (NBPTS, 2014, p. 51). Along these lines, Carver and Kosloski (2015) found that CTE students reported moderate levels of agreement regarding the authenticity of the content of their CTE classes. So even though authenticity is expected, it seems that it is not often realized. The researchers suggested workforce advisory committees be in place to guide programs and offer partnerships with businesses and industries to help create more authentic CTE learning environments (Carver & Kosloski, 2015). CTE teachers are then encouraged to adjust instructional methods based on student need and industry requirements.

Assessment

Classroom assessment can take on many forms. There is assessment collected before learning, often called diagnostic assessment; assessment observed during learning, referred to as formative assessment; and assessment collected after learning occurs, called summative assessment. Diagnostic assessment provides a means for teachers to learn about students' strengths and weaknesses on a topic or skill before learning begins (Jang & Wagner, 2013). Formative assessment provides feedback to teachers on how and if adjustments need to made while students are engaged in learning activities (Black & Wiliam, 2010). This type of assessment is used to adapt teaching to meet student needs (Black & Wiliam, 1998). Summative assessment is used when learning has taken place and the teacher would like to know if students have mastered the content (Liu, 2010).

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Because the many types of assessment could possibly overwhelm new CTE teachers, effective instruction in these various forms of assessment is critical. Traditional education practices could likely conjure up images of paper and pencil tests at the end of a chapter. However, classroom assessment may be used as a data collection method for teachers to use to make instructional decisions (Black & Wiliam, 2010). If new teachers are not instructed on the many forms and purposes of classroom assessments, they will possibly opt to incorporate only the ones with which they are familiar—namely the ones they grew up using in school. Alternatively prepared teachers, as well as traditionally prepared teachers, would likely benefit from exposure to multiple uses of classroom assessment in order to enhance student growth and achievement. Therefore, including instruction on classroom assessment in alternative-route programs is important in order to inform those lacking formal pedagogical training of the many forms and purposes of assessment.

Postsecondary Readiness

CTE teachers focus not only on preparing students for college but also for their future careers. The NBPTS standard of postsecondary readiness centers on preparing students for whatever lies ahead for them after high school, whether it is college, career, or something else (NBPTS, 2014). Although widely questioned and contested, the Common Core State Standards called for all students to be prepared for college and career, not one or the other ("National Governors Association Center", 2010). In response, states began to realize the need to prepare students for all postsecondary opportunities. The state school board in Mississippi (the state associated with this study) adopted five strategic goals in response to this call (Mississippi Board of Education,

2014). Goal number two in this list is, "Every student graduates high school and is ready for college and career" (Mississippi Board of Education, 2014, p. 1). California adopted "Linked Learning" methods intended to link an academic high school education with career pathways (Iasevoli, 2015). Additionally, many states are incorporating career academies, small learning environments where students choose a career pathway in high school and all high school coursework is related to that chosen pathway. There are over 8,000 of these career academies nationwide ("Career Academies," 2012). While academic education is beginning to see the importance of guiding students toward a career path, CTE teachers continue to be encouraged to be aware of postsecondary educational opportunities relevant to their field in order to adequately prepare students for those programs. Likewise, CTE teachers also have a duty to inform students of industry credentials and employment opportunities that do not require education beyond high school. In either case, emphasis on industry and employability skills is necessary for students to prepare for future success (NBPTS, 2014).

Program Design and Management

This standard referred to designing and maintaining a CTE program (e.g., welding, family and consumer science, or forestry). CTE teachers have a responsibility to research and implement the most recent and relevant industry needs in their classrooms (NBPTS, 2014). Included in these efforts is seeking and developing relationships with business, industry, and community partners in the local area. CTE teachers and leaders often design and maintain programs with very little funding other than state support. One research study found that CTE teachers and leaders are interested in growing their programs through grant writing and other funding opportunities (Cannon, Kitchel, &

Duncan, 2013). This type of support would likely guarantee continuation of some programs if state funding fell through.

Managing a CTE program involves collecting and analyzing student data, maintaining and inventorying lab equipment, and often advising a CTE student organization (NBPTS, 2014). CTE teachers will also often chair an advisory committee devoted to ensuring that teachers are preparing CTE students for the next level, whether it is college or a career.

Partnerships and Collaborations

Similar to the program design and management standard, this standard promoted collaborative partnerships between students, teachers, families, educational institutions, businesses, and industries. Families play an important role when preparing for a CTE student's future. The NBPTS encourages CTE teachers to include families in conversations concerning all postsecondary opportunities (NBPTS, 2014).

Additionally, CTE teachers network with local postsecondary education agencies to learn more about vertical alignment to similar CTE programs. CTE teachers can use these relationships to continue to develop their own programs, often in an attempt to mirror a postsecondary program in order to best prepare students for success in these programs.

Likewise, CTE teachers interact with community and business partners to foster relationships between students and partners. As stated earlier, Carver and Kosloski (2015) encouraged these types of partnerships, along with relationships with businesses and industry. These partnerships often lead to job shadowing or internship opportunities, or even jobs for students (NBPTS, 2014).

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Leadership in the Profession

CTE courses are generally not automatically added to a student's program of study; they are not required courses. Therefore, unlike teachers of many traditional high school courses, teachers of CTE courses must recruit students to their programs. This puts the CTE teachers in more of a leadership position, as they are often responsible for filling their programs. If there are no students signing up, the program cannot continue. So the burden falls on the teacher as a leader to recruit students and populate classes. CTE teachers may accomplish this by holding classroom tours, giving guest lectures, or by collaborating with community partners (NBPTS, 2014).

CTE teachers also exhibit leadership qualities when they engage with other educators to inform and mentor novice teachers. Interaction with peer CTE teachers aids in the continuation and growth of CTE programs. Similarly, relationships with postsecondary institutions provide openings for leadership opportunities for CTE teachers as they work to vertically align their secondary programs with postsecondary expectations (NBPTS, 2014).

Reflective Practice

Accomplished CTE teachers are encouraged to reflect on their own instruction and practice, seek out their own professional development, and commit to lifelong learning (NBPTS, 2014). Reflective practitioners are aware that ongoing analysis of their own planning and delivery of instruction supports professional growth. However, new teachers who may not have the experiences of veteran or accomplished teachers may benefit from reflecting on their own learning in order to make better assumptions about teaching and learning in the classroom (Darling-Hammond & Bransford, 2005).

Additionally, when new teachers have opportunities to reflect on their work and subsequently relate it to research, they are better able to identify their own areas of improvement (Darling-Hammond & Bransford, 2005). Reflective practice among teachers also enables them to see the influence of their beliefs on some of the instructional decisions they make while teaching (Farrell & Ives, 2014).

Reflective teachers gather and analyze student data in order to best meet the needs of all students, and they "reflect on all aspects of their practice at all times" (NBPTS, 2014, p. 83). They do not grow complacent with the same lessons year after year; instead, they look for ways to grow professionally and modify methods based on this continuous reflection.

Gaps in CTE Teacher Expectation versus Traditional Teacher Education

Although not mentioned in the NBPTS list of imperative knowledge for CTE teachers, there are other areas of teacher preparation that are widely accepted as necessary, in addition to the ones listed above that are particularly suited for CTE. The SREB valued the following areas of teacher preparation as important as well and included them in their model for CTE alternative-route teacher education (Bottoms et al., 2013). These areas included, but are not limited to, classroom management (Emmer & Stough, 2001), instructional planning (Darling-Hammond & Bartz-Snowden, 2007), and instructional strategies (Darling-Hammond & Bransford, 2005). The following text describes each of these and the importance of each in teacher preparation.

Classroom Management

Unlike other professions, education typically does not view new teachers as "novices" who need to be trained or mentored (Kelley, 2004). These teachers are generally expected to perform at the same level as their long-seasoned, veteran counterparts. Furthermore, the inability to effectively manage a classroom has been cited as one of the main reasons teachers leave the classroom (Evertson & Weinstein, 2006; Latham & Vogt, 2007). Therefore, an effective teacher-preparation program would focus heavily on classroom management. However, many new teacher induction programs, as well as traditional teacher-education programs, offer only a few class sessions on the topic, leaving new teachers feeling stranded, helpless to manage the classroom and students as required (Evertson & Weinstein, 2006). The lack of local classroom management support for new teachers coupled with the likelihood that teachers will leave the field because of poor classroom-management skills creates a strong case in support of extensive instruction and support in classroom management.

Instructional Planning

CTE teachers often come to the field of education directly from business or industry and therefore have no formal instruction on how to plan lessons (Heath-Camp & Camp, 1990). Therefore, planning for daily instruction is often a source of frustration for new teachers and an area in which they most often request professional development (Bottoms et al., 2013). Accomplished teachers can likely attest to the positive impact made by a well-planned lesson when compared to one that is less organized. Well-planned lessons often have a beginning where background knowledge is activated or interest is piqued; a middle that includes time for new instruction and opportunities for

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students to work alongside the teacher, alone, or in groups; and an end with a closure or a lesson wrap-up that summarizes the material and allows opportunity for questions (Cunningham, 2009).

This pattern can be challenging to implement for new teachers. Bottoms et al. (2013) responded to this challenge by including introductory and sustained professional development for instructional planning in their new CTE teacher induction model. Teachers are instructed on how to create and modify lesson plans to align with state and national standards while also creating meaningful and relevant student-centered activities.

Instructional Strategies

Teachers learn various instructional strategies during teacher education. The strategies taught to preservice teachers often reflect the most recent research on how to best instruct students (Cochran, King, & DeRuiter, 1991). Many of these strategies can apply to multiple content areas. For example, a biology teacher might use a Venn diagram to show relationships between mitosis and meiosis while a history teacher might use the same strategy to compare two historical documents. In this example, the same strategy is used, but the content is different. There are some strategies, however, that seem to work best with specific content areas—when knowing how to best support students in the particular content is essential for student understanding. When this occurs, it is known as pedagogical content knowledge (Shulman, 1986).

Pedagogical content knowledge. Shulman (1986) coined this term after conducting historical research concerning what and how teachers are expected to teach. In his article, Shulman described what was required of teachers in the late 1800s:

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knowledge of content. As evidence, he noted that "only 50 out of the total 1,000 possible points" on the 1875 California Teachers Examination pertain to the theory of teaching (Shulman, 1986, p. 5). When compared with same types of tests over a century later, evaluation of content is "treated as a prerequisite for entry into a teacher education program" rather than as an exit from the program (Shulman, 1986, p. 5). The exit exams of the day covered more pedagogical measurements such as evaluation, management, and cultural awareness, with little to no regard for content. Shulman (1986) remarked on the stark contrast between the requirements of the two time periods. His research suggested the pendulum swung from content to pedagogy so swiftly that a teacher's knowledge of content was not considered as important as it once was, and the research of the day focused solely on classroom management, lesson planning, and assignment structure (Shulman, 1986).

Shulman's identification of the "missing paradigm" of a teacher's content knowledge and of pedagogy led him to coin the term *pedagogical content knowledge* as a way to describe the methods and best practices a teacher uses to effectively teach his or her content (Shulman, 1986, p.7). His work paved the way for future research to inform practices for better teacher-education programs in multiple disciplines, as well as for awarding teacher licenses. Hill, Ball, and Schilling (2008) conceptualized Shulman's pedagogical content knowledge and examined its influence in the mathematics domain. Multiple researchers have examined the role of and offered suggestions for strengthening pedagogical content knowledge in science, at both elementary and secondary levels (Appleton, 2008; Driel, Verloop, & Vos, 1998; Magnusson, Krajcik, & Borko, 1999). Howey and Grossman (1989) quickly studied the implications for policy and

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implementation of pedagogical content knowledge in English. Mishra and Koehler (2006) and Koehler and Mishra (2009) built upon Shulman's ideas by expanding them into the field of technology. Cochran et al. (1991) provided a model for including pedagogical content knowledge in teacher-education programs.

The years of study dedicated to pedagogical content knowledge have indeed informed policy around teaching licenses in the United States. Forty-five states and the District of Columbia required or encouraged those pursuing teaching licenses to pass varying and/or multiple assessments of the Praxis Series (2015), a battery of tests provided by the national nonprofit Educational Testing Service. Preservice teachers in these states often must pass combinations of the Praxis Core Academic Skills for Educators (measure of academic skills in reading, writing, and mathematics designed for candidates entering teacher-preparation programs), the Praxis Principles of Learning and Teaching (historical context and pedagogical knowledge based on student grade level), and/or the Praxis Subject Assessments (content-knowledge assessment based on grade level and/or discipline) (Praxis, 2015). The remaining states—Arizona, Florida, Illinois, Massachusetts, and New Mexico—used state-level tests or the National Evaluation Series (NES) to test pedagogical and content knowledge (Arizona Department of Education, n.d.; Florida Department of Education, 2015; "Illinois Licensure Testing System," 2015; Massachusetts Executive Office for Education, 2015; New Mexico Teacher Assessments, 2016). Additionally, some states required portions of the Education Teacher Performance Assessment (EDTPA), an assessment developed through a partnership between Stanford University and the American Association of Colleges for Teacher Education (AACTE). Those states were Arkansas, California, Delaware,

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Georgia, Hawaii, Illinois, Iowa, Minnesota, New Jersey, New York, Oregon, Tennessee, Washington, and Wisconsin (EdTPA, 2016).

Shulman's (1986) ideas regarding pedagogical content knowledge have made a large impact on policy surrounding teacher preparation. However, these licensure requirements apply to academic teacher-preparation program graduates and alternate-route teachers, not CTE teachers. Instructional strategies for CTE teachers remain largely separated from the content they teach, and as stated earlier, are often absent from CTE-teacher endorsement policies.

Administrator Relationships

A seemingly missing component in the requirements for teacher-preparation programs is collegial relationships with administrators and peer teachers. Latham and Vogt (2007) suggested administrator relationships are a critical factor in teacher retention. Boyd et al. (2011) added that improved school administration could lead to less teacher turnover, validating the need for effective leaders and positive teacher/administrator relationships. Similarly, Viviano (2012) found that emotional relationships, rather than merely intellectual or managerial relationships, hold more value between administrators and teachers. In their longitudinal analysis, Dworkin and Tobe (2014) found that lack of trust between teachers and administrators often resulted in teacher burnout and attrition. It can be argued that more positive, purposeful relationships between teachers and administrators could likely prevent these unwanted results.

In a report following the implementation of SREB's national model for CTE-teacher preparation, Headrick and Bottoms (n.d.) summarized that "teachers who had regular contact with their administrators experienced a greater sense of support and felt a

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part of the school. These experiences led to teachers remaining in the teaching profession" (p. 4). These findings, which included both academic and CTE teachers, suggested there is at least some merit to teachers experiencing positive relationships with their administrators.

Mentor Relationships

Teacher mentors have been in practice in teacher education since the 1980s (Hobson, Harris, Buckner-Manley, & Smith, 2012). Implementing mentoring relationships early in teacher-preparation programs could help teachers feel more prepared to teach. Darling-Hammond and Bransford (2005) noted that novice teachers who have relationships with veteran teachers and gain classroom experience early in teacher-preparation programs seem to be more prepared to relate their coursework to their classroom experience. Additionally, researchers found that relationships between pre-service teachers and mentor teachers help to form a bond before classroom teaching even begins (Hobson et al., 2012). Similarly, Headrick and Bottoms (n.d.) indicated that "teachers who had regular contact with their mentors experienced a greater sense of support and felt part of the school" (p. 4). Teacher-mentor relationships seem to aid in teachers' sense of belonging in a school culture.

According to Joiner and Edwards (2008), teacher attrition rates can be attributed to "weak socialization structures" when teachers work mostly in isolation (p. 44). Additionally, they suggest teacher mentors assist with not only social and emotional issues but also curriculum matters, citing that many induction programs fail to include mentoring for instructional strategies in content areas, a nod to the importance of pedagogical content knowledge (Joiner & Edwards, 2008). These findings indicate there

is value in school-level teacher/mentor relationships which focus on social, emotional, pedagogical, and curriculum needs.

CTE Teacher Education in Mississippi

Though the previous text included standards and suggestions for best practices in preparing beginning CTE teachers, these suggestions referred to a national approach. Although in its beginning stages, SREB's national model for CTE-teacher preparation was piloted in several states (Mississippi, Georgia, Tennessee, South Carolina, and Oklahoma), and modifications have been made as a result of these pilots. Mississippi participated in the second year of SREB's pilot phase. Prior to joining SREB's pilot in 2012, hereafter referred to as VIP1 (the one-year methods program), Mississippi's new CTE teachers participated in the VIP program, hereafter referred to as VIP3 (the three-year methods program). In the following text, the two VIP programs are described.

VIP3. Prior to 2003, Mississippi hired CTE teachers who were prepared through traditional teacher education, any of the many alternative means, or based on industry credentials. Previous regulations for licensing CTE instructors included a special license to teach based on work experience related to the occupation to be taught. The teacher would earn a standard license upon completion of a specified set of requirements within the first three years of employment (Research and Curriculum Unit, 2006).

In 2003, in an effort to streamline the preparation of CTE teachers in Mississippi, the Mississippi Department of Education (MDE), Mississippi State University's Research and Curriculum Unit (RCU), and a steering committee of CTE professionals drafted Mississippi's Vocational Instructor Preparation (VIP) program. It included six modules to

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be completed over a three-year period that focused on the history and philosophy of CTE, developing instructional materials, teaching methods, student assessment, classroom management, and program development in CTE (Research and Curriculum Unit, 2006). A description of the VIP3 modules can be seen in Table 1, and a timeline of the events of VIP3 can be seen in Figure 1.

Table 1

Description of VIP3 Modules

VIP3 Modules	Description
Best Practices	Introductory. Five days of workshop-style instruction.
History & Philosophy of Career and Technical Education	Overview of the history and development of CTE programs
Developing Instructional Materials in Career and Technical Education	Stresses the importance of effective lesson planning. Teachers look specifically at technology, media, instruction, and theoretical positions. Discussions and assignments are divided into five basic themes in this module: Learning Foundations, Digital Environments, Traditional Media, Trends in Technology and Media, and Classroom Resources.
Teaching Methods in Career and Technical Education	Study of theory-based methods and techniques of instructional delivery in the CTE classroom and laboratory.
Student Assessment in Career and Technical Education	Study of the basic principles and methods of measurement and evaluation of student achievement in the CTE classroom and laboratory.
Classroom Management in Career and Technical Education	Stresses the importance of managing the classroom effectively.
Program Development in Career and Technical Education	Introduces the concepts of curriculum and assessment development.
Best Practices Follow-Up	Series of VIP follow-up activities.
Portfolio Compilation	Ongoing. Teachers compile a portfolio of accomplishments and records of requirements met.
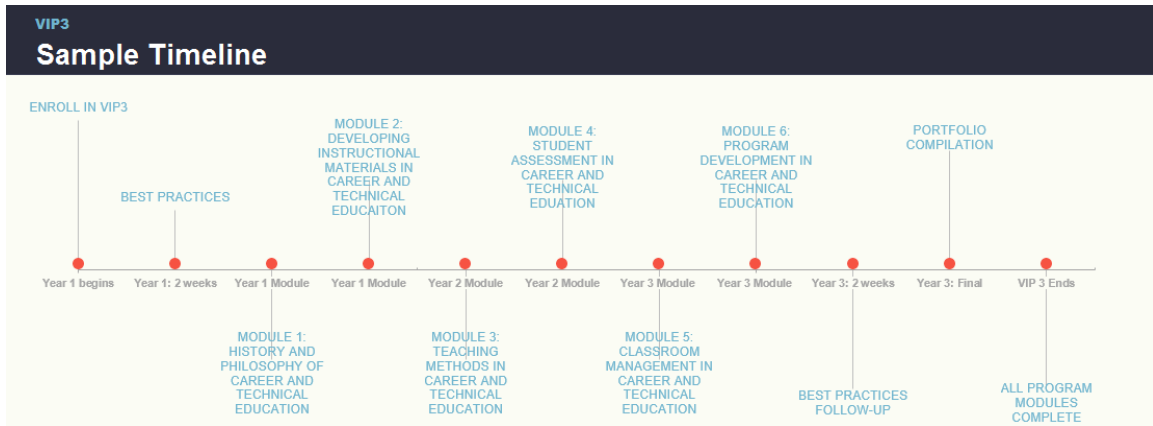
Figure 1.   VIP3 Timeline.

These methods were used until 2012 when SREB approached the MDE about the possibility of piloting their new CTE-teaching induction model. New cohorts were added to VIP3 until the fall of 2012. The participants who began in 2009-2011 finished the VIP3 program, while all new cohorts began using the VIP1 method in fall of 2012.

VIP1. After several planning meetings with SREB, the MDE, along with the RCU, decided to pilot the new CTE-teacher induction model in the 2012-2013 school year as VIP1 (L. Long, personal communication, November 21, 2013). In an agreement with SREB, Mississippi followed the model as prescribed during the pilot year. A description of the VIP1 modules can be seen in Table 2.

Table 2

Description of VIP1 Modules

Title and Description	Outcomes—Areas of Teacher Instructional Competence
Module 1: Instructional Planning Effective CTE instruction is carefully planned to target the technical, academic, and 21st-century skills within a career pathway that prepare students for both further learning and the workplace.	Create short-term and long-term standards-based instructional plans based on the varying learning needs of students. Specific Areas of Emphasis: • Plan instruction that reflects the new mission of CTE: supporting both college- and career-readiness. • Set instructional goals that incorporate industry standards, 21st-century skills, and grade-level academics (reading, writing, and mathematics). • Make instructional modifications for diverse learning needs. Reflect, both individually and collaboratively, on the effects of instruction, and use the reflective process to continually improve instructional practice. • Reflect individually with guiding questions and the use of a professional portfolio. • Reflect collaboratively through the use of protocols for providing feedback and looking at student work.
Module 2: Instructional Strategies Research-based instructional strategies engage and motivate students and deepen learning.	Use instructional strategies that actively engage students in learning and encourage the development of problem-solving, critical-thinking, and team-work skills. Specific Areas of Emphasis: • Use project-based learning with real-world problems and tasks. • Design intellectually challenging assignments. • Use cooperative learning. • Integrate academic skills, including embedded literacy and numeracy.

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Table 2 (continued)

Title and Description	Outcomes—Areas of Teacher Instructional Competence
Module 3: Classroom Assessment Assessment provides a clear picture of students' performance in relation to the standards, informing teaching practice and further learning.	Use formal and informal assessment strategies to evaluate student progress toward learning goals, and provide feedback to improve student learning. Specific Areas of Emphasis: • Use formative and summative assessment methods that prepare students for workplace and postsecondary types of assessment (for example, employer and college-readiness exams). • Incorporate student self-assessment, especially through a portfolio of work. • Use rubrics to clearly define assessment criteria. • Create written exams that mirror standardized-assessment-type or employer-type exam questions. • Assess student progress in using reading, writing, and mathematics to solve problems and take action in the field. • Develop a plan for grading and reporting student progress.
Module 4: Classroom Management A well-managed classroom centers on respectful, collaborative relationships that support student learning.	Create a learning environment that encourages student motivation, positive behavior, and collaborative social interaction. Specific Areas of Emphasis: • Establish appropriate rules and routines for the CTE lab. • Create a culturally responsive classroom. • Offer rewards and recognition to encourage effective effort and increase student motivation. • Design extra help to support all students in reaching standards. • Communicate with parents and engage them in supporting students' success.
Mentor Relationships	A structured mentoring program was developed for providing support and encouragement to participating teachers. Mentors are trained to prepare them to support new teachers.

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Table 2 (continued)

Title and Description	Outcomes—Areas of Teacher Instructional Competence
Administrator Relationships	The designated administrator supervising the beginning teacher participates in two days of training along with the mentor assigned to the beginning teacher, which includes an overview of the content of the professional-development sessions. The supervising administrator is expected to meet with the mentor and the new CTE teacher at least monthly to discuss implementing what the teacher learns in the training. The supervising administrator is also expected to visit the new CTE teacher's classroom weekly for the first month (then monthly) and observe classroom practices, using a checklist targeted around the four strands from the training.

For the 2013-2014 school year, due to lack of manpower and in response to the specific needs of Mississippi teachers, VIP1 was modified from the previously described model by decreasing the number of coaching visits to two and slightly modifying the content to represent CTE in Mississippi rather than on a national level (L. Long, personal communication, November 21, 2013). A timeline of the events of the revised VIP1 can be seen in Figure 2 below.
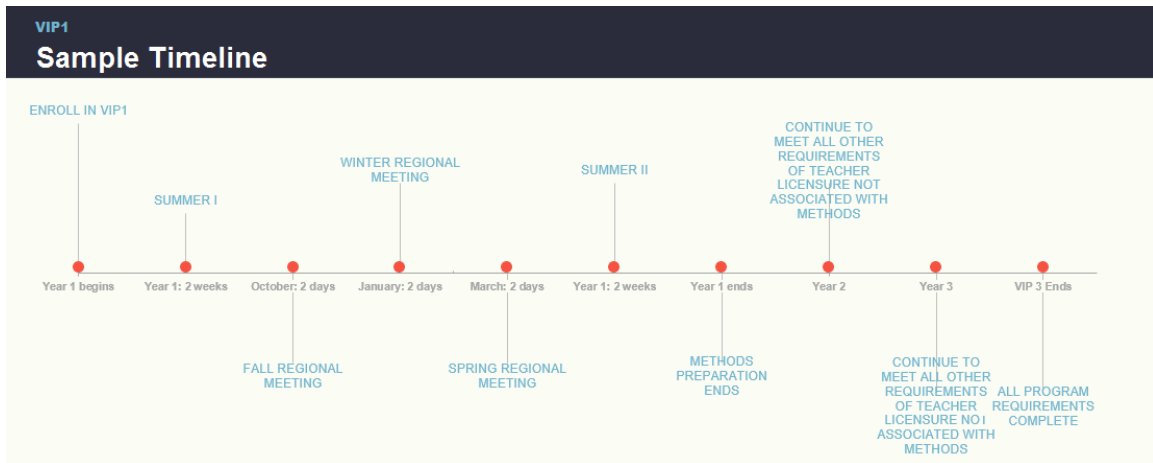
Figure 2. VIP1 timeline.

Even if the aforementioned VIP1 strategies are used as guidelines, it is still often difficult to see what a teacher-preparation program could look like, specifically because there are so many views and so many variables. In this study, the researcher sought to uncover what methods of teaching taught during the VIP programs were the most effective in helping CTE teachers feel prepared for their first year(s) of teaching, to compare the self-efficacy of beginning CTE educators enrolled in each of Mississippi's two VIP programs, and to investigate how novice CTE teachers' professional relationships with mentors and administrators influenced their teaching efficacy and job satisfaction.

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CHAPTER III

MATERIALS AND METHODS

In order to compare Mississippi's two alternative-route teacher-education programs, VIP3 (the three-year methods program) and VIP1 (the one-year methods program), an embedded, qualitative, multiple-case study approach was selected to effectively evaluate each program. Yin (2003) described this type of study as one that involves multiple cases with subunits that are observed simultaneously and then analyzed. Embedded multiple-case study was appropriate for this research as there are multiple types of teacher-education programs (two) with multiple cases (teacher participants) and multiple embedded units of analysis (each element of the teacher-preparation program). Berg (2007) described a case study as a method involving systematically gathering enough information about a person, social setting, event, or group so the researcher understands how the subject operates or functions. Berg (2009) stated that case studies allow researchers to "capture various nuances, patterns, and more latent elements that other research approaches might overlook" (p. 318). This factor blended well with the embedded multiple-case study and added to the overall intent of this research as it allowed for an in-depth look into each teacher-education program, potentially revealing even more than what was sought through the research questions.

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The researcher examined the following three research questions in this study:

1. How do CTE teachers completing one of two different delivery methods of Mississippi's VIP program perceive the value of their teacher-education program in preparing them to teach with confidence?

2. Which specific program elements associated with Mississippi's VIP programs do CTE teachers perceive as the most effective in preparing them for their first year(s) of teaching?

3. How do novice CTE teachers' professional relationships with mentors and administrators influence their teaching efficacy and job satisfaction?

Within this embedded multiple-case study, direct observation was one of the qualitative methods through which data were collected. The use of direct observation allowed the researcher to not actively participate in the research study but, instead, be as unobtrusive as possible while observing participants (Gay & Airasian, 2000; Trochim & Donnelly, 2006). This type of observation differs from participant observation, which provides opportunities for the researcher and the participants to develop relationships (Gay & Airasian, 2000). In participant observation, the researcher may gain other insights that are not available to direct observers who remain discreet in the research setting (Gay & Airasian, 2000). Becoming a participant observer in the research would not have served a greater purpose or benefit this study, so the intent was to remain as geographically neutral as possible as a direct observer. The use of the direct-observation method complemented this study because the researcher was not interested in becoming an active part of the classroom activity, but was instead interested in the everyday classroom activity among the participants and their students. In an attempt to preserve

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this everyday classroom activity, the researcher was intentional about positioning herself in the classroom in unobtrusive areas.

Data were collected through semi-structured interviews, the Teachers' Sense of Efficacy Scale (TSES) survey, and the M-STAR. Additionally, relevant artifacts, such as lesson plans, activity sheets, and so forth, were collected to support findings. The use of multiple methods provided opportunity for data triangulation and strengthened the validity of the study (Park & Lee, 2010). A table outlining the alignment of each element of the teacher-preparation program with all sources of data can be seen in Appendix D.

The researcher examined relationships between the results of all data sources to infer which methods of teacher preparation were effective in helping CTE teachers feel prepared for their first year(s) of teaching, as some participants had just finished their first year (VIP1) and others had just finished their third (VIP3).

Description of the Population and Sample

This study was performed following the 2013-2014 school year, when all participants had completed either the VIP1 or the VIP3 program. After a thorough IRB review, the sample was collected from professional development databases housed at the RCU. Participants enrolled in VIP1 and VIP3 were selected according to the above processes. Participant data were obtained from the RCU professional development databases to determine the pool of eligible participants.

Population

The sample for this research study was selected from the larger population of participants in Mississippi's VIP programs (both VIP1 and VIP3) during the 2013-2014

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school year. There were a total of 120 teachers enrolled in both programs combined, 50 in VIP3 and 70 in VIP1. Several of these dropped out before either program was completed. There were three cohorts within the VIP1 program throughout the state: northern, central, and southern. These teachers had taught no more than two years. Individuals from the VIP3 cohort had taught no more than four years and were enrolled in a formal, ongoing, three-year methods-instruction program.

The participants, as CTE teachers, represented multiple industries and fields of knowledge. CTE teachers generally arrive in the classroom directly from industries such as agriculture, manufacturing, or culinary arts. They enter into the teaching profession, often as a subsequent career choice, in order to teach content from their field to the future workforce. They transition into the teaching profession based on their current industry credentials, with the understanding that they will participate in an alternative-route-to-teaching program to obtain a teaching license.

Sample

This study used purposive sampling methods. Purposive sampling occurs when "researchers use their special knowledge or expertise about some group to select subjects who represent this population" (Berg, 2009, p. 50-51). Participants were therefore chosen based on the researcher's knowledge of the population, stemming from the researcher's job-embedded involvement in the development and implementation of the VIP programs. The sample came from the population of teachers enrolled in the VIP1 and VIP3 programs. In an attempt to have a representative sample, measures were taken to ensure that teachers were chosen from areas throughout the state to reflect the larger population.

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Participant Descriptions

There were nine teachers who agreed to participate in this study, four from VIP3 and five from VIP1. In order to accurately describe each participant, details about each are conveyed in the following sections, followed by a summary table of participant information upon enrollment. Pseudonyms were used to protect the identity of the participants.

Kellie Boyd, Health Sciences/Sports Medicine Teacher, Central Mississippi, VIP3. Kellie Boyd, a white female in her late 20s, came from a family who worked in several CTE fields. Her grandparents were in construction and agriculture, while her mom was a licensed practical nurse and her dad worked in a steel mill. Her interest in sports medicine began when she was in high school and had the opportunity to shadow her athletic trainers at school. They noticed her interest in the career and set her on a path to become an athletic trainer. They told her what to major in and which classes to take.

After becoming certified as an athletic trainer, she worked at a small private college for approximately four years. Athletic trainers at colleges travel regularly, so when it was time to start a family, Ms. Boyd decided to begin working at local high schools. It was here where she began mentoring young students interested in sports medicine, similar to the way she was mentored in her youth. This mentorship morphed into an athletic-trainer program for students that catapulted her into a teaching career.

Because Ms. Boyd worked at multiple local high schools, she could not always be at each place when needed. So when her mentees called her to say someone had rolled an ankle, she began teaching them how to take care of minor problems such as this one. She

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taught them taping techniques for trivial injuries or instructed them to ice the injuries and start range of motion exercises until she arrived.

Her school leaders paid attention to her development of the student athletic-trainer program. When the opportunity to begin a sports medicine pathway for CTE students arose, they approached her about not only teaching the content, but also writing the curriculum. After some negotiations (because teaching was a significant pay reduction from athletic training), Ms. Boyd became a part-time teacher and curriculum writer for one of her schools. The following school year, she enrolled in VIP3 and began her teaching career.

Kurt Henley, Engineering, North Mississippi, VIP3. Kurt Henley, a black male in his mid-30s, came into the field of education by way of marriage. His parents both finished high school, but that was as far as either of them carried their education. His wife's family, however, was steeped in the field of education. His brother-in-law was a principal, his mother-in-law was an assistant superintendent, and his wife was a professor at a local college. This familial influence led to a previously unlikely career choice for Mr. Henley.

Mr. Henley held a technical job at a local casino for several years before taking a security position at a local alternative school for students with behavior issues. He worked at the alternative school for eight years. During the last four years, he completed a degree in management information systems (MIS). Ironically, when he finished his degree, he was laid off by the alternative school. His family told him about a job at the local CTE center—an engineering teaching position. Though his degree was not in engineering, some of the content of the CTE course was similar to his MIS coursework.

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He applied and was offered the job. He accepted the position thinking he would likely only teach for one year. He began teaching after enrollment for VIP had ended, so he entered the classroom with no pedagogical background. The following summer, he enrolled in VIP3.

Jim Sanders, Agriculture and Environmental Science and Technology (AEST), North Mississippi, VIP3. Jim Sanders's accidental leap into education can be partially attributed to his hobby—farming family land for additional income. Mr. Sanders's mother was a school speech therapist and his father owned a local grocery distribution company. Mr. Sanders, a white male in his early 40s, earned a bachelor's and a master's degree in forestry but immediately began working for his father's company upon graduation. After purchasing some land, he began growing vegetables and experimenting with small-scale agriculture. He really enjoyed it, and when a teaching position in agriculture was advertised in his hometown, he decided to apply. Though he did not get that position, he was hired at a district one county northwest of his hometown. He enrolled in VIP3 the same year he began teaching, but he taught for about three weeks before he received any formal education instruction.

Selina Varner, Health Sciences Teacher, Central Mississippi, VIP3. Selina Varner, a white female in her mid-30s, also did not come from a family of educators but married into one. Ms. Varner's father and brother were dentists, and she herself was a dental hygienist for 14 years. Her father-in-law was a superintendent, and her mother-in-law was a retired home economics teacher. When Ms. Varner's children started elementary school, she decided she wanted to be home with them in the afternoons. Her

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full-time dental hygienist job did not allow that. She decided to cut back on her hours and began volunteering at her children's elementary school. Her presence there then led to opportunities to substitute teach. She really liked it, and with the encouragement of her father-in-law, she began the alternate-route process. During this time, the high school assistant principal approached her about a new opportunity at the high school—a health science academy with a focus on dental health. After a few conversations, she decided to take the position, and she enrolled in VIP3 immediately.

Mark Davis, Industrial Maintenance Teacher, North Mississippi, VIP1. Mark Davis, a white male in his late 50s, worked in maintenance for 30 years before coming to the field of education. Though he worked as a machinist, and then as a foreman in a machine shop, he also had the opportunity to serve as a trainer during his years there. He liked that type of education because it involved work that needed to be done immediately and on site.

His father was in maintenance as well, and his mother was a nurse. Like some of the other participants in this study, he got the idea to go into teaching from his spouse, who was herself a teacher. After 30 years in the machine shop, he was ready to retire from that job, but he was not necessarily ready to quit working. An industrial-maintenance position at the local CTE center opened and he applied. He was hired too late to enroll in VIP1 and taught for a year with no pedagogical background. The following summer, he enrolled in VIP1.

Matt Dabney, Logistics Teacher, North Mississippi, VIP1. Matt Dabney, a white male in his late 40s, developed a diverse career background before his teaching

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career began. His father had a brief career in business before passing away at the age of 29, and his mother was a business teacher at a college, a private school, and then ultimately retired from a public school. He, on the other hand, had no interest in a teaching career. He had always wanted to own his own business. Even though he spent his college years helping the local high school marching band, and his band directors and family members were certain he would go into music, he held steadfast that he wanted to open his own business. After he finished his bachelor's and master's degrees in business, he worked in information technology (IT) at a manufacturing plant, eventually working his way up into management. Mr. Dabney then had the opportunity to branch off with a partner and start a business. It was successful, but his interest waned. He and his wife considered moving, but he happened across a job listing for a teaching position in logistics at a local high school. After speaking with the principal, it was evident this position was a perfect fit.

While in graduate school, he was able to teach a few courses as an adjunct and did on-the-job training at his company, but he never seriously thought of teaching as a career. This teaching position gave him the opportunity to teach students how to run a business. He took the position, though he was hired too late to enroll in VIP1 for his first school year. He taught a year and then enrolled in VIP1 the following summer.

Natasha Ellis, Health Sciences Teacher, South Mississippi, VIP1. Natasha Ellis, a black female in her mid-30s, whose mother was head of security at a prison and whose father was a retired sailor in the Navy, had aspirations of an advanced career in medicine. She began this career as a nurse, but with twelve-hour shifts there was no time left for her to study for medical school. Searching for an eight-hours per day job, her

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friend noticed an advertisement for a health science teaching position. She was hired for the teaching position and the next week was accepted into medical school. Not wanting to leave the students she decided to stay for the quarter, then the semester, and then the entire year. After her first year, she realized she loved teaching and did not want to attend medical school as she had always planned. She was hired too late to enroll in VIP1, so she began teaching and enrolled in VIP1 the following summer.

Heather McCormick, Health Sciences Teacher, Central Mississippi, VIP1.
Heather McCormick, a white female in her mid-40s, always knew she wanted to be a nurse. She had advanced in her career and was serving as a teaching nurse who instructed patients how to manage their health care at home. She was content in her job, but at the prodding of her children, she applied for and accepted a teaching position. On her last day of her nursing job, her son was diagnosed with cancer. The following year was tough and confusing, and she was convinced she would not have been able to keep her nursing position under those circumstances. Having been hired too late to enroll in VIP1, she enrolled the following summer.

Scott Manning, Information Technology Teacher, North Mississippi, VIP1.
Scott Manning, a white male in his late 30s, came from a military family. His grandfather was a World War II veteran, and his father was a career marine who worked in avionics (the electronics on an airplane). His father's position spurred an interest in computers at an early age. Mr. Manning himself was a Marine who, after earning a degree in IT, accepted a call to ministry and obtained a master of divinity degree. His wife, a bookkeeper for the school district, suggested he look into the available IT teaching

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position for monetary reasons. He had enjoyed tutoring when he was in college, and he had a relevant degree, so he applied and accepted the position. He also was hired too late to enroll in VIP1, so he taught for a year and enrolled the following summer.

Table 3 provides a summary of participant information upon their enrollment in either of the VIP programs.

Table 3

Participant Summary

Pseudonym	Subject Area	VIP Program Enrollment	Teaching Experience Before VIP Enrollment	Teaching Experience at Time of Observation
Kellie Boyd	Health Science— Sports Medicine	VIP3	1 school year (part-time)	1.5 school years
Kurt Henley	Engineering	VIP3	1 school year	1.5 school years
Jim Sanders	Agriculture and Environmental Science and Technology (AEST)	VIP3	No teaching experience	3 school years
Selina Varner	Health Science— Dental	VIP3	No teaching experience	3 school years
Mark Davis	Industrial Maintenance	VIP1	1 school year	1.5 school years
Matt Dabney	Logistics	VIP1	1 school year	1.5 school years
Natasha Ellis	Health Science— no specialty	VIP1	1 school year	1.5 school years
Heather McCormick	Health Science— no specialty	VIP1	1 school year	1.5 school years
Scott Manning		VIP1	1 school year	1.5 school years

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Measures of Ethical Protection of Participants

Participation in this research was voluntary, and refusal to participate involved no penalty or loss of benefits to which the participants were otherwise entitled. The participants were informed that they could quit the study at any time or refuse to answer any specific questions. The information provided by the participants was confidential, and no participant was identified in the study.

In compliance with IRB guidelines, permission to perform this study was first collected from the eligible participants' school district administrators without identifying the particular teachers who were involved. Permission was then sought from the potential teacher participant. Pseudonyms were used to protect the identity of the participants.

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Data Collection and Procedures

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In order to collect data that are thorough and accurate, measures were taken to ensure that data were collected from multiple sources so it can be compared, cross-referenced, and connected, if relevant. Any one source alone could provide useful information; however, when only one data collection method is considered, reality is often skewed (Berg, 2009). When researchers combine several lines of sight and consider them together, a clearer picture of the participants and programs will likely emerge (Berg, 2009). Therefore, data were collected in the Spring 2014 semester using direct observations, semi-structured interviews, a teaching self-efficacy survey, casual conversations with participants, and relevant artifacts. The collective data obtained from these qualitative research methods, when evaluated together with attempts to relate them, provided multiple perspectives to the study that would not be available if each source of data were studied independently.

Description of the Instruments

Park and Lee (2010) contend that data triangulation is not optional, but necessary in qualitative research. Triangulation offers multiple perspectives centered on research questions, solidifying any findings as potentially significant instead of possibly anecdotal if considered in isolation. In this study, the researcher attempted to triangulate the acquired data by gathering information from several sources: observations, interviews, teaching self-efficacy surveys, casual conversations, and relevant artifacts. Finding alignment among these sources strengthened the internal validity of the study.

Observations

Teacher-performance data were gathered during direct observations with the participants using the M-STAR, an instrument used in the Mississippi Teacher Evaluation System (MTES). The M-STAR has been adopted by the MDE for the purposes of monitoring and evaluating teacher performance (MDE, 2013). The creation and adaptation of the M-STAR are federal requirements of Mississippi's Elementary and Secondary Education Act (ESEA) waiver (Wright, 2014). The use of the M-STAR (not as part of this study) is mandatory for teachers or administrators, and therefore did not pose any significant burden on the participants, as its use is already an integral part of their school climate. The purpose of the M-STAR is explained on the Mississippi Teacher Center website:

The Mississippi Statewide Teacher Appraisal Rubric is an evaluation process designed to improve the professional performance of all educators. M-STAR provides a reliable and valid system of performance assessments based on common standards used to gauge teacher effectiveness, help track educational

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progress, identify areas of need, and improve performance throughout a teacher's career. (MDE, 2012)

The M-STAR provides a means of assessing teachers in five domains: planning, assessment, instruction, learning environment, and professional responsibilities. The standards associated with each domain may be seen in Table 4. Teachers are evaluated and rated according to the following four performance levels: Level 4, Distinguished; Level 3, Effective; Level 2, Emerging; and Level 1, Unsatisfactory (MDE, 2014). Teachers receive 1-4 points based on these levels for each standard in each domain. The points are then averaged for each domain, providing an average score for each domain. Subsequently, each of the domain scores are averaged, providing an overall teacher performance score. This study only evaluates four of the five domains, as the professional responsibilities domain consists of measurements that are not relevant to this study.

Table 4

MSTAR Rubric Domains

M-STAR Domain	Standards
Domain I: Planning	1. Plans lessons that demonstrate knowledge of content and pedagogy 2. Plans lessons that meet the diversity of students' backgrounds, cultures, skills, learning levels, language proficiencies, interests, and special needs 3. Selects instructional goals that incorporate higher level learning for all students 4. Plans units of instruction that align with the MS Curriculum Frameworks or, when applicable, the Common Core State Standards
Domain II: Assessment	5. Collects and organizes data from assessments to provide feedback to students and adjusts lessons and instruction as necessary 6. Incorporates assessments into instructional planning that demonstrate high expectations for all students
Domain III: Instruction	7. Demonstrates deep knowledge of content during instruction 8. Actively engages students in the learning process 9. Uses questioning and discussion techniques to promote higher order thinking skills 10. Brings multiple perspectives to the delivery of content 11. Communicates clearly and effectively
Domain IV: Learning Environment	12. Manages classroom space and resources effectively for student learning 13. Creates and maintains a climate of safety, respect, and support for all students 14. Maximizes time available for instruction 15. Establishes and maintains a culture of learning to high expectations 16. Manages student behavior to provide productive learning opportunities for all students

Table 4 (continued)

M-STAR Domain	Standards
Domain V: Professional Responsibilities	17. Engages in continuous professional development and applies new information learned in the classroom 18. Demonstrates professionalism and high ethical standards; acts in alignment with the MS Code of Ethics 19. Establishes and maintains effective communication with families 20. Collaborates with colleagues and is an active member of a professional learning community in the school

As part of the VIP1 program, teachers were observed by program instructors and were given feedback according to a modified version of the M-STAR. This method was used to assist the teachers in identifying areas of strength and areas of growth but did not assign scores. VIP3 participants were not observed as a part of their program and therefore do not have any previous observation criteria. To obtain more relevant data for this study, the participants were informed that the M-STAR would be used during observations and that quantitative scores would be assigned based on the researcher's training as an M-STAR evaluator. These scores were for the purposes of this study only and were not given to the teachers' administrators. The scores assigned during the course of this study have no weight on any local evaluation.

Interviews

In addition to the M-STAR observation protocol, the researcher conducted semi-structured interviews and casual conversations with all participants. The interviews took place in the participants' classrooms and lasted about 30 minutes to one hour. The interview questions and discussion topics were organized according to the three research

questions associated with this study and were based on all areas of the teacher-preparation programs (VIP1 and VIP3). The interview topics, observation criteria, and sample questions are located in Appendix C. The interviews were recorded with an electronic recording device, transcribed, and saved in an encrypted file.

Measure of Self-Efficacy

Tschannen-Moran and Woolfolk Hoy (2001) developed a measure of self-efficacy for teachers called the Teachers' Sense of Efficacy Scale (TSES). The scale consists of items that measure teaching self-efficacy: 24 on a long form and 12 on a short form. The items are divided into three subscales: instruction, management, and engagement. The researchers showed all 36 items on the scale to be reliable using principal-axis factoring with varimax rotation, yielding reliabilities of 0.91 for instruction, 0.90 for management, and 0.87 for engagement (Tschannen-Moran & Woolfolk Hoy, 2001).

Though there are many other measures of teaching self-efficacy, this scale meets the needs of this study because it addresses many of the topics covered in both VIP1 and VIP3. Additionally, many of the other scales do not have reliability data, so the use of the TSES will strengthen the reliability of this study. Both the 24-item form and the 12-item form yield high reliabilities (Tschannen-Moran & Woolfolk Hoy, 2001). For the purposes of this study, and in order to obtain a broad representation of efficacy, I used the 24-item form to collect data from participants in the Spring 2014 semester. The scale was used to measure the level of teaching self-efficacy of each teacher participant. The collection of these data further supported triangulation of all data collected through qualitative methods in this study.

Although the TSES developers suggest factor analysis to analyze the survey results, descriptive statistics will provide the analysis desired for this study. For the purposes of this study, and with nine participants, frequencies and teachers' self-placement on the TSES are sufficient to inform the research questions. Factor analysis places the data in three correlated factors that are counter to the ones focused on in this study. Subsequently, each question was placed into one of three categories: 1) classroom management, 2) classroom assessment, and 3) instructional strategies. (The survey did not provide structures to determine a teacher's self-efficacy in instructional planning, the fourth element of teacher preparation in VIP1.) Participants were asked to complete the survey, which included 24 statements of competence. The survey respondent chose a number between 1 and 9 to indicate their level of confidence in completing each task. The results of the survey were entered into a spreadsheet and averaged according to participant enrollment in either VIP1 or VIP3. The results were then compared to participant responses from the other data sources to determine if relationships existed.

Explanation of the Procedures

Data collection for this case study involved one 30-minute observation that included M-STAR evaluation, one 30-60 minute interview, and the TSES to measure teaching self-efficacy. Relevant artifacts, including lesson plans and assignments, were collected. Data collection was performed at the participants' respective local education agencies.

I observed teacher participants based on the M-STAR and scored them to the best of my ability as a trained M-STAR evaluator, focusing on four of the five rubric domains:

planning, assessment, instruction, and learning environment. The scores were totaled and then compared with other qualitative data to see if any trends emerged.

To capture the self-efficacy of these CTE teachers, as well as their opinion of the elements of their teacher-induction program, qualitative interview topics and observation criteria were developed to be used in the interviews and observations. Interview and observation times were set up with the teachers. Data were collected via interviews, observations, and artifacts. After the interview and observation, I administered the 24-item TSES to each participant. Data were then transcribed and analyzed to look for overarching and recurring themes that pertain to teacher self-efficacy and confidence in teaching, as well as the individual elements of each teacher-preparation program.

Data Analysis

Each data source was analyzed separately and then compared with the other sources to triangulate the data.

TSES Analysis

In order to analyze the TSES data, I created a spreadsheet with each TSES question listed in the first column and the participants' names along the top row. I recorded their responses for each question in the appropriate cell. The 24 questions were organized to gather data in three categories: classroom management, classroom assessment, and instructional strategies (the survey did not ask questions that gave insight into instructional planning). To calculate descriptive statistics for each area, I averaged each participant's responses according to the three qualifiers. Each participant produced a classroom management average, a classroom assessment average, and an instructional

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strategies average. I also calculated each participant's overall individual self-efficacy average. Additionally, I calculated averages for classroom management, classroom assessment, and instructional strategies according to enrollment in VIP1 or VIP3. These data can be viewed in Tables 6-8.

M-STAR Observations

The observations provided an opportunity for independent analysis of each classroom. During the analysis, I considered teacher placement in the classroom, classroom equipment and furniture placement, student behaviors and engagement, teacher and student safety and security measures, teacher presence in the classroom, teacher responses to interruptions, and interactions with students. Data were collectively analyzed alongside the interviews, surveys, and artifacts (when available) to create a more complete picture of the whole teacher, what he or she believes about his or her own teaching ability, as well as what he or she portrays.

The M-STAR was used to collect data for teacher appraisal in the classroom. To analyze this data, I averaged the scores in each domain on the M-STAR. I then averaged each subscore and calculated an overall average rating for each teacher participant. These scores can be observed in Table 5 in Chapter IV of this document along with relevant discussion of the findings.

Interviews

For qualitative analysis of interview data, I used the qualitative data analysis software NVivo (2013). NVivo software shows visual, numerical representations of concepts and themes found within qualitative data. The software, however, is not

intended to replace deep, critical analysis of qualitative data; rather, it was created to increase the effectiveness of learning from the data (Bazeley & Jackson, 2013). Therefore, I used the software as an organizational tool, then thoroughly analyzed the data. The following text describes the process of using this software to analyze the data collected in this study.

Importing Sources and Node Creation

Data were collected from multiple sources. For a detailed look into the interview data, I imported the transcripts from the interviews and placed them in an interview source folder. To look for patterns in the interview data, I first created a node—a broad classification folder in the NVivo software—for the participants in the study, with a subnode—a more narrow classification identifier—created for each participant. I placed each participant in one of two source classifications to indicate his or her enrollment in either VIP1 or VIP3. In order to organize the data among the participants, I created nodes for teaching self-efficacy, elements of teacher preparation, and mentor and administrator relationships. Under the teaching self-efficacy node, I created subnodes using the attitude characteristics of positive, negative, mixed, and neutral. Under the elements of teacher preparation node, I created subnodes of instructional planning, instructional strategies, classroom management, and classroom assessment. Under the mentor and administrator relationships node, I created subnodes of administrator relationship and mentor relationship. When I noticed trends in the data concerning pedagogical content knowledge and general VIP program comments, I created nodes for each of these areas in order to structurally capture those comments. Within these categories, I coded the data accordingly.

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Data Coding and Queries

Saldaña (2013) defines code in qualitative inquiry as "short phrase(s) that symbolically assign a summative, salient, essence-capturing and/or evocative attribute for a portion of language-based on visual data" (p. 3). Further he contends that coding is not a precise science but rather an interpretive act. In other words, two people may code the same excerpt in different ways (Saldaña, 2013). However, through the process of interpretation and coding, codification emerges as the researcher segregates, groups, and relinks data in a search for patterns (Saldaña, 2013). Therefore, I used the nodes and subnodes to organize the data, then coded the data according to the patterns identified. Once all data were coded, I ran a comparison between the enrollment of VIP1 and VIP3 with the efficacy subnodes in order to capture which group of participants displayed a higher sense of efficacy. Additionally, I ran comparisons between VIP1 and VIP3 participants to determine the nature of the comments related to instructional planning, instructional strategies, classroom management, and classroom assessment. Likewise, the data for mentor and administrator relationships were compared to capture the participants' attitudes based on their VIP1 or VIP3 enrollment.

Trustworthiness

In the following text, I describe my role as the researcher in this study and include any potential biases that may exist (see curriculum vitae in Appendix G).

As mentioned before, Rubin and Rubin (1995) state that in naturalist research, "the researchers themselves become the data-gathering instrument" (p. 21). To address the role of the researcher as an instrument in this case study, I attempted to show myself

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to be reliable and trustworthy as I conducted the research and disclosed any biases I may have in relation to the research.

I am a 39-year-old white female who entered the education profession through a traditional four-year teacher-education program at an accredited university. I taught junior high and high school computer and math courses at a small, rural, county school in north Mississippi from 1999 until 2008. I was then offered the position of instructional design specialist at the RCU at Mississippi State University, where I am currently employed. My work at the RCU involves researching, writing, and implementing secondary CTE curricula for the state. I am also an instructor and coach in the CTE teacher-induction program the RCU provides, VIP1. It is in this capacity that I interacted with the teachers involved in this study. Although in a position of authority in the VIP1 program, this research was conducted separately from the program, and the participants were not among those assigned to me to coach.

Because this research was an extension of my job, potential biases existed. It may have been possible that, because I wanted the VIP1 program to be a success, I might have perceived an element of the program to be necessary or successful simply because I believed it to be so. Additionally, having been prepared to teach through traditional means, I may have had a bias in favor of traditional teacher education, as opposed to the alternative route being researched. To address these potential biases, I remained aware of them during the data collection and analysis portions of the research. When faced with surprising or unexpected results, I remained focused on what the data revealed and not what I possibly hoped it would reveal.

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In order to become more fluent in the application of the M-STAR, I have been trained as an M-STAR evaluator by participating in the required training for principals in Mississippi. This training focused on the objective evaluation of teachers based on the M-STAR, which is part of the MTES. During the training, I was led through the entire MTES, which included an analysis of the 20 M-STAR standards; the scripting (detailed notes about what is observed during a teacher observation) and scoring of four videos; coaching for feedback conferences; and the development of two specific, measurable, attainable, realistic, and timely (SMART) goals for each teacher.

It was my intent as an instrument in this study to maintain the integrity of case study research so the results are valid and reliable. I collected, coded, interpreted, and analyzed the data and, as suggested by Onwuegbuzie & Leech (2005) as a practice of reliable research, sent each participant the analysis of his/her data for member checking. If necessary, corrections were made so the data were as accurate as possible.

Discussion of Internal Validity

In his 1995 book, Harry Wolcott, a leader in qualitative-research writing methods, discussed qualitative internal validity and suggested that is has less to do with being "valid" than it has to do with being more "credible," or that what was discovered in the research would be "more likely." My experience and expertise in classroom management, classroom assessment, curriculum, and instructional planning help make my research and my findings more credible. My experience and expertise come from nine years as a classroom teacher and seven subsequent years studying and implementing best practices in the aforementioned areas.

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The MTES uses the M-STAR to evaluate teachers statewide. All teachers are held to the same standards and all principals and other school leaders are trained to use the M-STAR for the purpose of teacher improvement. The participants in this study were each observed by me, the sole evaluator, and I made observations and evaluations based on the criteria noted on the rubric as I was trained to do in M-STAR evaluator training.

Tschannen-Moran and Woolfolk Hoy (2001), in their quest to develop a teacher self-efficacy scale, performed three studies on the TSES. Participants were asked to respond to three different teaching self-efficacy scales. All three scales gave similar results, with alpha scores of $p < 0.01$.

Discussion of External Validity

Wolcott (1995) also discussed external validity, suggesting that in qualitative research, it is really a question of transferability. He suggested that, in order to be able to transfer findings, there must be a discussion or dialogue. However, in the absence of the possibility of a dialogue, providing readers with thick description helps researchers more accurately recreate the circumstances under which research was conducted, allowing for more accurate comparison of results. Thick description is used in this study to assist readers in determining the transferability of the findings.

The M-STAR is a statewide rubric to which all teachers in Mississippi are held accountable. Therefore, generalization could be cautiously applied to all teachers in Mississippi. However, for the purposes of this study, generalization will remain focused on the population of teachers who participated in and completed VIP1 or VIP3 during the 2013-2014 school year, because these teachers represent very specific tenure in terms of

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their years of experience in teaching and their participation in either the VIP1 or VIP3 programs.

To control for external validity, I began by observing all aspects of the environment in which the observation occurred, noting any distractions or other uncontrollable variables. I attempted to provide future researchers with thick description of my research methods, design, findings, and conclusions in order to adequately present areas where results might be generalizable.

Reliability

Wolcott (1995) suggested that because reliability proposes that researchers will consistently get the same answers no matter when or how a study is carried out, it would seem that qualitative research is unreliable. Rather than label it as such, we can explain the reasons no two situations can be identically replicated. The concept of reliability, however, is not at the forefront in qualitative research. Rather, Wolcott (1995) suggested that qualitative researchers are more interested in research results, not research processes. To address reliability in this study, I attempted to be consistent with each participant, audiotaping and meticulously transcribing and capturing each word, pause, display of emotion, and interruption so that data analysis is transparent. I also looked for consistency among all methods of data collection: interviews, observations, surveys, and artifacts (if applicable).

The tool used for observation (the M-STAR) was used in a pilot phase during the 2013-2014 school year. Based on feedback from educators, administrators, and superintendents, a few edits have been made concerning the number of observations and the frequency of pre- and post-observations, but very few edits were made to the domains

and the indicators themselves. The rubric is based on ongoing research from the Bill and Melinda Gates Foundation and the Danielson Group, who have seen many improvements among teacher participants (Cantrell & Kane, 2013; Danielson Group, 2013).

As stated previously, Tschannen-Moran and Woolfolk Hoy (2001) showed in three consecutive studies that all 36 items on the TSES scale were reliable by using principal-axis factoring with varimax rotation, yielding reliabilities of 0.91 for instruction, 0.90 for management, and 0.87 for engagement.

CHAPTER IV

FINDINGS

This chapter presents the findings of this embedded, qualitative, multiple-case study comparison of the two CTE-teacher-preparation programs in Mississippi. The findings are presented in relation to the three research questions and are organized according to interview, observation, and survey data, as well as by enrollment status in either VIP1 (the one-year methods program) or VIP3 (the three-year methods program).

Research Question #1

The following text describes participant responses and researcher observations based on the following research question:

How do CTE teachers completing one of two different delivery methods of Mississippi's VIP program perceive the value of their teacher-education program in preparing them to teach with confidence?

Each participant was self-enrolled through the RCU and had recently completed the requirements of either the VIP1 or the VIP3 program. The participants were interviewed, observed, and surveyed to capture evidence of their teaching self-efficacy and their perception of the effectiveness of their teacher-education program to prepare them to teach with confidence.

Interviews

Collectively, the participants from both VIP1 and VIP3 had both positive and negative overall comments about their experiences. Comments that pertained to teaching self-efficacy were coded as positive self-efficacy, negative (lack of) self-efficacy, neutral self-efficacy, and mixed self-efficacy. The positive comments divided among the VIP3 and VIP1 participants indicate that VIP3 participants reported statements that represent positive self-efficacy 41.4% of the time, while VIP1 participants reported experiences that represent positive self-efficacy 58.6% of the time. As separate subgroups, VIP3 participants gave negative statements that indicated a lack of self-efficacy regarding their experience 62.6% of the time, while VIP1 participants indicated a lack of self-efficacy 37.4% of the time. This data, along with the percentages regarding statements of mixed and neutral self-efficacy, can be seen in Figure 3 below. Figure 3 includes four categories: mixed self-efficacy, lack of self-efficacy, neutral self-efficacy, and high level of self-efficacy. High level of self-efficacy is interpreted as the frequency of participant statements that indicated a high sense of self-efficacy. Lack of self-efficacy is interpreted as the frequency of participant statements that indicated a lack of or low self-efficacy. Mixed self-efficacy is interpreted as the frequency of participant statements that indicated a mixed sense of self-efficacy. Neutral self-efficacy is interpreted as the frequency of participant statements that indicated a neutral sense of self-efficacy.

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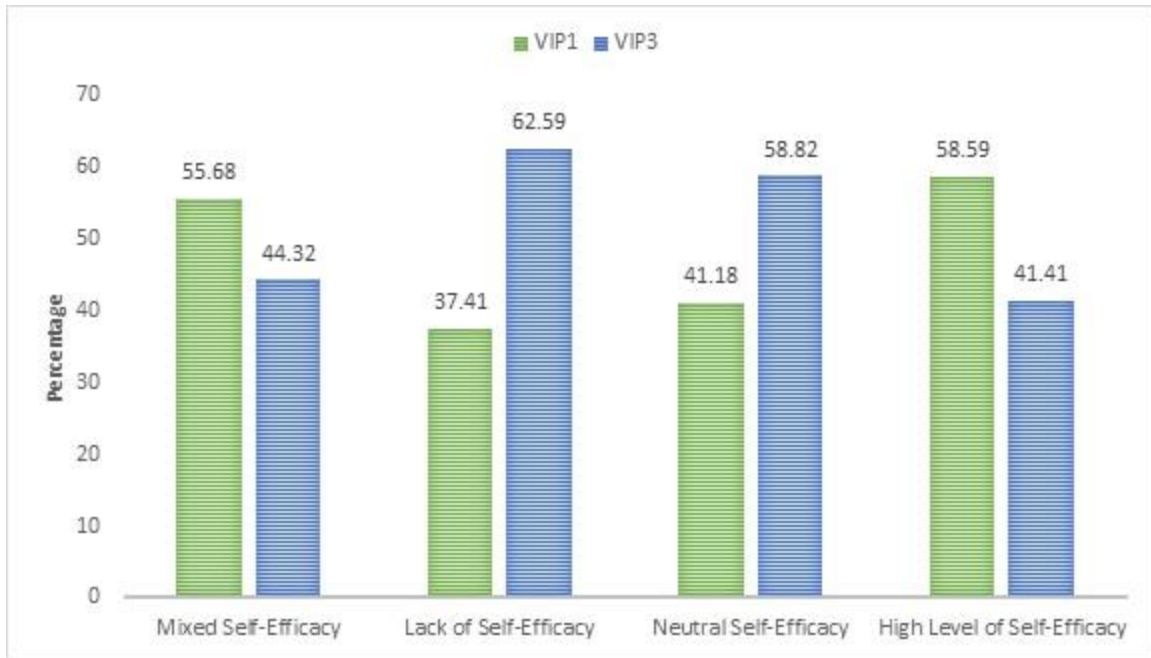
Figure 3.   Percentage of Statements Indicating Level of Self- Efficacy.

VIP3 positive self-efficacy. As a group, the VIP3 participants reported more statements that indicated a lack of self-efficacy than VIP1 participants (62.6%). However, the VIP3 participants did express statements that indicated at least some positive self-efficacy. Jim Sanders, agriculture teacher, recalled the culture of chaos he entered when he started teaching, stating, "They got some chaos that had become culture because the other kids talk about it, so you are coming into the situation where you have to change the culture." When asked if he believed he had been able to change that culture, he said, "I think I have, yeah." Likewise, Selina Varner, health science teacher, had positive comments relating back to her first year teaching, stating, "I can do this [teach], and I know things that I will do different next year." She also attributed some of her success to her VIP3 experience: "VIP helped….I mean, it truly helped me." Kellie Boyd, health

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science teacher, credited VIP3 with teaching her multiple forms of instructional strategies. She stated, "That [engagement] is what VIP gave me in my first year was to have hands-on, to have engagement, having a back-and-forth dialogue where it is not just me lecturing but allowing them to feel comfortable enough to ask questions, bringing in hands-on lab activities."

VIP3 lack of self-efficacy. Three VIP3 participants were also forthcoming with their struggles as first year teachers. Though Jim Sanders felt he was able to change the culture in his classroom, he also shared some negative experiences concerning his first year of teaching, giving credit for only "a quarter to a third" of his success to his VIP3 experience. The rest of his perceived success he attributed to his wife, an experienced educator, whom he relied on for support, as well as fellow teachers in his school and other agriculture teachers in his district. Mr. Sanders also described his first weeks of school as "spinning" and "out of my comfort zone" following the first session of VIP3.

Kellie Boyd was critical of her planning skills, likening them to "scribble-scratch" and a "struggle," and stating, "There are not enough hours in the day for me to work on all the details." She mentioned the challenge associated with developing a precise lesson plan and then realizing it will fail right "in the middle of it." Toward the end of the conversation, she simply stated, "I'm not good at it [planning]." Seven times Ms. Boyd used the terms "struggle" or "struggling" and "thrown" to describe her experience as a first-year teacher. She expressed a desire for minute-to-minute instructions on what a class period should look like and feeling like she was "just kind of thrown and trying to live and figure it out as we go."

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Kurt Henley, engineering teacher, struggled with the recruitment aspect of CTE. As stated in the NBPTS, the burden to recruit students to CTE programs falls on the teacher (NBPTS, 2014). Mr. Henley stated, "After VIP it seemed more like I was a teacher/market person, you know, salesman, [laughs] like, I didn't really sign up for this. I am not good at it either. I admit." He attributed some of his perceived weaknesses in this area to having no professional development before he entered the classroom since he was hired in September. Another weakness he identified was differentiating instruction. Mr. Henley stated, "But my weakness is having a student actually left behind when in the reality of it sometimes is like I am trying to catch you up, but I am holding everybody else back and that probably will go on for… nine weeks until I it figure out." He discussed the variety of questions he used in his lessons because of his students' various "backgrounds in different schools" and stated, "I don't know what I should do."

VIP3 mixed self-efficacy. Although the VIP3 participants shared both positive and negative statements about their own teaching self-efficacy, oftentimes their comments reflected a mixed view of how well they thought they were performing as beginning teachers. Jim Sanders, again attributing his perceived success to his wife, stated while speaking to a gardeners' group that if she had not helped him during his first year, he would not have made it. He also said that he learned much of the content he taught by teaching it, calling it "more of an experience thing," and stated that "VIP could not have taught you that either."

Kellie Boyd and Kurt Henley also gave responses that indicated a mixed level of self-efficacy. Ms. Boyd, still wavering on her opinion of lesson planning, recalled a "lesson planning wheel [Webb's Depth of Knowledge Levels]" given to her during VIP

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training. She claimed it would be "useful if [she] had the time to put into it." When asked about his confidence in teaching on a scale of one to ten, Mr. Henley responded, "I would say seven. I could never say ten though."

VIP3 neutral self-efficacy. The VIP3 participants had very few comments about their self-efficacy in teaching that could be considered "neutral." However, when Jim Sanders was asked whether he could attribute any of his perceived success as a teacher to what he learned in VIP, he answered with a simple, "I don't know."

The NBPTS suggest that CTE teachers prepare lessons that align with industry and create a classroom environment that mirrors industry (NBPTS, 2014). Kurt Henley, still struggling with the multiple roles of a CTE teacher, stated that he tried "to work with the industry as best (as he) can."

VIP1 positive self-efficacy. As a group, the VIP1 participants reported more statements that indicated positive self-efficacy than VIP3 participants (58.6%). Heather McCormick, health science teacher, expressed that she always thought the best teachers were the ones in front of the class lecturing and engaging students in conversation. However, as a teacher herself, she saw opportunities for her students to be involved with one another and the content, work in groups, and sometimes lead the class. Hired too late to attend VIP before she began teaching, she felt if she used the latter methods that she would not be a very good teacher. After VIP1, she "learned that it [group work] is not necessarily the lazy way" of teaching, adding that VIP1 showed her that "some of the things (she) was afraid to do with the students, that it is okay to do those." Additionally, though she admitted she does not plan as she was instructed to in VIP1, "I am real good

with jotting down an agenda" and determining what she needs to cover by Thanksgiving or Christmas.

Matt Dabney, logistics teacher, was very positive about taking the job as a CTE teacher and stated it was "just ridiculous how good of a fit it was" for him. He was most excited about starting the program from scratch and said he felt "pretty good" about his perceived success as a teacher. He added that the students enjoyed many of his instructional strategies and were "always asking, 'When are we going to do that again?'" Mr. Dabney also stated that he does not have much trouble with classroom management.

Natasha Ellis, health science teacher, took the CTE teaching position as a means to pay for her return to medical school, should she be accepted. However, when she was accepted, she felt an obligation to the students and decided to finish the year. At the end of the year, she recalled that she saw herself "flourishing in it [teaching]" and that teaching was "something (she) was good at and enjoyed doing," adding that it was something she would do for free. Ms. Ellis's self-efficacy in teaching was already strong before she entered into the VIP1 program. She shared, "Let's just say if we were to measure it on a scale of one to ten, pre-VIP, I was a seven. Post-VIP, I was an eight or nine."

Scott Manning, IT teacher, had a background that helped build his efficacy in teaching. He shared that math came easily to him, and so he enjoyed tutoring, even in college. He stated, "I loved seeing light bulbs come on….You know you could show them, 'This is how you solve this equation.' Do it 13 or 14 times and all of a sudden they go 'Ahhhhh!' and you go, 'That's it right there!' I taught somebody how to do

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something!" Additionally, as a pastor, he likened his role to that of a teacher and stated "that part [teaching] is natural to me."

VIP1 lack of self-efficacy. Though mostly positive, the VIP1 participants also shared their negative experiences as beginning teachers. Heather McCormick, expressed multiple times that she was "not great at lesson plans." She also commented that during her first year of teaching, before enrollment in VIP1, she often felt guilty if she allowed students to work on their own. Ms. McCormick added that she felt "like [she] was being lazy and not putting forth the effort to teach them." This stemmed from a self-declared "mindset of the teacher standing in the front of the classroom" as the correct way of teaching.

Mark Davis, industrial maintenance teacher, shared that he still felt like a beginning teacher and that he had a long way to go. When asked how successful he felt as a teacher on a scale of one to ten, he stated, "Maybe I am a four or five." He also used the term "thrown" to describe entering the classroom with no formal training, having been hired to his position too late to enroll in VIP1 before school started. Mr. Davis shared that he struggled with classroom management as a beginning teacher and expressed feelings that management is something a teacher learns from experience, and with experience, a seasoned teacher could "get their respect right away."

Matt Dabney only expressed a struggle with classroom assessment. He stated, "I don't like giving those multiple-choice tests." Scott Manning had negative comments about his self-efficacy in planning. He lamented, "I am not a planner…I don't like to plan." He recognized this as a weakness and stated, "It just doesn't come natural to me."

He also mentioned that although he considered himself a natural motivator, sometimes he just did not "know how to pull it [desired behavior] out of them."

VIP1 mixed self-efficacy. The VIP1 participants expressed very little of what would be considered mixed self-efficacy. Heather McCormick mentioned that she "almost felt guilty because [she] was not actually teaching" her students when they were allowed to research on their own and work in groups. When asked if she was confident in her abilities as a teacher to be successful with the students, she added, "Some days more than others."

Mark Davis expressed mixed self-efficacy when he admitted he did not have experience with all of the content in his curriculum. He recalled a time when he was required to teach students to bend conduit, a skill he had never learned. He stated, "You are teaching and there are certain areas that you are good at and certain areas you have never done, so you have to learn like the students do." Speaking with reserved confidence, he added, "I am better than when I first started…if you saw where I started and where I am now, I feel much more comfortable."

Scott Manning recalled a time when his students performed poorly on a test. He realized the scores could have been a result of poor teaching and that he could possibly do a better job. He said, "We are just going to go back and do that lesson again. We are going to do that whole block again and then retest because obviously I didn't do well on that one."

VIP1 neutral self-efficacy. The only reference to neutral self-efficacy mentioned from a VIP1 participant was when Scott Manning mentioned that he "played football in

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Memphis and…would tutor some of the other football players in math." This referred to a time before he was teaching but indicated self-recognition of teaching capabilities.

Observations

The previous self-efficacy statements show that no matter which VIP program the participants were enrolled, they all vocalized statements that could indicate positive, mixed, neutral, or a lack of self-efficacy, at least in some areas. The interview findings often correlated with the observation findings. The following text details the teacher observations and demonstrates relationships between observations and the previously discussed interview data.

Teacher-performance data was gathered during direct observations with the participants using the M-STAR, an instrument used by the MTES. The M-STAR contains standards used to assess teachers in five domains: planning, assessment, instruction, learning environment, and professional responsibilities. The professional responsibilities domain was not considered in this study because evidence for this domain would be difficult to ascertain during a single observation. Quantitative scores were assigned based on the researcher's training as an M-STAR evaluator. These scores were for the purposes of this study only and were not given to the teachers' administrators. The scores assigned during the course of this study have no weight on any local evaluation. Though discussed according to participant, the scores can be found in a summary table following the observation discussion in Table 5.

VIP3 observations. Collectively, the VIP3 teachers scored an average of 2.01, out of a possible 4.00, on the M-STAR observation rubric. In the following text, I will

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describe each of the VIP3 participants' classrooms, give a brief summary of the classroom observation, and report the participants' M-STAR scores.

Kellie Boyd. Kellie Boyd's health science/sports medicine classroom was of average size, approximately 20'x30'. There were student desks on either side of the room with a large gap in the middle, which housed a cart with technology. The desks faced the front of the room where there was a whiteboard, projector, and bookshelves. The teacher desk was in the back corner of the room and was actually more like two small tables pushed together. There were school banners on the walls. Toward the front of the room on the right, there was a door that led to the athletic training room. This room was filled with patient tables and other equipment to assist students with athletic injuries.

Ms. Boyd was reviewing for a test and then conducting a test online during the observation. There were eight students, all female, in the classroom. The students called her by her first name and seemed very comfortable with her and in the classroom, eating snacks and sipping drinks. During the review, which consisted of verbal questioning from teacher and students as well as internet research, Ms. Boyd received a text on her cell phone. She stopped the review, read the text, and exclaimed, "Bam! I called it!" She then declared a "confidentiality moment" to the class and proceeded to describe an injury sustained by a student, whom she called by name. Later, a male student knocked on the door and asked Ms. Boyd for help with a minor injury. She sent him away and instructed him to come back later because she was in the middle of class. For the remainder of the review, Ms. Boyd's phone continued to signal incoming text messages, which she continued to check and did not attempt to silence.

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After the review, students were able to study alone for a few moments before the test began. Each student had a school-provided laptop on her desk. The test was administered online through a learning-management system. When the test began, students were allowed to log in and begin. After the test began, students continued to talk and ask questions. After five minutes, Ms. Boyd continued to answer questions and review students. Then there was silence for the test.

During the test, Ms. Boyd continued to send and receive text messages. A second student knocked on the door seeking help for an injury. This time she accepted the student and took him into the athletic-training room for treatment, leaving her students to take the test unattended. The students began whispering and sending and receiving text messages on their personal cell phones. As the class time drew to a close, Ms. Boyd reentered the classroom to give final instructions to the class before they exited for the day.

For Domain I (Planning), Ms. Boyd received a domain score of 1.25 out of a possible 4.00, receiving scores of 1 on standards 1, 3, and 4, and a score of 2 on standard 2 (see Table 5). Each of the standards relies on the strength of the teacher's lesson plans. Ms. Boyd admitted that her principal does not require her to turn in lesson plans so she does not complete formal lesson plans. She described her planning as more of an "outline" and "scribble-scratch." Therefore, Ms. Boyd's lesson did not demonstrate knowledge of content and pedagogy, did not incorporate higher level learning for all students, and did not clearly align with the Mississippi Curriculum Framework. It did, however, have multiple methods of review and incorporated technology, so she was given a rating of 2 for meeting the diverse needs of students.

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For Domain II (Assessment), Ms. Boyd received a domain score of 1.50 out of a possible 4.00, receiving a score of 2 on standard 6, and a score of 1 on standard 5. It was not clear from the lesson that she collected and organized data from assessments to provide feedback to students. However, she received a 2 for her efforts to incorporate assessments into instructional planning, although the assessments did not necessarily demonstrate high expectations for all students.

For Domain III (Instruction), Ms. Boyd received a domain score of 2.20 out of a possible 4.00. During the lesson, she demonstrated knowledge of content and communicated clearly, so she received scores of 3 on standards 7 and 11. She used multiple methods of instruction and review and asked a few "how" and "why" questions, so she received scores of 2 on standards 9 and 10. She received a 1 on standard 8 because she did not actively engage students in the learning process.

For Domain IV (Learning Environment), Ms. Boyd received a domain score of 2.40. She received scores of 3 on standards 12 and 13 because her classroom was maintained for student learning, and the students demonstrated signs indicating they were safe and respected (ease of discussion, eating, drinking, conversing, etc.). For standards 14, 15, and 16, she received scores of 2 because time was not fully maximized for instruction, high expectations were not observed, and productive learning experiences were not available to all students.

Ms. Boyd's class climate during the observation was much like the interview—sporadic, disjointed, and interrupted. Students were distracted and uncertain of what was expected of them. The observation was consistent with the way I experienced the interview. However, Ms. Boyd's actions did not indicate that she herself considered her

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classroom unplanned and often interrupted. Ms. Boyd received an overall teacher performance score of 1.83 out of 4.00, which is an average score of the four domains considered for this study.

Kurt Henley. Kurt Henley's engineering classroom was rather large, measuring approximately 24'x72'. There were 15 student stations with computers facing the front of the room where an interactive white-board and projector were hung. The teacher's desk was also in the front of the room. Behind the whiteboard was office and storage space. This room arrangement created an inset in the front of the room which housed hydraulic and pneumatic training devices. Along the wall nearest the hallway sat three additional computers, two additional training devices, and tools. There were work tables and a television across the back and bookshelves by the windows.

Mr. Henley was teaching career-planning skills, a unit in the Mississippi Engineering curriculum, and students were asked to create a résumé and cover letter. During the observation, Mr. Henley reviewed the students on common job-seeking skills and then allowed time for them to work on their cover letters on their own. He went to each student as they worked in order to help them individually. The students were not applying for actual jobs nor did they seem to be seeking jobs in the engineering field.

For Domain I (Planning), Mr. Henley received a domain score of 2.75 out of a possible 4.00, receiving scores of 3 on standards 1, 3, and 4, and a score of 2 on standard 2. His lessons were planned according the curriculum, although the students were not necessarily required to use higher-level thinking. Through his questioning, Mr. Henley displayed knowledge of content. The lesson provided opportunities for students to seek

jobs based on their own interests but did not seem to focus on jobs within the engineering field.

For Domain II (Assessment), Mr. Henley received a domain score of 2.50 out of a possible 4.00. He received a score of 3 on standard 5 because he used student responses to guide his instruction going forward, and he received a 2 on standard 6 because, although he was using the cover letters to assess their knowledge, this particular assessment did not seem to elicit high expectations.

For Domain III (Instruction), Mr. Henley received a domain score of 2.60 out of a possible 4.00. He received scores of 2 on standards 7 and 8 and scores of 3 for 9, 10, and 11. Mr. Henley demonstrated knowledge of content; however, it was limited and did not relate to students' interests or choices. Students were engaged when he was working with them but were often looking out the window or talking to one another while he worked with others. He did communicate well with them, asked higher level questions, and discussed the topics through group questioning, individual instruction, and demonstration.

For Domain IV (Learning Environment), Mr. Henley received a domain score of 2.20. He received scores of 2 on standards 12, 13, 14, and 16, and a score of 3 for standard 15. Classroom space and behavior were sufficiently managed for student learning, and his instruction and questioning suggest high expectations, even though the culminating assessment did not.

Many of Mr. Henley's answers during his interview aligned with what was witnessed during the observation. He displayed patience with students and individualized instruction while discussing lessons with each student. This is consistent with a statement

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made during his interview, when he discussed not wanting to leave any student behind. Mr. Henley received an overall teacher performance score of 2.51 out of 4.00.

Jim Sanders. Jim Sanders's agriculture classroom was of average size, approximately 26'x15'. The center of the classroom was the focal point and housed eight module stations with computers, which seemed relatively new compared to the old and outdated impression the rest of the school provided. The students were seated at the modules in pairs. There were tables on the wall closest to the hallway and on the opposite wall next to the windows. In the front of the room, there was a closet, sink, clock, and whiteboard. The teacher's desk was near the rear of the room next to the left of the modules. The wall along the back of the room was lined with tables, file cabinets, and bookshelves.

On the day of the observation, Mr. Sanders was reviewing students for an upcoming exam with a basketball-inspired review game. The instructions for the game were unclear in the beginning, and the students exhibited frustrations as the game began. During the game, the students were talking to one another unnecessarily and seemed unconcerned about any potential reward that could be gained from "winning" the review game. The game was comprised strictly of vocabulary, so all instruction involved low-level thinking. The style of the game did not require all students to be engaged at all times, so students were often disruptive. Mr. Sanders attempted to quieten them with very little success. When the bell rang, the students jumped up and dismissed themselves.

For Domain I (Planning), Mr. Sanders received a domain score of 1.75 out of a possible 4.00, receiving scores of 2 on standards 1, 2, and 3, and a score of 1 on standard 4. His lesson plans did not reflect an alignment with the Mississippi Curriculum

Framework. His lesson, though it required low-level thinking, was planned according to what would be on the upcoming assessment, and it did provide all students with opportunities for success.

For Domain II (Assessment), Mr. Sanders received a domain score of 1.00 out of a possible 4.00, receiving scores of 1 on standards 5 and 6. There was no evidence that Mr. Sanders adjusted his instruction based on assessments, and the assessment for which they were reviewing involved low-level material.

For Domain III (Instruction), Mr. Sanders received a domain score of 2.00 out of a possible 4.00, receiving scores of 2 on all standards in this domain. His communication and knowledge of content was clear, but the instruction was low-level and engaging to only a few at a time.

For Domain IV (Learning Environment), Mr. Sanders received a domain score of 1.40 out of a possible 4.00. He received scores of 2 for standards 12 and 13 and scores of 1 for 14, 15, and 16. Student behavior was very disruptive and attempts to control it were unsuccessful. The classroom space was managed well and was safe for all, but time was not maximized for student instruction, and high expectations were not established.

There were some discrepancies between what Mr. Sanders said during his interview and what was later observed in his classroom. He mentioned that he planned in great detail; however, there were not many details on the plan he shared with me. Likewise, there was not a lot planned for the day of the observation other than a review. There was no differentiation or support for struggling students. Also, he mentioned in his interview that he had been able to get the chaos under control in his classroom. My observation indicated there was still chaos among the students and very little student

engagement, at least not more than one student at a time. Mr. Sanders received an overall teacher performance score of 1.53 out of 4.00

Selina Varner. Selina Varner's health-science classroom was relatively small, approximately 15' x 26'. There were 20 student desks facing the front of the room, which boasted a whiteboard, an interactive whiteboard, and a projector. Also in the front of the room were a podium and a rolling cart of supplies. To the students' right there were tables with computers and cabinets above them. The teacher's desk was in the back-right corner. Along the back of the room were chairs, storage closets, and windows. To the students' left was a room divider (not a solid wall). Ms. Varner had a larger lab across the hall for dental hygiene instruction, but the program was so new she did not use it very often.

During the observation, Ms. Varner was reviewing content to prepare students for a state test. She stood at the front of the room and asked questions of the students. At times, she would refer to drawings and ask them to label them verbally. Other times, since the content matter was concerned with the skeletal system, she would ask the students to locate and identify parts of a skeleton using a model skeleton in the classroom.

There were several distractions during the observation. Ms. Varner shared a printer with the teacher across the hall, and while Ms. Varner was teaching, a student from the neighboring classroom came in to retrieve paper from the printer. Additionally, a teaching assistant (fellow student) left and disrupted class. Then a veterinarian, who partners with the health science academies, interrupted to show Ms. Varner a picture from the local newspaper.

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After the brief review, Ms. Varner let the students have free time before class ended. She approached me and asked, "Is that enough? Did you get what you needed?"

For Domain I (Planning), Ms. Varner received a domain score of 2.25 out of a possible 4.00, receiving scores of 3 on standards 1 and 4, a score of 2 on standard 2, and a score of 1 on standard 3. Ms. Varner's lesson plans were aligned to the Mississippi Curriculum Framework and reflected a knowledge of content and pedagogy. The plans indicated that multiple strategies were used to instruct students at multiple levels. The plans did not indicate higher level learning for all students.

For Domain II (Assessment), Ms. Varner received a domain score of 2.00 out of a possible 4.00, receiving scores of 2 on standards 5 and 6. Ms. Varner made adjustments to her instruction based on student responses, and she planned assessments as part of her instruction, although this lesson had little evidence of higher level learning.

For Domain III (Instruction), Ms. Varner received a domain score of 2.00 out of a possible 4.00. She received a score of 3 on standard 8, scores of 2 on standards 7, 10, and 11, and a score of 1 on standard 9. All students were engaged during Ms. Varner's review. She communicated clearly and showed a deep knowledge of content. Her questioning, however, did not promote higher order thinking skills.

For Domain IV (Learning Environment), Ms. Varner received a domain score of 2.40 out of a possible 4.00. She received scores of 3 on standards 12 and 13, and scores of 2 for standards 14, 15, and 16. Ms. Varner's classroom was well-managed and safe for all students. Time was not maximized as students were given free time at the end, and high expectations were not evident in this lesson.

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The interview with Ms. Varner indicated that she taught in a traditional manner. She mentioned not knowing what to do because she did not have a textbook or any materials to use at the beginning of her career. What I observed during my visit was consistent with the interview. Ms. Varner used text and textbook resources to teach students, and they were expected to memorize and perform well on a test. Ms. Varner received an overall teacher performance score of 2.16 out of 4.00.

VIP1 observations. Collectively, the VIP1 teachers scored an average of 2.58 on the M-STAR observation rubric. In the following text, I will describe each of the VIP1 participants' classrooms, give a brief summary of the classroom observation, and report the participants' M-STAR scores.

Matt Dabney. Matt Dabney's logistics classroom was very large, approximately 80'x60', and functioned as an actual distribution facility and warehouse. It held classroom tables as well as scaffolding and shelving for a book-distribution company. There were five student tables facing an interactive whiteboard and projector. On the same wall, there was a whiteboard, a bulletin board, and the teacher's desk. On the adjacent wall to the students' right were storage shelves, cabinets, and cleaning supplies. On the rear wall were tall shelving units which held hundreds of cases of books. On the wall to the students' left were roll-up delivery doors for semi-trailer trucks, shelving with supplies, a roll of bubble wrap fastened to the wall, and an emergency exit. In the center of the room were tables and pallets filled with books ready to be distributed. There were computer workstations with computers loaded with shipping software and a Styrofoam

packing-peanut apparatus. Mr. Dabney's classes were arranged in a block schedule, and he referred to each block as a "shift" rather than a class period.

When the students entered the classroom, they clocked in as though they were arriving to work. The students began working on a vocabulary bell ringer on the board. After a few minutes, Mr. Dabney went over each word and related it to logistics and to their operations in the classroom. The students then participated in a review activity with yellow and green cards and self-assigned topics as ones they understood or still needed help with.

The students then moved to the warehouse, where they periodically rotated duties and assignments based on real-world logistical operations. Mr. Dabney discussed a problem with the "manager" and allowed him to make the decision on how to move forward. All students then used the remainder of the class period to perform their duties according to their assigned role and prepared their inventory for shipment.

For Domain I (Planning), Mr. Dabney received a domain score of 2.75 out of a possible 4.00, receiving scores of 3 on standards 1, 2, and 4, and a score of 2 on standard 3. Mr. Dabney's lesson plans demonstrated knowledge of content and pedagogy and allowed for students to perform various skills at various levels. The plans were in alignment with the Mississippi Curriculum Framework and incorporated multiple levels of learning for students.

For Domain II (Assessment), Mr. Dabney received a domain score of 3.00 out of a possible 4.00, receiving scores of 3 on standards 5 and 6. Mr. Dabney used student self-assessment to make instructional decisions and student performance to make decisions about duty assignment in the warehouse.

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For Domain III (Instruction), Mr. Dabney received a domain score of 3.00 out of a possible 4.00, receiving scores of 3 on standards 7, 8, 9, 10, and 11. Mr. Dabney exhibited deep knowledge of content during class, and his instruction required higher order thinking and decision-making, engaged all students, and was clearly communicated.

For Domain IV (Learning Environment), Mr. Dabney received a domain score of 4.00, receiving scores of 4 on standards 12, 13, 14, 15, and 16. Mr. Dabney, though a beginning teacher, already demonstrated distinguished levels of classroom management, expected and enforced safety and respect, and maintained a culture of high expectations.

During the interview, Mr. Dabney spoke of multiple forms of instruction and assessment. He discussed formative and summative assessments and aligning his questioning to Webb's Depth of Knowledge. My observation of his classroom aligned with our discussion during the interview. The students were engaged, and Mr. Dabney questioned them using multiple levels of questioning throughout the lesson. They spent the end of the class performing a well-planned, engaging self-assessment in order to prepare for the next day's lesson. The evidence from these two data sources indicates that Mr. Dabney planned and executed lessons just as he said he did. Mr. Dabney received an overall teacher performance score of 3.19 out of 4.00.

Mark Davis. Mark Davis's industrial-maintenance classroom was relatively large, measuring approximately 80'x60'. There were seven student tables facing the front of the classroom, which housed a whiteboard, an interactive whiteboard, a projector, a bulletin board, and the teacher's desk. The wall to the right of the students held file cabinets, shelves, toolboxes, and a roll-up door. Scaffolding, a ladder, lockers, and cleaning

supplies were located along the rear wall. To the left of the students were trainers, scaffolding, and a portable air conditioner.

Mr. Davis's lesson involved students learning to bend conduit for residential wiring. The students entered the class and completed a vocabulary bell ringer, which consisted of writing definitions of residential wiring terms. Mr. Davis then demonstrated how to measure and bend conduit. Students were then allowed to try it on their own. They were then released to work in groups to cut, thread, and assemble conduit to wire a receptacle. The students continued this work both in and outside the classroom until the bell rang for dismissal. Although there was reference to a closure to the lesson in the lesson plan, Mr. Davis did not review the lesson or conclude it in any way.

For Domain I (Planning), Mr. Davis received a domain score of 1.75 out of a possible 4.00, receiving a score of 3 on standard 4, a score of 2 on standard 1, and scores of 1 on standards 2 and 3. Mr. Davis's lesson plans were aligned to the Mississippi Curriculum Framework, and he demonstrated that he knew the content he was teaching. His lesson plans did not provide opportunities for multiple learning levels or interests and did not reflect higher level learning.

For Domain II (Assessment), Mr. Davis received a domain score of 1.00 out of a possible 4.00, receiving scores of 1 on standards 5 and 6. Mr. Davis showed no evidence of adjusting lessons based on feedback from students or of assessments that demonstrated high expectations for students.

For Domain III (Instruction), Mr. Davis received a domain score of 1.40 out of a possible 4.00, receiving scores of 2 on standards 7 and 9 and scores of 1 on standards 8, 10, and 11. Although Mr. Davis demonstrated knowledge of content and questioned

students during instruction, the students were not engaged and were confused about what to do with the conduit after the short introduction. When the students were released to work in groups, they were off-task and disengaged. Instructions were not communicated clearly.

For Domain IV (Learning Environment), Mr. Davis received a domain score of 2.40 out of a possible 4.00, receiving scores of 3 on standards 12, 13, and 16, a score of 2 on standard 14, and a score of 1 on standard 15. Mr. Davis's classroom management provided safety for all students. He exhibited good rapport with the students, and resources were available for learning. Students were given a lot of time to work together, but not all time was productive. The expectation for higher level learning was not evident during this observation.

During my discussion with Mr. Davis, he said he was a much better teacher now than when he started. He mentioned that he felt good about his abilities as a teacher, while at the same time conceding to those who were more experienced. My observation of his teaching did not align with the confidence and competence he discussed in the interview. He was very straightforward with his instruction, and the students seemed uninterested and disengaged. Mr. Davis received an overall teacher performance score of 1.64 out of 4.00.

Natasha Ellis. Natasha Ellis's health-science classroom was rather large, measuring approximately 75'x30'. There were nine student tables facing the front of the room. Immediately in front of the student tables were two desks used for teacher organization and a lectern. On the wall in front of the students was a whiteboard and a bulletin board. Next to the whiteboard was a catty-corned computer desk that was

adjacent to the offset storage and office space. Next to the office were a sink, a cabinet, a refrigerator, and a washer and dryer. On the wall to the right of the students were an emergency-exit door and tables with mannequins intended for cardio-pulmonary resuscitation (CPR) instruction. Along the wall behind the students were hospital beds with mannequins, as well as computer stations. On the wall to the left of the students were another whiteboard and a door.

During the observation, Ms. Ellis reviewed students on the parts and functions of the human sexual reproductive system. After a verbal review, the teacher and students played a teacher-prepared bingo game as reinforcement for the vocabulary terms. The students were engaged and all participated in the review and the game. When Ms. Ellis was called away to take care of something for another student, the students in her class continued to play and seemed to know what was expected of them in such an instance.

For Domain I (Planning), Ms. Ellis received a domain score of 2.75 out of a possible 4.00, receiving a score of 4 on standard 4, a score of 3 on standard 1, and scores of 2 on standards 2 and 3. Ms. Ellis's lesson plans were in complete alignment with the Mississippi Curriculum Framework, and she showed knowledge of content and pedagogy. This particular lesson did not incorporate high-level learning, as it was mostly vocabulary review, and it did not fully address all learning levels or skills.

For Domain II (Assessment), Ms. Ellis received a domain score of 3.00 out of a possible 4.00, receiving scores of 3 on standards 5 and 6. Although this lesson was mainly vocabulary review, Ms. Ellis was cognizant of student understanding and reinforced any topics that seemed to cause confusion. Students were preparing for a state exam, and adjustments were made to the lesson based on feedback from students.

For Domain III (Instruction), Ms. Ellis received a domain score of 3.40 out of a possible 4.00, receiving scores of 4 on standards 7 and 11 and scores of 3 on standards 8, 9, and 10. Ms. Ellis demonstrated deep knowledge of content during instruction and communicated all instructions and material clearly and effectively. She engaged the students and used questioning and discussion techniques. She also delivered the content in multiple ways.

For Domain IV (Learning Environment), Ms. Ellis received a domain score of 2.60 out of a possible 4.00, receiving scores of 3 on standards 12, 14, and 16, and scores of 2 on 13 and 15. Ms. Ellis maximized the time available for instruction and managed student behavior through established rules and procedures. High expectations for learning were not necessarily evident during this observation.

Ms. Ellis seemed very confident during our interview, and she also seemed confident during the observation. She clearly had high expectations for the students, and they met them during my visit. Ms. Ellis received an overall teacher performance score of 2.94 out of 4.00.

Scott Manning. Scott Manning's IT classroom was of average size, measuring approximately 28'x25'. There were nine students tables arranged in a semicircle facing the front of the room. A tabletop lectern was situated in the center of the front table. On the wall in front of the students were a whiteboard and a projector. The wall also held portable storage closets. On the wall to the right of the students were another whiteboard, a table with equipment, and filing cabinets. On the wall behind the students were another storage closet, a bulletin board, shelving, organizational bins, printers, and the teacher's desk. The wall to the left of the students was filled with windows.

Mr. Manning was reviewing students for an upcoming exam. He questioned students, and they provided answers. During the review, one student expressed confusion about a function of an inkjet printer. Mr. Manning asked all students to join him in the back of the room around the inkjet printer. He then removed pieces of it and explained the confusing topic to all students. The students were participating and engaged. He then resumed the review. During this part of the review, student engagement weakened, but the students were compliant and did not disrupt class. The students were given a few minutes of free time toward the end of class. When the bell rang, Mr. Manning gave final instructions and dismissed the students.

For Domain I (Planning), Mr. Manning received a domain score of 2.00 out of a possible 4.00, receiving scores of 2 on standards 1, 2, 3, and 4. The lesson plan (which was not available) for this class period did not seem to provide opportunities for multiple learning levels or skills, nor did it incorporate higher level learning. The lesson seemed to be based on the Mississippi Curriculum Framework but was not available, so a comparison could not be made. Mr. Manning demonstrated knowledge of content when he stopped the review and instructed the class on the functions of an inkjet printer.

For Domain II (Assessment), Mr. Manning received a domain score of 1.50 out of a possible 4.00, receiving a score of 2 on standard 5, and a score of 1 on standard 6. Mr. Manning adjusted the lesson based on feedback from students, but there was no evidence that this assessment, or any other assessment, demonstrated high expectations for all students.

For Domain III (Instruction), Mr. Manning received a domain score of 2.60 out of a possible 4.00, receiving scores of 3 on standards 7, 10, and 11, and scores of 2 on

standards 8 and 9. Mr. Manning communicated clearly to the students—they showed no difficulty understanding what was expected of them. He also demonstrated knowledge of content during the review and could answer student questions. The students, however, were not always actively engaged, and the questioning did not promote higher order thinking skills.

For Domain IV (Learning Environment), Mr. Manning received a domain score of 2.40 out of a possible 4.00, receiving scores of 3 on standards 12 and 13, and scores of 2 on standards 14, 15, and 16. Mr. Manning's classroom was well-organized and contained equipment relevant to his field. The classroom climate was safe, and students seemed to feel free to discuss and ask questions as they needed. Not all time was used for the purpose of instruction, and, during this observation, a culture of high expectations was not observed.

Mr. Manning's interview and observation aligned. He was cautious to not be overly confident during the interview and seemed to be aware of the weaknesses observed during our visit. Mr. Manning received an overall teacher performance score of 2.13 out of 4.00.

Heather McCormick. Heather McCormick's health-science classroom was a trapezoid-shaped room and relatively small. She had a rather large lab next door, however, that housed all of the hospital and clinical materials. Her classroom had 19 student desks that faced the interactive whiteboard and projector at an angle. Next to the whiteboard were filing cabinets, shelves, and an additional whiteboard. On the wall to the right of the students were the teacher's desk, two tables, a bulletin board, and more

shelves. There was a large desk used for test-taking in the back of the room. There was nothing along the wall to the left of the students.

Ms. McCormick's formal lesson plans were not available, but she shared the competencies and objectives she was addressing during the class period. She also shared the real-world scenario and group assignments given to the students. The students were learning about the different types of rehabilitative services that are available to recovering patients. Ms. McCormick showed a video about different types of therapies that are available, such as art, music, and recreation therapy. After the video, Ms. McCormick led a short discussion about what they had seen in the video. She then assigned the students to groups, each of which was given patient scenarios containing a certain type of therapy to research. The students were asked to develop activities to help their patients using the type of therapy they were assigned. The students then worked together on electronic devices to research and plan their activity. When the bell rang, Ms. McCormick dismissed the class.

For Domain I (Planning), Ms. McCormick received a domain score of 3.25 out of a possible 4.00, receiving a score of 4 on standard 3, and scores of 3 for standards 1, 2, and 4. Although Ms. McCormick was unable to provide formal lesson plans, it was evident this lesson was planned thoroughly. It was in alignment with the Mississippi Curriculum Framework and incorporated higher level learning for students. Students were able to switch groups if they were more interested in another topic, indicating voice and choice based on student interests.

For Domain II (Assessment), Ms. McCormick received a domain score of 2.00 out of a possible 4.00, receiving scores of 2 on standards 5 and 6. Ms. McCormick did

make adjustments based on student feedback, but there was very little evidence of the assessment associated with this assignment, other than the expectation of a presentation.

For Domain III (Instruction), Ms. McCormick received a domain score of 3.00 out of a possible 4.00, receiving scores of 3 on standards 7, 8, 9, 10, and 11. Ms. McCormick's instruction was varied and relevant. She engaged all learners and presented the content in multiple ways. She communicated effectively and demonstrated deep knowledge of content consistently throughout the lesson.

For Domain IV (Learning Environment), Ms. McCormick received a domain score of 3.80 out of a possible 4.00, receiving scores of 4 on standards 12, 13, 14, and 16, and a score of 3 on standard 15. Ms. McCormick exhibited distinguished levels of classroom management, safety, and respect. Class time was engaging, and student behavior was maintained.

Ms. McCormick was very reserved during her interview and did not give herself a lot of credit as a teacher. She mentioned more than once that she did not feel that she was doing all she could do to teach her students. However, that is not what I observed during our visit. She was very comfortable with the students, planned a lesson that aligned to the curriculum, and engaged the students in a project that would meet the competency. As observed, Ms. McCormick was a much better teacher than she gave herself credit for in the interview. Ms. McCormick received an overall teacher performance score of 3.01 out of 4.00. M-STAR summary data is located below in Table 5.

Table 5

M-STAR Summary Data for Participants

Pseudonym	VIP1 or VIP3	Domain I (Planning) Score (out of 4)	Domain II (Assessment) Score (out of 4)	Domain III (Instruction) Score (out of 4)	Domain IV (Learning Environment) Score (out of 4)	Overall Teacher Performance Score (out of 4)	Overall Average for VIP1 or VIP3
Kellie Boyd	VIP3	1.25	1.50	2.20	2.40	1.83	
Kurt Henley	VIP3	2.75	2.50	2.60	2.20	2.51	
Jim Sanders	VIP3	1.75	1.00	2.00	1.40	1.53	
Selina Varner	VIP3	2.25	2.00	2.00	2.40	2.16	VIP3: 2.01
Matt Dabney	VIP1	2.75	3.00	3.00	4.00	3.19	
Mark Davis	VIP1	1.75	1.00	1.40	2.40	1.64	
Natasha Ellis	VIP1	2.75	3.00	3.40	2.60	2.94	
Scott Manning	VIP1	2.00	1.50	2.60	2.40	2.13	
Heather McCormick	VIP1	3.25	2.00	3.00	3.80	3.01	VIP1: 2.58

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Surveys

  The TSES self-efficacy survey has 24 questions that were divided into three sub-categories: classroom management, classroom assessment, and instructional strategies. These represent three of the four sub-categories examined in this study. The TSES does not contain questions that pertain to instructional planning, therefore instructional planning is not discussed as a factor when presenting results from the survey. Participant survey responses can be found in Table 6. Participant responses according to question type (i.e., classroom management, classroom assessment, or instructional strategies) can be found in Table 7. Overall averages for survey responses can be found in Table 8.

  VIP3 survey results. The VIP3 participants rated themselves highest in classroom assessment, an average of 8.17 out of 9.00. They rated themselves lower in classroom management (7.16) and in instructional strategies (7.14). Of the VIP3 participants, the lowest rating was displayed in instructional strategies (5.57), while the highest rating was displayed in classroom assessment (9.00). Overall, the VIP3 participants' self-efficacy average was 7.49 out of 9.00. The following text describes each of the VIP3 participants' individual survey results.

  Kellie Boyd. Ms. Boyd's survey results suggested she was most confident in her classroom assessment abilities, with an average of 7.33. Classroom management was the second-highest category, with an average of 6.79. Ms. Boyd expressed the least confidence in her use of instructional strategies, with an average of 5.57. Ms. Boyd had an overall self-efficacy rating of 6.56 out of a possible 9.00. These findings were consistent with the interview and observation data. Ms. Boyd's classroom management

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style created a chaotic atmosphere, and she used very few instructional strategies. As she mentioned in her interview, she did not complete lesson plans, so lack of planning could possibly be related to these low survey results.

Kurt Henley. Mr. Henley's survey results suggested he was also most confident in his classroom assessment abilities, with an average of 8.00. The instructional strategies category was the second highest, with an average of 7.57. Mr. Henley expressed the least confidence in classroom management, with an average of 6.50. Mr. Henley had an overall self-efficacy rating of 7.36 out of a possible 9.00. These findings were somewhat inconsistent from the interview and observation data. During the observation, Mr. Henley had a well-managed classroom even though students were working on different projects.

Jim Sanders. Mr. Sanders's survey results suggested he was also most confident in his classroom assessment abilities, with an average of 8.33. The instructional strategies category was the second highest, with an average of 7.29. Mr. Sanders expressed the least confidence in classroom management, with an average of 7.07. Mr. Sanders had an overall self-efficacy rating of 7.56 out of a possible 9.00. These findings were inconsistent with what I experienced during the interview and observation. Although Mr. Sanders rated himself with high levels of self-efficacy in each area and spoke of improved classroom-management skills, I observed poor classroom management and only one instructional strategy used throughout the lesson.

Selina Varner. Ms. Varner's survey results suggested she was also most confident in her classroom assessment abilities, with an average of 9.00. Classroom management was the second highest category, with an average of 8.29. Ms. Varner

expressed the least confidence in her use of instructional strategies, with an average of 8.14. Ms. Varner had an overall self-efficacy rating of 8.48 out of a possible 9.00. She rated herself with very high values in all areas, indicating a high level of efficacy. However, though these ratings were consistent with the confidence she portrayed during the interview, the observation indicated very few instructional strategies were used and interruptions created a disrupted classroom environment.

VIP1 survey results. The VIP1 participants rated themselves highest in instructional strategies, an average of 7.66 out of 9. They rated themselves lower in classroom assessment (7.53) and lower still in classroom management (7.50). Of the VIP1 participants, the lowest rating was displayed in classroom assessment (6.33), while the highest rating was displayed in instructional strategies (8.71). Overall, the VIP1 participants' self-efficacy average was 7.56 out of 9.00. The following text describes each of the VIP1 participants' individual survey results. Participant survey responses can be found in Table 6. Participant responses according to question type (i.e., classroom management, classroom assessment, or instructional strategies) can be found in Table 7. Overall averages for survey responses can be found in Table 8.

Matt Dabney. Mr. Dabney's survey results suggested he was most confident in his use of instructional strategies, with an average of 8.71. The classroom management category was the second highest, with an average of 8.50. Mr. Dabney expressed the least confidence in classroom assessment, with an average of 8.33. Mr. Dabney had an overall self-efficacy rating of 8.52 out of a possible 9.00. He rated himself high in all categories,

indicating a high level of self-efficacy. The interview and observation data were consistent with these results.

Mark Davis. Mr. Davis's survey results suggested he was most confident in his classroom assessment abilities, with an average of 8.33. The instructional strategies category was the second highest, with an average of 8.14. Mr. Davis expressed the least confidence in classroom management, with an average of 8.00. Mr. Davis had an overall self-efficacy rating of 8.16 out of a possible 9.00. Though Mr. Davis rated himself highly in each category and spoke confidently about some topics during the interview, he did not exhibit these characteristics during the observation. He attempted to use formative assessment at the beginning of class, but all questioning was on a very low level. The students were not engaged during the beginning of class.

Natasha Ellis. Ms. Ellis's survey results suggested she was most confident in her classroom management abilities, with an average of 7.50. The instructional strategies category was the second highest, with an average of 6.71. Ms. Ellis expressed the least confidence in her classroom assessment abilities, with an average of 6.33. Ms. Ellis had an overall self-efficacy rating of 6.85 out of a possible 9.00. Ms. Ellis rated herself relatively low in each area. However, she expressed confidence in her interview and observation and had a well-maintained classroom with multiple instructional strategies used.

Scott Manning. Mr. Manning's survey results suggested he was most confident in his classroom assessment abilities, with an average of 7.67. The instructional strategies category was the second highest, with an average of 7.43. Mr. Manning expressed the

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least confidence in classroom management, with an average of 6.93. Mr. Manning had an overall self-efficacy rating of 7.34 out of a possible 9.00. These findings were consistent with the interview and observation data.

Heather McCormick. Ms. McCormick's survey results suggested she was most confident in her use of instructional strategies, with an average of 7.29. Classroom assessment was the second highest category, with an average of 7.00. Ms. McCormick expressed the least confidence in her classroom management abilities, with an average of 6.57. Ms. McCormick had an overall self-efficacy rating of 6.95 out of a possible 9.00. Again, these ratings were lower than would be expected following the observation. Ms. McCormick had excellent classroom management abilities and used multiple forms of instructional strategies.

When compared, the VIP3 participants represented a larger range of averages across all three categories, (from 7.14 to 8.17 a range of 1.03), while the VIP1 participants represented a smaller range (from 7.50 to 7.66, a range of 0.16). This could have implications for how participants in each VIP program perceived their own ability to teach and assess students. The survey results can be viewed in Tables 6-8.

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Table 6

Self-Efficacy Survey Results

Survey Question Number	Participant Responses (with pseudonyms)*								
	SV	KH	KB	JS	HM	MDav	SM	NE	MDab
1	7	7	7	7	5	7	3	7	7
2	8	6	6	5	8	9	8	8	9
3	9	5	9	7	6	9	8	9	9
4	9	5	7	5	7	7	6	6	7
5	9	8	8	9	7	9	8	8	9
6	9	6	6	6	7	9	7	7	9
7	7	7	8	8	5	8	8	7	9
8	8	6	5	8	6	9	7	6	9
9	9	7	6	6	8	7	8	8	8
10	9	8	9	8	7	9	8	7	8
11	9	9	6	8	6	8	8	6	8
12	8	9	5	7	8	8	7	7	8
13	9	7	9	8	7	9	7	8	8
14	8	6	4	7	6	7	5	7	8
15	8	8	9	6	7	7	6	9	9
16	8	6	7	8	6	9	8	7	9
17	8	9	6	8	7	9	8	5	9
18	9	7	7	9	8	8	7	6	9
19	8	6	8	7	8	9	7	8	9
20	8	8	6	9	7	8	8	8	9
21	8	8	4	6	7	7	8	8	9
22	8	5	2	8	6	6	6	7	8
23	8	7	7	7	7	8	7	5	9
24	9	8	5	8	8	8	9	7	9

Note. Scale of 1-9, with 9 being high self-efficacy.

Table 7

Participant Averages by Question Groupings in Survey

Survey Response Question Groupings	Participant Averages (with pseudonyms)*								
	SV	KH	KB	JS	HM	MDav	SM	NE	MDab
Classroom Management Averages	8.29	6.50	6.79	7.07	6.57	8.00	6.93	7.50	8.50
Classroom Assessment Averages	9.00	8.00	7.33	8.33	7.00	8.33	7.67	6.33	8.33
Instructional Strategies Averages	8.14	7.57	5.57	7.29	7.29	8.14	7.43	6.71	8.71
Individual Averages	8.48	7.36	6.56	7.56	6.95	8.16	7.34	6.85	8.52

Note: Scale is 1-9, with 9 being high self-efficacy.

Table 8

VIP3 and VIP1 Averages by Question Groupings in Survey

Question Groupings	VIP3 Averages*	VIP1 Averages*
Classroom Management	7.16	7.50
Classroom Assessment	8.17	7.53
Instructional Strategies	7.14	7.66
Overall Average	7.49	7.56

Note. Scale is (1-9, with 9 being high self-efficacy.

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The following text describes participant responses and researcher observations based on the following research question:

> Which specific program elements associated with Mississippi's VIP programs do CTE teachers perceive as the most effective in preparing them for their first year(s) of teaching?

Zeichner and Schulte (2001) suggested research efforts would be more productive if the attention currently placed on comparing the routes to teacher education shifted to focusing on the methods within each route that are the most effective in preparing successful teachers. Therefore, this study examined the components and outcomes of two alternative-route programs, VIP3 and VIP1, to determine which methods of each were successful for preparing confident and competent teachers. The following text describes each element of the two alternative-route programs and provides responses and comments derived from interview, observation, and survey data.

Instructional Planning

Instructional planning is a focus in both VIP3 and VIP1. In VIP3, it is taught in the "Developing Instructional Materials in Career and Technical Education" module, and the module description states that it "stresses the importance of effective lesson planning." In VIP1, it is taught in the "Instructional Planning" module, and the module description states, "Effective CTE instruction is carefully planned to target the technical, academic, and 21st-Century skills within a career pathway that prepare students for both further learning and the workplace."

VIP3 instructional planning interview data. According to discussion with Jim Sanders, he began planning for the upcoming week on the Tuesday of the current week. By doing this, he could make certain he had all materials gathered ahead of time and make plans for a guest speaker if applicable. Mr. Sanders, who shared his lesson plan with me, said that the lesson plan form they used was more "concise" and only required the standards, major topics, and the procedures they planned to use. He said the new form "does not have as much room for detail."

When asked about his experience with instructional planning during VIP3, Jim Sanders recalled being required to "make a plan and write out the minutes" they were going to cover and include transitions. He said he still planned according to those guidelines and added how many minutes he planned to stay on a standard or topic to his lesson plan. He stated that his experiences with planning in VIP3 were helpful to him as a teacher. When asked how he planned for the three weeks he taught before VIP3 began, he again gave credit to his wife, a fellow educator, for helping him prepare for class. Although he stated that VIP3 helped him with instructional planning, he claimed that he still relied heavily on his wife for support in his first year. When asked if he had any other comments to make about VIP3 and instructional planning, he stated, "Well, just that as time goes on you get more experience, and you look back and you see what they [VIP3 instructors] were telling you, and it makes more sense. You see what they were trying to prepare you for."

Kellie Boyd was not required to turn in lesson plans at her school, which she believed was likely due to her not having a planning period. She described her planning as "more of an outlined plan" that is completed by the month, but in that outline she did

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not specify what would be done on which days. She stated, "I kind of scribble-scratch the details on where I want to go with it [the lesson]." When asked how she might plan if lesson plans were indeed required of her, she stated with a defensive tone, "If they were, I would have a planning period. If they were, I would have an afternoon to put into it." However, when asked if she thought that the requirement would make her a better planner, she acknowledged that it likely would. She stated, "I'm not good at it [planning], but it is also not put on me to do it either….He (the principal) does not make me turn in a lesson plan, but to a degree would it be better for me? Sure."

When asked if VIP3 taught her how to do lesson plans, instead of answering the question, Ms. Boyd took that time to express how difficult VIP3 was for her because of the terminology that was used. She discussed depth of knowledge (DOK) and how it would "flow off their (the instructors') minds a lot easier" and said she just wanted to make planning a lot simpler. Her comments indicated that she experienced frustration with learning the format and content of a lesson plan at the same time.

Kurt Henley shared that he would go through his curriculum to plan, but usually only wrote plans for three or four days. He noted that, since he was at a CTE center that served students from multiple schools, the students did not always show up. There were often various interruptions that prevented students from coming to school, and Mr. Henley lamented, "We (are) usually like bottom on the priority list." So the students' absences affected the way he planned.

Mr. Henley did, however, credit VIP3 for teaching him how to write lesson plans. He stated that he liked lesson plans but did not allow them to be a "crutch," or hindrance

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to getting his point across. He shared that teachers should "be able to deviate [from the lesson plan] every now and then."

Selina Varner stated that she used her curriculum to plan every week. During our discussion, Ms. Varner mentioned a particular set of books and resources that seemed very important to her. She mentioned their extreme cost but believed they were necessary in order to teach the curriculum. Before her school was able to get them, she explained that she was required to "make every PowerPoint" because the curriculum was brand new and her school had no resources. She also mentioned that she was currently teaching an updated revision of the curriculum and liked it better because it was "more concentrated and more…organized." Ms. Varner never elaborated on how she planned, but she did share her lesson plan, and it included roughly three weeks of material in a two-page template (provided by her school district).

VIP1 instructional planning interview data. Heather McCormick stated several times that she was "not great at lesson plans" and struggled with following the district-wide pacing guide. She believed that she functioned better when she would jot down an agenda and create a "rough draft of what [her] week is going to cover."

She admitted that she did not meet all of the requirements of lesson planning as it was taught in VIP1, adding that planning minute-to-minute was frustrating for her. She shared:

 If I have a rough draft or outline that we are going to do this, this, and

this, and not so much down to the minute, when I have the couple of kids

that look at me like I am talking Greek to them and have no clue, I do not

feel so much pressure to move on. I feel like I have that time to make sure

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to cover those kids, whether it is me spending that extra time with them or letting a kid who did "get it" go to those kids and them have a little bit of extra time.

Ms. McCormick did not share a lesson plan with me, but rather shared a copy of the page in the curriculum she was instructing from and the group assignment she used with the students for that class period.

Mark Davis shared that he used a curriculum map, or pacing guide, that he learned to make in VIP1. Another industrial maintenance teacher also shared a pacing guide with him for reference. He also mentioned that he used the state curriculum and referred to it to be sure he was meeting his goals. He shared his lesson plan with me, and it was formatted on his district's lesson-planning template.

Matt Dabney admitted that, because of the nature of the logistics field, he did not plan more than a week in advance. He shared, "I come in typically on a Saturday or Sunday and will do my lesson plans for the following week, simply because anything we do Monday through Friday the previous week might change the lesson plan for the next week." He mentioned that he made sure that he was staying in line with the curriculum. Mr. Dabney shared that he had created a notebook with the curriculum and all relevant handouts and attachments to use for reference. He also shared his lesson plan with me, which was formatted on his district's lesson-planning template.

Ms. Ellis taught one school year before enrolling in VIP1 and referred to her planning before that time as "fish flopping." She asked herself, "What am I going to do next? What am I going to teach next?" and admitted that her planning was not very structured. During VIP1, Ms. Ellis learned how to create a pacing guide based on her

assessment blueprint and curriculum. She shared that the most beneficial element of her experience with VIP1 was the development of the curriculum map, a portion of the instructional planning module. She stated that after she learned about long-range planning, "it was a whole new world."

Ms. Ellis stated that she used the methods of daily planning that she learned in VIP1 as well, such as bell ringers and minute-to-minute planning. She stated that these methods helped "to keep [her] on-target and organized so [she] can cover more content." Additionally, she shared that during her first year of teaching, before VIP1, she did not finish teaching her curriculum. During her second year of teaching, which occurred while she was enrolled in VIP, she was able to cover all of her curriculum and still had time to go back and review before the state test, which improved her students' scores.

Scott Manning mentioned repeatedly that he did not like to plan and that he did not consider himself "good at it." Although his principal required lesson plans to be turned in every Thursday, Mr. Manning stated that his lesson plans were not the caliber they should be. He admitted that he referred to the curriculum, his textbook, and to the lesson plans of his predecessor in order to effectively plan for class, though he did give credit to VIP for helping him with the skills he needed for planning.

VIP3 instructional planning observation data. Two of the four VIP3 participants were able to share lesson plans with me: Selina Varner and Jim Sanders. Ms. Varner's plans were recorded on the template used by her high school. The template was very detailed and included space for the course name, grade level, unit/lesson title, curriculum objectives, "Common Core Anchor Standards," essential questions, learning outcomes, literacy strategies, real-world connections, instructional strategies, transitions,

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student engagement, and connection to the next day's lesson. Ms. Varner filled in each box on the template with content relevant to her curriculum, and it appeared to be a unit plan instead of a daily plan, including dates that spanned over three weeks. My observation fell toward the end of this time period, so I did not have the opportunity to observe much of this plan in action. Instead, I only witnessed a haphazard review of medical terminology in preparation for the culminating unit exam. The content of the review involved no higher order thinking and was not reflective of the material mentioned in the plan. For example, the learning outcomes for the unit required students to be able to "Analyze the interdependence of the body systems" and "Interpret the basic structures and functions of the integumentary system." However, the content of the lesson I observed, which was intended to prepare the students for a cumulative assessment, involved questions that required only recall of terminology.

Mr. Sanders's lesson plan was also recorded on the template used by his high school. The template included space for the subject, curriculum standards, main concepts to cover, reflection, assignments for the week, learning strategies (which were only required for junior high teachers), and a "minute to win it" section which mapped out up to four segments of five days of lesson plans and the time spent on each segment each day. Mr. Sanders's lesson plan included a week of daily lessons to prepare for an exam. It was very skeletal in nature, listing repeatedly that students would complete a review sheet, review with the teacher, watch videos related to curriculum content, then work in the school garden. The plan did not reference any of the Mississippi Curriculum Framework standards. His plan mirrored what I observed in the classroom.

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VIP1 instructional planning observation data. Two of the five VIP1 participants shared lesson plans with me: Matt Dabney and Mark Davis. Mr. Dabney's lesson plan was recorded on the template used by his high school. The template included space for the subject, block, semester, student engagement, curriculum standards, time, procedures, materials, homework, enrichment, and remediation. Mr. Dabney's plan was thorough and provided details about each segment of the day's lesson. The plan included every detail in which both the teacher and the students would participate. The activities included opportunities for students to engage in lower level and higher level thinking, and the materials varied based on the assignment. For example, not only did Mr. Dabney's students use a book as a reference, they also used teacher-created materials, the internet, computers, index cards, and an interactive whiteboard. The lesson plan mirrored what I observed in the classroom that day.

Mr. Davis's lesson plan was also recorded on the template used by his high school and included space for the subject, block, semester, student engagement, curriculum standards, time, procedures, materials, homework, enrichment, and remediation. His plan described the lesson according to how long it would take to complete each element. The plan included bell work, which consisted of writing definitions. The rest of the lesson included learning about residential wiring and conduit bending, thread cutting for receptacle wiring, and a review. There was no explanation of procedures, and the only reference mentioned was the textbook.

Instructional Strategies

Instructional strategies are discussed in both VIP3 and VIP1. In VIP3, it is taught in the "Teaching Methods in Career and Technical Education" module, and the module

description states that it is the "study of theory-based methods and techniques of instructional delivery in the vocational-technical classroom and laboratory." In VIP1, it is taught in the "Instructional Strategies" module, and the module description states, "Research-based instructional strategies engage and motivate students and deepen learning."

VIP3 instructional strategies interview data. Jim Sanders shared that he tried to incorporate various learning styles as much as he could. He mentioned that he began by presenting the theory of a subject, then perhaps students would do an outline "so they will have something to study," and then try to follow it up with an application or a hands-on activity. He shared that although snow days or other interruptions sometimes occurred, he tried to do this in every unit. He went on to say that sometimes the textbook did not have enough information or cover the topic he needed to discuss, and in such an instance he would use a PowerPoint for instruction. Additionally, for each content area that he taught, he said he tried "to have somebody that is still working in that area…to come in and talk to [his students] about what they do."

Kellie Boyd admitted that she struggled with having a "this is the book, here's the lecture, your test is on Friday" mentality. She credited VIP with giving her a "foundation of how to engage the kids." Ms. Boyd had much to say about how VIP influenced her choice of instructional strategies. She shared that she used a skeleton, a pig's foot, and a pig's eye to make their learning more real-life. I noticed she had cartons of Play-Doh in her classroom and asked about how she used it. She said they used the Play-Doh to create midsagittal and frontal representation of the body. She also stated:

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Play-Doh comes in when I do take away their phones…now that is a VIP technique I learned. She [the VIP instructor] put Play-Doh in creative fidget boxes and [we] would sit there and tinker with it….It is a good thing, but it is also one of those little challenges to keep every class period to do.

Ms. Boyd also shared about one particular lesson in which students were learning about how to detect diabetes from a patient's urine. She mentioned that she could have simply told them how to detect it, but instead she did a demonstration:

That book is going to tell them that sugar is in the urine so you can test diabetes with urine…but come in here one day, get…about five different specimen cups, one tea-colored, one lemonade-colored, one white, and then tell them to see which one has sugar in it and drink it. It is just colored water, but they will never forget that sugar is in her urine.

Ms. Boyd concluded that varying instructional strategies mattered in the classroom. She said, "It [the concept] has to come to life before it can be absorbed….That was the tip that we were given, and I totally see that benefit."

Kurt Henley, although enrolled in the same VIP3 course as Ms. Boyd, had different opinions about learning instructional strategies. When discussing how to deal with varying levels of competence in his students, I asked Mr. Henley if VIP3 was successful in helping him figure out the levels. He answered, "No, they told me I would have to do it [differentiate]. They didn't tell me how." He continued, "I knew that everybody did not learn the same…. I think I even did the assessment that we took down there to figure out their learning types and everything. It wasn't accurate but you know, I tried it." However, the more we talked, Mr. Henley gave credit to VIP3 for some of his

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instructional methods. He stated, "I learned incorporation of fun, so we started playing games when I found a game that could make the lesson interesting." Elaborating, he talked about watching relevant videos in class, having class outside, and making tutorials with Quick Response (QR) readers. I asked how he instructed students before he went through VIP3, and he answered, "I would just stand up and talk about it [the concept]." He added that student engagement in his classroom was better after he attended VIP3.

Selina Varner had very little to say about instructional strategies in her experience with VIP3. She mentioned that her instructor showed them games and other classroom strategies, but quickly shifted her discussion to what she learned from other health-science teachers on their shared website, provided by the state of Mississippi. She elaborated on the many activities she retrieved from the website and used in her classroom and stated that she learned more about instruction from them than from VIP3.

VIP1 instructional strategies interview data. Heather McCormick, whose first year of teaching was coupled with her son's cancer diagnosis, shared that the type of instruction she used in her first year made it easier on her. She shared:

It is real easy to just sit up and do a PowerPoint just to spit it all out. They take it, test on it, and I did a lot of that my first year more out of just to keep from drowning. However, she quickly followed up with a statement about how she had seen that students retain so much more when they are instructed while they are engaged in something:

So they had to work on each other as far as putting each other through range of motion. It was a lot easier to teach them. I showed them a real quick PowerPoint. I told them not to take notes but to just look at it as I go through it so it will not be total Greek to you. And then we will go in the lab and take it from

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there. They learned so much more by doing it that way than me just giving notes and having them take notes, lecturing, that kind of stuff, and then there were just a few minutes of hands-on, but they retained the material a lot better.

Ms. McCormick saw the benefit of allowing students to work together even though at first she did not feel as though she was doing due diligence by allowing it. However, after attending VIP1 and discussing with other teachers, she realized the students were sharing ideas with one another. She recalled:

> Because of a lot of the activities that we did in VIP, the "think-pair-share" and different things like that that, they put us in groups and made us do, it helped me realize that that kind of teaching is okay. And that it is not a way of cheating but that it is perfectly okay.

In summary, she stated, "I felt like I had accomplished something too."

Mark Davis shared that he used Kagen chips (colored chips with a variety of question stems and activity starters) to differentiate instruction in his classroom. He also mentioned that he allowed students to teach one another to help them learn themselves, asking them to put their hands in their pockets so they could practice telling each other how to do something, rather than simply showing them or doing it for them. Mr. Davis also shared that if going over and over a certain topic was unsuccessful, he would ask another student to try to explain it to give the student "another perspective."

Matt Dabney shared that he used games, giveaways, and activities to vary his instruction. He added:

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I don't do a lot of stand in front and dictate, like get up and read a PowerPoint. I want them to discuss as much as possible. I think the more they talk about it the more they understand, whether they are talking correctly or incorrectly.

Mr. Dabney acknowledged that the VIP1 program pushed for hands-on instruction and mentioned that he tried to do that as much as possible. He added that he used the "station" ideas he learned in VIP1, where students visited several different areas in the classroom that were set up for instruction. He assigned students to each station and had them teach the content of the station to their peers. When asked if this was meant to emulate a "train the trainer" model, he said, "Absolutely!"

Natasha Ellis also credited VIP1 with learning about differentiated instruction. She shared, "Prior to VIP, I never included it [differentiation] in my lesson plans, but afterwards I would always put a little 'start here' for my IEP students." Ms. Ellis described her instructional strategies, including her use of bell ringers, with two or three questions related to what she planned to cover that day. She also stated that she gave students worksheets but added that she walked around to assess their learning, determine how they were applying their critical thinking skills, and attempt to inquire "why" and "how" as opposed to "what." Ms. Ellis added that she also employed peer learning group strategies:

> After I made my assessment on who are my stronger students and weaker students, I would break up the strong group because obviously they are going to do well. I would kind of do strong, weak, strong, weak, so the stronger person can pull along the weaker one when they are doing group activities.

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Scott Manning, who had an extensive military background, described how he learned while in the military:

All we do is lecture. We jokingly call it "death by PowerPoint." You come in the room, you sit there, go through the slides, "Any questions?" Ok. Next block of instruction. Then at the end of that it's "Ok, it is time for the test."

He shared that as the years went on, leaders in the military began to realize they were leaving a lot of people behind by not looking at different ways of reaching them. He credited VIP1 with teaching him this concept. When asked what he thought his classes would look like if he had not gone through the VIP1 program, he answered, "Very bland. It would look like military training." He also shared that although his class did participate in group work, he did not feel they did enough of it. He added there was pressure for his students to pass a certification exam, so much of their time was spent in preparation for it, meaning ultimately, and unfortunately, individual work.

VIP3 instructional strategies observation data. There were four participants from VIP3 in this study. Three of the four were reviewing students for an upcoming exam. The other was instructing students on how to write a resume and cover letter to apply for a job. Collectively, the teachers who were reviewing were asking questions from their students who would provide answers. The questions were low-level, often one-word answers. The following text describes the instructional strategies used by each participant.

Kellie Boyd had a very casual rapport with her students. There was quite a bit of "dead time" before instruction actually began, coupled with several interruptions

throughout. Ms. Boyd sat in a chair at the front of the room, facing the students. She read aloud several questions and allowed the students to answer freely. Ms. Boyd made no effort to engage all students and simply moved on to the next question when each was answered. The students used computers to study and review before logging in to take the test online.

Jim Sanders had a basketball review game planned for his students. He stood in the front of the room and faced the students. He asked a question to each team individually, and only a team member from that team could answer. If the person answered it correctly, they got a point as well as a shot at the basketball goal. If they made the goal, they received an additional point. The questions all required low-level thinking. The students were often confused about whose turn it was and who should shoot the basket. When it was not their turn to answer, the teams were not engaged and, at times, were very rowdy. Mr. Sanders spent a lot of time "shushing" the students and attempting to keep them focused.

Selina Varner stood in front of the classroom and conducted a review very similar to Ms. Boyd's, with low-level questions asked aloud that anyone could answer. There was very little discussion. As stated earlier, the review that was meant to prepare students for a cumulative exam did not require the same level of thinking the standards necessitated.

Kurt Henley was teaching students how to create a resume and cover letter to apply for a job. The students were already working on the assignment, so he reviewed some of the requirements with them and then made himself available to the students for assistance. When they were with him, they were engaged and working on the project.

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When he walked away to work with other students, they would often become distracted and look out the window to watch buses or cars pull up. The students used computers for the assignment.

VIP1 instructional strategies observation data. There were five VIP1 participants in this study. During my observations three of them were teaching a lesson while two were reviewing for an upcoming exam. The following text describes the instructional strategies I observed during my visits.

Matt Dabney used a variety of instructional strategies during the observation. Students first participated in a bell-ringer vocabulary activity, then they moved to their stations in the warehouse to perform their duties. Mr. Dabney collaborated with each one to be sure they knew what was required. Then the students were free to do their assigned tasks. Some worked alone; others worked in pairs. The students remained engaged during the class, even though they were all performing different tasks. Mr. Dabney rotated around the warehouse to assist the students when needed. The class ended with a review and a self-evaluation using index cards at the work tables.

Mark Davis's students began the class period with a vocabulary bell ringer as well. He then demonstrated to them how to measure and bend conduit needed for residential wiring. The students were then allowed to try it for themselves. They spent the rest of the class period in groups practicing wiring receptacles. Mr. Davis was available to help them as needed. He did not close the lesson or review before the students left.

Natasha Ellis stood in front of the room and faced the students to conduct a verbal review. Ms. Ellis asked the questions, and the students took turns answering. She then instructed the students to participate in a teacher-created bingo game to enhance the

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review. The students eagerly participated in the bingo review game as Ms. Ellis facilitated. Though the verbal review had many low-level questions, there were also a few that required higher level thinking, and the bingo game required critical thought at times as well.

Scott Manning was also reviewing his students for an upcoming exam. He was seated at the front of the class, facing the students. Though many of the questions required only recall, he did respond to a student's question about inkjet printers by showing all of them on an actual inkjet printer. Though student engagement varied throughout the review, the students were respectful of one another and of Mr. Manning.

Heather McCormick was teaching her students about alternate forms of therapy, such as music and art. The students were sitting at desks, and Ms. McCormick walked around the room as she talked to them about these types of therapy, giving examples of when they would be beneficial to patients. She showed a video that discussed the benefits of these therapies and then talked about it with her students. The students were then divided up into groups and were given patient scenarios. The students were asked to research alternative therapies, choose one that might benefit the patient in their scenario, then prepare the activity to share with the class. The students spent the remainder of the class using electronic devices and computers to research for this assignment. Throughout the lesson she used multiple strategies to engage her students. Ms. McCormick dismissed the students when the bell rang.

VIP3 instructional strategies survey data. Seven of the 24 questions on the TSES pertain to competence in instructional strategies, the methods used to impart knowledge onto learners. VIP3 participants collectively rated instructional strategies as

their lowest competence, a 7.14 average. Individually, two of the four VIP3 participants rated instructional strategies lowest, with none of them rating it as highest.

VIP1 instructional strategies survey data. VIP1 participants collectively rated instructional strategies as their highest competence, a 7.66 average. Individually, two of the five VIP1 participants rated instructional strategies highest, with none of them rating it as lowest.

Classroom Management

Classroom management is discussed in both VIP3 and VIP1. In VIP3, it is taught in the "Classroom Management in Career and Technical Education" module and the module description states that it "stresses the importance of managing the classroom effectively." In VIP1, it is taught in the "Classroom Management" module, and the module description states that the goal is to, "create a learning environment that encourages student motivation, positive behavior, and collaborative social interaction."

VIP3 classroom management interview data. Jim Sanders discussed how he thought VIP1 may have helped him somewhat with classroom management, but he really learned about it through experience and dealing with different situations. He shared that he did not have a lot of reinforcement from the administration and that there was "chaos that had become culture" in the school. During his second year, the school hired someone to deal strictly with discipline, and he said that helped some. When asked if he had rules or procedures the students were expected to follow, he said, "Yeah, I had the rules posted. Everybody knew what my expectations were, but they were trying the new guy." He added there had been two teachers prior to him in only a year and half. He suggested

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classroom management was the reason they did not last long in the classroom. Mr. Sanders shared that he believed he had been able to change the culture in his classroom and that classroom management was more under control than it once was.

Kellie Boyd joked that students "love to find creative ways to get out of work." She shared that she has focused on finding a balance between getting the work done and dealing with all of the personalities in the classroom. She shared that she used bell ringers to begin class, but the students were not really doing them. Ms. Boyd then shared that she made the assumption they chose her class because they wanted to learn. "Not necessarily," she quipped. "If it ain't got a grade, they ain't gonna do it!" She then decided to have them keep all of the bell ringers in a composition book, then at the end of the nine weeks she grades five at random.

She shared that she established boundaries at the beginning of the school year that, as they have gotten to know each other, have relaxed somewhat. I noticed her students call her by her first name, and we discussed how even that relates to classroom management. She shared that although the school would prefer her students call her "Ms. Boyd," she knew these students as a sports medicine professional before she was their teacher, so she settled on the first name, noting that "certainly, it beats 'coach.'"

Kurt Henley shared that his classroom management "varies from day to day" and "depends on (his) mood." He added:

We have cues and then we know to start class. About 80% of them will comply when it is time to start. It is to the point where the other 20% is being looked at by other students like, "It is time to start."

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He went on to say that he had no problem keeping students engaged once they got started. When asked about rules and procedures, Mr. Henley shared that he learned about those in VIP3, but that he "probably (doesn't) have them posted like they say (he) should." When asked if he believed his classroom-management skills changed or became different in any way after VIP3, he shared:

Yeah. It changed. It got better….Better because that is how I knew you had to engage the students upon entry and capture their attention and not to feed into negative behavior and let them sidetrack the lesson and you know, not to waste class time dealing with a student.

In her brief remarks on the topic, Selina Varner shared that she did not believe a teacher could learn classroom management until they were actually in a classroom.

VIP1 classroom management interview data. Heather McCormick shared that she did not believe she was very good at classroom management before VIP1. She stated:

Before VIP, I was not real, real good at it [classroom management] because I was still in the mindset of the teacher standing in the front of the classroom. "You be respectful, you shut your mouth, you take notes, you listen, and then you go to the next class." When they did not conform to that, I would get real frustrated and not necessarily know how to handle that.

She then attributed her improved classroom management to what she learned about student engagement in VIP1. She said, "After I went through VIP and saw there is a different way of teaching, I do not have as many discipline issues. I do not have as many problems with classroom management because they [the students] enjoy being engaged." She shared some strategies that helped with her classroom management, like

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keeping instruction hands-on and giving students "brain breaks" when they can use their phones or just stretch or rest. She also shared that she used Popsicle sticks, which had the students' names on them, when no one would volunteer an answer or when she had trouble moving forward. She attributed these strategies to improved classroom management and less distraction.

Matt Dabney attributed his classroom-management skills to the engagement practices he learned in VIP1. He admitted that before VIP1, he used more dictation and lecture. He added:

> So that [delivery of instruction] has changed, and the VIP helped do that. That and you know, research as a result of the VIP, you know, progressing it more and to looking at other alternatives and to find out what worked and what didn't work, just like you said, trial and error. But that component helped to identify the disengagement as well, and you know, I wouldn't have been talking about "engaging" someone. That is all from that training.

Mr. Dabney shared that occasionally the students could get a little out of hand, but in general, his classroom management was under control.

Natasha Ellis learned about creating positive rules for students in VIP1 and noted that rule number one in her classroom was "Expect greatness." She shared that the rules helped her with classroom management and stated, "Often when they are doing something, I say, 'What rule are you violating? Are you expecting greatness?' That kind of changes their mentality some." She added that she sent a syllabus home at the beginning of the semester that outlined all expectations. Additionally, the students were permitted to wear scrubs when they went on clinical visits or field trips. The students

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really enjoyed this, so if behavior became an issue, she would remove their travel privileges.

Scott Manning stated several times during our discussion about classroom management that he did not have classroom-management issues. However, he made comments such as, "They kind of ran over me," and "I have trouble telling them to stop playing." He discussed the ethics associated with discipline in a high school classroom, noting the differences between dealing with them and dealing with a military unit. He discovered that there were situations he could deal with in the classroom without having to involve the principal. He shared that he spent time establishing consequences that were scalable and that fit the crime. "I don't send him to the office because he is chewing gum. Spit (the) gum out and deduct 5 points for participation."

VIP3 classroom management observation data. Kellie Boyd's classroom management style was very relaxed. The students and teacher were very at ease. She did not correct her students for any behavior issues. Students were eating, drinking, and texting on their phones. No one was disrespectful to Ms. Boyd; the atmosphere was simply easy-going. During her review, she turned a student who knocked on the door away, but during the test, she accepted another student who needed medical assistance and took him into the lab. Her students were left in the classroom taking an online test without her supervision. When she stepped out of the class, the students began talking and texting.

Kurt Henley's large classroom only had a few students during my observation. His classroom management style was relaxed, but the students were engaged while he was teaching. During the remainder of the class, he walked around to each student to help

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them with the assignment. The unattended students were busy working some of the time, but would disengage as the class went on. Mr. Henley did not correct them during this time.

Jim Sanders's classroom-management skills were almost non-existent. His laid-back personality seemed to contribute to much of the disorder. He would attempt to "shush" students and keep them engaged, but his efforts went unnoticed most of the time, and it seemed as though he was eagerly anticipating the end of class, as he became more frazzled as time went on. Although he did have a plan, the game did not engage many students at one time and unfortunately left everyone frustrated.

Selina Varner's students did not create many problems for her. They participated in her review and then were given some free time before class ended. The distractions came from other people entering the classroom. A teacher's aide, another student, and an industry partner all interrupted class time throughout the lesson.

VIP1 classroom management observation data. Matt Dabney had no classroom-management issues during my observation. His lesson followed what was in his plan, and it was obvious the students knew what was expected of them when they entered the classroom. They went to their mailboxes and clocked in without instruction. Mr. Dabney and the students shared great rapport with one another, and all were engaged in each element of the lesson. Class ended with instructions for the next time they would meet.

Mark Davis's students were not impolite or noncompliant; they simply did not seem to be interested in the course content, or at least in this particular day's lesson. Mr. Davis taught his lesson and demonstrated the measuring and bending of conduit, students

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tried it themselves, and then they worked in groups on residential wiring. The students did not misbehave and worked on their assignments throughout the class period with very few interruptions or corrections.

Natasha Ellis's classroom ran like a well-oiled machine. The way the students participated, transitioned, and responded to interruptions indicated to me that there were procedures in place in Ms. Ellis's classroom, and everyone followed them. The students were engaged in the day's lesson, and Ms. Ellis did not have to correct anyone's behavior during the observation. The students did not have any time when they were not expected to be engaged in learning.

Scott Manning's class was compliant during his review. At the beginning, he did have to tell a student more than once to quit playing a game so he could start class. But once class began, the students did as they were instructed. The classroom-management issues that Mr. Manning shared during his interview were not necessarily evident during my observation.

Heather McCormick did not have any classroom-management issues during my observation. The students were engaged and did as they were expected to during class. She talked with them, listened to them, and helped them when they had questions. The students had multiple transitions throughout the lesson, and they were not disruptive during any of them.

VIP3 classroom management survey data. Fourteen of the 24 questions on the TSES pertained to classroom management, the methods by which teachers maintain order in classrooms. VIP3 participants collectively rated classroom management as their

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intermediate competence, with a 7.16 average. Individually, two of the four VIP3 participants rated classroom management lowest, with none of them rating it as highest.

VIP1 classroom management survey data. VIP1 participants collectively rated classroom management as their lowest competence, with a 7.50 average. Individually, three of the five VIP1 participants rated classroom management lowest, with one of them rating it as highest.

Classroom Assessment

Classroom assessment is discussed in both VIP3 and VIP1. In VIP3, it is taught in the "Student Assessment in Career and Technical Education" module, and the module description states that it is the "study of the basic principles and methods of measurement and evaluation of student achievement in the vocational-technical classroom and laboratory." In VIP1, it is taught in the "Classroom Assessment" module, and the module description states, "Assessment provides a clear picture of students' performance in relation to the standards, informing teaching practice and further learning."

VIP3 classroom assessment interview data. Jim Sanders stated that what he learned most from the VIP3 assessment module was to give students feedback: "They need feedback, they need feedback constantly, and I think that is one thing that was the main theme of that course." He discussed the various assessments he used with his classes, naming multiple choice, listing, and discussion as written assessments. He also said that with some content he employed performance-based assessment:

For example, after we have gone over how to light a torch and safely do that then we will have one performance assessment [that] will be them showing me everything for

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how to light a torch, how to set it up safely, and shut it down safely. Then the next one I will have them actually cutting the metal. And then when we do small engines, we will dismantle the engine and put it back together. I am constantly, every day, I am seeing if they have met their checkmarks and then at the end of that, they get a test grade for that.

Kellie Boyd shared that she still struggled with grading and assessment because she was still developing the curriculum. Particularly, she expressed difficulty with formative and summative assessments and how to effectively use them. She discussed at length how some students would do well on summative grades and not so well on formative assignments, and vice versa. She lamented that often it seemed that one type of score was bringing down the other. She struggled to find a balance. She mentioned that she would give a study guide before a test but let the students know that their tests could cover any topics discussed in class. Ms. Boyd also mentioned that she could tell how much a student knew about a topic from interactions with that student, even if he or she never turned in a paper. When asked if her skills in making assessments came from VIP3 or from experience, she said, "A combination of both."

Kurt Henley shared that his assessment strategies did not change much after he attended VIP3, and that he gave different types of assessments. He stated, "I felt like they should have formative assessments often. Not necessarily tests." He shared that throughout a project, his students would experience both formative and summative assessments and that he graded their work ethic daily. Mr. Henley shared that he learned how to create written assessments, not from his experience in VIP3, but from his own experience as a student. A graduate student himself, he joked, "I've been a student (for) a

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while." However, he did attribute some of his knowledge of classroom assessment to VIP3:

> They taught me how to group them [assessments]. All the true and false in one section. How to use the higher-order thinking questions at the bottom, and how I should incorporate some, and what else? Make sure you put instructions on the paper.

He stated that VIP3 was a reinforcement of assessment knowledge he already possessed. He then added that the "History and Philosophy" module in VIP3 could be dropped as it did not help him with his everyday teaching.

Selina Varner recalled learning how to make a test in VIP3. She also remembered her instructor saying, "After you do your grading and stuff, if the majority of them do not get it, you're going to have to go back and reteach it." She shared that after her subsequent experiences and requirements at her school regarding formative and summative assessments, she remembered what she had learned about them in VIP3 and said, "It clicked."

VIP1 classroom assessment interview data. Heather McCormick discussed her various methods of classroom assessment. She shared that she included hands-on assessments, written assessments, quizzes, and some oral formative assessments. However, she shared that she had not figured out how to include oral assessments in her gradebook:

> Some teachers say they give a daily grade or they just ask questions. Like I use my Popsicle sticks a lot...They will use Popsicle sticks and ask questions and, based on

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student participation, they actually give them a grade in the gradebook as a formative-type grade. I have not quite figured out how to do that yet.

Mark Davis explained that he used performance-based assessments with rubrics, as well as formative assessments along the way. He added that all of his tests were from the National Center for Construction Education and Research (NCCER) program. Mr. Davis shared that he had his students take a self-paced review to see how many questions they missed, then he remediated the students based on these results. These reviews were based on the chapters in the NCCER book they used as a reference in his class. If there were repeated failures on the reviews, Mr. Davis retaught the content.

Mr. Davis discussed how he learned to give feedback during VIP1:

I always try to give back tests and all the information because at first I was holding stuff because of record keeping….I always give back, so, review, and everything I give them I try to give back and correct in class….I got that from VIP to make sure that everything we do needs to go back to the student. They are not learning if they do not see what they miss.

Matt Dabney admitted that he did not like giving multiple-choice tests, but he gave them in order to prepare his students for the state test. He shared that he was constantly questioning his students, always assessing their knowledge. He mentioned that he assessed his students based on the position they held in the warehouse and that he used a rubric. He shared, "That was one of the areas that I probably could've done a little more with…rubric development, because rubrics were new to me, completely new." However, Mr. Dabney shared that everything he learned about assessment in VIP1, he brought back to the classroom and taught it to his students. As they prepared for exams, they analyzed

the review questions and identified the DOK levels of each. They also discussed other elements of classroom assessment, particularly the structure and development of multiple-choice questions, so they knew what to expect on standardized exams.

Natasha Ellis attributed her knowledge of formative assessment to the VIP1 program. She shared that she used exit slips and "thumbs-up/thumbs-down" assessments to gauge understanding. She also mentioned that she asked her students to "teach back" to her, as she did in VIP1. Ms. Ellis stated that she used multiple forms of assessment in her teaching: "I give a variety [of assessments]. I do not give all multiple choice, even though the CPAS [state test] is multiple choice. I give them true and false so they can think critically, short answer, matching. It is just a variety."

Scott Manning shared that formative assessments and getting feedback from his students came naturally to him. He mentioned that he also used the "thumbs-up/thumbs-down" method and attributed it to VIP1. His summative assessments, he admitted, were mostly from the textbook since his students were assessed by the state via a national certification. He stated that the results of his students' assessments "will tell me how well I did, not necessarily how well they did." He went on to say that he made adjustments to his lessons or retaught content when students performed poorly on exams.

VIP3 classroom assessment observation data. I was able to observe Kellie Boyd's class taking an actual assessment. The assessment was delivered online through a content-management system. From the review, I determined that most of the questions were likely multiple-choice. The students continued to ask questions and talk to Ms. Boyd after the test began, so it was very distracting. While the students were testing, Ms. Boyd accompanied an injured student to the lab, leaving her students to test

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unsupervised. The students began talking and texting during the test. According to this observation, the results of the assessment would likely not be reliable for Ms. Boyd, but she would have no way to know that because she was out of the classroom. The other classroom assessment I witnessed during my observation was simple teacher questioning with student responses as part of a review.

Kurt Henley asked students questions aloud in class, and the students responded. Discussion followed if the question was answered incorrectly. I witnessed the students working on a project that would eventually be assessed but was unable to witness the assessment during my observation.

Jim Sanders's review allowed me to witness verbal assessment of his students. He asked questions aloud, and students responded. When a question was answered incorrectly, they discussed the correct answer and moved on to the next question. I was unable to witness any other type of classroom assessment.

Selina Varner was reviewing her students for an upcoming exam so I was able to observe her asking questions aloud to her students. The students responded aloud as well. She also asked them to identify skeletal parts on a model skeleton, which was more of a demonstration assessment.

VIP1 classroom assessment observation data. Matt Dabney's students used index cards to self-assess. He also asked them questions as they were working in the warehouse. Additionally, they reviewed vocabulary during the bell ringer at the beginning of class.

Mark Davis's students participated in a quick review during the bell ringer. Students were asked to write definitions, and then Mr. Davis went over them with the

students. During his lesson, Mr. Davis asked students questions to which they responded aloud. While they were working in groups, he observed their work and helped them when they needed it.

Natasha Ellis also asked questions aloud as part of a review. The students were called upon and answered her questions. If a question was answered incorrectly, Ms. Ellis and the students discussed the correct answer. The students were then assessed further with the same material, but this time with a bingo game. All students participated and were engaged so Ms. Ellis could assess which students were comfortable with the material and who possibly needed assistance.

Scott Manning conducted a verbal review of content with his students, who answered aloud. He did not seem to take note of who was answering the questions or whether all were participating. However, he did respond to student inquiry during the review and modified his instruction based on feedback from the students.

Heather McCormick used only verbal classroom assessment during my observation. She asked students their opinions on the alternative types of therapies, and discussion followed. She responded to their questions and guided them as they worked with partners on their assignment.

VIP3 classroom assessment survey data. Three of the 24 questions on the TSES pertain to classroom assessment, or the methods by which teachers measure student competence. VIP3 participants collectively rated classroom assessment as their highest competence, with an 8.17 average. Individually, all four of the four VIP3 participants rated classroom assessment highest, with none of them rating it as lowest.

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Classroom assessment was difficult to observe in most instances during this study. Though many of the participants, particularly the VIP3 participants, were reviewing for tests, the questions were very low-level and required only recall or memorization. The VIP3 participants collectively spoke mainly of paper and pencil, end-of-unit tests during interviews.

VIP1 classroom assessment survey data. VIP1 participants collectively rated classroom assessment as their intermediate competence, with a 7.53 average. Individually, two of the five VIP1 participants rated classroom assessment highest, with two of them rating it as lowest.

Although difficult to observe in many cases, I observed several instances of formative assessment with the VIP1 participants. A few of them even discussed formative assessments during their interviews, indicating an understanding of the use of and importance of this type of assessment, among others.

Research Question #3

The following text describes participant responses and researcher observations based on the following research question:

How do teachers' professional relationships with mentors and

administrators influence their teaching efficacy and job satisfaction?

Administrator Relationships

VIP1 has a requirement that all participants engage in meaningful, scripted conversations and activities with their immediate supervisor. The description of this requirement states:

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The designated administrator supervising the beginning teacher participates in two days of training along with the mentor assigned to the beginning teacher, which includes an overview of the content of the professional development sessions. The supervising administrator is expected to meet with the mentor and the new CTE teacher at least monthly to discuss implementing what the teacher learns in the training. The supervising administrator is also expected to visit the new CTE teacher's classroom weekly for the first month (then monthly) and observe classroom practices, using a checklist targeted around the four strands from the training.

VIP3 has no such requirement, although many school districts engaged in similar activities. Although it was not a requirement in their program, the VIP3 participants were asked about their relationships with their administrators and whether or not a required relationship would have been helpful to them as a new teacher.

VIP3 administrator relationship interview data. Jim Sanders shared that his relationship with his administrator was a good one. When asked if he felt he could approach his administrator with questions or concerns, he answered, "I can usually send him an e-mail and within a day or so I get a response….He lets us do our own thing." He shared that he believed the administration did a good job of letting them know what the expectations were. When asked if he thought a required administrator relationship would have been helpful, he stated that the mentor relationship would have been more helpful to him.

Kellie Boyd said of her relationship with her administrator, "I like it [the relationship], and then I don't like it at times." She went on to share that her administrator

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supported her in anything she wanted to do, like taking the students on a field trip, and added that he did not micromanage her. But she also added that when she first started she wanted someone to come around and "pat (her) on the back" and lamented that she did not see her administrator much. When asked if she thought a required administrator relationship would have been helpful, she answered:

> Yeah, I would think so….Because you only got, just about with anything, you only have a 10-minute time to kind of get all the nuts and bolts in order. Ten minutes [isn't] enough to get all your opinions and feelings out and share….You have a problem, you are confused on how things operate or how to make things better, you don't really go talk to the colleagues as much as you go straight to the administrator and say, "Ok, I'm running into this problem. Can we address it?"

Kurt Henley shared that he had a good relationship with his administrator and did not have an opinion about whether a facilitated relationship with his administrator would have been helpful to him.

Selina Varner had a similar reaction and shared that she always felt free to ask her administrator questions when she had them.

VIP1 administrator relationship interview data. Heather McCormick shared that she saw the value of an administrator relationship because she did not have one and at times felt unsupported. She was teaching a CTE program at a comprehensive high school, so although there was a CTE director, that person was not located on her campus. Therefore, her facilitated administrator relationship was with one (or more) of her principals. She shared:

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It is a weird situation, and it would be very helpful to have a CTE director in the building, but I also understand that they cannot justify it because I am the only CTE program, other than STEM, which is not really CTE…. But if I had a principal who was a little more educated on CTE or understood a little more, it might be a little easier.

Ms. McCormick conducted the scripted administrator activities with several of her principals and found no value in them. However, she stated, "I talk to my friends who are in VIP who have a CTE director on site, and I do see where that relationship would be beneficial, but I do not have that."

Mark Davis appreciated the administrator relationship and said that it helped him get to know his administrator before his evaluations began. When asked if he thought the administrator relationship was an important part of the VIP program, he answered, "Yes ma'am, very much so."

Matt Dabney admitted there was some value to a facilitated administrator relationship, but his situation created hurdles. He had a new course that had never been taught before and a new administrator who had never experienced CTE before. He recalled that some of the information was helpful, but some of it was not relatable for their situation.

Natasha Ellis, in a situation similar to Ms. McCormick, taught at a school where there was no CTE director. She mentioned that the scripted conversations were helpful with her principal but suggested that they would have been even more helpful had they been with the CTE director "because she knows what is expected for the CTE."

Scott Manning shared that the facilitated administrator relationship made his relationship with his director stronger. He credited the VIP1 program facilitating an

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ongoing meeting with his director. He shared, "I definitely think that [administrator relationship] needs to continue because it is a good thing."

Mentor Relationships

VIP1 also has a requirement that all participants engage in meaningful, scripted conversations and activities with an assigned mentor. The description of this requirement states: "A structured mentoring program was developed for providing support and encouragement to participating teachers. Mentors are trained to prepare them to support new teachers."

VIP3 has no such requirement, although many school districts engage in similar activities. Although it was not a requirement in their program, the VIP3 participants were asked about their relationship with a mentor, if they were assigned one, and whether or not a required relationship would have been helpful to them as a new teacher.

VIP3 mentor relationship interview data. Jim Sanders was not assigned a mentor, but a teacher across the hall from him acted as one. He shared, "She [the mentor teacher] took me under her wing, and I will always appreciate that." He stated that she helped him with classroom management and how to follow rules and procedures that were expected of him. When asked if he thought a required mentor relationship would have been helpful, he said, "I think that [required mentor relationship] would have helped. I am just fortunate that she [the teacher across the hall] took me under her wing." He added that he believed the required mentor relationship would have been more helpful than the administrator relationship.

Kellie Boyd was assigned a mentor and said that her mentor was unhelpful the first year because Ms. Boyd did not know how she needed help. When asked if she thought a required mentor relationship would have been helpful, she shared that it would have been because she did not know what types of problems she was going to run into, and an experienced teacher could have helped her with them before they happened. She added:

> And as a mentor you need to be able to recall what that first-year teacher needs to know because we are just kind of flying by the seat of our pants. If we could have that dialogue and say, "You are going to run into classroom management, and here's some of the things that as a mentor I can advise you with."

When asked if he had a mentor assigned to him when he started teaching, Kurt Henley stated, "Yeah, I had a teacher assigned to me." When asked to elaborate, he joked, "That was just about it. She was assigned to me." He said he probably could have approached the mentor teacher for help but admitted that he never did. When asked if he thought a required mentor relationship would have been helpful, he said it probably would have been. He added that a mentor could have helped him with classroom management and creating assessments.

Selina Varner was assigned a mentor at her school who was a real help to her. She shared, "She [the mentor teacher] would help show me how to do things. She would give me some supplies. She was just kind of a person that was there that I could always ask questions to." She added that her first year would have likely been more difficult if she had not had a mentor.

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VIP1 mentor relationship interview data. Heather McCormick had a similar situation with her mentor relationship as she did with her administrator relationship. Although required as part of her VIP1 program, Ms. McCormick was not assigned a mentor her first year. She stated that she told them [her administrators] she did not have one and they said, "Yeah, yeah, we are working on that [assigning a mentor teacher]," but it never happened. When asked if she thought the required mentor relationship would have been helpful, she answered that it would have been helpful with "simple, everyday activities of lesson plans or discipline forms or how to go on a field trip." She added, "I was clueless about all that my first year."

Mark Davis found his mentor relationship to be very valuable. He stated that his mentor, "helped [him] in lots of ways, to organize my lessons and how [he] can prepare to make it easier for next year." He shared that the required mentor relationship was very helpful because "you don't have to rely on [your own] experience, and sometimes that will get you in trouble."

Matt Dabney also appreciated his relationship with his mentor: "She had taught career and tech previously so we were able to talk." He added that her availability and knowledge of students helped him tremendously.

Although Natasha Ellis had a positive relationship with her mentor, she shared that she believed a relationship with the director would have been more beneficial to her. She did, however, credit her mentor with helping her keep a positive attitude and helping her through some difficult times with her students.

Scott Manning described the mentor relationship portion of VIP1 as "absolutely necessary." He described his relationship with his mentor and how she was able to help

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him learn more about education. Although they had completely different backgrounds, she was able to help him in his first year of teaching. He shared, "The things she taught me either came from VIP or [were] so closely related that it was almost 100% overlap." His experience with his mentor led him to the conclusion that he "couldn't put a high enough value on [the relationship]."

The participants had various experiences with their individual mentors and administrators. Though I could not observe their relationships, I listened to their concerns and experiences during the interview. The results seem to indicate at least some value in both mentor and administrator relationships.

Unexpected Findings

During the data analysis portion of this study, two unexpected findings occurred: the teachers' desire for pedagogical content knowledge and a desire for instruction before entering the classroom. The following text details these unexpected findings.

Pedagogical content knowledge. An unexpected finding in this study was the presence of an expressed desire for more time with experienced instructors from the participants' content area, or in educational terms, a desire for increased pedagogical content knowledge.

VIP3 pedagogical content knowledge interview data. Jim Sanders had much to say about the influence that other agriculture teachers had on his first year of teaching. The agriculture programs in the state required new agriculture teachers to attend more than just VIP training:

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The one thing that agriculture teachers did, they make you do "New Teacher"

workshops, and then you are with your colleagues, and that is probably the most helpful

because they bring you in for a weekend and you are hearing the issues they are having. It

may be with resources, it may be classroom management, or whatever. You are in a

situation where you can make connections, and then you see those people more when you

go to competitions.

When asked to elaborate on these types of relationships, Mr. Sanders shared, "If

you put teachers together, you are going to discuss other issues …managing an

agriculture program and managing FFA, but there is going to be a lot of overlap on how

you manage your classroom from those things." He stated that he believed the

combination of VIP3 and the agriculture new-teacher program made him a better teacher.

Kellie Boyd also mentioned the benefit of getting together with other health-

science teachers. She attributed her knowledge of classroom management and other

pedagogical content to VIP3, but shared that when she attended a health-science teacher

meeting, "All we did was [break] down the curriculum, and we talked about how we did

it. We talked about the hands-on component that we did." She added that the experienced

health-science teachers shared how they taught each element of the curriculum and how

they kept their students engaged. She also learned how to deal with difficulties in

scheduling clinical visits for her students and getting CPR certified. She credited this

meeting with helping her more than VIP3 in her day-to-day activities.

Kurt Henley also shared that he contacted other engineering teachers to see how

they taught certain subjects. He quipped, "I steal from everybody, that's what I do, and I

plan to do it."

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Selina Varner shared similar sentiments. She stated, "So, I am now a year out from finishing my VIP and truly what I learned the most from was going to some of our health-science meetings and talking to other teachers." She also shared that she used the shared health-science teacher website to gain insight on certain subjects.

VIP1 pedagogical content knowledge interview data. Ms. McCormick stated that it was very helpful during VIP to be grouped with other teachers who were nurses. She stated, "That [being grouped with other nurses who were teachers] was extremely helpful to just kind of feed off each other and see what they did for a unit. Some people's creative minds are a little different than others." She added that the content of VIP1 could be improved and stated:

I think there needs to be a lot more focus for the specific subject.... They tried real[ly] hard to give us time in our individual subject area, but I feel like there still needed to be more time from a specific person who is knowledgeable in that area.

Mark Davis appreciated being with teachers who shared the same experiences he did: "They have had the same problems and some of them knew how to handle it and some of it you learn…an experienced teacher can tell you so many things."

Natasha Ellis shared that she still communicated with many of the health-science teachers she met in VIP1. "We talk and share stories," she stated. She shared that she believed these relationships were a benefit of VIP and added:

I benefited mostly when I was there with my other health-science teachers and we kind of did those activities together because great minds think alike…and I know it is probably impossible to do the whole program with all health-science teachers, but I think if it could be incorporated more, like curriculum.

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Ms. Ellis added that the program took on a whole new meaning when it was personal and related to her content. She said:

> I guess I can compare that [attending the VIP program without opportunities to meet with veteran health-science teachers] to going to a conference and them just teaching you good work ethics as opposed to going to a conference about a policeman's good work ethics.

Her experiences with fellow health-science teachers were the most valuable aspect of VIP1:

> (We) stood up and went to separate tables and everybody else went and found a "veteran teacher". When I was there, the [experienced] teachers would tell us, "When I get to this content, this is what I do." So yeah, it was better. It was much better.

Pedagogical instruction before classroom experience. Another unexpected finding occurred when participants repeatedly mentioned how they had to begin teaching before they had received any formal pedagogical instruction. Seven out of the nine total participants in the study taught in the classroom before they received any pedagogical instruction. This was a result of having been hired too late to enroll in their respective VIP programs. Ms. Boyd and Mr. Davis both used the term "thrown" to describe how they felt when they entered a classroom with no formal training. Ms. McCormick used the words "confused," "clueless," and "frustrating" to describe her first months of teaching. Although the MDE provided supplementary support to those who were hired too late, she said it was "more confusing than it was supportive." Several mentioned the

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pedagogical mistakes they made before attending either VIP program and indicated an introduction to teaching would have been helpful before they entered the classroom.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter consists of a summary of this study. Conclusions based on the

findings, both anticipated and unexpected, are discussed. The implications of the study

and recommendations for future research conclude this chapter.

Summary

The purpose of this study was twofold: to compare the self-efficacy of beginning

CTE educators enrolled in each of Mississippi's two VIP programs and to determine the

effectiveness of the elements of the programs themselves, namely classroom

management, classroom assessment, instructional strategies, instructional planning,

administrator relationships, and mentor relationships. Previous studies had focused on the

self-efficacy of teachers prepared by both traditional and alternative methods but did not

necessarily segment CTE teachers from the whole (Darling-Hammond et al., 2002; Flores

et al., 2004; Forsbach-Rothman et al., 2007; Isaacs et al., 2007; Tournaki et al., 2009).

Therefore, this study was designed to specifically focus on novice CTE teachers to

examine their teaching efficacy.

Additionally, many researchers have studied which method of teacher preparation

is better: traditional or alternative. Zeichner and Schulte (2001) suggested these research

efforts would be more productive if the attention placed on comparing the routes to

teacher education shifted to focusing on the methods within each route that are the most

effective in preparing successful teachers. This recommendation, along with Ruhland and Bremer's (2002) suggestion to examine alternatively certified secondary CTE teachers to determine their professional development needs, powered the second purpose of this study: to determine which elements of Mississippi's CTE alternative-route-to-teaching program were helpful to novice teachers.

An embedded, qualitative, multiple-case study approach was used to evaluate the two CTE alternative-route programs in Mississippi, VIP3 (the three-year methods program) and VIP1 (the one-year methods program). An embedded multiple-case study was appropriate for this research because there are two types of teacher-education programs with multiple cases (teacher participants) and multiple embedded units of analysis (each element of the teacher-preparation program.) This approach added to the overall intent of this research as it allowed for an in-depth look into each teacher-education program, and, indeed, revealed even more than what was sought through the research questions.

There were nine participants: five from VIP1 and four from VIP3. The participants consisted of five males and four females who were teaching in various regions of the state. Multiple methods of data collection were used, including an interview, an observation, and a survey. The qualitative interview data were entered into NVIVO, a qualitative data-analysis computer-software program, for purposes of organization and analysis. Observation data were interpreted independently, and the survey data were analyzed for descriptive statistics in a spreadsheet.

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The conclusions and a discussion of the findings of this study are stated in this section. The discussion is organized around the three research questions presented in the study. Relevant data are discussed according to each research question.

Research Question #1

How do CTE teachers completing different delivery methods of Mississippi's VIP program perceive the effectiveness of their teacher-education program to prepare them to teach with confidence?

Interviews. This question refers to the self-efficacy of these novice teachers and to their perception of the effectiveness of the VIP program they attended. During the interviews, VIP3 participants provided comments that indicated a high level of self-efficacy 41.4% of the time, while VIP1 participants provided comments that indicated a high level of self-efficacy 58.6% of the time. Additionally, VIP3 participants provided comments that indicated a lack of self-efficacy 62.6% of the time, while VIP1 participants provided comments that indicated a lack of self-efficacy 37.4% of the time.

Three of the four VIP3 participants, Ms. Varner, Mr. Henley, and Ms. Boyd, credited the VIP3 program with at least some of their perceived success in the classroom. Mr. Sanders recognized other sources of support as more helpful to him than VIP3. Specifically, Mr. Sanders credited his wife with most of his perceived success and further suggested that VIP3 could not have taught him much of the content he teaches (though neither VIP program teaches CTE content).

All five VIP1 participants gave at least some credit to the VIP1 program for their perceived success as teachers. Specifically, Ms. McCormick shared that she gained more confidence in her teaching abilities from her involvement with VIP1. Mr. Davis, Mr. Dabney, Mr. Manning, and Ms. Ellis all gave similar reports, with variations on what they perceived to be the most helpful aspects of the program, covering all areas of teacher preparation, including mentor and administrator relationships.

Collectively, these data suggest teachers involved in VIP1 have a greater degree of self-efficacy in teaching than those involved in VIP3. Likewise, and possibly even more telling, the VIP3 participants provided over one and half times more negative comments concerning self-efficacy than the VIP1 participants, suggesting a more negative experience among the VIP3 participants.

Observations. In the following discussion of observation data, the overall average M-STAR score is placed in parentheses after the first occurrence of each teacher's name, e.g., Ms. Boyd (1.83), with 4.00 being the highest rating possible. Collectively, the VIP3 teachers scored an average of 2.01 on the M-STAR observation rubric, while the VIP1 teachers scored an average of 2.58 on the M-STAR observation rubric. As a group, the VIP3 teachers fall slightly over the threshold of emerging on the scale. The VIP1 teachers are also in the emerging category, but their collective score places them close to an effective rating.

Individually, I noticed both positive and negative teaching practices and indicators of self-efficacy during my VIP3 observations. Ms. Boyd (1.83), Ms. Varner (2.16), and Mr. Sanders (1.53) each demonstrated very low-level questioning during teacher-led discussion. The course content covered during these observations, though it

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was aligned with the Mississippi curriculum frameworks, was likely easily memorized. Additionally, when lesson plans were provided, allowing for comparison with curriculum standards, the rigor of the lessons did not reflect the level required by the standards. Mr. Henley's (2.51) class was engaged in an ongoing project that required research and original thought. Though the students were sometimes off-task, the content was aligned to standards, and the students were creating a potentially meaningful document. During the observations, Ms. Boyd, Ms. Varner, and Mr. Sanders gave no indication that they recognized the levels of teaching and student engagement in their classrooms were subpar according to the M-STAR standards, with Ms. Boyd and Ms. Varner even exhibiting a sense of capability and confidence. Mr. Henley, however, appeared humbled, almost embarrassed, when describing what the students were doing in class that day. These data seem to suggest that teachers who score lower on the M-STAR do not necessarily demonstrate low self-efficacy. Conversely, the one VIP3 teacher who scored the highest seemed to have the lowest observer-perceived self-efficacy.

During the VIP1 observations, I also noticed positive and negative teaching practices and indicators of self-efficacy. Mr. Dabney (3.19) displayed confidence in his teaching methods and ability. His lesson was organized, used multiple instructional strategies, and was career-oriented and student-centered. Ms. McCormick (3.01) led a calm, organized lesson to an engaged group of students. Ms. Ellis (2.94) exhibited confidence during her lesson, and I noticed the confidence seemed to demand respect from the students. They knew what to do and when to do it. Mr. Manning (2.13) seemed less sure of his abilities and appeared to rely heavily on what the previous teacher had done. He seemed confident in the content but less so in how he was going about teaching

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it. Mr. Davis (1.64) seemed confident in the content of the lesson on the day of the observation. His demeanor, however, suggested that he was uncomfortable helping the students. If overall average M-STAR scores are used as the measure, these data suggest that observer-perceived confidence in teaching is likely correlated to teacher effectiveness.

Surveys. The survey data is divided into three sub-areas: classroom management, classroom assessment, and instructional strategies. On a scale of 1-9, VIP3 participants rated themselves highest in classroom assessment (8.17), while VIP1 participants rated themselves highest in instructional strategies (7.66). VIP3 participants rated classroom management at 7.16 and instructional strategies at 7.14. VIP1 participants rated classroom management at 7.50 and classroom assessment at 7.53. These data suggest that VIP3 participants feel more confident about preparing and delivering classroom assessments than they do about their abilities in classroom management and instructional strategies.

Overall, the VIP3 participants averaged 7.49 on the self-efficacy survey, while the VIP1 participants averaged 7.56, a marginal difference in percentages. These data suggest that VIP3 and VIP1 participants have approximately the same range of self-efficacy in teaching, with VIP1 participants rating themselves only slightly higher.

As the researcher, upon considering all sources of data, I found this outcome alarming when I compared teacher confidence with teacher effectiveness. Two of the three sources of the data collected in this study (interviews and surveys) were obtained directly from the participants. The observation data was collected by me as the researcher and was based on my qualifications as an M-STAR evaluator. As I considered all of the data in terms of self-efficacy, and in relationship to the first research question, I noticed

that many of the lowest-scoring teachers rated themselves highest in self-efficacy. For example, Mr. Davis, a VIP1 participant, received an overall M-STAR rating of 1.64 out of 4.00 but rated his own self-efficacy in teaching at 8.16 out of 9.00. Likewise, Ms. Varner and Mr. Sanders, VIP3 participants, received overall M-STAR ratings of 2.16 and 1.53 respectively, but rated their own self-efficacy in teaching at 8.48 and 7.56—both particularly high self-efficacy ratings. Conversely, Ms. Ellis, a VIP1 participant, received an overall M-STAR rating of 2.94 but rated her own self-efficacy in teaching at 6.85. Similarly, Ms. McCormick received an overall M-STAR rating of 3.01 but rated her own self-efficacy in teaching at 6.95.

These conflicting data and unexpected results prompted a search of the literature to see if there existed a phenomenon in which individuals that appear highly competent would rate themselves poorly on self-efficacy. The search also sought to determine the opposite: whether a less-competent individual would rate themselves highly upon self-reflection. The literature review revealed a phenomenon known as the Dunning-Kruger Effect (Kruger & Dunning, 1999). These researchers discovered that when an individual is unskilled in a certain task, they not only make poor choices in that area but also lack the metacognitive ability to realize it (Kruger & Dunning, 1999). Likewise, the more an individual learns about a task or topic, thereby increasing his or her metacognitive abilities, the more the individual recognizes his or her own limitations (Kruger & Dunning, 1999). The effect has been validated and further tested to find that intrinsic motivation could likely be a factor in whether or not individuals want to know more about a topic (Kim, Chiu, & Bregant, 2015). This was an unexpected finding, but it is worth mentioning when considering the self-efficacy of teachers. In both VIP3 and VIP1,

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participants who scored high on the M-STAR evaluation rated themselves lower in terms of self-efficacy. This finding is consistent with the Dunning-Kruger effect, because many of the teachers who performed at a higher overall level may perceive themselves to be less competent than they actually are, according to their evaluation score. Trendowski (2015) found this phenomena to be consistent in his study involving physical education teachers. The less competent teachers were more confident in their teaching and unaware of the lack of student learning (Trendowski, 2015). Additional research would be necessary to see if this type of result would be consistent in all areas of the field of education.

Together, the data suggest the VIP1 participants feel greater confidence in their teaching than the VIP3 participants. They reported more positive comments about the program and about their teaching efficacy. The VIP3 participants reported more negative comments about the program and about their teaching efficacy. These findings seem to indicate the revised VIP1 program, which is modeled after the SREB national model, is more successful at preparing participants to teach with confidence. These findings therefore validate the success of SREB's recently released national model for new CTE teachers participating in an alternative-route program. The findings subsequently validate Mississippi's decision to follow SREB's national model, as the results of this study indicate teachers who participate in the model are more self-efficacious upon completing this program versus the previous one.

Research Question #2

What methods of teaching acquired during Mississippi's VIP programs do CTE teachers perceive as the most effective in preparing them for their first year(s) of teaching?

Instructional Planning. The VIP3 participants recalled being instructed on how to complete lesson plans, and all four credited the program with at least some of their knowledge of lesson planning. However they each seemed to plan in their own way. Mr. Sanders planned for the week as required by his district using a template provided by his district, but the plan he shared with me was vague and lacked details. Ms. Boyd was not required to turn in lesson plans and therefore did not complete them. Ms. Varner was required to turn in plans on a template provided by her district and relied heavily on the curriculum and textbooks to complete them. Mr. Hardwick, also using a template provided by his district, only planned for three or four days each week because of his unpredictable schedule. These data suggest that although the VIP3 model did indeed include instruction on lesson planning, program completers have a difficult time implementing it with fidelity, which is consistent with research findings (Bottoms et al., 2013). This is seemingly a result of varying local-district requirements.

The VIP1 participants gave credit to the VIP1 program for teaching them how to complete lesson plans. Although Mr. Manning and Ms. McCormick did not consider themselves good at lesson planning and often did not complete plans in the format specified by their respective districts, they did plan and turn in lesson plans. Mr. Davis, Mr. Dabney, and Ms. Ellis used the templates provided by their respective districts for daily plans. Mr. Davis's and Mr. Dabney's plans and their district's template mirrored the

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methods used in VIP1 to teach about instructional planning. Ms. Ellis gave particular accolades to VIP1 for instructing her how to map the curriculum for an entire year and how to use her assessment blueprint to plan instruction. Mr. Dabney also mentioned using his curriculum map to plan. These data suggest lesson-planning instruction acquired during VIP1 was more transferrable and relevant to these participants and in their respective districts.

Instructional Strategies. Three of the four VIP3 participants attributed their knowledge and use of various instructional strategies to what they learned in VIP3. Ms. Boyd's and Mr. Sanders's comments were all positive, but Mr. Henley and Ms. Varner, although they acknowledged that some help came from VIP3, also expressed frustration with the program or gave additional credit to other sources. Mr. Henley mentioned the instructors in VIP3 told him he would have to differentiate his instruction, but they did not tell him how to do it. Similarly, Ms. Varner shifted her praise to other health-science teachers in the state who helped her learn to use various instructional strategies. These data suggest instructional strategies were discussed during VIP3, but they were not interpreted or absorbed by each participant in the same way.

Interestingly, the VIP3 participants who felt most confident in their use of instructional strategies and how they learned them during the program are the same teachers who scored the lowest on the M-STAR evaluation during the observation. Mr. Sanders (1.53) and Ms. Boyd (1.83) gave credit to VIP3 for teaching them instructional strategies. Ms. Vinson (2.16) and Mr. Henley (2.51) stated that they either felt underprepared or found another source of support for instructional strategies. These data reflect the findings of Kruger and Dunning (1999), who found that those who are more

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competent at a given skill are less likely to rate themselves as highly competent and vice versa. Though Mr. Sanders and Ms. Boyd gave acknowledgement to VIP3 for helping them use various instructional strategies, their observation scores did not reflect a high overall competence.

On the survey, the VIP3 participants rated themselves lowest on instructional strategies, with an average of 7.14. Not only did they verbally question their own use of instructional strategies, they also identified it as their lowest competence on a self-efficacy survey. Collectively, these data seem to align with the lack of depth of understanding and use of instructional strategies among VIP3 participants.

All five of the VIP1 participants recognized VIP1 as the source of their understanding about various instructional strategies. Ms. McCormick shared her realization that group learning and student involvement were actually acceptable replacements for the lecture-style teaching she had once clung to prior to VIP1. Although not observed during the visit, Mr. Davis discussed his use of Kagen chips and peer tutoring to differentiate instruction. Mr. Dabney credited VIP1 for promoting hands-on instruction and the idea of using "stations" to present multiple perspectives of similar content. Ms. Ellis admitted that before VIP1 she never included multiple instructional strategies in her lesson plans, but afterwards she began incorporating bell ringers and "how" and "why" questions. Mr. Manning, who had a military background, admitted that he too would teach only lecture-style before attending VIP1. Although not observed during the visit, he mentioned that he realized that in military training as well as in his classroom, he was leaving people behind because they learned differently. These data suggest the VIP1 instructors received extensive training in the most recent and

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researched-based instructional strategies, as suggested by researchers, and put them into practice after completing VIP1 (Cochran et al., 1991). The variety of strategies and the terminology used in their responses indicate they have a deeper understanding of the use of multiple and diverse instructional strategies across their various content areas.

On the survey, the VIP1 participants rated themselves highest on instructional strategies, with an average of 7.66. They spoke with confidence about their abilities with instructional strategies, and they also identified it as their highest competence on a self-efficacy survey. Collectively, these data seem to align with the confidence observed and discussed concerning instructional strategies among VIP1 participants.

Classroom Management. The VIP1 participants shared various thoughts on classroom management. Mr. Sanders and Ms. Varner both alluded to the notion that classroom management is learned after a teacher enters a classroom, consistent with Evertson and Weinstein's (2006) ideas that lack of instruction in classroom management may leave teachers feeling as though they must figure it out later. Ms. Boyd discussed a few classroom-management issues she had experienced and how she used grades to control some of them. Mr. Henley was the only VIP3 participant to specifically credit the VIP program with improvement in his classroom management, sharing that learning strategies to engage students early in the class period helped him manage his classroom better.

The observations of the VIP3 participants gave only mediocre impressions of effective classroom management. Even those participants who spoke highly of their classroom-management skills exhibited poor classroom management habits that resulted in disorder and very little student learning.

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The VIP3 participants collectively rated classroom management as their second highest competence, with an average of 7.16. The observation data alone indicate poor classroom-management skills among the VIP3 participants. Together, all three sources of data indicate classroom-management skills were not fully demonstrated by the VIP3 participants. Although some mentioned being instructed on the topic, at least two of the four participants stated that they did not (and determined they could not) learn effective classroom management before entering their own classrooms.

Three of the five VIP1 participants specifically attributed their classroom-management skills to their experiences in VIP1. They discussed how creating positive classroom rules made a difference and indicated that the engaging instructional strategies learned in VIP1 also eliminated some of their classroom-management issues. Another participant made no comment, and another claimed to have no classroom-management issues, although he mentioned negative student behavior more than once.

The observations provided insight into each VIP1 teacher's classroom-management skills. Mr. Dabney had multiple "jobs" for his students and an order of events for them to follow. Ms. McCormick, though not planned on paper, led an organized lesson to an engaged group of students. Ms. Ellis's students' behavior indicated they understood her classroom-management expectations.

On the survey, the VIP1 participants collectively averaged a 7.50 in classroom management, their lowest competence. The data collected during the observations and interviews indicate that, collectively, the VIP1 participants have a deeper understanding of classroom-management concepts. These data suggest, again, that those who

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understand more about a topic will likely rate themselves lower on a self-efficacy scale (Kruger and Dunning, 1999).

Classroom Assessment. Each of the four VIP3 participants commented on how the VIP program supported their knowledge of classroom assessment. Mr. Sanders discussed how he learned to give feedback. Ms. Boyd shared her struggles with finding a balance between formative and summative assessments, but gave at least some of the credit for her assessment skills to VIP3. Mr. Henley quipped that he learned how to create classroom assessments from being a graduate student, but that he learned to group items on a test and include instructions on all assessments in VIP3. Ms. Varner shared that she learned how to create a test in VIP3 and that the instruction in the VIP program helped her understand what she had been asked to do in her district.

There was very little classroom-assessment data drawn from the observations, except many of the teachers were reviewing for tests during my visits. I noticed the lower level questions that were asked of the students and, in some instances, was able to compare the types of questions with the standards being addressed. There were times when the standard was on a much higher level and, at least from what could be observed, the students were not being assessed on that higher level. I was also able to observe Ms. Boyd's class taking a test on the computer, but they were unsupervised and began to talk to one another, so the validity of the assessment was compromised.

On the survey, the VIP3 participants collectively averaged an 8.17 in classroom assessment, their highest competence. The data collected during the observations and interviews indicate that, collectively, the VIP3 participants have a solid understanding of summative classroom-assessment concepts, such as creating end-of-unit tests, but made

little or no mention of other types of assessments. The survey data indicate the VIP3 participants are very confident in their classroom-assessment abilities. These data again reflect the idea introduced by Kruger and Dunning (1999): Those with lesser skills on a topic will often rate themselves higher on a self-efficacy scale because they are lacking the metacognitive ability to recognize their own incompetence.

Some of the VIP1 participants gave credit to the VIP1 program for their classroom-assessment skills, and all of them mentioned the variety of methods they used. Ms. McCormick mentioned hands-on, written, and oral assessments. Mr. Davis mentioned his use of performance-based assessments with rubrics. Mr. Dabney spoke of his dislike of multiple-choice tests, but added that he was constantly questioning his students, even teaching them the DOK levels of questions so they could identify them on a standardized exam. Ms. Ellis credited VIP1 for her knowledge and use of a variety of formative assessments, such as "thumbs-up/thumbs-down" and "teach back". Mr. Manning shared that although formative assessments came naturally to him, most of his summative tests were from a textbook since he was preparing students for a national certification exam.

During the observations I saw VIP1 teachers using self-assessments, reviews, and questioning. The variety of the assessments and the terminology used to describe them indicated the VIP1 participants had a solid understanding of classroom-assessment methods, which is one of the characteristics identified by the NBPTS as essential in CTE (NBPTS, 2014).

On the survey, the VIP1 participants collectively averaged a 7.53 in classroom assessment, their second highest competence. These data indicate that classroom-

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assessment strategies were taught and captured during VIP1, though, as a group, the VIP1 participants do not feel as confident in classroom assessment as they do other elements of the VIP1 program.

Neither the participants in VIP3 or in VIP1 indicated a belief that they did not need instruction in any of the four elements of teacher preparation listed above. Each group specified positive experiences and meaningful content associated with all four elements. The self-reporting nature of the survey indicates the VIP3 participants would likely benefit from more instruction on classroom management and instructional strategies, and the VIP1 participants would likely benefit from more instruction on classroom management and classroom assessment.

Research Question #3

How do teachers' professional relationships with mentors and administrators influence their teaching efficacy and job satisfaction?

Administrator relationships. The VIP3 participants were not required to have facilitated conversations or complete required tasks with their administrators. One of the four participants indicated she would have enjoyed such a requirement because she thrived on encouragement. The other three indicated they felt they could talk to their administrator as needed, and a facilitated relationship would not have been beneficial to them.

The VIP1 participants were required to participate in facilitated conversations and complete tasks with their administrator. All five of the VIP1 participants saw at least some value in this relationship. Ms. McCormick and Ms. Ellis both taught at a school

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where the CTE director was located off-site. They indicated that a relationship with the person in that role would have been more beneficial to them than a relationship with the building-level principal. Two other participants commented that the required relationship made their relationship with their administrator stronger and indicated that the activities provided opportunities to grow that relationship. One expressed mild frustration because his program was new, and his administrator was new to CTE, so the circumstances made it difficult to grow the relationship. One of the VIP1 participants specifically stated the administrator relationship was an important part of the VIP program.

These data provide mixed results. The VIP1 participants, who were required to have an administrator relationship, seemed to see value in it. The VIP3 participants, who were not required to have an administrator relationship, did not seem to mind the lack of such a relationship, though they appreciated it when they had a positive relationship with their administrator. The participants' experiences with administrator relationships correspond to the literature, with participants generally seeing value in the relationship, whether that relationship provided managerial or emotional support (Boyd, et al., 2011; Viviano, 2012; Vogt, 2007).

Mentor relationships. The VIP3 participants were not required to have facilitated conversations or complete required tasks with an assigned mentor. Mr. Sanders was not assigned a mentor, but one teacher took on the role of a mentor for him. He added that a required mentor relationship would have been a beneficial part of the VIP program. Ms. Boyd and Mr. Henley were both assigned mentors but did not have instructions about how the relationship should proceed. They both indicated the relationship was not helpful to them. Ms. Varner was assigned a mentor by her district

and had a good experience because the mentor teacher sought her out and helped her get to know the building and the routines.

The VIP1 participants were required to have facilitated conversations and complete required tasks with an assigned mentor. Ms. McCormick's defunct relationship with her building-level administrator generated a non-existent mentor relationship as well. She shared that a mentor relationship would have been helpful. Ms. Ellis had a positive relationship with her mentor, but she so craved a relationship with her CTE director that she believed that relationship would have been more beneficial than a mentor relationship. Mr. Davis, Mr. Dabney, and Mr. Manning all had positive relationships with their respective mentors. Mr. Manning referred to the relationship as an "absolutely necessary" part of the VIP program.

These data also suggest mentor relationships are important to beginning teachers. VIP3 and VIP1 participants alike placed value on the mentor-type relationships they developed in their first years of teaching. Even those who did not have a positive mentor relationship recognized the worth of the relationship and expressed their desire for one. This aligns with and adds to previous research, which finds that positive mentor relationships provide teachers with a sense of support and belonging and can also prevent teacher attrition by providing a stronger social structure within the school (Darling-Hammond & Bransford, 2005; Henley & Bottoms, n.d.; Joiner & Edwards, 2008).

Limitations

The results of this study describe the experiences of teachers involved in the specific VIP1 and VIP3 cohorts selected from the larger population of those who completed their programs during the 2013-2014 school year. Because the program is

modified each year, the results should not be generalized to any other VIP1 or VIP3 cohort. Future researchers are advised to generalize these results with caution, as the circumstances surrounding these one-year and three-year long cohorts are very likely different from any other cohorts.

Recommendations and Future Research

Based on the results of this study, it is recommended that the current VIP program (VIP1) maintain the pedagogical content it currently provides in the areas of instructional planning, instructional strategies, classroom management, and classroom assessment. The participants in this study did not indicate a belief that any of the content of VIP1 was unnecessary, although one participant did indicate that the "History and Philosophy" module in VIP3 was not needed. The participants in both programs had positive comments about each of the four main topics (instructional planning, instructional strategies, classroom management, and classroom assessment). They usually noted positive changes in their own instruction and other areas of pedagogy after attending their respective VIP programs. Additionally, although the VIP1 participants had lower averages of self-efficacy on the survey, the interviews and observations provided data that suggests higher quality teaching and learning is taking place in the classrooms of VIP1 teachers' who took part in this study. Their lower self-efficacy scores can likely be attributed to the Dunning-Kruger effect, which suggests those who are more competent at a given skill are less likely to rate themselves as highly competent, and vice versa (Kruger and Dunning, 1999). Therefore, the results of this study indicate the content of the VIP1 program, while producing lower self-efficacy scores, likely produces more

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competent teachers. Future research is needed to see if this effect is consistent in other groups of CTE teachers.

The program elements of classroom assessment, classroom management, instructional strategies, and instructional planning are not the only four elements of teacher preparation. However, they are the four included in the VIP models examined in this study and the four suggested by the SREB as those necessary for CTE-teacher preparation (Bottoms, 2011). Though much of the content is included in these four areas, the SREB modules do not fully align to the NBPTS for exemplary CTE teachers (NBPTS, 2014). In order to prepare CTE teachers using a national standard for best practices, future research is recommended to align CTE teacher-preparation programs, particularly the SREB program, to the NBPTS for CTE teachers.

Though the VIP3 participants did not have a required relationship with their administrators, and some could not see the value of such a relationship, the VIP1 participants who did have a required administrator relationship indicated the resulting conversations and activities had value. Two VIP1 participants stated an administrator relationship, particularly with the CTE director, would be very valuable. Therefore, it is recommended the required administrator relationship remain a part of the VIP program for new CTE teachers in Mississippi, and that, whenever possible, this administrator should be the CTE director. Additional research is recommended to focus specifically on the value of relationships between CTE teachers and CTE administrators.

Many of the VIP3 and VIP1 participants, although it was not required for VIP3 participants, made positive comments about their relationships with their mentor teachers. Whether the mentor teacher was assigned to them or organically assumed the role, the

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relationships were often appreciated in both programs. Some participants placed a higher value on the mentor relationship than on the administrator relationship. Therefore, it is recommended that the required mentor relationship remain a part of the VIP program for new CTE teachers in Mississippi. Additional research is recommended to focus specifically on the value of relationships between CTE teachers and their mentor teachers.

The unexpected findings in this study provide an opportunity for recommendations to the current VIP program as well. First, many of the teachers in both VIP programs expressed the desire to spend more time with veteran teachers in their content area, or they mentioned gleaning much of their instructional strategies from time spent with these other teachers or from online interactions. Therefore, it is recommended that the content of the current VIP program be modified to include a significant amount of time for new CTE teachers to be paired with veteran teachers in the same content area. The results of this study validate the SREB's national model for CTE alternative-route teacher preparation, but they also add to this research, suggesting a need for a larger focus on pedagogical-content knowledge for new teachers (Bottoms, 2011; Bottoms et al., 2013; Bottoms & McNally, 2005; Henley & Bottoms, n.d.). Future research is recommended to evaluate the effectiveness of including more opportunities for beginning CTE teachers to grow their pedagogical-content knowledge.

The preliminary results of this research are currently being implemented in the planning for the next VIP cohort. The program designers have altered the first two-week session to include a one-week pedagogical introduction and one week with veteran teachers so new CTE teachers can obtain pedagogical-content knowledge before they

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enter the classroom. Future research is recommended to examine whether CTE teachers from future cohorts describe positive experiences based on this change.

The other unexpected finding indicated most participants were hired too late to enroll in VIP and subsequently were frustrated because they had to teach with no formal pedagogical instruction. Therefore, it is recommended that either the VIP program begin later in the summer or earlier in the fall to account for late enrollees, or that a separate cohort begin each fall to allow participants to catch up to the current cohort and continue with them as the year progresses.

This recommendation is also being implemented in the planning for the next VIP cohort. The program designers will not change the current schedule but will offer a fall "catch up" cohort for those individuals who were hired too late to enroll in the summer cohort. These individuals will then join the summer cohort throughout the rest of the year. Future research is recommended to examine the impact of the fall cohort and how it affects the teachers' self-efficacy and teaching abilities.

Future research is also recommended to determine if the program revisions implemented as a result of this study have a significant impact on CTE-teacher retention and their overall self-efficacy in teaching.

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APPENDIX A

IRB APPROVAL LETTER

Pannell, Myra

From:	nmorse@orc.msstate.edu
Sent:	Wednesday, December 03, 2014 10:58 AM
To:	Pannell, Myra
Cc:	Morse, Nicole; Morse, Nicole; Franz, Dana
Subject:	Study 14-333: What Really Works in Teacher Preparation Programs: Teachers' Self-Efficacy and Successful Methods After Participation in Mississippi's Career and Technical Education Alternate Route Program

Protocol Title: What Really Works in Teacher Preparation Programs: Teachers' Self-Efficacy and Successful Methods After Participation in Mississippi's Career and Technical Education Alternate Route Program

Protocol Number: 14-333

Principal Investigator: Ms. Myra Pannell

Date of Determination: 12/3/2014

Qualifying Exempt Category: 45 CFR 46.101(b)(1)

Attachments: Stamped informed consent in separate email

Dear Ms. Pannell:

The Human Research Protection Program has determined the above referenced project exempt from IRB review.

Please note the following:

- Retain a copy of this correspondence for your records.

- An approval stamp is required on all informed consents. You must use the stamped consent form for obtaining consent from participants.

- Only the MSU staff and students named on the application are approved as MSU investigators and/or key personnel for th! is study.

- You do not need to submit an application for annual continuing review; however, a new application must be submitted if the study is ongoing after 5 years from the date of approval. (SOP 01-03 Administrative Review of Applications)

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- Any modifications to the project must be reviewed and approved by the HRPP prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project.

- Per university requirement, all research-related records (e.g. application materials, letters of support, signed consent forms, etc.) must be retained and available for audit for a period of at least 3 years after the research has ended.

- It is the responsibility of the investigator to promptly report events that may represent unanticipated problems involving risks to subjects or others.

This determination is issued under the Mississippi State Universit! y's OHRP Federalwide Assurance #FWA00000203. All forms and procedures can be found on the HRPP website: www.orc.msstate.edu.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at nmorse@orc.msstate.edu or call 662-325-5220.

Finally, we would greatly appreciate your feedback on the HRPP approval process. Please take a few minutes to complete our survey at https://www.surveymonkey.com/s/YZC7QQD.

Sincerely,

Nicole Morse, CIP
IRB Compliance Administrator

cc: Dana Franz (Advisor)

APPENDIX B

INTERVIEW TOPICS AND QUESTIONS

<u>Interview topics</u>

Perceptions about being a teacher after having attended training

Confidence levels on teaching after having attended training

Use of learned planning/management techniques as time goes on

Portions of the training that have carried over into the way you teach and manage your classroom

Portions of the training that have not carried over into the way you teach and manage your classroom

<u>Observation criteria</u>

Classroom setting

Classroom management styles and teaching methods based on M-STAR rubric

Engagement with and responses to students

Specifically looking for elements of the training that are evident in the classroom (classroom management, classroom assessment, instructional strategies, instructional planning)

Attempt to observe elements of training that are effective/ineffective in the classroom (classroom management, classroom assessment, instructional strategies, instructional planning)

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<u>Sample Interview Questions</u>

Research Question 1: 1)   How do career and technical education teachers completing one of two different delivery methods of Mississippi's Vocational Instructor's Preparation (VIP) Program perceive the value of their teacher education program in preparing them to teach with confidence?

- Tell me about yourself/background/history/family, etc.
- Parents'/grandparents' jobs
- Personal job history
- What led you to teaching and this position?
- Think back to the beginning of your teaching career. Tell me about your first few weeks as a teacher.
- What went well?
- What didn't?
- Tell me about things that you already knew that you might do differently next year
- How have you incorporated elements of your VIP training into your teaching?
- Talk about 2 or 3 individually for me.
- Were these experiences successful? Unsuccessful? Explain.
- At the current time, how do you feel about your success as a teacher? (if needed, give them a "on a scale of 1 to 10 scenario)
- How much of this success do you attribute to VIP training?
- To what else to you contribute the success?
- Tell me about how you prepare to teach each week. Each day.
- Are you forming any patterns in your planning? Like what?
- In what ways do you attribute your planning methods to training you received?
- Tell me about your classroom management.
- Are you incorporating any classroom management strategies that you learned in training?
- Which strategies specifically, if any?
- What would have been helpful to you to increase your feelings of success?

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- What would your first year(s) have been like if you hadn't received VIP training?

Research Question 2: Which specific program elements associated with Mississippi's Vocational Instructor Preparation (VIP) programs do career and technical education teachers perceive as the most effective in preparing them for their first year(s) of teaching?

- Instructional Planning
    - What methods of instructional planning would you consider the most effective in helping your prepare to teach? The least effective? (If necessary, probe teachers with examples of instructional planning.)
- Classroom management
    - What methods of classroom management would you consider the most effective in helping you manage your students and classroom? The least effective? (If necessary, probe teachers with examples of classroom management.)
- Instructional Strategies
    - What methods of instructional strategies would you consider the most effective in helping you reach your students with course material? The least effective? (If necessary, probe teachers with examples of instructional strategies.)
- Classroom assessment
    - What methods of classroom assessment would you consider the most effective in helping you assess your students? The lease effective? (If necessary, probe teachers with examples of assessment strategies.)
- Considering only the VIP training, tell me the most useful things you learned about each area (IP, CM, IS, and CA).
- Are there other strategies that you have learned in your teaching experience that have been helpful? Explain.

Research Question 3: How do novice CTE teachers' professional relationships with mentors and administrators influence their teaching efficacy and job satisfaction?

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- Were you assigned a teacher mentor when you started teaching?
- If so, talk to me about that relationship.
- Has the relationship been beneficial? In what way?
- How would you have fared as a teacher without the mentor relationship? OR
- How have you fared without a mentor relationship?
- How do you think your situation would have differed if you had been assigned a mentor?
- Talk to me about your relationship with your administrator.
- Has it been beneficial? If so, how?
- If not, what support did you need in your first year that would have improved your relationship with your administrator?
- Are there any other professional relationships that have helped you in your first year(s) of teaching?
- Is there anything else you with to add about mentor or administer relationships?

APPENDIX C

ALIGNMENT TABLE

VIP1 Module	VIP3 Module	MSTAR Indicator	Interview Questions	TSES Questions
Classroom Management	Classroom Management in Career and Technical Education	12. Manages classroom space and resources effectively for student learning. 13. Creates and maintains a climate of safety, respect, and support for all students. 14. Maximizes time available for instruction. 15. Establishes and maintains a culture of learning to high expectations. 16. Manages student behavior to provide productive learning opportunities for all students.	• Tell me about your classroom management. • Are you incorporating any classroom management strategies that you learned in training? • Which strategies specifically, if any? • What methods of classroom management would your consider the most effective in helping you manage your students and classroom? The least effective? (If necessary, probe teachers with examples of classroom management.) • Considering only the VIP training, tell me the most useful things you learned about each area (IP, CM, IS, and CA).	3. How much can you do to control disruptive behavior in the classroom? 7. How well can you respond to difficult questions from your students? 8. How well can you establish routines to keep activities running smoothly? 13. How much can you do to get children to follow classroom rules? 15. How much can you do to calm a student who is disruptive or noisy? 16. How well can you establish a classroom management system with each group of students? 19. How well can you keep a few problem students form ruining an entire lesson? 21. How well can you respond to defiant students?

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Classroom Assessment	Student Assessment in Career and Technical Education	5. Collects and organizes data from assessments to provide feedback to students and adjusts lessons and instruction as necessary. 6. Incorporates assessments into instructional planning that demonstrate high expectations for all students.	• What methods of classroom assessment would you consider the most effective in helping you assess your students? The lease effective? (If necessary, probe teachers with examples of assessment strategies.) • Considering only the VIP training, tell me the most useful things you learned about each area (IP, CM, IS, and CA).	9. How much can you do to help your students value learning? 10. How much can you gauge student comprehension of what you have taught? 11. To what extent can you craft good questions for your students? 14. How much can you do to improve the understanding of a student who is failing? 17. How much can you do to adjust your lessons to the proper level for individual students? 18. How much can you use a variety of assessment strategies?
Instructional Planning	Developing Instructional Materials in Career and Technical Education	1. Plans lessons that demonstrate knowledge of content and pedagogy. 2. Plans lessons that meet the diversity of students' backgrounds, cultures, skills, learning levels, language proficiencies, interests, and special needs.	• Tell me about how you prepare to teach each week. Each day. • Are you forming any patterns in your planning? Like what? • In what ways do you attribute your planning methods to training you received?	2. How much can you do to help your students think critically? 8. How well can you establish routines to keep activities running smoothly? 11. To what extent can you craft good questions for your students?

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	3. Selects instructional goals that incorporate higher level learning for all students. 4. Plans units of instruction that align with Mississippi Curriculum Framework or, when applicable, the Common Core State Standards.	• What methods of instructional planning would you consider the most effective in helping you prepare to teach? The least effective? (If necessary, probe teachers with examples of instructional planning.) • Considering only the VIP training, tell me the most useful things you learned about each area (IP, CM, IS, and CA).	12. How much can you do to foster student creativity? 17. How much can you do to adjust your lessons to the proper level for individual students? 22. How much can you assist families in helping their children do well in school? 24. How well can you provide appropriate challenges for very capable students?
Program Development in Career and Technical Education	1. Plans lessons that demonstrate knowledge of content and pedagogy. 2. Plans lessons that meet the diversity of students' backgrounds, cultures, skills, learning levels, language proficiencies, interests, and special needs. 4. Plans units of instruction that align with Mississippi Curriculum		11. To what extent can you craft good questions for your students? 12. How much can you do to foster student creativity? 17. How much can you do to adjust your lessons to the proper level for individual students? 22. How much can you assist families in helping

Category	Standard	Indicators	Questions
		Framework or, when applicable, the Common Core State Standards.	their children do well in school? 24. How well can you provide appropriate challenges for very capable students?
Instructional Strategies	History & Philosophy of Career and Technical Education		
	Teaching Methods in Career and Technical Education	7. Demonstrates deep knowledge of content during instruction. 8. Actively engages students in the learning process. 9. Uses questioning and discussion techniques to promote higher order thinking skills. 10. Brings multiple perspectives to the delivery of content. 11. Communicates clearly and effectively.	• What methods of instructional strategies would you consider the most effective in helping you reach your students with course material? The least effective? (If necessary, probe teachers with examples of instructional strategies.) • Considering only the VIP training, tell me the most useful things you learned about each area (IP, CM, IS, and CA). 1. How much can you do to get through to the most difficult students? 2. How much can you do to help your students think critically? 4. How much can you do to motivate students who show low interest in school work? 5. To what extent can you make your expectations clear about student behavior? 6. How much can you do to get students to believe they can do well in school work? 12. How much can you do to foster student creativity?

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	20. To what extent can you provide an alternative explanation or example when students are confused? 23. How well can you implement alternative strategies in your classroom? 24. How well can you provide appropriate challenges for very capable students?
	• Talk to me about your relationship with your administrator. • Has it been beneficial? If so, how? • If not, what support did you need in your first year that would have improved your relationship with your administrator? • Are there any other professional relationships that have helped you in your first year(s) of teaching?
Administrator Relationship	

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	• Is there anything else you with to add about mentor or administer relationships?
Mentor Relationship	• Were you assigned a teacher mentor when you started teaching? • If so, talk to me about that relationship. • Has the relationship been beneficial? In what way? • How would you have fared as a teacher without the mentor relationship? • How have you fared without a mentor relationship? • How do you think your situation would have differed if you had been assigned a mentor?
	Best Practices
	Best Practices Follow-Up
	Portfolio Compilation

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| Self-Efficacy in Teaching | • What led you to teaching and this position?
 • Think back to the beginning of your teaching career. Tell me about your first few weeks as a teacher. What went well? What didn't?
 • Tell me about things that you already knew that you might do differently next year.
 • At the current time, how do you feel about your success as a teacher? (If needed, give them a "on a scale of 1 to 10" scenario.)
 • How much of this success do you attribute to VIP training?
 • To what else to you contribute the success? What would have been helpful to you to increase your feelings of success? | | |

- What would your first year(s) have been like if you hadn't received VIP training?
- Are there other strategies that you have learned in your teaching experience that have been helpful? Explain.

APPENDIX D

PROCEDURAL MODIFICATION

MISSISSIPPI STATE UNIVERSITY HUMAN RESEARCH PROTECTION PROGRAM	Modifications to Approved Human Subjects Research Version: 04.28.2015

IRB Study #   14-333

Principal Research/Investigator: Myra Pannell

Choose all that apply. Corresponding sections will populate below. Please complete all fields.

☐ Closing Report   ☐ Continuation   ☐ Personnel Modification   ☒ Procedural Modification

The Procedural Modification should be used by Principal Investigators to request a change in procedures.
Please note: This form may NOT be used for personnel changes or time extensions

1. Summarize / Itemize requested changes and provide a justification for each.

   Please add Marshall County as a district who has agreed to participate in the study.

2. Do changes require revisions to the assessment of risk of harm to the subjects?

   ☐ Yes - if yes, explain

   ☒ No

3. Do changes require revisions to the methods of ensuring anonymity or confidentiality?

   ☐ Yes - if yes, explain

   ☒ No

4. Are there new findings that may relate to a participant's willingness to continue taking part in the research study?

   ☐ *If yes, explain whether these findings need to be provided to participants, and if so, how this will be accomplished.*

   ☒ No

5. Do changes require a REVISED CONSENT statement or procedure?

   ☐ *If yes, attach a revised consent form with the changes tracked, and a clean copy for the IRB approval stamp.*

   ☒ No

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Name of Principal Investigator / Researcher:

Signature   Date

Name of Advisor (if applicable):

Signature   Date

Note: You must receive written notification of approval from the IRB before implementing any changes (except when necessary to eliminate apparent immediate hazards to the subject).

Date Signed: 5/11/15

MSU HRPP
Full Accreditation

[X] Exempt

[ ] Exp

[ ] CIRB   Approved by Nicole Morse

APPENDIX E

RECRUITMENT LETTER

Dear Educator,

I am writing to tell you about a research study being conducted at Mississippi State University. It involves the Vocational Instructor's Preparation (VIP) program in which you are enrolled. I, along with my advisor, Dr. Dana Franz, will be conducting the study to attempt to answer three research questions:

1) Using interviews and a measurement of teaching self-efficacy, how do career and technical education teachers completing different delivery methods of Mississippi's Vocational Instructor's Preparation (VIP) Program perceive the effectiveness of their teacher education program to prepare them to teach with confidence?

2) What methods of teaching acquired during the Mississippi's Vocational Instructor Preparation (VIP) programs do career and technical education teachers perceive as the most effective in preparing them for their first year(s) of teaching?

3) How do teachers' professional relationships with mentors and administrators influence their teaching efficacy and job satisfaction?

The purpose of this letter is to request your participation in the research study. The study will involve at least one 30-minute interview, at least one 30-minute observation, a self-efficacy survey, and casual conversations, to be performed at the participants' respective local education agencies. Participation in this research is voluntary, and your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may quit the study at any time or refuse to answer any specific questions that you do not want to answer. The information you provide will be confidential, and you will never be personally identified in the study.

Please respond to this letter to indicate whether or not you would like to participate. If you should have any questions about this project, please feel free to contact Myra Pannell at (662) 316-3814 or by email at myra.pannell@rcu.msstate.edu. You may also contact Dr. Dana Franz at (662) 325-7117 or by email at df76@colled.msstate.edu. For more information about human participation in research, please contact the MSU Regulatory Compliance Office at (662) 325-3294.

Thank you for your consideration.

Sincerely,

Myra Pannell

Mississippi State University

APPENDIX F

CURRICULUM VITAE

Myra Carter Pannell
112 Peaceful Lane
Starkville, MS 39759
Work Phone: 662.325.2510
Home Phone: 662.316.3814
E-mail: myrapannell@yahoo.com

EDUCATION

Mississippi State University	**2010-present**
Doctor of Philosophy—in progress	
Curriculum and Instruction	
Mississippi State University	**2010**
Master of Science	
Technology	
National Board Certified Teacher	**2007**
National Board for Professional Teaching Standards	
Career and Technical Education/Early Adolescent through Young Adulthood	
Specialty Area: Business, Marketing, Information Management, and Entrepreneurship	
Cisco Networking Academy	**2001**
Northeast Mississippi Community College	
Mississippi State University	**1998**
Bachelor of Science	
Elementary Education, College of Education	
Areas of Concentration: K-8 Education, Mathematics, Technology, and Social Studies	

PROFESSIONAL ACCOMPLISHMENTS

Partner, Golden Triangle Early College High School, Mayhew, MS	**2014-present**
Collaborated with MDE, EMCC, and North Carolina New Schools to establish Mississippi's first early college high school, providing opportunities for students to graduate high school with a traditional diploma and an associate's degree in four years.	
M-STAR Evaluator	**2014**
ACTE Engineering and Technology Education Division	**2011**
Service Award	
Certification of Online Learning (C.O.O.L.)	**2010**
Franklin Covey's 7 Habits of Highly Effective Teens Trainer Certification	**2010**
Internet and Computing Core Certification (IC³)	**2007**
Interactive Competency Assessment of Technology (iCAT/Propulse) Certification	**2007**

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PROFESSIONAL EXPERIENCE

Mississippi State University   **2008 – Present**
Research and Curriculum Unit, Starkville, MS
Senior Research Associate

Mississippi State University   **2013 – 2015**
College of Education, Starkville, MS
Adjunct Instructor

East Union Attendance Center   **1999-2008**
Union County Schools, Blue Springs, MS
Teacher

Service to the Profession

Chair, National Science, Technology, Engineering & Mathematics Cluster Workgroup   **2012**
CTE Courses: Creating Commonality with SCED project supported by ACTE,
NASDCTEc, and the Department of Education's Office of Vocational and Adult
Education and National Center for Education Statistics.

Reviewer, Investing in Innovation (i3) Grant, U.S. Department of Education   **2012**
Selected to serve on a panel of reviewers to read, review, and rate grant applications
for STEM education.

Secretary   **2011-present**
Elected position of the Engineering and Technology Education Division National Policy
Committee, Association for Career and Technical Education (ACTE).

Partner, NSF Grant, CLiPSE   **2011-present**
Provide input and support for the Climate Literacy Partnership in the Southeast
NSF grant.

Advisory Board Member, NSF GK12 Grant, INSPIRE   **2011-present**
Provide input and advice on a project between Mississippi State University and
three rural school districts in North-Central Mississippi to implement
technology-supported, inquiry learning in the Earth and Space sciences for 7th -12th
grade classrooms.

Supervision Representative   **2009-2011**
Elected position of the Engineering and Technology Education Division National Policy
Committee, Association for Career and Technical Education (ACTE).

RCU Position Search Committees   **2008-2011**
Project Manager for Business Development, Appointed Member
Construction Science Instructional Design Specialist, Appointed Member
Professional Learning Specialist, Appointed Member

STEM Career Pathway Taskforce   2010
Led a team of secondary and postsecondary teachers, directors, and industry members
to collaborate and develop an updated STEM Career Pathway for the state of Mississippi.

STEM in Race to the Top, National Governor's Association   2009
Represented the state of Mississippi to learn how to successfully write STEM elements
into the Race to the Top grant.

PRESENTATIONS, CREATIVE ENDEAVORS, & GRANTS

Pannell, M., & Ming, C. (2015, October). *Learner-centered strategies*. Professional development presented to Natchez Early College Academy faculty at Golden Triangle Early College High School, Mayhew, MS.

Pannell, M. (2015, September). *What does it mean to be an early college student?* Lecture presented to students at Golden Triangle Early College High School, Mayhew, MS.

Pannell, M., & Skelton, B. (2015, August). *Project-based learning*. Professional development presented to teachers at Golden Triangle Early College High School, Mayhew, MS.

Pannell, M. (2015, March). *Mississippi design principles*. Lecture presented to HPLI Cohort 7 at Research and Curriculum Unit, Starkville, MS.

Pannell, M. (2015). *Classroom and Statewide Assessment Alignment and Student-Centered Learning*. Invited presentation. Presented to CTE New Administrators, Brandon, MS.

Pannell, M. (2015). *Graduation Restructuring*. Presented to Superintendents, Principals, and Counselors. Jackson, MS

Pannell, M. (2015). *Design principles and early college strategies*. Invited presentation. Presented to the High Performance Leadership Institute, Starkville, MS

Pannell, M. (2015). *Aligning statewide and classroom assessment*. Invited presentation. Presented to CTE New Administrators, Brandon, MS

Pannell, M. (2014). *Career clusters & pathways and Mississippi graduation options*. Invited presentation. Presented to CTE New Administrators, Raymond, MS.

Pannell, M. (2013). *Career academies in Mississippi*. Invited presentation. Presented to Program of Research and Evaluation for Public Schools (PREPS) Conference, Jackson, MS.

Pannell, M. (2013). *Career pathways and innovative high school models: Methods to increase retention*. Invited presentation. Presented to Dropout Prevention Conference, Jackson, MS.

Pannell, M. (2013). *Keystone delivery and flipped classrooms*. Invited presentation. Presented to Madison County Keystone teachers. Madison County Career and Technical Center, Madison, MS.

Pannell, M. & Durr, S. (2013). *Rankin county career academy: Integrated project planning*. Invited presentation. Presented to members of the Rankin County Career Academy. Brandon High School, Brandon, MS.

Pannell, M. (2013). *What can you do with a ph.d.?* [Panel discussion] Invited. Mississippi State University, Starkville, MS.

Pannell, M. (2011, November). *Pencils down! Performance based assessment in the polymer science classroom.* Invited presentation at the Association for Career and Technical Education Annual Convention and Career Tech Expo: St. Louis, MO.

Pannell, M. & Parker, R. (2011, November). *No money, no problem! Technology tools you can use.* Presentation at the Association for Middle Level Education: Louisville, KY.

Pannell, M. (2010, December). *Robotics and engineering: An exciting and innovative secondary CTE program.* Invited presentation at the Association for Career and Technical Education Annual Convention and Career Tech Expo: Las Vegas, NV.

Pannell, M. & Parker, R. (2010, November). *21st century middle school technology classroom.* Presentation at the National Middle School Association: Baltimore, MD.

Bowen, M.D., & Pannell, M. (2010). *Engineering pathway training.* $12,412.05 [Grant award]. Mississippi Department of Education: Jackson, MS.

Pannell, M. and R. Parker (2009, July). *Pre-Teen "Techsperts": A 21st-Century Approach to Technology Education in the Middle Grades.* Presentation at the High Schools That Work Staff Development Conference in Atlanta, GA.

Parker, R. and M. Pannell (2009, July). *Growing dendrites: Career/technical instruction that works.* Invited presentation at the High Schools That Work Staff Development Conference in Atlanta, GA.

Pannell, M. (2009, January). Career pathways in redesign. Invited presentation at the Tech Prep Counselor Retreat in Louisville, MS.

Pannell, M., and R. Parker (2009). Engineering curriculum proposal. Report presented to Entergy in Jackson, MS 2009.

Mississippi Department of Education; Continuation of Services for the Research and Curriculum Unit at Mississippi State University; $2,196,931.00; 2008-present. (Awarded - Participant)

Pannell, M. (2008). Mississippi Department of Education. *Career Pathways Research*. Architecture and Engineering. MDE Brief, (3) 2.

Pannell, M. (2008, July). Understanding by design—STEM cluster. Presentation at the Mississippi Association for Career and Technical Education in Raymond, MS.

Pannell, M. (2008). [Review of the book *Survey of engineering: An introduction to engineering & technology for middle school and lower high school grades*, by A. G. Gomez, W. C. Oakes, L. L. Leone, & J. L. Gruender.]

Published Curricula and Assessments

Pannell, M. (2014). Keystone. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2014). Polymer Science. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2013). Engineering. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2013) Information and Communication Technology I. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

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Pannell, M. (2013) Information and Communication Technology II. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2013) Marine Technology. [Postsecondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2013) Military Technology. [Postsecondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2012). Information systems technology. [Postsecondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2012). Law and public safety. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2012). Technology foundations. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2011). STEM Applications. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2011). Automation and control. [Postsecondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2011). Civil engineering technology. [Postsecondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2010). Graphic and Print Communication. [Postsecondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2010). Media Technology. [Postsecondary assessment]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2010). Polymer science. [Secondary assessment]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2010). Engineering. [Secondary assessment]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2010). Information Technology. [Secondary assessment]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2010). Digital Media Technology. [Secondary assessment]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M. (2010). Polymer science. [Secondary curriculum]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M (2009). Engineering. [Secondary assessment]. Mississippi State, MS: Research and Curriculum Unit.

Pannell, M (2009). Polymer science. [Secondary assessment]. Mississippi State, MS: Research and Curriculum Unit.

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PROFESSIONAL ASSOCIATION MEMBERSHIPS

Member of Association for Career and Technical Education (ACTE)

Member of Association for Supervision and Curriculum Development (ASCD)

Member of the Engineering and Technology Education Division of ACTE

Member of the Association for Middle Level Education (AMLE)

SERVICE & AFFILIATIONS

Henderson Ward Stewart PTO Executive Council   **2010-2014**
Starkville Public Schools
3rd Grade Representative

Starkville Raiders Youth Football, Powerhouse Youth Football Association   **2010-2013**
Communication Officer

Service DAWGS   **2008-present**
Assist in the coordination of 200+ university student volunteers with multiple
service projects