

High Quality, Virtual Supervision in a Reimagined Teacher Preparation Model

by

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ABSTRACT

Faculty members in Mary Lou Fulton Teachers College at Arizona State University have been reimagining the undergraduate and graduate teacher preparation programs to serve better PreK-12 students and improve the teaching profession. An important feature of the reimagined teacher preparation model included placing teacher candidates (TCs) on teams of educators with distributed expertise, which was intended to provide PreK-12 students more opportunities for deeper and personalized learning. Lead teachers who also served as mentors for TCs facilitated these teams. Within this reimagined approach to organizing the educator workforce and preparing future teachers, there was still a need to supervise appropriately TCs during their student teaching experience. Faculty supervisors conducted a minimum of six observations of each TC during each student teaching semester. These observations required a substantial amount of time being spent meeting with TCs at school sites, as well as a substantial amount of travel between placement locations. To address this problem of practice, an online, virtual supervision (VS) approach to providing coaching and feedback was implemented during the fall 2020 semester. The VS approach included an initial training for faculty supervisors, adoption of a video coaching platform, and a flexible protocol for completing four virtual walkthroughs and two virtual performance assessments for each TC during the student teaching semester. The purpose of this mixed methods action research study was to examine the effects of using VS to provide coaching and feedback to teacher candidates (TCs). Participants included three faculty supervisors who organized and facilitated coaching conversations with their assigned TCs who also participated in the study. Data for this mixed methods study included pre- and post-

intervention faculty supervisor interviews, post-intervention TC interviews, and retrospective, pre-intervention and post-intervention surveys of TCs. Findings suggested faculty supervisors and TCs preferred the flexibility in scheduling coaching conversations and the ‘any-time-any-where’ availability of the faculty supervisor for support offered through the VS model. TCs also indicated they received quality feedback and coaching. The discussion focused on complementarity of the quantitative and qualitative data, connecting the findings to the research literature, limitations, implications for practice and research, personal lessons learned, and conclusions.

DEDICATION

I dedicate this work to the Site Leads within the teacher preparation program at Mary Lou Fulton Teachers College. These clinical faculty members are the frontline workers of the program, and give a significant amount of their blood, sweat, and tears to ensuring the success of future professional educators and the children with whom they work. You all ROCK!

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CHAPTER 1

CONTEXT AND PURPOSE OF THE STUDY

A National Education Association (NEA) Policy Brief entitled *Profession-ready teachers* suggested teacher preparation programs should always be working to improve the quality of their programs to prepare better teacher candidates (NEA, 2013). A more recent report published by the American Association of Colleges for Teacher Education (AACTE) identified improving clinical experience models as a current focal point for improving teacher preparation programs (AACTE, 2018). Supervision was one area where clinical experience models have been examined with greater scrutiny. Supervisors have played a key role of providing coaching and feedback during student teaching (ST) experiences. In May of 2018, the National Council of Teacher Quality (NCTQ) released a review of teacher preparation programs, which suggested there was an overall absence of feedback by qualified supervisors during ST experiences (NCTQ, 2018). The current teacher shortage and continuing high turnover rates have placed greater emphasis on the need to prepare better teacher candidates (TCs) for the profession. For example, an August 2018 report published by the Arizona School Personnel Administrators Association (ASPAA) identified 1,547 teacher vacancies in Arizona based on those school districts who responded to the ASPAA survey (Wing, 2018).

University supervisors have played an important role in preparing teacher candidates for the profession. Supervisors have typically been educators who had many years of experience as classroom teachers, instructional coaches, and sometimes school administrators. The role of the supervisor has been multifaceted, and included observing,

evaluating, modeling, and collaborating, among many other roles (Bates, Ramirez, & Drits, 2009; Jones, 1970; Stephens, 1998).

Although most supervision for ST still has been provided using an in-person approach, more recently, colleges of education have also implemented virtual mentoring because some STs were placed in settings that were at a distance and not readily accessible to supervisors (Berkey & Conklin, 2016; Van Boxtel, 2017). For example, Van Boxtel (2017) conducted a qualitative study of STs and mentor teachers to better understand the strengths and challenges of using video recorded lessons as a replacement for in-person supervision during the student teaching experience. In general, the outcomes from Van Boxtel's (2017) study identified several benefits to the use of video supervision, including increased self-efficacy by STs. Similarly, Kelly and Bishop (2013) developed a remote supervision model for physical education students using video and microphone equipment. This study found the application of video in place of face-to-face supervision reduced costs associated with travel, and improved the timeliness of supervisor feedback (Kelly & Bishop, 2013). Both studies also presented some of the limitations discovered through the implementation of a virtual approach to supervision.

Situated Context

The Mary Lou Fulton Teachers College (MLFTC) at Arizona State University (ASU) has served as one of the largest teacher preparation programs in the country. During the past three academic years, MLFTC has graduated 2,500 beginning teachers from its undergraduate and graduate certification programs (P. Marsh, personal communication, June 24, 2018). The undergraduate teacher preparation program, iTeachAZ, consisted of two internship experiences during the junior year, and the

program was capped off by two semesters of ST, known as Senior Year Residency (SYR). Since 2011, the SYR model has been fully implemented in MLFTC for all undergraduate programs leading to certification. The model was derived from the previous Professional Development Schools (PDS) model MLFTC had conducted with several school partners since 1999. The PDS model had emphasized collaboration between the teacher preparation college and the school partner in preparing future teachers (Darling-Hammond, 2009). Under the PDS model, TCs took coursework on-site, while simultaneously completing their ST experience. MLFTC had as many as nine PDS sites before moving to the SYR model in 2011. The PDS model produced graduates who were much better prepared to serve as beginning teachers than those who participated in the traditional teacher preparation model that was still being implemented with the majority of TCs in the college (iTeachAZ boasts decade-long track record of teacher preparation, 2010). The success of the PDS model convinced college leaders to transition all undergraduate elementary education programs away from the traditional single semester ST model and scale-up the SYR model.

In spring of 2018, the highly successful SYR model had completed its seventh year of full implementation. From the perspective of school administrators, who actively sought to hire program graduates, graduates of iTeachAZ, the name of the SYR program, performed at the level of second-year teachers during their induction year (Schlesinger, 2013). Despite the success of the program, the college has pursued opportunities to innovate.

Currently, the college has conducted extensive work on reimagining what teacher preparation should look like moving forward. This work has included more than just

rethinking teacher preparation. In fact, a larger imperative of reimagining what the education workforce should look like for all educators and students has served as the driving force for these efforts. The college has called this initiative *The Next Education Workforce*. The initiative was guided by two principles (a) providing students with deeper and personalized learning by building teams of educators with distributed expertise, and (2) empowering educators by developing new opportunities for role-based specialization and advancement. The college recognized an important aspect of this initiative from districts' and schools' perspectives would be with respect to how teacher candidates were deployed for their internship and student teaching experiences. Approaching the deployment of teacher candidates in a new way included (a) reimagining how schools utilized TCs to best support the school's mission, (b) reimagining the role of the lead teacher as more than just a model and coach, and (c) reimagining the role of the TC as a valued contributor to a collaborative team. These ideas have been depicted in Figure 1, which provided a visual representation of the main components of the reimagined teacher preparation model. See Figure 1.

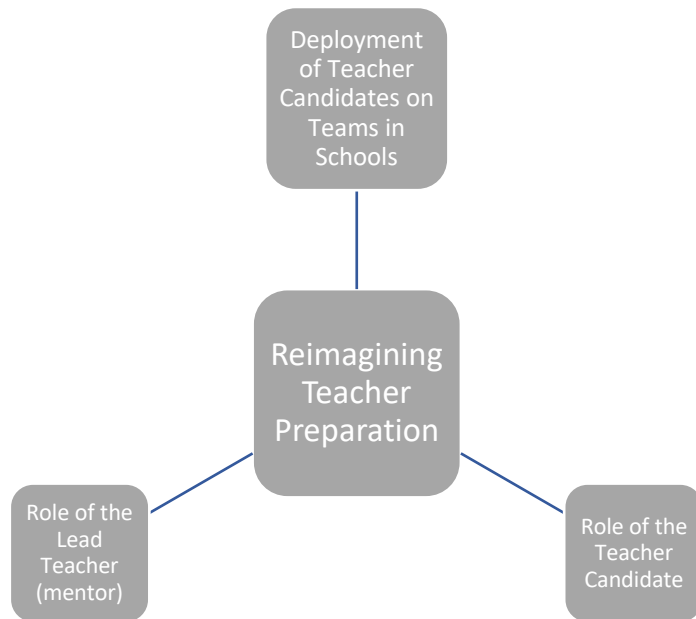


Figure 1. Components of Reimagined Teacher Preparation Model

In August 2018, I was hired to serve as the Executive Director of Professional Experiences for MLFTC at ASU. As the Executive Director for Professional Experiences, one of my core responsibilities was to focus on rethinking what experiences students should have to prepare them better for the current workforce, and more importantly, prepare them for a changing educator workforce that does not yet exist. In addition to the student experience, I was charged to consider the changing role of MLFTC faculty members and supervisors.

One model for placing TCs in the field that was pilot tested in spring 2019 was what we have called a ‘regional model.’ In the regional model, the metro-Phoenix area was divided into west, central, and east regions. In each region, we identified a ‘hub’ where STs took their ASU coursework. The hub was located at a school site within a school district. For example, we identified an east valley hub at Playa del Rey in the

Gilbert Public School district. Teacher candidates who selected the east valley hub during the spring 2019 semester took all of their ASU coursework at Playa del Rey. These students also chose the school district into which they wanted to be placed for ST. TCs placed in the east valley hub had a choice of Gilbert Public Schools, Chandler Unified School District, or Mesa Public Schools for their ST placement. In the older SYR model, spring start students only had a choice between one west valley district and one east valley district. This new regional hub model allowed students more options for ST placement. Although students were provided more options for ST placements, a challenge of this new model was the distance at which students were placed from the hub where faculty supervisors originated their work. This was a challenge, because faculty supervisors under the previous supervision model were required to make a minimum of six face-to-face visits with each TC during a semester. Clearly, such an approach would not be appropriate or feasible in the new ‘distributed’ model, which spread STs across a wider geographic area. As the spring 2019 semester moved forward, the hub approach to facilitating coursework in the field, combined with placing teacher candidates in multiple sites, quickly became a problem for faculty supervisors. Faculty supervisors were spending a substantial amount of time traveling between school sites to supervise TCs across multiple schools and districts, and they were complaining about not having enough time to complete the required observations and evaluations. If the college was going to sustain the approach of providing teacher candidates more student teaching placement options, while also maintaining or increasing the quality of supervision, it became clear that it would be necessary to consider alternative supervision models. Thus, we began to explore virtual supervision options during the 2019-2020 academic year.

Brief Introduction to the Intervention

To deal with this issue, I developed a virtual supervision (VS) approach. In the approach, I provided professional development to faculty supervisors on the GoReact platform, which allowed them to view TCs' recorded walkthroughs and formal performance assessments. Moreover, they used Zoom to provide coaching and feedback to TCs using Costa & Garmston's Cognitive Coaching framework.

Purpose of the Project and Research Questions

The purpose of this project was to increase the quality and quantity of supervision for TCs in a reimagined teacher preparation model where ST were placed across a large geographic area. Many factors have contributed to TCs' preparedness for the teaching field. One of the most consequential has been the ST experience and the supervision TCs received during ST. Recently, the college has begun to reconsider the traditional supervision model for ST. This issue was directly related to my work responsibilities, and one that I was tasked with addressing as part of our college's reimagining of teacher preparation programs.

To guide the direction of the study, I used three research questions (RQ).

RQ 1: How and to what extent did virtual supervision affect the amount and quality of coaching/feedback between faculty supervisors and teacher candidates?

RQ 2: How and to what extent did virtual supervision and coaching affect teacher candidates' self-efficacy related to teaching practices?

RQ 3: What challenges and benefits arose during use of a virtual supervision component for coaching/feedback between faculty supervisors and teacher candidates?

It was my belief that seeking answers to these research questions would help me to understand better the quality and quantity of supervision that was needed to prepare better TCs for the changing educational workplace.

Response to Pandemic

In March of 2020, the Covid-19 pandemic began to influence operations of the education system across Arizona, the United States of America, and the world. Because of the pandemic, schools moved to various instructional formats, with many moving to completely remote, virtual instruction. During the summer of 2020, the MLFTC leadership team made a decision to begin the 2020-2021 academic year with fully remote, virtual supervision (VS) for all teacher candidates, regardless of the format of instruction at their assigned student teaching school sites. Rather than pilot testing the VS model with a select group of faculty supervisors and TCs, the VS model was applied to all student teaching experiences during the fall 2020 semester. This sudden change did not change the research questions of the study, or the identified participants of the study. The college benefited from the timing of this study because the infrastructure for VS was already being developed when remote supervision of TCs became necessary. Moreover, the study afforded the College an opportunity to examine thoroughly and formally the effectiveness of VS and its components, as well as the challenges and benefits arising from using VS.

CHAPTER 2

THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE PROJECT

In Chapter 1, I provided the larger and local context for this research study. MLFTC has been in the midst of reimagining its teacher preparation program. My role in this reimagining process has been to oversee all changes related to clinical experiences. These changes included establishing new and deeper partnerships with school districts, formulating a clinical experience model that was aligned to the larger vision of the teacher preparation program, and ensuring faculty and staff members were prepared to support students in the new model. For this research study, I was focusing on the supervision of teacher candidates (TCs) during their student teaching semesters, and how a virtual supervision model could support supervisors and TCs. I proposed this model to address increasing concerns related to time restrictions, extensive travel, and quality of the faculty supervisor and teacher candidate collaborative experiences.

In Chapter 2, I have provided an in-depth description of two theoretical frameworks that served as lenses guiding this research project. For each theory, I have included descriptions of how current practices in the MLFTC teacher preparation model were aligned with characteristics of the theory. The first theoretical framework I presented was Albert Bandura's (1977, 1997) self-efficacy perspective. The second theoretical perspective I presented was Moore's (2012) transactional distance framework, which has been used to describe the relationship between educators and students when distance or time has separated them. Subsequently, in Chapter 2, I have presented descriptions of related, relevant literature on classroom walkthrough assessment approaches, cognitive coaching models, and virtual supervision and coaching. The first

two of these practical frameworks have played a critical role in the support of TCs during the student teaching experience in the MLTC teacher preparation programs; whereas the third was included to describe current uses of virtual approaches in supervision and coaching.

Self-Efficacy

Self-efficacy was introduced by Albert Bandura in 1977 as a result of his research on social cognitive theory. Self-efficacy has been defined as the ability of individuals to see themselves as capable of having success within specific situations (Bandura, 1977, 1994, 1997). Notably, Bandura claimed self-efficacy was contextual; individuals experienced various levels of self-efficacy depending on the situation. As Bandura (1995) noted, “Perceived self-efficacy refers to beliefs in one’s capabilities to organize and execute the courses of action required to manage prospective situations. Efficacy beliefs influence how people think, feel, motivate themselves, and act” (p. 2). For all individuals, various levels of self-efficacy were experienced in all areas of life, not just in educational settings.

Sources of information that influence self-efficacy. Self-efficacy has been influenced by four sources of information based on different experiences: mastery experiences, vicarious experiences, verbal persuasion occasions, and emotional arousal situations (Bandura, 1977, 1994, 1997). Three of the four sources of self-efficacy information, which were most relevant to the study, along with connections to the student teaching experience, have been described below.

Mastery experiences. Repeated success leads to increased self-efficacy, and the ability to overcome challenges (Bandura, 1977, 1997). TCs who have experienced

repeated successes as part of their teacher preparation involvement had a higher degree of confidence in their teaching ability when they entered the teaching profession (Hoy & Spero, 2005; Tuchman & Isaacs, 2011). TCs who dedicated time to planning for lessons prior to instruction experienced reduced stress, and increased likelihood of experiencing a successful lesson delivery (Martins, Costa, & Onofre, 2015). TCs were better prepared for the profession when they experienced success in diverse settings, worked with various groups of classroom students, and had opportunities to teach multiple subjects (Clark, Byrnes, & Sudweeks, 2015; Young et al., 2018).

With respect to clinical experiences during their preparation programs in the Mary Lou Fulton Teachers College, experiences were designed to build on repeated successes related to instructional practices over the course of the internship and student teaching semesters. TCs in the MLFTC received a substantial amount of feedback and coaching related to instructional practices through the application of the TAP instructional rubric and observation protocol (National Institute for Excellence in Teaching, 2013). The observation protocol included pre-conferencing, lesson observation, and post-conferencing facilitated by clinical faculty members. Additionally, TCs were purposefully placed with lead teachers who were appropriately certified for the content area for which the TC was seeking certification. Further, these lead teachers were identified by their principals as possessing the attributes of instructional leaders who provided effective mentorship to teacher candidates through modeling, coaching, and offering feedback.

Vicarious experiences. Vicarious experiences were those in which individuals observed someone else achieve success (Bandura, 1977, 1997). In the clinical experience

model, a key responsibility of the lead teacher has been to model quality teaching practices and professional behaviors for TCs. Over time, TCs who have observed successful instruction have begun to adopt those instructional practices they deemed most effective. During the student teaching experience, lead teachers modeled their own highly developed professional skills and pedagogical methods for TCs. Simply observing the highly skilled efforts of their lead teacher had potential to contribute to the self-efficacy of the TC (Gallagher, 2012). Vicarious experiences may also have had the reverse effect on TCs if the TCs focused attention on faults exhibited during delivery of a lesson rather than on the successes of a lesson (Martins et al., 2015).

Recalling from Chapter 1, during the terms 5 and 6 internships, students' experiences focused on opportunities for the intern to observe their lead teachers and implement some of those behaviors in small ways. By comparison, during the student teaching semesters, terms 7 and 8, TCs transitioned from primarily observation in the initial weeks of the experience, to co-teaching, and lead teaching for the majority of the student teaching experience. This sequence of experiences provided numerous opportunities for TCs to observe their lead teachers navigate challenging situations when planning lessons, teaching students, managing student behaviors, working with parents, and collaborating with colleagues. Through these situations, for example, lead teachers facilitated vicarious experiences by thinking out loud when solving a problem to model the strategy for the TC (Ertmer & Newby, 2013). MLFTC has worked closely with school administrators to identify lead teachers who have shown the ability to consistently model best teaching practices to TCs.

Verbal persuasion. When individuals were told by others they have what it takes to accomplish a specific goal, their self-efficacy has been increased (Bandura, 1977, 1997). During student teaching, verbal persuasion frequently resulted from communication offered by the lead teacher and the faculty supervisor, which influenced the self-efficacy of TCs (Garvis, Twigg, & Pendergast, 2011). Lead teachers and faculty supervisors who had worked at developing trusting relationships with their TCs were more likely to influence TCs through verbal persuasion (Martins et al., 2015).

During the student teaching semesters, TCs participated in cohorts with peers who provided support to one another throughout the experience. TCs were placed with lead teachers who were skilled in highlighting and reinforcing teaching practices that candidates performed well. In addition to on-going support from their peers and mentors, TCs were assigned full-time clinical faculty supervisors who taught some courses to the cohort, and who supervised TCs in their student teaching placements. The faculty supervisor provided verbal feedback and encouragement throughout the student teaching experience.

Self-efficacy's influence on behavior. In addition to sources of information from experiences that have contributed to individuals' self-efficacy, human behavior has been shown to be influenced by self-efficacy in different ways. Bandura (1993) identified four psychological areas where self-efficacy contributed to how people behaved including cognitive processes, motivational processes, affective processes, and selection processes.

Cognitive processes. Individuals who had a high level of self-efficacy tended to think positively about outcomes, and were more likely to seek out challenges, whereas

those who possessed lower self-efficacy tended to become overwhelmed in challenging situations (Bandura, 1993; Pajares, 2002). The more challenging situations became, the more likely individuals with lower self-efficacy would become discouraged. Pajares (2002) described how students who struggled with self-efficacy with respect to a subject, also struggled with self-regulation to push forward when the work became challenging. Many TCs have experienced a slump in performance during the student teaching semester. They communicated to their faculty supervisor and lead teacher about being overwhelmed with balancing the workload of a full-time teacher, with the requirements of being a full-time college student. At the same time there were TCs who thrived throughout the student teaching experience. These teacher candidates likely possessed higher levels of self-efficacy, and embraced the opportunity to lead planning and instruction in the classroom.

Motivational processes. Individuals who had high levels of self-efficacy were more likely to be motivated, and they believed their successes were a result of their efforts and not necessarily their ability (Bandura, 1993). These individuals generally set goals for themselves, which provided motivation for sustaining their efforts when faced with challenges (Bandura, 1993). Zimmerman (2002) argued that processes, such as goal setting, related to building self-efficacy and self-regulation could be developed in students by those who provided modeling and instruction to them. During the senior year residency (SYR), the full-year of student teaching during terms 7 and 8, faculty supervisors worked with TCs to set realistic goals for personal growth. Additionally, supervisors and TCs collaborated to set goals for the K-12 students with whom they worked.

Affective processes. Individuals who had high levels of self-efficacy related to their ability to manage stress were more willing to take on challenging situations without experiencing anxiety (Bandura, 1993). These individuals had confidence they could manage or navigate their stress and anxiety, and were more willing to put themselves into high stress environments (Bandura, 1993). Given the current project, this ability was important because many TCs entered the student teaching experience with unmanageable levels of anxiety.

Selection processes. Individuals have selected environments in which they believed they would experience success, based on their sense of self-efficacy (Bandura, 1993). The greater the level of self-efficacy, the more options individuals had with respect to career paths and other life choices. Based on my experience working with TCs, they frequently made choices to avoid subject areas where they had lower levels of confidence. For example, TCs may have requested to be placed in a middle school English setting, not because of a specific passion for teaching English, but because of low self-efficacies related to teaching mathematics and science, for example. The two semesters of internship experience during terms 5 and 6 prior to the SYR were designed to provide a range of experiences with different grade levels and subject areas. This range of experiences was intended to guide TCs toward identifying a teaching setting in which they would thrive.

Self-Efficacy and the Roles of Faculty Supervisor and Influences on Teacher Candidates

In this research project, two participant roles, were examined through the lens of self-efficacy. The first role was that of the faculty member supervisor, who was

implementing a supervision experience far different than the current face-to-face model that had been used previously. Typically, supervisors had a high level of self-efficacy related to their supervisory role having confidence in their ability to observe, evaluate, coach, and provide feedback and support to TCs who were performing at various levels during student teaching. All MLFTC faculty member supervisors have had substantial classroom teaching experience in K-12 settings and have had a range of professional development related to evaluating and facilitating coaching conversations with TCs. Faculty supervisors have used a traditional classroom walkthrough model to conduct informal observations of ST since the college transitioned to the SYR student teaching model in 2011. Implementing a revised model of supervision to replace or supplement walkthroughs could temporarily decrease faculty supervisors' self-efficacy related to field supervision of TCs. This anticipated decrease in self-efficacy was addressed as a component of the intervention described in Chapter 3. Additional detail about the purpose and process of conducting classroom walkthroughs has been discussed later in this chapter.

The second participant role examined through the lens of self-efficacy was that of TCs. Supporting TCs by building self-efficacy has been a key objective of all teacher preparation programs. Self-efficacy was gradually developed over the course of the student teaching experience through opportunities to observe and teach in various settings with diverse groups of students who performed at a wide-range of academic levels. Self-efficacy was also nurtured through supervision and coaching by the lead teacher and the faculty supervisor. Thus, this project was conducted to examine simultaneously (a) how the implementation of a revised supervision model would contribute to the development

of TC self-efficacy related to becoming a professional educator and (b) how faculty supervisors developed self-efficacy for implementing a new supervisory model that included virtual meetings and virtual coaching of TCs.

Transactional Distance

The theory of transactional distance was developed by Michael G. Moore, and dated back to 1972 when distance education began to take hold as an option for educators to reach students who did not have access to brick and mortar learning institutions (Moore, 2012). In transactional distance theory, proponents sought to describe the relationship between educators and students when distance or time separated the two (Moore, 2012; Shannon, 2002). Educators who have taught in online settings sought to limit transactional distance by accounting for three factors: structure, dialogue, and learner autonomy (Moore, 2012). These three factors have been described further, below.

Structure. Structure referred to all of the components of a distance learning course, including lessons, presentations, objectives, content, activities, materials, questions, and discussions (Moore, 2012). The more structure there was in a course, the greater the transactional distance. This counterintuitive outcome occurs when instructors do not use high levels of dialogue or provide high levels of learner autonomy because of the high structure. Distance education courses have been marked by standardization, limiting the amount of flexibility built into the course (Lemak, Shin, Reed, & Montgomery, 2005). Dockter (2016) argued that pre-recorded videos of instruction that were part of online courses actually increased transactional distance, due to the fact that such an approach limited interaction with the instructor or with peers when students were watching a pre-recorded lesson. Notably, distance educators must have been able to find

the appropriate amount of structure in a course to provide enough support for students, while still maintaining some level of flexibility (Shannon, 2002). In their study, Lemak et al. (2005) found distance education students provided more favorable ratings for online instructors who were able to demonstrate flexibility in their course structures. Moore (2012) suggested providing students with options or pathways for students to gain the knowledge needed to meet the objectives of a lesson. The options included a list of readings, videos, or other web resources from which students might choose.

Dialogue. Dialogue was the act of having a two-way conversation between the instructor and the student (Moore, 2012). When pre-recorded videos of instruction were used as part of a distance learning course, the opportunity for dialogue was limited (Dockter, 2016). When it has been used, dialogue has been facilitated through synchronous, or live, delivery of a course through the use of video conferencing. Moreover, transactional distance has been reduced through 1-on-1 or small group video conferencing (Moore, 2012; Pattillo, 2007). The smaller the group, the greater the likelihood of full participation in the dialogue during video conferences. Other forms of dialogue that served to reduce transactional distance were discussion boards, recorded and annotated feedback, and email communication (Bostock, 2018). Thus, the implication is that video conferencing appears to offer the greatest opportunity for reducing transactional distance when using dialogue.

Learner autonomy. Learner autonomy has been defined as the degree to which distance learning participants were able to ‘own’ their learning (Moore, 2012). Learner autonomy in a distance learning environment increased when structure was low and dialogue was high, and decreased when structure was high and dialogue was low

(Bostock, 2018). Moore (2012) developed a model to represent learner autonomy, based on the degree to which a student was able to choose what to learn, the method of learning, and how the learning was assessed. The degree of learner autonomy model has been provided in Figure 2, below. A fully autonomous experience was one where participants had the ability to choose how to learn, execution; what to learn, goals; and how to be assessed, evaluation (Moore, 2012). Most often, learners have been given autonomy, i.e., choice with respect to execution of class activities, which was shown at number 7 in Figure 2.

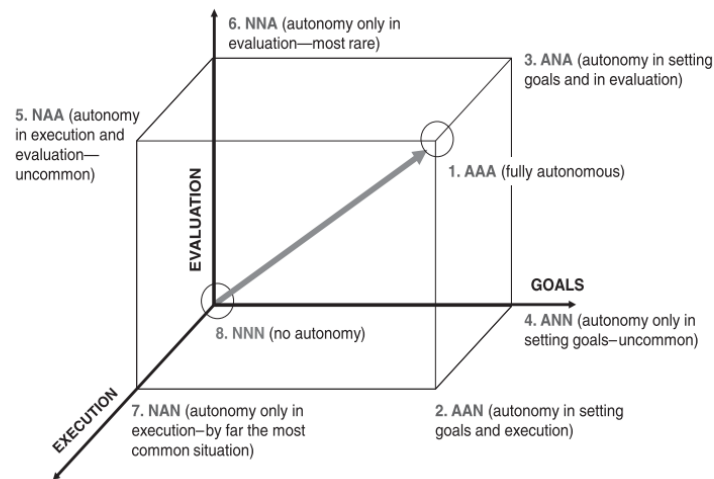


Figure 2. Degrees of learner autonomy in determining what to learn, how to learn, and evaluating learning. Adapted from *The theory of transactional distance*. By M. G. Moore in the *Handbook of Distance Education*, 3rd ed., p. 73. Copyright 2012 by Taylor & Francis.

Transactional Distance and the Roles of Faculty Supervisor and Teacher Candidate

Structure, dialogue, and learner autonomy were all considered when developing the virtual supervision intervention for this this action research study. Supervision of TCs during the student teaching experience was facilitated remotely. Nevertheless, understanding the challenges that faculty supervisors and TCs may have experienced as part of the virtual supervision component of the student teaching experience contributed to the overall design and implementation of the virtual supervision model.

First, the structure of the virtual supervision model was designed to allow flexibility for faculty supervisors and TCs. The overall pre-conference, lesson observation, and post-conference structure was maintained for the performance assessment process, but flexibility was afforded by allowing supervisors to determine their own range of questions that could be used to encourage reflection and push TCs' thinking. Further, faculty supervisors were encouraged to work with TCs to identify a time that would work best for conducting the pre- and post-conference conversations. Additionally, the use of the video platform, allowed TCs to upload their recorded lessons, and the faculty supervisor to view and annotate the lesson with feedback in a timely manner.

Second, extensive written and oral dialogue was facilitated through the application of the cognitive coaching approach, video coaching platform, and the use of Zoom. The remote coaching conversations were held in a 1-on-1 video conference setting, allowing the focus to be completely on dialogue about TCs' performances. Finally, learner autonomy was encouraged throughout the supervision model. TCs chose the lesson they submitted for their coaching conversations, and had a window of time to

submit the recorded lesson. Scheduling the coaching conversations was done collaboratively between the TC and the faculty supervisor. The use of cognitive coaching techniques as part of the conferencing approach allowed the TC to determine the focus the coaching conference to ensure the conference covered what was most important to the TC in that moment.

Classroom Walkthrough Observations

Classroom walkthrough observations, hereafter walkthroughs, have been frequently employed as a practice by school administrators in the K-12 setting (Protheroe, 2009). Classroom walkthroughs were brief visits inside classrooms with the goal of collecting focused data for later discussion between the instructional leader and the classroom teacher (Kachur, Stout, & Edwards, 2013). Classroom walkthroughs implemented over the course of an academic year have provided opportunities to identify instructional trends with individual teachers and across a group of teachers (David, 2008). These data have been used as part of larger school and district level efforts to provide informed professional development aligned to school improvement goals.

Several challenges have arisen when conducting walkthroughs. One substantial challenge related to walkthroughs was the unintended stress classroom teachers have experienced because of the observation or the anticipation of the observation (Valli & Buese, 2007). To address this problem related to potential anxiety, it has been important for administrators to be transparent about the walkthrough process by communicating to classroom teachers that walkthroughs were not evaluations of their teaching practices, rather they were part of a larger effort to collect data to inform school improvement (Kachur et al., 2013). Related to this anxiety was the idea that walkthroughs were

intended to be unannounced visits to provide a more authentic observation where teachers were not going out of their way to show what they thought administrators wanted to see. To reduce some of this anxiety, administrators have communicated a general window of time where they planned to conduct classroom walkthroughs, which risked the loss of capturing absolutely authentic observations, whereas others provided a schedule for conducting classroom walkthroughs (Kachur et al., 2013). When considering the challenges of administering classroom walkthroughs, consideration was given to whether the value of the data being collected from the walkthrough was worth the cost of added stress on teachers and the time needed for administrators to get into classrooms.

Over the past eight years, MLFTC has implemented walkthroughs as part of the observation component of the student teaching supervision model. During the SYR, faculty supervisors have conducted four classroom walkthroughs for each TC each semester, a total of eight walkthroughs over the course of the SYR. Faculty supervisors utilized a walkthrough form designed to collect data on the observed co-teaching/teaching approaches, subject areas, reinforcements, and refinements. An area of reinforcement was a teaching practice performed by TCs that was considered an area of strength, and TCs would be encouraged to include it in their teaching practices moving forward. An area of refinement was a teaching practice performed by TCs that was considered an area on which there could be improvement. Notably, the identified area of refinement was the area on which the faculty supervisor would spend additional time providing focused coaching and feedback. Moreover, faculty supervisors looked for opportunities to model best practices so TCs could improve upon the identified area of refinement. The reinforcements and refinements were based on the indicators of the TAP

instructional rubric. Along with the identification of instructional reinforcements and refinements, faculty supervisors recorded TAP related evidence of what was observed during the 15-20 minute walkthrough observation. These data were immediately available to TCs and the faculty supervisor in an online data dashboard. Data from walkthroughs were primarily used as a basis for coaching conversations with TCs. Walkthrough data were also used to inform topics for course instruction and mentor ‘trainings’ that took place between the faculty supervisor and lead teachers.

Although classroom walkthroughs were a valuable source of information to inform faculty supervisors about TCs’ performances in their student teaching placements, a single cycle of walkthroughs has taken a substantial amount of time to complete. Typically, classroom walkthroughs had been a practice used with in-service teachers and were conducted by school principals or instructional coaches within a single school setting. By comparison, MLFTC faculty supervisors typically have overseen a cohort averaging 20-25 TCs who were placed across 5-10 schools within a school district. This placement model resulted in faculty supervisors having to travel between multiple school sites to complete several walkthrough cycles. Usually a walkthrough cycle has taken faculty supervisors one to two weeks to complete. The time that was spent traveling between school sites and managing the multiple class schedules of TCs was time that could otherwise have been spent planning for instruction, collaborating with faculty colleagues, or working with TCs and mentors. Finally, from an administrative perspective, the amount of travel needed to conduct walkthroughs for all students in the SYR resulted in a substantial amount of funds being used for travel reimbursement. The sustainability of the walkthrough process as a viable means for collecting observation

data and providing coaching and feedback to TCs was a significant concern for me and college leaders. The innovation introduced in this research study sought to address concerns about effective use of faculty supervisor time and costs associated with traveling between placement sites.

In addition to walkthroughs, MLFTC supervisors have conducted more formal evaluations for TCs' teaching practices called performance assessments (PAs). Supervisors and TCs have drawn upon the cognitive coaching model as they collaboratively worked to ensure these performance assessments were thorough, beneficial, and contributed to TCs' development as a teaching professional. In the next section, I have described the cognitive coaching model, which provided the framework used during the PA process and the feedback that resulted afterward.

Cognitive Coaching

Cognitive coaching was a model of training developed by Art Costa and Robert Garmston, with the goal of developing reflective teachers through the nurturing of trust, learning, and autonomy (Costa & Garmston, 2015). The cognitive coaching approach was designed to be non-evaluative and marked by purposeful questioning, pausing, paraphrasing, and using appropriate body language (Costa & Garmston, 2015; O'Brian, Stoner, Appel, & House, 2007). Questions were designed to be open-ended, and encourage meta-cognition, careful reflection and thought about the teaching process. The coach paused throughout the process to encourage further reflection by the teacher. Paraphrasing was used to demonstrate understanding, and to show the participant that the coach was listening. Appropriate body language to facilitate cognitive coaching included leaning in, making eye contact, and nonverbal affirmations, which all show the

individuals being coached that coaches were attentive (Costa & Garmston, 2015). The three goals of cognitive coaching have been elaborated, below.

Trust. Before any real coaching and learning could occur, the coach, in the present context the faculty supervisor, must have developed a trusting relationship with the teacher or in the current case the TC (Costa & Garmston, 2002). The authors suggested one way this was accomplished by faculty supervisors was conducting ‘coaching conversations’ with TCs with the intent of seeking to understand. By using coaching conversations to understand TCs and their actions, supervisors demonstrated concern for TCs and worked toward building up trust. Further, the SYR model has encouraged building trusting relationships between faculty supervisors and TCs by using a model where TCs worked with the same faculty supervisor for the entire SYR.

Learning. Learning has never stopped, which has been true for the coach and those being coached. Coaches should have always been working toward improving their practice (Knight, 2009). For example, faculty supervisors have modeled continuous learning for TCs by being open about their own learning in which they were engaged. Coaches, in this instance faculty supervisors, should have been honest when they did not know the answer to a question, and engaged in the same reflective practices they encouraged TCs to perform (Costa & Garmston, 2002).

Autonomy. “The ultimate goal of Cognitive Coaching is teacher autonomy: the ability to self-monitor, self-analyze, and self-evaluate” (Garmston, Linder, & Whitaker, 1993, p. 58). Costa and Garmston (2002) suggested the cognitive coaching cycle included a pre-conference session, lesson observation, and a post-conference debriefing. Further, this cycle was aligned with the PA process implemented by MLFTC faculty

supervisors during the SYR. Danielson (2007) recommended ‘self-reflection’ was a key to making the teacher evaluation process meaningful to teachers. With respect to TCs, it was not realistic to expect them to function at a high level of autonomy by the end of their SYR, but TCs did graduate from the program with a strong sense of the importance for being a reflective practitioner.

Pre-conference session. In the traditional coaching model espoused by Costa and Garmston (2002), the pre-conference session, or planning conference, took place between the instructional coach and the teacher prior to the observed lesson. The pre-conference session was an opportunity for the instructional coach to clarify and understand learning outcomes for the lesson that was to be observed. It served as an opportunity for the teacher to talk through the lesson, while the coach posed reflective questions to bring unconscious aspects of the lesson to the conscious level (Costa & Garmston, 2002). Costa and Garmston suggested the goal of the conference was to develop thinking around the lesson at-hand and develop overall consciousness of effective teaching practices moving forward (Costa & Garmston, 2002). In the SYR, faculty supervisors used reflective questions aligned to the instructional rubric to help guide the pre-conference session discussion. The pre-conference session was usually scheduled at least two days prior to the observed lesson, so the TC had the opportunity to make revisions to the lesson plan prior to lesson delivery.

Lesson observation. The second portion of the cognitive coaching cycle was a lesson observation. The purpose of the lesson observation was to gather data aligned to an agreed upon set of criteria identified by the coach and teacher (Costa & Garmston, 2002). This could be anything from observing specific portions of the lesson such as

questions that were being asked, student behaviors, teacher behaviors, and so on. In the SYR model, faculty supervisors have used the TAP instructional rubric as a tool for collecting data and identifying where the teacher candidate was performing relative to multiple indicators on the rubric.

Post-conference debriefing. The final portion of the cognitive coaching cycle has been the post-conference debriefing, which has taken place within a few days of the lesson observation to allow the coaches and teachers to reflect on the lesson prior to conferencing. The post-conference debriefing has offered an opportunity for the coaches to invite the teacher to provide their thoughts on the lesson and pose reflective questions to encourage teachers to make connections between actions and outcomes (Costa & Garmston, 2002). In current SYR situations, faculty supervisors have implemented the reflective process using questions, which they believed were appropriate for TCs to handle. Early in student teaching experiences, TCs have struggled to reflect on their practices, because they did not know what they did not know. Faculty supervisors often used a more directive coaching approach early in student teaching experiences, and scaffolded their coaching support to ‘push’ TCs toward becoming more reflective practitioners. Costa & Garmston (2015) identified this more directive approach to coaching as “consulting,” where the purpose was for the coach to provide specific pedagogical and content knowledge the TC did not currently possess. Faculty supervisors continually worked to move students away from the consulting approach of support towards the cognitive coaching approach to foster self-reflection. As TCs moved in and out of comfort levels with new pedagogy and content, faculty supervisors had the task of determining which approach—consulting or coaching—was most appropriate.

The MLFTC has implemented the cognitive coaching model as a component of supervision during student teaching semesters. TCs completed four formal PAs during the SYR. Two PAs were completed during the first semester of student teaching, and two PAs were completed during the second semester. The PA cycle included a pre-conference session, lesson observation, and post-conference debriefing. Faculty supervisors implemented cognitive coaching approaches as part of the pre- and post-conference sessions.

One challenge of using the cognitive coaching model during the SYR, PA cycle was that PAs were considered to be evaluations of TCs' abilities to teach. A large number of points have been attached to the PA, and passing the PAs was a requirement of passing the student teaching semester. This placed added pressure on TCs and faculty supervisors. The original intent of cognitive coaching was to develop reflective teachers, but the evaluative role supervisors held in the student teaching context had potential to counteract the trusting relationship that supervisors and TCs must have for an effective cognitive coaching experience.

Moreover, Glickman, Gordon, and Ross-Gordon (1998) suggested the time supervisors spent on evaluation was time taken away from valuable coaching and support that a supervisor could otherwise have been providing. One way that faculty supervisors have addressed TCs' stresses about points tied to the PA process has been by focusing on coaching and feedback during the post-conference debriefing. Rather than reviewing scores tied to the instructional rubric, faculty supervisors focused on specific descriptors within the rubric where specific feedback could be given to the TC on how to improve

instructional practice. A short amount of time was dedicated at the very end of the post-conference for providing scores.

Virtual Supervision and Coaching

Although distance education was not a new concept, research related to virtual or remote supervision was limited. There were some case studies where virtual supervision (VS) was applied in various forms and to varying degrees. These case studies primarily focused on the benefits, challenges, and considerations faced by faculty supervisors and TCs when VS was implemented.

Benefits of virtual supervision. Notable advances in internet accessibility and videoconference technology have made the potential for VS and coaching a viable option for teacher preparation programs (Berkey & Conklin, 2016; Kelly, Neil, & Kwon, 2014; Smyth & Zanetis, 2007). Recording and livestreaming lessons taught by the TC can be facilitated through the use of inexpensive recording equipment, including tablets, cell phones, and wireless audio microphones (Berkey & Conklin, 2016; Smyth & Zanetis, 2007). Supervisors frequently noted that VS reduced time and expenses related to travel, and allowed them to apply that time to further supporting teacher candidates (Berkey & Conklin, 2016; Kelly & Bishop, 2013; Kelly et al., 2014; Kenyon, 2011; Owen, 2015; Smyth & Zanetis, 2007; Van Boxtel, 2017).

Teacher candidates noted VS was less of a distraction in the classroom, because the presence of the faculty supervisor often changed the behavior and performance of classroom students (Chilton & McCracken, 2017; Mac Mahon, Ó Grádaigh, & Ní Ghuidhir, 2019). Further, the absence of the faculty supervisor in the classroom translated to less anxiety on the part of TCs when they were teaching their lesson (Van

Boxtel, 2017). Both faculty supervisors and teacher candidates noted that a virtual approach to supervision was as good or better than the traditional face-to-face supervision approach, and the frequency and timeliness of coaching conversations improved using a virtual approach (Hamel, 2012; Mac Mahon et al., 2019; Smyth & Zanetis, 2007). TC participants in one study found the process of recording and reviewing the recorded lesson allowed the TC an opportunity to refresh their memory about what happened during the lesson, leading to increased reflection on TCs' instructional practices (Chilton & McCracken, 2017). Although many benefits to VS were identified in these case studies, many challenges were also experienced by faculty supervisors and TCs.

Challenges of virtual supervision. Technology issues, including familiarity with the online platform, knowledge of recording equipment, video sound quality, and video uploading difficulty, were frequently noted as challenges in these research studies of VS (Chilton & McCracken, 2017; Kelly & Bishop, 2013; Mac Mahon et al., 2019; Owen, 2015). Supervisors expressed concerns about not having the ability to see the entire learning space when viewing recorded lessons (Chilton & McCracken, 2017). TCs expressed a similar concern about supervisors not having a clear context of the school setting, if the supervisor did not have the opportunity to visit the school site as part of the support process (Mac Mahon et al., 2019). Owen (2015) noted supervisor and TC relationships developed at a slower pace in the virtual setting, due to the need to better understand the context and demographics of the student teaching setting.

Considerations for virtual supervision. Although research on the topic of VS was limited, there were several findings in the studies that were worth considering when developing the intervention for this action research study. Schwarts-Bechet (2014) found

that faculty supervisors who embraced the use of technology to facilitate VS had positive experiences with their TCs. Initial training and ongoing support for faculty supervisors on the use of the technology was a factor that was considered during the VS intervention. Berkley & Conklin (2016) placed all training materials in a shared Google Drive, so that they were readily available as resources for faculty supervisors and TCs. Schwarts-Bechet (2014) found a need for unique sets of VS handbooks and materials to be developed, one for the supervisor and one for the TCs, to clarify the work that needed to be done as compared to those who were engaged in traditional supervision and student teaching experiences. Chilton & McCracken (2017) found teacher candidates experienced anxiety when there was an extended time gap between submitting their lesson recordings and receiving feedback from their faculty supervisor. Providing clear timelines for faculty supervisors and for TCs had the potential to aid in limiting the amount of anxiety students experienced.

Conclusion and Implications

Using Bandura's self-efficacy theory and Moore's transactional distance theory, I review the problem of providing quality supervision to teacher candidates in a model that traditionally calls for face-to-face supervision, and is now moving towards a more efficient VS model. Faculty supervisors initially may experience a low level of self-efficacy with respect to their supervision roles until they experience success with a new approach to supervision. A major desired outcome of all student teaching experiences is to increase TCs' self-efficacy as professional teachers. The intent of this revised supervision model is to increase the amount of coaching and support teacher candidates receive during the SYR to increase TCs' self-efficacy.

Transactional distance is a factor that faculty supervisors will need to navigate to ensure TCs are experiencing a high level of engagement. Faculty supervisors are given the resources needed to implement the VS approach to provide coaching and feedback to TCs. Although there will be less face-to-face interaction than the traditional approach to supervision, there is an opportunity to maintain or increase the amount of coaching and feedback provided to candidates through the implementation of this new supervision model.

Finally, walkthroughs and cognitive coaching are two practical tools that are implemented by faculty supervisors during the student teaching process. Walkthroughs allow faculty supervisors to gather data on TCs' performances. Walkthroughs require a substantial amount of travel and time when thinking about the cost and benefit of the practice. A VS model could provide similar or better results related to coaching teacher candidates. Cognitive coaching is designed as a face-to-face activity between the faculty supervisors and TCs, but it could easily be transitioned into a VS model. Ultimately, the goal of this research project is to improve learning outcomes of TCs participating in the MLFTC SYR teacher preparation program.

CHAPTER 3

METHOD

The purpose of this action research study was to investigate the implementation of a virtual supervision model by MLFTC Site Leads (SLs), supervisors, during the student teaching semesters. I wanted to increase the quality and quantity of supervision for teacher candidates (TCs). In this chapter, I have described the methods that were used to generate, gather, and evaluate data related to the research questions.

To guide the direction of the study, I used three research questions (RQ).

RQ 1: How and to what extent did virtual supervision affect the amount and quality of coaching/feedback between faculty supervisors and teacher candidates?

RQ 2: How and to what extent did virtual supervision affect teacher candidates' self-efficacy related to teaching practices?

RQ 3: What challenges and benefits arose during use of a virtual supervision component for coaching/feedback between faculty supervisors and teacher candidates?

Setting

This research study took place within three different Senior Year Residency (SYR) cohorts lead by three different faculty supervisors. The first cohort was located in the west valley, and had SYR Teacher Candidates (TCs) who were enrolled in the undergraduate Early Childhood and Early Childhood Special Education dual certification program. The second cohort was located in the east valley, and had TCs who were enrolled in the undergraduate Elementary Education program. The third cohort was located in the east valley, and had TCs who were enrolled in the undergraduate Special

Education and Elementary Education dual certification program. SYR cohorts completed all program coursework with ASU faculty members in a district based ASU classroom while completing four to five days of student teaching per week with an assigned Lead Teacher (LT). SYR cohorts ranged in size between 15-25 TCs. TCs were placed with a LT within their assigned district. Typically, a cohort had TCs placed in multiple school sites throughout a school district. Placements were determined using a collaborative process between the faculty supervisor and district administrators. School principals approved the hosting TCs at their site, along with recommending teachers for the LT role. LTs must have had a minimum of three years of teaching experience under state issued certification, along with being in good standing with their district.

Participants

The research participants for this study were identified through purposeful sampling. Purposeful sampling required me to select participants who were directly engaged in the research intervention (Teddlie & Yu, 2007). I implemented what Ivankova (2015) called a *maximal variation* sampling approach of purposeful sampling, where the faculty supervisors selected participants based on their supervision of the three different elementary undergraduate teacher preparation programs. This approach to sampling ensured I was gathering data that reflected the virtual supervision experience for the three largest undergraduate teacher preparation programs. Additional criteria for selecting faculty supervisor participants included willingness to participate in the virtual supervision approach, the faculty supervisor must have had at least one year of experience in the role, and the faculty supervisor had to have been in good standing with the college (not on an improvement plan). For this research study, faculty supervisors

and TCs were selected based on the semester start of their cohort. The SYR took place during Term 7 and Term 8 of the undergraduate teacher preparation program. Term 7 and term 8 TCs were selected for this research study. TC cohort participants were identified based on their assignment to the faculty supervisors who were selected for this research study. Three TC cohorts were identified to participate in this research study, representing the three major elementary undergraduate teacher preparation programs: Elementary Education, Early Childhood and Early Childhood Special Education, and Special Education and Elementary Education.

Faculty Supervisors. Faculty supervisors were MLFTC clinical faculty members who had a dual role of teaching courses and supervising a cohort of TCs. All faculty supervisors were former K-12 classroom teachers. Many faculty supervisors have held coaching or administrative roles in a K-12 setting. Upon being hired for the faculty supervisor role, all faculty supervisors completed extensive training on the TAP Instructional Rubric, and became a TAP Certified Evaluator. The TAP rubric consisted of 19 indicators related to instruction, planning, and the learning environment. Of those 19 indicators, MLFTC used eight indicators—Instructional Plans, Standards and Objectives, Presenting Instructional Content, Activities and Materials, Academic Feedback, Managing Student Behavior, Academic Feedback, Teacher Content Knowledge, Teacher Knowledge of Students—to observe, evaluate, and provide coaching and support to TCs. Additionally, faculty supervisors used an adapted version of the pre- and post-conference protocols outlined by the TAP framework (National Institute for Excellence in Teaching, 2013). The observation protocol included pre-conferencing, lesson observation, and post-conferencing facilitated by faculty

supervisors. Faculty supervisors received additional onboarding preparation and training from MLFTC related to other responsibilities of the position. Faculty supervisors have played a critical role in the SYR model, because they were the main point of contact for the district-based cohort. Faculty supervisors were the first layer of support for TCs, LTs, and for communication between the school district and MLFTC. One duty of the faculty supervisor has been to conduct classroom walkthroughs and formal observations of the TCs throughout the SYR. The faculty supervisor conducted a minimum of four unscheduled walkthroughs and two formal lesson observations each semester.

Faculty supervisors who were selected to participate in this research study had several years of faculty supervisor experience. This experience played an important role in providing feedback about what was and was not working with the implementation of the virtual supervision intervention.

Teacher Candidates. Teacher Candidates (TCs) were term 7 and 8, undergraduate students who were participating in their SYR. TCs were completing ASU coursework and their student teaching experience simultaneously. The combination of ASU coursework and student teaching resulted in TCs being at their assigned school district full-time during each week for the entire academic year. TCs typically had four full days of student teaching in their designated placement, along with a fifth day that was designated for coursework. Courses were designed to be facilitated by MLFTC faculty members within the district where the cohort was placed. During the past academic year, 2019-2020, more students were getting opportunities to participate in paid positions within the districts in which they were student teaching. This required students to engage in student teaching and work in the district full-time five days a week. As a result of this

change, MLFTC was now scheduling courses to take place at the end of the K-12 school day. TCs who were taking coursework in the afternoon had courses two days a week, from approximately 4:30 to 6:30 PM. Many TCs worked part-time and full-time hours outside of their SYR experience. This left very limited time for completing homework and preparing for teaching outside of the school day. The virtual supervision and coaching model was designed to be integrated into the school day, so that TCs were free to complete homework on weekends and evenings, and faculty supervisors were not obligated to work extended hours.

Role of the Researcher

In this research study, I had a dual role of participant and observer. To develop buy-in from faculty supervisors, I worked with them to develop a protocol for conducting VS meetings. I provided input on the development of a protocol based on what I had learned from the review of related literature. Once the semester started, I created a Slack channel for faculty supervisors to post any questions they had about implementing the VS model, as well as sharing successes they were experiencing in the field. Towards the conclusion of the fall semester, I organized a professional development session where two faculty supervisors shared with others what they learned about the GoReact platform and the VS model over the course of the semester. Additionally, at the conclusion of the semester, I served as a data collector conducting post-intervention interviews with the three faculty supervisors to understand better their perceptions of the VS model. I also gathered other data by conducting post-intervention surveys with all TCs. Two weeks later, I administered another instrument conducting a retrospective, pre-intervention

assessment survey with all TCs. Finally, I collected interview data about VS and coaching with seven TCs to determine more fully their perspectives on VS and coaching.

Intervention

A VS model was implemented as the intervention to address my problem of practice. The initial intervention was implemented with three faculty supervisors and the cohorts of TCs they supervised during the SYR semesters. The VS model included a supervision professional development (PD) module, a flexible protocol for conducting and documenting virtual coaching discussions, and the use of Zoom and GoReact online video platforms. I also provided ‘just-in-time’ support to the supervisors using Google Form where they submitted their questions and I responded using email, Zoom, and phone conversations.

Training session. First, all faculty supervisors who were involved in implementing the VS intervention received PD on all areas of the model. Three PD sessions were facilitated, focusing on an overview of the VS model, conducting virtual walkthroughs, and conducting virtual performance assessments. The initial PD session took place during July 2020, as part of a faculty supervisor week-long, training workshop that was held online. The PD was required for any MLFTC faculty supervisors who planned to use the video platform for virtual supervision during the 2020- 2021 academic year. Faculty supervisors were not on contract during this time, so they received a stipend from the college for attending the workshop week. This first PD included an initial introduction to the Zoom and GoReact video platforms, and a high-level overview of the VS model. Most faculty supervisors already used the Zoom platform extensively for college related meetings. Nevertheless, the GoReact video platform was new for all

faculty members. The second PD session took place at the end of July 2020 and focused on planning for and conducting virtual walkthroughs. A final PD session took place in mid-August 2020 and focused on planning and facilitating virtual PAs. These final two PD sessions also incorporated some discussion on application of cognitive coaching within the VS model. There was less emphasis placed on cognitive coaching techniques, as most faculty supervisors had a background in effective coaching practices, and the cognitive coaching approach had been applied in previous models of face-to-face supervision. A PD module allowed supervisors and TCs to focus on the coaching conversation, and not get caught up in the struggle of navigating through how to use of the technology.

Coaching protocol. A flexible coaching conversation protocol had been developed as part of previous iterations of coaching and support provided in the field by faculty supervisors. This protocol applied the common language of the TAP instructional rubric and the questioning style of Costa and Garmston's (2002) cognitive coaching model. This protocol allowed for flexibility with the type of coaching conversations in which faculty supervisors and TCs engaged.

Video platforms. Faculty supervisors and TCs were encouraged to use the Zoom web-based video conferencing tool to conduct their virtual coaching conversations ("Zoom at ASU," n.d.). The Zoom tool has been approved for use throughout the university. The tool allowed for video and phone communications that could be recorded and stored in the cloud for later reference. Training on the use of the Zoom platform was integrated into the initial faculty supervisor PD session.

The GoReact platform was designed to allow TCs to upload videos of their teaching for faculty supervisors, other faculty members, and peers to provide feedback (“GoReact,” n.d.). Once a video was uploaded to the platform by the TC, the faculty supervisor entered the system to review the video. The GoReact system allowed users to apply “markers” to timestamp the video with feedback. The “markers” were labeled with the eight indicators for the TAP rubric that were used in the MLFTC teacher preparation program. In addition to timestamping the video with TAP aligned “markers,” the user was able to provide specific written feedback throughout the video. Faculty supervisors were asked to limit video clips submissions by TCs to 15 minutes in length for virtual walkthroughs and 45 minutes in length for PAs.

Design

For this study, I used a mixed methods action research approach. I collected qualitative data by conducting one-on-one interviews with the faculty supervisors who implemented the VS model with TCs. I conducted pre- and post-intervention interviews with faculty supervisors. Faculty supervisors were also asked to keep a reflective journal throughout the semester. An additional qualitative data source was an observation of at least one virtual coaching session with each of the faculty supervisors. Journals were not analyzed, but they were used as a reference for faculty supervisors as they participated in the post-intervention interview. Additionally, I gathered interview data from nine TCs on their perceptions of VS and coaching and its effectiveness. Quantitative data were collected from post-intervention surveys and retrospective, pre-intervention surveys of TCs. See Figure 3 for an illustration of the design. Prior to conducting the study, I obtained Institutional Research Board approval as noted in Appendices F and G.

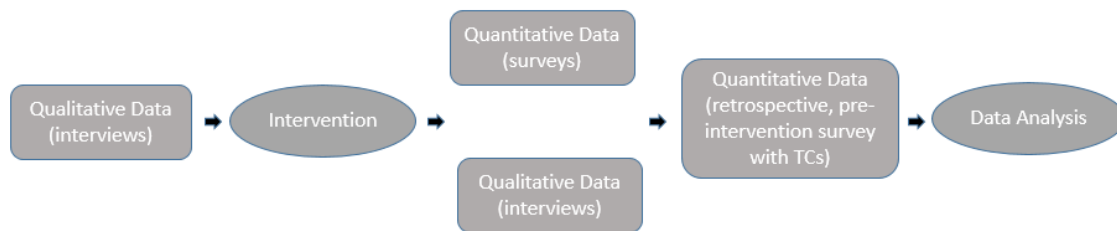


Figure 3. Design of the Study

Instruments

Faculty supervisor interview. Pre- and post-intervention interviews were conducted with the three faculty supervisors who were implementing the intervention. The interviews included open-ended questions designed to encourage faculty supervisors to reflect on their perceptions of VS and its effectiveness related to providing support to TCs compared to the traditional supervision model. Interviews were audio recorded and transcribed for qualitative analysis. Examples of faculty supervisor interview questions were “To what extent will/did a virtual supervision model allow you to provide coaching and support to your teacher candidates?” and “What challenges do you anticipate experiencing/did you experience when conducting virtual supervision with teacher candidates?” The complete set of questions from the interview instrument has been provided in Appendix A.

Virtual coaching observation. I gathered data from one coaching session for each of the supervisors based on an observation. Observations were recorded through the recording feature within the Zoom platform. I was not present during the virtual coaching session to ensure I did not become a distraction. I viewed the recorded coaching conversation, transcribed what took place, and analyzed the session. The purpose of these observations was to understand how closely faculty supervisors

followed the VS protocol and to determine whether there were other trends related to the VS model during the coaching conversations that took place between faculty supervisors and TCs.

TC surveys. All TCs who were in the cohorts participating in VS were asked to complete post- and retrospective, pre-intervention assessment surveys. This request was made in a Recruitment Consent Letter sent to the students. It has been included in Appendix B. The total number of participants who completed both surveys was 11 out of about 75 students working with the three supervisors. The survey was designed to gather quantitative data with respect to the constructs of TCs' self-efficacy for instructional factors related to the TAP indicators, and TCs' perceptions of the effectiveness of the virtual supervision model, and their perceptions of supervision quantity and quality. One set of survey items assessed TCs' perceptions about self-efficacy on four TAP indicators using a 6-point Likert scale, with 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, and 1 = *Strongly Disagree*. A second set of survey items evaluated TCs' ratings for satisfaction with quantity of supervision using a 6-point Likert scale, with 6 = *Strongly Agree*, 5 = *Agree*, 4 = *Slightly Agree*, 3 = *Slightly Disagree*, 2 = *Disagree*, and 1 = *Strongly Disagree*. A third set of survey items assessed TCs' ratings for quality of supervision and were rated using a 5-point Likert scale, with 5 = *Excellent*, 4 = *Very Good*, 3 = *Good*, 2 = *Fair*, and 1 = *Poor*.

The post-intervention survey consisted of 40 items, which assessed four constructs. These constructs were TC placement, TC experience with faculty supervision, TC perception of VS, and TC perspectives on teaching self-efficacy. The retrospective, pre-intervention survey consisted of 20 items, which assessed the

constructs TC placement and TC perspectives on teaching self-efficacy. The surveys were designed in Qualtrics and were distributed through ASU email. Examples of questions were “I deliver engaging lessons for my students;” and “I differentiate instruction to meet the individual learning needs of my students.” The complete set of items has been provided in Appendix C.

Post-intervention survey and retrospective, pre-intervention survey process. I chose to use a post-intervention survey followed by a retrospective, pre-intervention survey to avoid “response-shift bias” (Pelfrey & Pelfrey, 2009; Sibthorp, Paisley, Gookin, & Ward, 2007). The rationale was that often respondents rated themselves very high on traditional pre-intervention assessments because they used ‘liberal, less stringent criteria’ as they made judgments and provided their responses. Then, after the intervention, they used a new set of ‘more stringent criteria,’ which resulted in lower scores, as they provided responses on the traditional post-intervention assessment. This change in criteria has been called response-shift bias and the lower scores that resulted at the post-intervention assessment were the result of changes in criteria for making judgements not adverse effects of the intervention. To avoid response-shift bias, I administered the post-intervention survey followed by a retrospective, pre-intervention survey about one week later. The post-intervention survey has been provided in Appendix C; whereas, the retrospective, pre-intervention survey has been included in Appendix E.

At the post-intervention assessment, TCs were asked to respond to the items as they viewed themselves, now at the end of the intervention. In the retrospective, pre-intervention assessment, which was administered one week later, respondents were asked

to think back prior to the beginning of their student teaching experience and respond to the items (Pelfrey & Pelfrey, 2009; Sibthorp et al., 2007).

Satisfaction with quantity of supervision. The post-intervention survey included six items used to assess TC's satisfaction with virtual coaching and feedback. These items were designed using a 6-point Likert scale. Examples of questions were "I received the appropriate amount of coaching from my faculty supervisor;" and "I received the appropriate amount of feedback on my lesson plans from my faculty supervisor;" and "I received the appropriate amount of feedback on delivering lessons from my students from my faculty supervisor." The complete set of Likert items for assessing satisfaction with virtual coaching and feedback has been provided in Appendix C, question numbers Q8, Q9, Q10, Q11, Q12, and Q13.

Perceptions of quality of supervision. Additionally, the post-intervention survey included six items used to assess TCs perceptions of quality of coaching and feedback they received through the VS model. These items were assessed using a 5-point Likert scale from *Excellent* to *Poor*. Examples of questions were "The quality of my faculty supervisor's coaching was ____;" and "The quality of my faculty supervisor's observations were ____;" and "The quality of my faculty supervisor's feedback on lesson plans was ____." The complete set of Likert items for assessing TC perceptions of quality of coaching and feedback has been provided in Appendix C, question numbers Q8a, Q9a, Q10a, Q11a, Q12a, and Q13a.

TC interviews. Seven TCs were interviewed about their perspectives on virtual supervision and coaching, and self-efficacy. Faculty supervisors reached out to their assigned TCs of varying ability levels, and requested volunteers to participate in the

interview portion of this research study. Faculty supervisors provided the names of the volunteers to me, and I reached out to the TCs to schedule one-on-one interviews. The interviews included open-ended questions designed to encourage TCs to reflect on their perceptions of virtual supervision and its effectiveness related to their growth over the course of the semester. Interviews were audio recorded and transcribed for qualitative analysis. Examples of TC interview questions were “To what extent did the faculty supervisors’ use of virtual supervision and coaching provide you with support?” and “What challenges did you experience when participating in virtual supervision and coaching?” The complete set of question on the interview instrument has been provided in Appendix D.

Procedure

In Table 1, I have provided a timeline for this of this action research study, representing full implementation of the intervention and data collection processes. The participants for this research study were identified during spring 2020 when cohorts were established and students were placed in these cohorts. In January 2020, after cohort sites were confirmed, I sought the participation of three faculty supervisors representing the three different undergraduate programs (elementary education, early childhood/early childhood special education, special education). In May 2020, I conducted pre-intervention interviews with the three faculty supervisors. These interviews were scheduled individually. Interviews were audio recorded and the recordings were transcribed after the interviews took place. In May and June of 2020, I identified one day where I brought the three faculty supervisors together to conduct a group PD session on the virtual supervision model. Faculty supervisors had an opportunity to make

contributions and revisions to the model at that time. Faculty supervisors were not on contract during this time, so I obtained funding from the college to pay for their work hours. The intervention was implemented throughout the fall 2020 semester, during the months of July through November. Toward the end of November 2020, I conducted post-intervention interviews with faculty supervisors and surveys with TCs. For the faculty supervisor interviews, I used the same procedures I used for the pre-intervention interviews. In November, I conducted the post-intervention survey and consistent with retrospective, pre-intervention survey techniques, one week later, I conducted the retrospective, pre-intervention survey. TCs were also interviewed in November. I analyzed all data collected through the interviews and surveys during the month of December 2020. Table 1 has been provided to illustrate the timeline and procedures used in this research study.

Table 1

Timeline and Procedures of the Study

Time frame	Actions	Procedures
January 2020	Identified cohorts for research study.	<ul style="list-style-type: none"> Established fall 2020 SYR sites. Contacted faculty supervisors to seek research study participation.
May 2020	Conducted pre-intervention interviews with faculty supervisors.	<ul style="list-style-type: none"> Sought IRB approval for research study (Including interviews and surveys). Identified location and time to conduct interviews with each faculty supervisor. Facilitated and recorded each interview. Transcribed audio interview audio recordings.
May-June 2020	Carried out Virtual Supervision Model development and	<ul style="list-style-type: none"> Sought college funding to compensate supervisors for their time.

	training with faculty supervisors.	<ul style="list-style-type: none"> Identified 2-5 days to bring faculty supervisors together to further develop virtual supervision model and conduct collaborative training.
July-November 2020	Faculty supervisors implemented virtual supervision model.	
November 2020	Conducted post-intervention surveys with TCs.	<ul style="list-style-type: none"> Surveys were sent through email to all TCs in the cohorts participating in intervention.
November 2020	Conducted post-intervention interviews with faculty supervisors and TCs.	<ul style="list-style-type: none"> Identified location and time to conduct interviews with each faculty supervisor and TCs. Facilitated and recorded each interview. Transcribed audio interview audio recordings.
November 2020	Conducted retrospective, pre-intervention survey with TCs.	<ul style="list-style-type: none"> Surveys were sent through email to all TCs in the cohorts participating in intervention.
December 2020	Analyzed data.	<ul style="list-style-type: none"> Conducted qualitative analysis. Conducted quantitative analysis.

CHAPTER 4

DATA ANALYSIS AND RESULTS

Prior to presenting the results, I have described the quantitative and qualitative data that were collected. Next, I have described the data analysis procedures. Then, I have presented results from the study in two sections. In the first section, I have presented results for the quantitative data collected from this study. The next section covered results collected for the qualitative data of this research study. For the qualitative data, assertions have been presented and were supported through theme-related components and quotes from participants.

Quantitative and Qualitative Data

Quantitative data included a teacher candidate (TC) post-intervention survey, and a TC retrospective, pre-intervention survey. A post-intervention survey was administered to TCs in November, towards the conclusion of the fall student teaching semester. A retrospective, pre-intervention survey was administered to the same set of TCs two weeks after the post-intervention survey in early December. A total of 11 TCs completed both the post-intervention survey and the retrospective, pre-intervention survey.

Qualitative data included pre- and post-intervention interviews of three faculty supervisors, three post-conference observations between faculty supervisors and TCs, and seven TC post-intervention interviews.

Quantitative and Qualitative Data Analysis

Quantitative data collected from the TCs' surveys were analyzed using IBM SPSS Statistics software (IBM, 2017). First, reliability of the constructs was examined using Cronbach alpha coefficients. Then, repeated measures analyses of variance were

conducted to determine whether TCs' perceptions of self-efficacy changed. Additionally, at the post-intervention assessment only the effectiveness of virtual supervision and coaching were examined using descriptive statistics.

Qualitative interview data were analyzed through a series of coding cycles. After reading the transcripts several times, all qualitative data were entered into HyperResearch (HyperResearch 4.5.2, 2018) and analyzed using the constant comparative method (Stauss & Corbin, 1998). During the first cycle of *initial coding*, initial open codes consisting of keyword and short phrases were used, which provided the researcher with an opportunity to take an open-ended approach to coding, reflect on what data were within the responses, and apply a label to those concepts (Saldana, 2016). A second cycle of *focused coding* allowed the researcher to compare initial codes and think about how the initial codes were related to one another and how that information was related to the literature review (Saldana, 2016; Charmaz, 2014). The second cycle of coding provided an opportunity for the researcher to begin to recognize patterns in the data (Charmaz, 2014) and allowed me to gather codes into categories. To synthesize what was gleaned through the coding process, Charmaz (2014) suggested the practice of *memo-writing*. *Memo-writing* allowed the researcher to synthesize the data, and reflect on what new knowledge had been gained, and what questions were still looming. Then, I aggregated the categories into themes and then developed assertions based on the themes. I engaged in these described cycles to analyze the data collected during the interviews with faculty supervisors. I used the same process to analyze the student interview data. Because the codes were similar for the supervisors and the TCs, I combined these data and have presented them that way in the next section.

Results from Quantitative Data

The quantitative results have been presented in two sections. First, reliability data have been presented. Following the presentation of reliability data, descriptive statistics were presented.

Self-efficacy measures. Using SPSS, first, I computed Cronbach's alpha reliabilities. For the survey, the retrospective, pre-intervention assessment reliabilities for the four dependent variables associated with self-efficacy ranged from .87 to .94 with a median of .93. The reliabilities were all well above .70, which has been used as a criterion for acceptable levels of reliability. Thus, these data were reliable.

Then, I conducted a repeated measures analysis of variance (ANOVA) to determine whether there were differences between the retrospective, pre- and the post-intervention scores for the four self-efficacy measures. The overall repeated measures ANOVA was not significant, multivariate- $F(4, 7) = 1.38, p < .34$. Typically, the analysis would have stopped at this point. Because of the preliminary nature of these dissertation efforts, the individual follow-up ANOVA analyses were conducted for the four self-efficacy measures. The repeated measures ANOVA for self-efficacy for lesson planning was not significant, $F(1, 10) = 3.06, p < .11$. Thus, there were no differences in the retrospective, pre- and post-intervention means for self-efficacy for the lesson planning variable. This fact was evident in Table 2 in which means and standard deviations for four self-efficacy measures have been presented. See Table 2. Similarly, the repeated measures analysis for self-efficacy for lesson delivery was not significant, $F(1, 10) = 0.31, p < .59$, indicating no differences in the pre- and post-intervention means for self-efficacy for this measure. Moreover, the repeated measures analysis for self-efficacy for

using differentiation was not significant, $F(1, 10) = 2.47, p < .15$, indicating no differences in the pre- and post-intervention means for self-efficacy for using differentiation. Finally, the repeated measures analysis for self-efficacy for using assessment data, $F(1, 10) = 1.28, p < .29$, was not significant, indicating no differences in the pre- and post-intervention means for self-efficacy for using assessments. In sum, changes in the dependent variables were not evident with scores changing between 0.11 and 0.31 of a point, as seen in Table 2.

Table 2

Means and Standard Deviations for Pre- and Post-Intervention Scores for the Four Self-efficacy Measures from the Survey (n = 11)*

Self-Efficacy Measure	Pre-Intervention Scores	Post-Intervention Scores
Self-Efficacy for Lesson Planning	5.05 (0.76)	5.36 (0.60)
Self-Efficacy for Lesson Delivery	5.23 (0.73)	5.34 (0.74)
Self-Efficacy for Using Differentiation	5.00 (0.77)	5.27 (0.73)
Self-Efficacy for Using Assessment	5.23 (0.58)	5.43 (0.57)

*—*Note.* Standard deviations have been presented in parentheses.

Descriptive statistics. The means and SDs for teacher candidates’ recording of their teaching and meeting virtually with their supervisors were 5.09 (SD = 0.44) and 5.14 (SD = 0.60), respectively. These means indicated teacher candidates ‘agreed’ that recording their teaching and meeting virtually were effective during their student teaching experiences.

In addition, data on coaching and feedback indicated the 11 teacher candidates for whom there was complete data generally agreed they received appropriate levels of the quantity of supervision during their student teaching experience. It should be noted that these ratings of satisfaction were for individual items. See Table 3 for the details on quantity of supervision.

Table 3

Teacher Candidates' Satisfaction with Quantity of Supervision (n = 11)

Variable	Level of Satisfaction			
I received appropriate ...	SA	A	SLA	SLD
amount of coaching	3	6	2	—
number of observations	5	4	2	—
amt. feedback on lesson plans	4	4	2	1
amt. feedback on lesson delivery	4	5	2	—
amt. feedback on differentiating	3	6	2	—
amt. feedback on assessment	3	5	3	—

*—*Note.* SA is Strongly Agree, A is Agree, SLA is Slightly Agree, and SLD is Slightly Disagree. Also, amt. is amount. No ratings of Disagree or Strongly Disagree were obtained.

Finally, I assessed teacher candidates' perceptions of the quality of supervision. Results showed teacher candidates were generally satisfied with the quality of the supervisors' actions, but there were differences among the variables. Again, these data were based on individual items. See Table 4.

Table 4

Teacher Candidates' Perceptions of Quality of Supervision (n = 11)

Variable	Level of Quality			
	Ex	VG	G	F
quality of coaching	4	3	4	—
quality of observations	4	3	4	—
qual. feedback on lesson plans	4	1	6	—
qual. feedback on lesson delivery	4	4	3	—
qual. feedback on differentiating	3	3	3	2
qual. feedback on assessment	4	2	4	1

*—*Note.* Ex is Excellent, VG is Very Good, G is Good, and F is Fair. Also, qual. is quality. No ratings of Poor were obtained.

Results from Qualitative Data

Results from the qualitative data have been presented in this section. Table 5 included the five themes and their associated theme-related components and assertions that emerged from the qualitative data of the TCs and the supervisors. The themes included (a) role of the faculty supervisor; (b) TC self-efficacy with respect to teaching; (c) challenges of VS model; (d) benefits of VS model; and (e) use of video coaching online platform to support VS. Following the table of themes is a discussion of the themes, theme-related components, and assertions associated with each theme.

Table 5

Themes, Theme-related Components, and Assertions*

Themes and Theme-related Components	Assertions
<p><i>Role of the faculty supervisor</i></p> <ol style="list-style-type: none"> 1. Faculty supervisors showed flexibility with TCs in using the VS approach for supervision. 2. TCs noted faculty supervisors being available anytime. 3. Faculty supervisors held students to equally high expectations using the VS, compared to a traditional face-to-face supervision model. 4. TCs identified faculty supervisors as important to the success of VS. 5. TCs noted faculty supervisors provided feedback to help them grow. 6. Site supervisors provided TCs with teaching resources beyond coaching conversations. 	<ol style="list-style-type: none"> 1. The faculty supervisor plays a critical role in TC success within a virtual supervision model.
<p><i>TC self-efficacy with respect to teaching</i></p> <ol style="list-style-type: none"> 1. TCs noted improved confidence in their abilities. 2. Feedback from the faculty supervisor contributed to TC self-efficacy. 3. TCs felt comfortable making mistakes. 	<ol style="list-style-type: none"> 2. Teacher candidate self-efficacy about instructional abilities was attributed to faculty supervisor support.
<p><i>Challenges of VS model</i></p> <ol style="list-style-type: none"> 1. Uploading video to the GoReact platform was a challenge. 2. Variations in the quality of sound when recording video. 3. Communication between faculty supervisor and mentor teacher was limited. 4. Setting up a camera in the classroom. 5. TCs had noted difficulty of initially finding faculty supervisor feedback in GoReact platform. 	<ol style="list-style-type: none"> 3. Most of the challenges expressed by faculty supervisors and TCs were logistical challenges related to the use of technology.
<p><i>Benefits of VS model</i></p> <ol style="list-style-type: none"> 1. TCs and faculty supervisors identified flexibility in scheduling coaching conferences to be a benefit. 	<ol style="list-style-type: none"> 4. Faculty supervisors and teacher candidates found VS to offer flexibility and convenience, because of multiple

2. TCs had flexibility in choosing lesson to submit for feedback and evaluation.	modes of communication and ease of scheduling.
3. Convenience of connecting with faculty supervisor from home.	
<i>Use of a video coaching online platform to support VS</i>	5. The video coaching platform (GoReact) was a critical component in facilitating the virtual supervision model.
1. TCs were able to visualize the instructional rubric through the GoReact video.	
2. The use of markers to timestamp feedback in GoReact was beneficial.	
3. GoReact was easy to use after the getting through the first round of submissions.	

*--Note: Themes are in italic font.

The role of the faculty supervisor. *Assertion 1- The faculty supervisor plays a critical role in TC success within a virtual supervision model.* Pre- and post-intervention interviews with three faculty supervisors, observation of lesson post-conferences between the faculty supervisors and TCs, and post-intervention interviews with seven TCs provided insight into the role of the faculty supervisor in managing the virtual approach to supervising the student teaching experience. The following theme-related components led to assertion one: (a) faculty supervisors showed flexibility with TCs in using the VS approach for supervision; (b) TCs noted faculty supervisors being available anytime; (c) faculty supervisors held students to equally high expectations using the VS, compared to a traditional face-to-face supervision model; (d) TCs identified faculty supervisors as important to the success of VS (e) TCs noted faculty supervisors provided feedback to help them grow; and (f) site supervisor provided TCs with teaching resources beyond coaching conversations.

Faculty supervisor flexibility with VS approach. All seven TCs who were interviewed commented about faculty supervisors' ability to allow for some flexibility in

the VS model. Although there was a structure to the VS intervention, faculty supervisors made adjustments to meet needs of students. In discussing the need to work during student teaching, TC #2 shared, “So, it was definitely better for me, where I could if I even have an issue with work, I could just email her and she emailed me back or hop on the computer right away, rather than having to make an appointment.” TC #5 shared a similar experience about the flexibility of her faculty supervisor when she stated,

When it came to you and just like personal things, like personal life situations and like, I’m sorry, like, I know this assignment is really bad, like can I redo it? And if it’s like not for credit she would say yes, just so that I can get the experience almost and like figure it out.

TC #3 commented on his faculty supervisor’s empathy regarding the student teaching experience, and how that empathy led the faculty supervisor to be flexible with the VS approach when he said, “...she always made herself available when needed.” TC #3 shared that his faculty supervisor was empathetic when he maintained, “... could sense the struggle. It was more kind of like, I feel your pain. She understands our pain with everything just because she’s going through the same thing.”

In addition to the TCs finding the faculty supervisors to show flexibility with the VS model, all three faculty supervisors mentioned their ability to be more flexible with their supervision approach through the VS model. Faculty supervisor #3 found that she was able to be flexible with how much contact she had with her students over the course of the semester when she stated,

So, I think that my biggest change that I made from the expectation I had at the beginning to the expectation I had at the end was that I felt like I almost checked

in with my students more often than I really thought I was going to, because I think they would call me and say, I can't figure out how to get on GoReact. What am I doing? So, then I'm coaching them, like with the technology and inadvertently giving them some teaching coaching at the same time. So, I didn't expect to do all of that, but it did end up happening, which I think was beneficial.

Although clear structures were established for the application of VS between faculty supervisors and students, faculty supervisors understood that the VS intervention was new for everyone, and were empowered to make adjustments and show flexibility without threatening the fidelity of the VS approach. TCs recognized that faculty supervisors were exercising flexibility in the VS approach, which seemed to contribute to their overall success in completing a semester filled with challenges.

Faculty supervisor availability. The availability of the faculty supervisor to meet for pre- and post-conferences, coaching conferences, and other support was another critical role that all seven TCs expressed during the interviews. TC #3 shared his experience with the faculty supervisor being available outside of regular work hours when he claimed, "Even though it was an off week, she was there at 5:30 or 6:00 so that we can jump on and ask her for help, and then jump off as we please. So, she was always been available when needed." TC #3 also noted, "We email. She gave us her number. If we need anything right now to text her, to call her, or she is available during office hours." Faculty supervisors made themselves available through multiple channels. TC #7 found an important benefit of the VS model was access to the faculty supervisors when she noted, "I think it probably has to be the fact that you could legitimately reach out whenever you like." TC #7 added, "It's like you have a little angel on your shoulder

or in your phone that you can just always reach out to if you need help. That's a pretty good deal.”

Faculty supervisors also identified their ability to be flexible with their availability within the VS model as a critical to the success in their support of TCs.

Faculty supervisor #1 noted,

...the benefits are the flexibility, and so my ability to be extremely flexible, meeting early in the morning or after school. I could do that anytime. When I was doing it in person, I would be reluctant to leave my house at 5 am, and then schedule a 7 o'clock pm. I wouldn't really do that. But, if I do a 7 am and then have a break, and then do a multitude of other things, and then do a 4, or 5, 6, 7, I'm fine with that. I think the flexibility is the biggest benefit.

Scheduling time with a faculty supervisor was not always easy for TCs. TC #4 noted that his lack of planning made scheduling time with his faculty supervisor difficult when he admitted, “I feel like scheduling was annoying and difficult at times, but part of that is my own problem for putting things off too long.”

The VS model removed the barrier of scheduling constraints that faculty supervisors experienced when supervising teacher candidates who were located in multiple locations. The time they would have spent traveling between school sites in a traditional face-to-face supervision model was freed up as time they were available to meet virtually with TCs. TCs recognized the increased availability as a benefit of VS, and appreciated the ability to use multiple methods (Zoom, phone, text) to connect with their faculty supervisors.

Faculty supervisor expectations. A key role of faculty supervisors was to set expectations for performance of the TCs to ensure TCs were meeting the requirements of the program. During the post-intervention interviews TCs shared multiple examples of how faculty supervisors held them accountable for program expectations. TC #7 shared her experience with her faculty supervisor when her school was moving from a face-to-face to remote teaching format, due to the Covid-19 pandemic when she asserted,

She didn't stop when everything shut down. She still was there, she was still working with us and with the other site leads to make sure that we were getting what we needed. She looked at the reality and said, we need to change. We need to do something new. We miss the old way, but we're going to grow and move forward. And that is a very important skill that I think is going to be critical for virtual supervision.

TC #5 shared her perspective about expectations placed on her by the faculty supervisor when she said, "She was very supportive and especially when it came to like she is supervising me and like student teaching. So, like in that area, she did like push me out of my comfort zone on this." Although TCs recognized expectations set by faculty supervisors through the cognitive coaching process, TC #4 felt that feedback from his supervisor was more direct when he stated, "... there are times when he comes back with the feedback, but it doesn't seem like it's open to interpretation ... he's very direct and this is what it is."

Only one out of the three faculty supervisors addressed the topic of expectations during the post-intervention interview. During her interview, Supervisor #1 shared that

when she was asked by a district administrator about the quality of VS compared to face-to-face supervisions, she responded,

...our expectations are the same. The [instructional] rubric is very clear on what we're looking for, and we look for it online, we look for it in their teaching practice, and in their videos in our coaching conversations.

Supervisor #1 also made a comparison between face-to-face supervision of TCs and virtual supervision of TCs as it related to performance expectations when she acknowledged,

“I feel like I'm enhancing the residents [TCs] to a level of high expectations for an educator ... hopefully they feel the same way ... working really hard to give them what they need when they need it.”

The VS model did not show indications of expectations for TC performance by the faculty supervisor being lower as compared to a face-to-face supervision model. Faculty supervisors continued to play a role in setting high expectations for student performance, and holding students accountable through observations, and coaching conversations. Faculty supervisors exercised flexibility in their coaching approach, sometimes offering feedback that was more direct when students needed additional guidance.

Faculty supervisor and success of VS. Beyond the VS model and professional development provided to faculty supervisors prior to the start of the fall semester, the majority of the success of the VS intervention relied heavily on the faculty supervisors to follow through and adapt, as needed. During the post-intervention interviews, six of seven TCs attributed the success of the VS model to the role the faculty supervisor played

in the process. In describing the importance of her faculty supervisor to the success of VS, TC #2 acknowledged, “It was amazing ... [faculty supervisor name] was on top of it. If it was a different teacher, I don’t know if it would have been as wonderful, but [faculty supervisor name] nailed it.” TC #7 recognized the importance of who was conducting the supervision for VS to be successful when she shared, “It really comes down to who you’ve got in each position, and that’s definitely something that’s gonna have to be very carefully sought out like you need to find people who are willing to finds ways to make it work.”

The VS model was a substantial shift for faculty supervisors. Faculty supervisors had been accustomed to conducting all observations and coaching conversations in a face-to-face format, typically at the school site. Faculty supervisor #3 recognized that it would take time to become proficient with the VS format when she stated, “...there’s a learning curve there because this is like my first round....also like my first year was last year, and so I think...with more experience you get better at what you’re doing.”

Faculty supervisor #1 touched on job satisfaction being tied to the success of the VS model when she shared,

...when I think of job enjoyment and job fulfillment, I feel like I’m doing my job.
.... And next semester will be better, because I think this semester was all an adjustment. I had to really try to think of ‘how am I going to meet their needs when I’m in this little box?’”

The VS model depended primarily on the faculty supervisors who worked directly with students and mentored teachers in the field. If faculty supervisors did not believe that the VS model would be as good or better than a traditional face-to-face approach to

supervision, they would not be motivated to push through some of the challenges they faced throughout the semester. TCs recognized their faculty supervisors were a critical component to the success of VS, and how important it was for the faculty supervisor to be responsive and provide guidance when the answers were not always clear.

Faculty supervisor feedback and growth of TC. Coaching and feedback were core responsibilities of the faculty supervisor in the VS model. All seven TCs commented on the faculty supervisor feedback within the VS model. TC #1 approached the VS model as if the faculty supervisor was still in her room when she acknowledged, “I set her up in the back of my classroom, so she’s still got to watch me live and it was almost as if she was just sitting there. So, the feedback that I got from that PA [performance assessment] was super, super useful.” Speed and resourcefulness were identified by TC #3 when receiving feedback from his faculty supervisor. TC #3 stated, “There was never really a delay on any kind of questions we had. If she didn’t know the answer or needed time, she would tell us and got back to us right away with everything.”

One of the TCs did not have such a positive experience with supervisor feedback as did the other TCs. TC #4 did not believe the feedback he received from his faculty supervisor within the VS model was of high quality. He shared,

“I don’t think its high quality feedback. I would say mid-, mid-quality to high-lowish range ... a lot of what I realized is that this is how it is structured, so this isn’t jaded at [faculty supervisor name], but a lot of it is like you provide your own feedback and grade yourself. Basically, and tell him what you could improve on. And what you did wrong, and that’s just in my mind that’s not a successful model.”

The experience with receiving feedback that TC #4 described aligned very closely to the Cognitive Coaching approach of building autonomy (Costa & Garmston, 2015). The TC seemed to interpret reflective questioning as the TC was doing all the work, and not getting proper feedback from the faculty supervisor.

Faculty supervisors also recognized coaching and feedback as a critical component of their role within VS. Faculty supervisor #1 did not change her approach to providing coaching and feedback in the VS model as she noted, “My experience has been exactly the same, in that I’m giving them that same feedback I would online...as I would if I was sitting right there in front of them.” Faculty supervisor #1 reiterated later in her interview that a benefit of providing coaching and feedback in the VS approach was, “It’s immediate feedback. It’s quality feedback. It’s the same feedback we would give if we were in person.” Faculty supervisor #2 shared that one of his TCs acknowledged an increase in the amount of coaching and feedback that he received in the VS model when he shared, “... one of them made the comment that he hasn’t had this much supervision of his student teaching in any of his internships. He said he appreciated the amount of feedback he got.” It was important to note that one of the goals of the VS model was to increase the quality and quantity of feedback faculty supervisors provided to TCs.

Faculty supervisor provided resources. Another way that TCs recognized the faculty supervisor playing a critical role in the success of the VS model was by providing teaching resources to TCs. TC #3 described the resources and follow-up he received from his faculty supervisor when he acknowledged,

I know if I had specific questions with a student or the kind of scenario I’m facing at school ... she would give me ... something ... or this is what I’ve seen in the

past, and kind of work with it and ... tell me or work with me that day. She would follow up like maybe a couple days later, the next week, or the next class.

TC #2 shared a similar story when she claimed,

It just made me feel like the support was constantly there. And I felt like if I really had a question, because I've had a couple instances where like there's new disabilities I've never had like with my other previous internships. She'd be like, here's some information, here [are] some resources. Go ahead use them to tell me how they work. Come on back, so she would always follow up, too.

Faculty supervisors did not mention providing resources to TCs during the post-intervention interviews.

TC self-efficacy with respect to teaching. *Assertion 2- Teacher candidate self-efficacy about instructional abilities was attributed to faculty supervisor support.* The following theme-related components led to assertion two: (a) TCs noted improved confidence in their abilities; (b) feedback from the faculty supervisor contributed to TC self-efficacy; (c) TCs felt comfortable making mistakes.

TCs improved confidence. During the TCs post-intervention interviews at least three of seven TCs discussed their improved confidence in their teaching abilities. TC #1 described her improved confidence as a teacher and knowing what she was doing when she shared, "Okay, if somebody random walked into my classroom, they're not going to be like, what are these kids doing? Like, it does look like I am doing the right things." When asked a probing question about her preparedness as a future teacher, based on her student teaching experiences, TC #2 stated, "I'm feeling completely confident. I feel like I've been through the hardest things." Once again, the faculty supervisors played a

substantial role in providing coaching and feedback to TCs when faced with challenging situations, and throughout the student teaching experience. TC #7 discussed how the experience with her faculty supervisor provided her the confidence to respectfully disagree with her principal when she acknowledged, “You can say ‘no’ to your principal, and it’s okay ... [faculty supervisors name] definitely improved my ability to do more for myself to be more confident in what I’m already doing.” Although this seems like a bold move for a TC during a student teaching experience, TC #7 was in a unique paid student teaching experience, where she was a teacher candidate within the teacher preparation program *and* she was also a paid employee of the school district.

Feedback from supervisors contributed to TC self-efficacy. TCs attributed their improved self-efficacy to the coaching and support they received from their faculty supervisors, as well as the various challenges they had to navigate throughout their experience during the student teaching semester. During the post-intervention interview with faculty supervisor #1, she shared an observation she had made about TCs improved confidence and self-efficacy, acknowledging, “... [TCs] are more calm, they’re more confident, they’re showing me things that they really want the feedback from, so they’re starting to trust me more about providing feedback.”

TC #6 described how his self-efficacy related to developing lesson plans improved, based on feedback from his faculty supervisor. In describing his improved self-efficacy TC #6 shared,

When she gave us that information or the feedback of how we could approach lessons differently, especially when we wrote lessons and sent them to her to

view, it really changed how I wrote my lessons, and so and so from then on, I wrote my lesson to reach all students because it could easily be changed.

TC #7 also described how having easy access to her faculty supervisor contributed to her increased self-efficacy and ability to endure during a difficult semester when she shared,

If it weren't for having those supports behind me, I wouldn't have had the confidence to be able to step into this role, because it's definitely kind of intimidating...because you literally do everything...I felt like being in the online setting... has helped kind of ease those fears, because you can just log into zoom and say [faculty supervisor name], I'm freaking out. Talk me off the ledge.

TCs felt comfortable making mistakes. The ability to learn and recover from mistakes was a sign of increased confidence and self-efficacy that faculty supervisors fostered with TCs throughout the student teaching experience. The VS model took away the pressure of having a faculty supervisor physically in the classroom space, allowing TCs to feel more comfortable when mistakes were made. TC #6 described how the VS model was less intimidating than a face-to-face observation when he shared, "I just really felt that I could take a risk, without feeling like someone was judging me, even if the mentor was on screen." TC #2 shared similar feelings about her confidence and comfort making mistakes within the VS supervision model stating, "It just made me much more confident that when we're having issues, it's okay for all of us to make mistakes, which is what we want to teach our students, too."

This theme-related component of TCs feeling comfortable making mistakes also came up during post-conferences between the faculty supervisor and TC. During a TC

post-conference with faculty supervisor #1 the TC recognized, “We’re not failing, we’re just learning things in a different order. It’s fine.” In a different post-conference with Supervisor #1, a TC stated, “... it can get a little dicey sometimes, but I feel like learning from those experiences and getting help has been really effective.”

Challenges of VS model. *Assertion 3- Most of the challenges shared by faculty supervisors and TCs were logistical challenges related to the use of technology.* The following theme-related components about challenges led to assertion three: (a) uploading video to the GoReact platform was a challenge; (b) variations in the quality sound when recording video; (c) communication between faculty supervisor and mentor teacher was limited; and (d) setting up a camera in the classroom.

Uploading video was a challenge. The challenge that all seven TCs shared during the post-intervention interviews was their initial problems with uploading their recorded lessons into the GoReact platform. Most of the TCs noted that the size of their videos were too large to be uploaded to the GoReact platform, and they had to figure out how to convert the video to fit within the 2 gigabyte file size limitation. TC #6 noted, “I did have trouble where I had to really work around what to do to get this file on GoReact, because GoReact only allows you to upload, oh geez, I don’t remember, like one gig, two gigs.” TC #2 attributed her video upload issues to a bad internet connection, stating, “I had an upload issue ... but I think it was more of a connection issue rather than it was a GoReact issue.” Several of the TCs learned how to upload large videos to YouTube, and convert them to a smaller file size that was compatible with the GoReact platform. After figuring out how to convert the large video size, TC #5 described the process as “easy” when she acknowledged,

I think uploading to GoReact was even easier, because all I had to do was ... upload a file. I just had Zoom recordings, and I just uploaded that and it was very easy. Like, I was stressing out, because I'm not tech savvy in any way, but I just did that, and if my file was too long I just uploaded it to YouTube, and then uploaded it from that.

TC #4 became so frustrated with the challenge of uploading video that he considered quitting the program. TC #4 admitted, "In the first two assignments ... I couldn't figure it out ... I was ready to quit the program and throw my computer out the window ... it would upload the whole thing and then it wouldn't have sound on it." TC #4 shared that he was able to overcome this challenge when he acknowledged, "I figured it out. It's a little easier now."

Faculty supervisors also noted having to troubleshoot uploading issues with TCs early in the semester when the first round of observations were being submitted. When asked about the challenges of the VS model, faculty supervisor #3 stated, "Just making sure that everyone can get everything uploaded that needs to be uploaded that was ... was a little bit of a challenge." Faculty supervisor #3 also recognized video file size as the primary reason TCs were having upload issues when she shared, "... it generally was a challenge with videos that were quite large."

Quality of sound when recording video. TCs were not provided with any special recording equipment when recording their instruction within the face-to-face or online classroom setting. TCs typically used their smartphones, tablet, or laptop equipped with an internal camera to record their instruction. Some TCs were able to record their online instruction through whatever platform their online instruction was being delivered

through, including Zoom, WebEx, Google Classroom, and Microsoft Teams. Several of the TCs noted challenges with the sound quality of their recordings. TC #4 acknowledged the added stress of not being able to clearly hear the audio within his recordings when he stated, “I don’t feel like it’s helping anybody because ... the sound issues, and the whole stress of trying to make sure technology works on top of everything that you were dealing with already.” TC #5 identified a challenge for her was having to listen to her own voice, stating, “I hate the sound of my voice.” Another TC, TC #7 who was teaching in an online setting attributed the sound issues to poor internet connections when she shared, “My students are kind of hard to hear. Depending on the day and which kiddo in general it was due to the kiddos internet.”

Setting up camera. As stated in the previous section, TCs used their own recording equipment to record their lessons for submission into the GoReact platform. TCs primarily used their personal smartphones, tablets, or laptops with internal cameras for recording. During the post-intervention interviews a few of the TCs noted the challenge of setting up the camera in their classroom. TCs wanted to be certain they were capturing as much of the classroom as possible, so the faculty supervisor could get a complete understanding of what was happening with the TC and with classroom students during instruction. In describing the difficulty of recording his instruction, TC #3 noted, “the hardest part of everything is trying to find a place where you could get a good portion of the class.” TC #7 described a solution she came up with to address the challenge of ensuring she was only capturing students that she had approval to record, while also not allowing the camera to be a distraction when she said,

I had kids who didn't want to show their face on camera, so ... I have to maneuver the camera and the camera has to be able to see me and what I am teaching. But I have half the kids who don't want to look at it, and half the kids were distracted and making faces in it. We ended up hiding it in a bookshelf and didn't tell the kids. It was there. I recorded like all day, the whole school day, and then just clipped out the chunk, because that was the best way to keep recording it in person from being a distraction for the kids.

Locating feedback in GoReact platform. There were a few instances when TCs noted having challenges finding feedback provided to them by the faculty supervisor within the GoReact platform. During the post-intervention interview, TC #1 admitted this matter when she noted,

I wasn't aware ... how to view the feedback on GoReact. That's something I brought up to [faculty supervisor name] and she showed me exactly where to go, how to do it, and where to find it. So, after I got past that if it was a lot more effective for me.

Another TC who was meeting with faculty supervisor #1 for a post-conference shared a similar concern about her inability to find feedback when she told her supervisor, "I couldn't find any feedback, and I looked for comments ... I had looked and I didn't see, but I might be looking in the wrong place." The TC and faculty supervisor determined that the TC was indeed looking in the wrong place for the feedback the faculty supervisor had provided. Locating feedback within the GoReact platform seemed to be a challenge that was quickly resolved after the first round of video submissions and follow-up conferences took place.

Communication between faculty supervisor and mentor teacher. Although this theme-related component only came up once with a faculty supervisor and once with a TC, communication between the faculty supervisor and the mentor teacher was considered a critical factor in providing consistent and coherent support to the TC. During the post-intervention interview with TC #4, he suggested an improvement to the VS model would be to, “schedule [faculty supervisor] and the mentor to actually attend a lesson live.” The TC felt there was a disconnect between his faculty supervisor and his mentor teacher, because they had limited communication with each other in the VS model.

When asked about what was most challenging about the VS model during the post-intervention interview, faculty supervisor #3 admitted, “Communication with the mentors is probably my primary challenge.” Faculty supervisor #3 expanded on this comment when she shared,

I felt like, in retrospect, my missing piece was the communication with the mentors. I feel like maybe the mentors didn’t know what type of feedback I was giving, and for what lesson. It maybe was specific to which I feel like was valuable when we were visiting the classroom. Because, you know, I was walking out after watching science or whatever, and so the teacher knew our feedback was directly on a science lesson, whereas I don’t know there might have been a little bit of a breakdown with that portion of it.

Faculty supervisor #3 was referencing the traditional approach to supervision, where the supervisor would physically be in the classroom to observe the TC teaching the lesson. The observation would often be followed by a short discussion between the

faculty supervisor and the mentor teacher. This discussion ensured that the mentor teacher was aware of the feedback that the faculty supervisor would be providing to the TC, and it also provided an opportunity for the mentor teacher to share what support she was providing to the TC.

Benefits of VS model. *Assertion 4- Faculty supervisors and teacher candidates found VS to offer flexibility, because of the multiple modes of communication and ease of scheduling.* The following theme-related components led to assertion four: (a) TCs and faculty supervisors identified flexibility in scheduling coaching conferences to be a benefit; (b) TCs had flexibility in choosing lesson to submit for feedback and evaluation; (c) convenience of connecting with faculty supervisor from home.

Flexibility in scheduling. When asked about the benefits of the VS model during the post-intervention interviews, all seven TCs commented on flexibility in scheduling being one of the important advantages of the model. Scheduling flexibility allowed students to navigate their personal work schedules, and reduce the overall stress of the student teaching semester. In discussing scheduling, TC #7 described,

Yeah, it's tricky with schedules and whatnot, but like we have the option to do it on a weekend now, and before [faculty supervisor name] had to do them in person, where she had to find a time at some point between Monday and Friday to be there at the school and actually watch you teach the lesson. So, it kind of gives you a little bit more wiggle room, which is nice.

TC #5 described a similar experience regarding flexibility in scheduling time with her faculty supervisor when she shared,

It was easy. Like, if [supervisor's name] didn't have to come to the school to observe me, it was easier that I could just pick any day I wanted and just record my lesson. Then, if my lesson went two days, [supervisor's name] didn't have to worry about coming back the next day.

Faculty supervisors also recognized flexibility in scheduling time with TCs as a benefit of the VS model. In her post-intervention interview, faculty supervisor #1 shared, So, if there is an issue, if there's a questions, if there's anything, they can send me a text, they can send me an email. Hey, are you busy? Can we jump on Zoom? Or, I had a quick question about this. So, I think the support was immediate, and it was productive.

Faculty supervisors #3 described how the VS model provided for flexibility for unexpected situations that happened in the classroom when she shared,

They were able to schedule it the way they wanted to. If there was a fire drill in the middle of their video, they could redo, but different things like that didn't affect the whole situation.

Flexibility in choosing lessons for feedback. In the traditional approach to supervising student teachers, the faculty supervisors would observe a lesson on a set day at a set time. TCs were required to identify the lesson they would be teaching during the observation several weeks in advance. During the post-intervention interviews, several TCs noted their ability to be flexible when choosing which lesson on which they wanted feedback as a benefit of the VS model. Some of the TCs recorded multiple lessons throughout each week, and would then choose which lesson they wanted to submit for

feedback. TC #1 described her intentionality in selecting a lesson when she acknowledged,

One of the benefits was definitely being able to ... look through my lessons recorded throughout the week and be able to pick out my best work, or you know, even if I'm like oh, I taught a writing lesson for the first time this way, I'm going to send her this and get her feedback on that and see what she thinks I can improve on. So, I'm kind of being more intentional with what I was showing her.

TC #1 described a similar approach to purposefully choosing lessons to submit, stating,

Yeah, so if I knew that there was ... a walkthrough coming up, I would be like, okay, I'm going to use this part of this lesson today for my walkthrough. If it doesn't turn out good, I'm not going to send it, and I'm going to wait until I do get a good [lesson], you know.

TC #1 went on to describe how the VS model allowed her the ability to submit her best work when she admitted, "I'm going to turn in my best work...more ability to kind of pick and choose what to turn in, or to show it as my best work." Although TC #6 recognized the benefit of flexibility in choosing which lessons to submit for feedback, he also shared how this flexibility lead to him spending more time on the videos he submitted when he acknowledged,

I am very picky. I tried to ... edit my videos. So, there isn't like this span of time where there's a gap between me teaching and like transitioning from one lesson to another. So I'll go in and I'll cut it so it's like easy. Or, I'll put like credits, like, oh, going into math, going into reading, or this is what I'm teaching math and this is the specific subject I don't know, I'm pretty picky about it.

Convenience of connecting from home. Another benefit of the VS model that was shared by several TCs during the post-intervention interviews was their ability to connect to their faculty supervisor from the convenience of their home. Connecting from home added to the benefit of flexibility of the VS model, along with the additional benefits of reducing TC stress and having access to lesson materials during coaching conversations with the faculty supervisor. In describing the benefit of connecting from home, TC #2 shared,

I felt actually more comfortable through the virtual screen. I'm not completely sure why, but maybe it's because I was in an area that I'm comfortable being in at home, or in my teacher desk, so it was I would say better than it was in person. TC #5 had a similar comment about connecting from home being a benefit of the VS model when she stated, "I can meet from the comfort of my home or from wherever I am."

Additionally, TC #4 found the VS model to provide a level of privacy that was not always available in the face-to-face model when he described,

The luxury of being able to do it from wherever that was the biggest benefit. And ... it's a private conversation. You don't have other kids ... waiting there to jump in or feeling like [the faculty supervisor] might not say something because somebody is sitting there listening now.

TC #6 went into great detail about the benefits of connecting from home for post-conferences and other conversations with his faculty supervisor. He compared his experience with the VS model to what he had experienced with face-to-face supervision in previous semesters. TC #6 shared,

So, usually I'm at home, and we do these things. I have all my materials laid out, so it's beneficial, because I can talk about ... certain things that I'm doing.

Because sometimes when we're in our meeting, we go into a separate room we sit down, sitting there with like nothing, maybe a notepad to take notes on what she's talking about. But nothing that I taught in the classroom the day of the lesson, which usually when I teach the lesson the PA [performance assessment] is not the same day, it's still like a few days later. So, I don't have any of my material that I used or like even if I write down questions like, I don't know how to word them and it's just better if I have the props that I used to show and be like, what do you think of this? Like I created a big number chart and I just was like, I used this for them to count. What are other ways that I could use this? That's the one of the biggest thing that I really liked about, is being able to have my materials and just show them virtually. I mean, I guess you could do this same thing if you prepared properly, but I don't want to walk into a room lugging a bunch of stuff.

Faculty supervisors also recognized connecting from home as a benefit when they were asked about the benefits of the VS model during the post-intervention interviews. As mentioned previously when faculty supervisors #1 discussed flexibility of the VS model, she stated, "the benefits are that flexibility and ... my ability to be extremely flexible meeting early in the morning or after school." Faculty supervisor #1 was able to connect with students outside of the traditional workday, because of her ability to connect from home. Faculty supervisor #3 found that she was connecting with her TCs from home so often that her own children were getting to know the TC when she acknowledged, "It's funny, because honestly my kids are here ... they'll hear it in the

background, because I'm playing [a recorded lesson] in my kitchen ... and he'll be like, oh, I love this teacher!"

Use of a video coaching online platform to support VS. *Assertion 5- The video coaching platform (GoReact) was a critical component in facilitating the virtual supervision model.* The following theme-related components led to assertion five: (a) TCs were able to visualize the instructional rubric through the GoReact video; (b) use of markers to timestamp feedback in GoReact was beneficial; and (c) GoReact was easy to use after the getting through the first round of submissions.

Visualize instructional rubric through GoReact. Faculty supervisors viewed lessons submitted by TCs within the GoReact platform. The platform was designed to allow users to apply timestamps at critical points in the lesson, and record comments and feedback aligned to what was happening in the video at that time. Additionally, users could add "markers" that were aligned to each of the instructional rubric indicators. The markers were designed to note what instructional rubric indicator the comment was referencing. Several of the TCs described how they were able to understand better what the instructional rubric indicators looked like within their teaching practice after receiving feedback from their faculty supervisor within the GoReact platform. TC #7 described how easy it was to find the point in her recorded lesson that aligned to specific parts of the instructional rubric when she shared,

When we have it right there and she can just click on which trait that she wants to highlight for me and it takes me right to where she had clipped it. It makes for a lot more specific feedback which is wonderful.

TC #7 went further into detail about how her faculty supervisor used the GoReact platform to help her see what the rubric looked like within her lesson when she described,

The whole GoReact system is delightful. It really streamlines and makes it easier to understand how those TAP elements actually look in the moment, because [supervisor's name] can say this is when I saw you do that and show you ... you doing that. And I am like, oh yeah that did happen, look at that. That's what the rubric means and all that jargon. This is what it actually looks like when you're doing it. That's a wonderful perk.

During the post-intervention interview with faculty supervisor #3, she also noted how the GoReact platform provided a visual of what was happening in the classrooms of her TCs when she acknowledged, "I think that it allowed me to support them. Well, I think that I was able to get a good idea of how things were going in the classroom."

Timestamped feedback. Adding to the theme-related component of the GoReact platform supporting TCs with visualizing the instructional rubric, as previously stated, the GoReact platform included a timestamp feature. This feature enabled users to place digital timestamps within a lesson video at critical points in the lesson. Faculty supervisors utilized these timestamps to add feedback that could be reviewed by TCs and also referenced during post-conference conversations. TC #1 described her experience with her faculty supervisor using the GoReact platform during a post-conference conversation when she claimed,

She literally could stop it in specific places in the video and put like this indicator in the TAP rubric and it was very, very specific. Like oh, when you asked this

question it showed this in the TAP rubric. So I think it was like almost a little bit easier to give that positive feedback and really that specific feedback to me.

TC #1 expanded on the value of the timestamped feedback when she acknowledged, "What I really liked about GoReact videos or like when it comes to observations that she can link different categories at certain times. And, so it's easy for me to like say like, oh, this is at this is exactly where in my lesson I could have ... improved on this and she commented really well on that."

TC #7 shared how seeing the timestamps and markers linked with feedback within the GoReact platform improved how she felt about her instructional performance when she confessed, "GoReact, I think was good. I think it was efficient and boosted my ego at times when it was like, okay, when I see all these markers, words like good job."

Ease of use of GoReact platform. A critical factor that was considered when selecting the video coaching platform that was integrated into the VS intervention was that the platform had to be easy to use for TCs and for faculty supervisors. Feedback provided by TCs during the post-intervention interviews showed that TCs found the GoReact platform to be easy to use after their initial experiences with using the platform. TC #3 found the GoReact platform relatively easy to navigate once he figured out the steps, stating,

The platform itself was pretty self-explanatory. I liked how it was the step 1, 2, 3, name it, upload the video, choose a video ... it's uploaded, then they send you the confirmation email. Now it's pretty simple.

TC #1 admitted to not knowing how the VS model would work early on in the semester. She described the high level of precautions her school had put in place for

visitors, and how she didn't think her faculty supervisors would be able to observe her classroom when she shared,

I was like, how are they going to observe us if ... parents can't even walk their kindergartner back to the classroom? Like, they're not going to let her back here. They don't know who she is, and so I really do think GoReact was like a really great tool to adapt, and I think it was worthwhile.

TC #1 went on to explain how the GoReact platform was easy to use when she shared,

I feel like GoReact is actually like a very user-friendly site. Initially I wasn't aware ... how to view the feedback on GoReact. That's something I brought up to [faculty supervisor name] and she showed me exactly where to go, how to do it, where to find it. So, after I got past that, it was a lot more effective for me.

TC #7 compared the simplicity of the VS experience with a previous semester where she was receiving face-to-face supervision when she acknowledged,

I love GoReact. We didn't have GoReact my first semester of student teaching, so we had to ... go through and fill out all the little boxes, and it was a mess of paperwork, and so confusing, and you always forgot something. But GoReact really helps you kind of understand how each of those different traits on the rubric actually be visible in what you're doing.

CHAPTER 5

DISCUSSION

This action research project is designed to implement and examine a virtual supervision (VS) model as a replacement to the traditional face-to-face supervision teacher candidates (TCs) typically receive during the student teaching semesters. The goal of this action research project is to increase the quality and quantity of supervision for TCs during the student teaching semesters of the teacher preparation program, increase teacher candidate self-efficacy of teaching practices, and identify the challenges and benefits of a VS model for future work. Previous chapters include a description of the larger and local context for this research study, an in-depth description of two theoretical frameworks that serve as lenses guiding this research project, a description of the methods that are used to generate, gather, and evaluate data related to the research questions, and the results of the quantitative and qualitative data gathered for this research study. This chapter includes a discussion of the synthesis of the quantitative and qualitative findings, connections to the extant research, limitations of the study, as well as implications for practice and future research, personal lessons learned, and a conclusion.

Complementarity and Integration of Quantitative and Qualitative Data

This action research project utilizes a mixed methods approach for data collection, which includes quantitative and qualitative data. This research study best fits the MMAR research study approaches described by Ivankova (2015), because it relies on having data that are collected from multiple perspectives. Quantitative data includes a TC post-intervention survey and a TC retrospective, pre-intervention survey. Qualitative data includes pre- and post-intervention interviews of three faculty supervisors, post-

intervention interviews of seven TCs, and observations of three post-conferences between faculty supervisors and TCs. These quantitative and qualitative data are merged to examine areas of complementarity. Complementarity of mixed methods data is concerned with the matter of overlap in the data in terms of pointing to the same conclusions and providing multiple perspectives on a phenomenon (Greene, Caracelli, & Graham, 1989). Results from the quantitative and qualitative data of this study show complementarity in two areas—TCs' perceptions of the *quantity* of faculty supervision they received and their perceptions of the *quality* of supervision they received.

The post-intervention survey revealed TCs were generally satisfied with the quantity of supervision they received during the virtual supervision (VS) intervention. These assessments included amount of coaching, number of observations, amount of feedback on lesson plans, amount of feedback on lesson delivery, amount of feedback on differentiating for student learners, and amount of feedback on assessment. The one-on-one, post-intervention interviews with TCs provided additional insights on TCs' satisfaction with the amount of supervision they received. In particular, TCs provided specific examples of how they were able to interact with their faculty supervisors in the VS setting with respect to these same measures. Several of these examples are provided within the qualitative themes articulated in Chapter 4.

Additionally, when asked in the post-intervention survey to rate the level of quality of supervision as part of the VS model, TCs are generally satisfied with the quality of supervision they receive. These results are enhanced by qualitative data from the TC and faculty supervisor post-intervention interviews, which suggest TCs and

faculty supervisors find the quality to be as good or better in the VS model when comparing it to the traditional face-to-face approach to supervision.

One construct where there is not clear complementarity of the data is in TC self-efficacy of instructional practices. The ANOVA results reveal there are no significant increases in TC self-efficacy of instructional practices, which included self-efficacy as it relates to lesson planning, lesson delivery, employing differentiation, and using assessment. Contrary to the quantitative data on self-efficacy with respect to instructional practices, the post-intervention interviews show several TCs note improved overall self-efficacy of their teaching practices and preparedness as a teacher. A reason there may not be an increase in self-efficacy in these areas is that TCs are more familiar and have more experience with these matters because they are evaluated throughout the program on these areas using the TAP rubric. Thus, these behaviors are well practiced and students may already have high levels of self-efficacy because they are supposed to exhibit mastery and have had previous opportunities to do so. The data from these assessments supports this interpretation because pre-intervention scores are quite high with means of 5.00 to 5.23 for the retrospective, pre-intervention measures.

Taken together, quantitative data for this study provide a general understanding of TCs' perceptions of their experience with the VS model. The qualitative interviews with faculty supervisors and TCs, as well as the post-conference observations, provide deeper insights by helping to expand on the results from the quantitative data.

Discussion of Findings including Connections to the Literature

This action research study focuses on implementing a virtual approach to supervising TCs during their student teaching semesters. The goals of this intervention

are to increase the quantity and quality of supervision provided to TCs during the student teaching semesters, while also improving TC self-efficacy of instructional practices. The findings are discussed in three sections: (a) TCs report high levels of support from faculty supervisors within the VS model; (b) faculty supervisors' actions mitigated transactional distance within the VS model; and (c) VS influence on teacher candidate self-efficacy.

Support of TCs by faculty supervisors within the VS Model. Data from this study reveal TCs are generally satisfied with the quantity and quality of supervision provided by faculty supervisors in the VS model. TC post-intervention survey responses show evidence of overall satisfaction for the quantity and quality of observations, coaching, and feedback related to specific instructional practices provided during the VS intervention. Additionally, during the post-intervention interviews, TCs frequently comment about the frequency of coaching and feedback provided by faculty supervisors, as well as the accessibility of their faculty supervisors for this and other support.

Satisfaction related to quantity of supervision in the VS model is consistent with findings in the related research. Results from various studies show a VS model allows for less time to be spent on travel, and more time to be spent on supporting TCs (Berkey & Conklin, 2016; Kelly & Bishop, 2013; Kelly et al., 2014; Kenyon, 2011; Owen, 2015; Smyth & Zanetis, 2007; Van Boxtel, 2017). Moreover, several TCs note the quality of their VS experience is attributable to faculty supervisors' availability for support and supervisors' flexibility with respect to the application of the VS model. This finding aligns with related research where Hamel (2012) and Mac Mahon et al. (2019) find frequency and flexibility of scheduling coaching conversations as a vital benefit of a VS approach.

The GoReact online video feedback platform is an important component of the VS model that contributes to the quality the supervision faculty supervisors are able to provide. Specifically, the GoReact platform allows teacher candidates to upload recordings of their instruction. Then, faculty supervisors can go into the GoReact system to view recordings and provide timestamped feedback that is aligned to the instructional rubric. Post-intervention interviews with TCs reveal they appreciate the ability to see specific feedback on their lesson, which shows them the instructional rubric indicators on which they are receiving feedback at a particular point in their recorded lessons. TCs' experiences with regard to specificity of the feedback they receive in the GoReact system is consistent with related research on video selection. In particular, Chilton and McCracken (2017) find an increase in TC reflection on their instructional practices occurs through the process of recording and viewing their instruction.

Cognitive coaching plays a prominent role in quality of support TCs receive from faculty supervisors. TCs and faculty supervisors do not specifically mention 'cognitive coaching' in post-intervention interviews. Nevertheless, the reflective questioning approach faculty supervisors apply during post-conferences and other coaching conversations originates in cognitive coaching practices. Although faculty supervisors may not be practicing cognitive coaching in its purest form, the frequency at which they are able to provide coaching and feedback to TCs contributes to building trust and autonomy. Trust and autonomy are key goals of the cognitive coaching framework (Costa & Garmston, 2015). Ultimately, TC autonomy develops when TCs are able to productively reflect on their teaching practices. Thus, TC autonomy increases with more frequent and quality interactions with their faculty supervisors.

Moreover, TCs note the timeliness of the feedback as an advantage of VS. This outcome is consistent with other findings about the VS model. For example, Hamel (2012), Mac Mahon et al. (2019), and Smyth and Zanetis (2007) also find a virtual approach to supervision provides for timeliness of coaching conversations.

Reduction of transactional distance in the VS model. In Chapter 2, transactional distance was explored as a theory to consider when implementing the VS model. Transactional distance is the phenomenon that occurs when faculty and students are separated by distance and time (Moore, 2012; Shannon 2002). There is greater potential for learning when transactional distance is reduced. To reduce transactional distance, key factors to consider include communication and learner autonomy (Moore, 2012). As previously shared, data from the TC post-intervention surveys reveal TCs are generally satisfied with the quantity and quality of supervision they receive within the VS model. An important contributing factor to mitigating transactional distance is the quantity of supervision TCs receive in the VS model. Faculty supervisors are available to meet with TCs on short notice. Post-intervention interviews with TCs indicate many of the TCs contacted their faculty supervisor by phone, text, email, and Zoom outside of the formally scheduled post-conference times. During these informal communications, TCs can receive coaching and support in a just-in-time manner. Faculty supervisors also frequently mention flexibility in connecting with TCs as a substantial benefit of the VS model. Additionally, faculty supervisors and TCs frequently mention the flexibility the VS model affords with regard to scheduling coaching conversations and overall availability of the faculty supervisor. Leka et al. (2005) find similar results in their study, where education students have more favorable ratings for instructors who demonstrate

flexibility in their approach to remote learning. All of these factors contribute to a reduction in transactional distance within the VS model. Although the study did not include a quantitative measure of transactional distance, evidence abounds within the qualitative data to support the notion that transactional distance is minimized through frequent communication and flexibility that are readily built into the VS model.

VS influence on teacher candidate self-efficacy. Data from this research study demonstrate mixed results with respect to how VS influences TCs' self-efficacy for instructional practices. Retrospective, pre- and post-intervention scores for four TC self-efficacy measures show no significant changes in TC self-efficacy for the 11 TCs who completed both surveys; whereas the qualitative data indicate slightly higher levels of confidence with respect to ability to plan and deliver instruction. There are two possible explanations for this outcome. First, 'TCs do not know what they do not know when they enter their student teaching experience.' Many TCs enter their student teaching semester with high levels of confidence related to their teaching practices. When asked to assess their personal teaching performance on the instructional rubric at the start of the semester, they often score themselves very high, the illusion of being competent. Second, they experience successes and failures with designing and teaching lessons over the course of the semester. Thus, TCs may perceive they have not grown as a practitioner.

Notably, some TCs describe in detail their processes for choosing what video clips to submit for coaching and feedback on their instruction, choosing clips that represent instructional practices they are trying for the first time. The effort put into the video selection process aligns with related research on self-efficacy and cognitive processes. Bandura (1993) and Pajares (2002) describe how individuals who possess

higher levels of self-efficacy tend to seek out challenging experiences. TCs who are purposeful in selecting their videos to get feedback on teaching practices they are attempting for the first time are demonstrating higher levels of self-efficacy in their instructional ability. Moreover, such an approach is likely to facilitate their learning and foster the development of self-efficacy because they will be receiving feedback they can use to move their instructional efforts toward mastery.

Limitations and Approaches to Building Validity and Trustworthiness

Given the complexity of this research study and its importance to informing practice, it is important to ensure the research findings are as accurate and valid as possible. Maxwell (2013) defines validity as “a way to refer to the correctness or creditability of a description, conclusion, explanation, interpretation, or other sort of account” (p. 122). It does not mean that the results of this research study provide an absolute truth to the research questions that are being investigated.

There were several traditional threats to validity, which warrant consideration. For example, history is a threat to the trustworthiness of the study. History is the situation where participants, supervisors and TCs, engage in some action “outside the study” that influences their behaviors “inside” the study (Creswell & Guetterman, 2019). For example, supervisors may have done some of “their own research” on virtual supervision, which affects their attitudes toward it, in such a case change in attitudes is not just the result of their participation in the intervention of this study. In fact, during the intervention implementation semester, I am aware that faculty supervisors held many conversations among themselves as they navigated the challenges of the VS model. Some faculty supervisors even reached out directly to tech support offered by the GoReact

vendor. I view these actions as acceptable resources of support for faculty supervisors who participated in the intervention, and encouraged faculty supervisors to rely on each other for support.

Additionally, the experimenter effect is a potential threat to validity. In the experimenter effect, participants, in this case supervisors, may respond to me as the researcher; not the intervention, per se (Smith & Glass, 1987). For example, the faculty supervisors and TCs who were interviewed for this research study may respond to questions in a manner in which they are telling me what they thought I wanted to hear as the researcher. There was an instance during one of the TC interviews when a TC stated “I’m not sure if this is what you want me to say, but...” My response to the TC was that I wanted him to be honest in his responses to all of the questions. Prior to the start of every interview, I told participants that I wanted their honest response, and there would be no adverse reaction by me for their honest responses.

In my role as the researcher, I am mindful of how my positionality may influence the participants in this study. In my role within the teacher preparation program, many faculty supervisors view me as their immediate supervisor. Although that is not the case, I am consistent about communicating to faculty supervisors that I am not evaluating their performance as part of this research study. My focus is on the application and outcomes of the intervention as a whole, and not the individual performance of faculty supervisors. During interviews with faculty supervisors, I consider how my approach to questioning may come across as evaluative of their performance. As a precaution, I provide clear intent about the purpose of the interviews and ensure supervisors that we are operating in a safe space where they can be honest about their experiences related to the

implementation of the VS intervention, because those responses will be used to refine the intervention for future application.

Applying a mixed-methods approach to the research supports the triangulation of the data that are collected (Mertler, 2017). Triangulation is a method of gathering and using data from multiple sources and participants using multiple data collection methods to enhance the credibility of the conclusions drawn from the data (Creswell & Guetterman, 2019). Collecting data from multiple sources helps to mitigate issues related to validity and trustworthiness of the data as a whole (Creswell & Creswell, 2018; Ivankova, 2015; Maxwell, 2013). In this research study, I gather and use qualitative data from faculty supervisors' pre- and post-interviews and observations of recorded coaching sessions and student interviews. Additionally, I gather and use quantitative data by conducting surveys of TC participants. Thus, by using various methods and various data, I increase the credibility of the study.

To increase the credibility of the interpretations of qualitative data, I use the constant comparative method, and ongoing reflection through analytical memos. The constant comparative method is a method of interpreting data in which new data is constantly compared to previous codes or categories to determine whether a new code or category is necessary or whether the new information can be subsumed under a previously used one (R. Buss, personal communication, January 23, 2021). Analytic memo writing provides an opportunity to step back and reflect on the data that have been interpreted throughout the process (Chamaz, 2014). I kept a notebook throughout the application of my intervention and data analyses. I used these notes to jot down patterns I notice while observing recorded post-conferences, and conducting faculty supervisor and

TC interviews. I also used this as I analyzed and interpreted the qualitative data. This process serves as an opportunity to stop and reflect on what important ideas and themes are surfacing from the data and how the data are connected. Although there is no way to completely eliminate threats to validity within this research study, I make a conscious effort to do so.

Implications for Practice

The use of VS to observe TCs for the purpose of evaluation, coaching, and support is not going away. In fact, it is likely the VS model will be refined and expanded to provide teacher candidates a more robust experience during student teaching, and to bring more efficiencies to the faculty supervisor role. VS provides a sustainable approach to supervision within teacher preparation programs that continue to seek ways to remove geographic barriers. A true VS approach to supervision will remove any geographic concerns about where TCs are attending their field-based, teaching experiences, and where faculty supervisors live in relation to those field experiences. TCs and faculty supervisors could potentially live anywhere in the world and engage in a VS model. As the VS model continues to grow, there are some areas of the model that may be influenced and guided by data from this research study. Potential areas for future iterations of the VS model include: (a) developing more explicit criteria for selection of recorded instruction for ‘virtual walkthroughs;’ (b) developing clear expectations for faculty supervisor communications with *mentor* teachers; (c) integrating program faculty and TC peers in the feedback cycle; (d) creating a video library of exemplary practices; and (e) expanding VS into internship semesters prior to the student teaching semesters.

Conversations during the post-conference interviews with TCs reveal there are inconsistencies among TCs with respect to how they select their recorded lessons for their virtual walkthrough submissions. Some TCs choose a clip from a lesson they feel they perform really well on, whereas others selected a clip from a lesson where they want feedback on something new they are trying in their teaching. In the traditional approach to a face-to-face walkthrough, faculty supervisors make an unannounced visit to the TCs' classrooms, to observe whatever is happening at the moment. Through the application of the VS model, students are spending more time selecting video clips from lessons that may not be a true representation of what is happening in their classroom. Future criteria for virtual walkthrough submissions might include an expectation that video submissions show an instructional practice the TC or faculty supervisor has previously identified as a refinement, i.e., an area that needs to be improved. Another criteria option for virtual walkthrough submissions could be for the recording to be of an instructional strategy that the TC is trying for the first time. As stated, the virtual walkthrough is an opportunity for the TC to receive coaching and feedback from their faculty supervisor. There are no points, and thus, no evaluation is tied to the virtual walkthrough, so there is no pressure on the student to 'show' their best performance.

Developing clear expectations for faculty supervisors to communicate with mentor teachers is another area where the VS model can be strengthened. In the traditional face-to-face supervision model, faculty supervisors have many opportunities to communicate with mentor teachers when they are visiting classrooms to observe teacher candidates. Data from post-intervention interviews with faculty supervisors and teacher candidates indicate there is limited opportunity for the faculty supervisor to communicate

with the mentor teacher in the VS model. A possible solution to this deficit could be to require the faculty supervisors to schedule video or phone conversations with mentor teachers prior to each post-conference conversation with teacher candidates. This would allow the faculty supervisor to gain understanding about what supports mentor teachers are providing to TCs, what concerns the mentor teacher may have, and what questions the mentor teacher may have regarding supporting TCs.

The adoption of the GoReact video coaching platform is a critical component of the VS model. The platform provides a place for TCs to upload their recorded lessons, for faculty supervisors to view the recorded lessons, and for supervisors to provide timestamped feedback. The GoReact platform, or a similar video coaching platform, provides an opportunity for expanding those from whom TCs receive feedback about their instructional practices. A future iteration of the VS model could include inviting other MLFTC program faculty or TC peers to join the feedback process. The GoReact platform has the capability of allowing other participants to provide unique feedback to a TC on their recorded lesson. TCs could benefit from perspectives of other faculty members and their peers.

Several of the TCs participating in the post-intervention interview share how they are able to visualize the instructional rubric through the use of timestamped feedback in the GoReact platform. They discuss the benefit of being able to see how specific things they are saying and doing within their lesson align to identified best practices on the instructional rubric. Moving forward, there could be a benefit to developing a virtual library of video clips that represent specific indicators and descriptors on the instructional rubric. For example, students who seek a practical understanding of what academic

feedback looks and sounds like during instruction could access a virtual video library that has categorized short video clips that provide examples of academic feedback. This video library can be developed over time through the collection of TC video submissions.

Finally, VS is currently limited to the student teaching semesters for this research study. When considering further scaling of the VS model, program faculty may think about how VS could be applied during the internship semesters prior to student teaching when TCs are getting their initial experiences in the field. Historically, supervision of TCs by faculty during the internship semesters is limited to a couple of specific programs, including the Early Childhood/Early Childhood Special Education dual certification, and the Physical Education programs. The VS model may provide an opportunity to scale up supervision to the internship semesters without requiring a substantial number of new faculty supervisors. Clinical faculty members who have traditionally only taught courses on campus, could take on some level of supervision responsibilities as part of their workload. These faculty members would not need to travel to sites to supervise students. There would need to be some sort of clear equivalency determined between teaching a course on campus and supervising a specific number of students.

Implications for Future Research

Results from this research study find TCs to be satisfied, overall, with the quantity and quality of supervision they receive. Quantitative data indicate no significant change in TC self-efficacy related to instructional practices. Nevertheless, some TCs discuss improved confidence in their ability to teach when asked about self-efficacy during the one-on-one post-intervention interview. Ultimately, the goal of supervision during the

student teaching experience is to provide coaching, feedback, and support to TCs so that they demonstrate proficient teaching practices and develop self-efficacy in their abilities by the time they complete the program. Because the quantitative data indicate no significant change in TC self-efficacy, future studies may be conducted to consider how to revise the VS model to have a greater influence on TCs' self-efficacy. A research question for this study could be, "What factors of the VS model contribute to increasing TCs' self-efficacy with respect to instructional practices?"

This research study focuses on TCs and the faculty supervisors who support TCs. There are many more faculty members and staff who are involved in the overall success of TCs within the teacher preparation program. There has been and continues to be substantial effort within the college to have all faculty members work together to support all students. A future study focusing on how other faculty members engaged in the VS model could provide insight into future program redesigns, as well as future iterations of the VS model to better support the unique outcomes of each academic program. A research question for this study could be, "How and to what extent do program faculty members contribute to the VS model?"

Another potential area of future research is examining inter-rater reliability and fidelity of implementation of the VS model. MLFTC has over 30 full-time faculty supervisors who supervise over 700 teacher candidates each semester. A possible research question is, "How and to what extent does professional development of faculty supervisors contribute to inter-rater reliability of instructional rubric scoring of TCs?" Another research questions could be, "How and to what extent does professional development of faculty supervisors contribute to fidelity in execution of the VS model?"

Finally, both faculty supervisors and TCs mentioned some concern about what cannot be seen or what is being missed in the classroom by the faculty supervisor when video is the primary method of observing TCs' instruction rather than actual, live observations. Faculty supervisors may not be getting the complete context of the classroom setting when viewing a recording that shows an isolated portion of the classroom. In a future research study, investigators might examine best practices for capturing what cannot be seen in a recorded video observation. A research question for this study could be, "How can faculty supervisors 'capture actions' that cannot be seen in a recorded lesson within the VS model?"

Personal Lessons Learned

This action research study is not my first experience with action research, however it is my most extensive experience with action research within my work setting. I understand action research can be an influential part of creating change within my work, and each step in the action research process provides information that is critical to the overall process. Throughout this research experience I have learned several lessons that will influence how I conduct future cycles of action research. Some of the lessons I have learned include (a) work with problems that are within my scope; (b) allow others to take a lead; (c) ensure all necessary stakeholders are included; and (d) communicate the work.

When I started this EdD program, a lesson I brought with me from a previous attempt in the program is to be ensure the focus of my research fits within my current work, and it is a topic that is within my sphere of influence. When I entered the program I knew my research would focus on improving the supervision experience for faculty supervisors and for TCs. Because of my leadership role within the college, I was able to

make many decisions about how the VS model would be implemented and work closely with my director to seek approval for a pilot and scaled up implementation of the VS intervention during the fall 2020 semester when I was scheduled to implement the intervention and collect data. Action research should not be an “extra thing.” Instead, action research should be integrated into my work as a method for seeking continuous improvement and innovation for my work and for the organization where I work.

When I began the implementation of my intervention for this action research study, I tried to be the expert on all parts of the innovation. I quickly learned that faculty supervisors who were actively engaged in the VS model are the true experts. They know what is working and what is not working, and they know the GoReact platform in greater depth than I do, because they are using it on a daily basis for their work. When two faculty members volunteered to do a one-hour workshop on what they learned about GoReact during the semester, I realized they were the experts and I quickly took them up on their offer. While I was facilitating the implementation of the VS model, I learned that I could and should rely on others to support the continuous development of the work.

Early on in this action research study, I learned the importance of considering all the potential stakeholders that may be affected by the intervention. One example where I overlooked at least one stakeholder was when I worked with college leadership to adopt the GoReact online video coaching platform. One key person who was not part of the decision making process was the Director of Technology Operations. The director had many questions about the online platform that were not asked prior to receiving approval to use the platform. This lack of communication on my part resulted in frustrations that could have been prevented if I had developed a clear list of all stakeholders who needed

to be included in the process. For future research studies, I will spend more time thinking through all of the stakeholders that should be included in the planning and implementation of the intervention.

Finally, related to the consideration of all stakeholders, I have learned that communication about the progress and implications of the research study is an important factor. As previously stated, I did not anticipate the VS model to be implemented at full scale during the fall 2020 semester, but circumstances lead to a full-scale implementation. Many faculty members who are not supervising TCs do not have a clear understanding of the VS model, and have questions about what VS means for their field-based course assignments. In the future, for action research studies that I implement, I will include a communication plan that provides a summary of what the intervention is, why the intervention is needed, and provides updates on the progress of the study.

Conclusion

The VS approach to supervising teacher candidates during the student teaching semesters will continue to be a critical component of the teacher preparation program in MLFTC. When I began this action research study, I had only intended to conduct a small pilot of the VS model with a few faculty supervisors and their assigned TCs. Several factors contributed to the VS model being implemented at full scale during the fall 2020 semester with over 30 faculty supervisors and over 700 TCs who were in their student teaching semesters. There are clear benefits to the college with a VS approach to supporting students in the field. These benefits include having the ability to supervise TCs anywhere in the world. With many programs moving to online offerings, having the capacity to supervise TCs regardless of location will be critical to the success of these

programs. Another benefit to the college is the flexibility of assigning faculty supervisors to TCs, regardless of location. In the VS model, faculty supervisors no longer have to travel between school sites to observe and meet with TCs. The elimination of travel is also a cost savings to the college, as faculty supervisors have been reimbursed for their travel mileage. Most importantly, as discovered through this action research study, the VS model provides an amount of observation, coaching, and feedback that is equal to or exceeds and is better than a traditional approach to supervision. Faculty supervisors and TCs are generally satisfied with the amount of support that is provided through the VS model.

Moving forward, future iterations of the VS model should be a collaborative effort between faculty supervisors, lead program faculty, and MLFTC leadership to ensure the model is sustainable. There is substantial potential for the VS model to benefit each of the certification programs within MLFTC beyond being used during the student teaching semesters. The VS model offers an opportunity for program faculty who are not typically engaged in what TCs are doing in the field to participate in observations and provide feedback that is specific to their course objectives. In a college where the larger university takes tremendous pride in being an innovation leader, the VS model, and future versions of the model, offer great potential for innovation to change the long-standing traditional approach to preparing teacher candidates to be professional educators.

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APPENDIX A

FACULTY SUPERVISOR INTERVIEW QUESTIONS

(PRE- AND POST-INTERVENTION QUESTIONS)

1. To what extent will/did the virtual supervision and coaching model allow you to provide support to your teacher candidates?
2. What challenges do you anticipate experiencing/did you experience when conducting virtual supervision and coaching with TCs?
3. What modifications did you make to the virtual supervision and coaching model during the semester? Why? (post-interview)
4. From your perspective, what are the anticipated/experienced benefits of virtual supervision and coaching?
5. From your perspective, what was the quality of supervision and coaching you were able to provide to TCs? (post-interview)
6. How will/did TCs react to virtual supervision and coaching?
7. How will/did virtual supervision and coaching influence TCs' development as teachers?
8. In what ways will/was virtual supervision and coaching (be) effective?
9. What other information or ideas would you like to share about the virtual supervision and coaching model?

APPENDIX B

TC RECRUITMENT AND CONSENT LETTER

Dear Teacher Candidate:

My name is Robert Morse and I am a doctoral student in the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University (ASU). I am working under the direction of Dr. Ray Buss, a faculty member in MLFTC. We are conducting a research study on virtual supervision of student teachers. The purpose of this study is to understand better the current situation with respect to the quality and quantity of virtual supervision for teacher candidates in the teacher preparation program.

We are asking for your help, which will involve your participation in two surveys and an interview (some of you will be chosen at random for the interview) concerning your knowledge, experiences, attitudes, and beliefs about the quality of supervision for teacher candidates when implementing a virtual approach to supervision. We anticipate the surveys will take about 10 minutes each on two occasions. The interview to take about 20 minutes. I would like to audio record this interview. The interview will not be recorded without your permission. Please let me know if you do not want the interview to be recorded; you also can change your mind after the interview starts, just let me know. For the surveys, to protect your identity, and to allow us to match your data from the two surveys, we will ask you to develop a unique identifier known only to you. It will consist of the first three letters of your mother's name and the last four digits of your phone number. Thus, if your mother's name was Sarah and your phone number was (602) 555-4567, your unique identifier would be Sar4567.

Upon completion of both surveys, you may submit your name and email address to a separate link to be entered into a drawing. A random drawing will take place and seven \$20 gift cards will be awarded. The chances of winning a gift card are about 1 in 8.

Your participation in this study is voluntary. If you choose not to participate or withdraw from the study at any time, there will be no penalty whatsoever and it will not affect your standing in the college or at ASU. You must be 18 years of age or older to participate.

The benefit to participation is the opportunity for you to reflect on and think more about the quality of ASU supervisor observations and feedback during student teaching. Interview responses will also inform future iterations of this work, and provide guidance for how the college can improve the virtual supervision experience for faculty and teacher candidates. Thus, there is potential to enhance the experiences of our students and their supervisors. There are no foreseeable risks or discomforts to your participation.

Your responses will be confidential. Results from this study may be used in reports, presentations, or publications but your name will not be used.

If you have any questions concerning the research study, please contact the research team – Ray Buss at ray.buss@asu.edu or (602) 543-6343 or Robert Morse at robert.morse@asu.edu or (623) 217-0708.

Thank you,

Robert Morse, Doctoral Student
Ray Buss, Associate Professor

Completion of the surveys will indicate your consent to participate in the surveys. At the time of the interview, we will ask for your verbal consent to audio record your responses.

If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact Ray Buss at (602) 543-6343 or the Chair of Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965-6788.

APPENDIX C

TEACHER CANDIDATE POST-INTERVENTION SURVEY

Supervision and Coaching During Internship and Student Teaching

The purpose of this survey is to better understand the current situation with respect to ASU Site Leads (your supervisor) having limited time to conduct classroom observations and provide quality feedback during student teaching. All answers will remain anonymous and confidential.

We ask you to create your own unique identifier so that we can match you pre-survey responses with those from your post-survey. The unique identifier consists of the first three letters of your mom's name and the last four digits of your phone number. For example, for a student whose mom's name was Sarah and whose phone number was (623) 123-4567, the unique identifier would be Sar4567.

Q1: Unique identifier (first three letters of your mom's name, and last four digits of your phone number): _____

Q2: Gender

Male

Female

Prefer not to answer

YOUR PLACEMENT

The following items are about your current student teaching placement. Please answer them to the best of your ability.

Q3: In what grade range are you completing your student teaching?

K-2

3-4

5-6

7-8

Q4: In what program are you completing your undergraduate certification?

Elementary Education

Special Education/Elementary Education (Dual Cert)

Early Childhood/Early Childhood Special Education (Dual Cert)

English as a Second Language/Bilingual Education (Dual Cert)

Secondary Education

Masters and Certification (MAC)

Q5: How many times has your faculty supervisor conduct a classroom walkthrough in your student teaching classroom this semester?

0 1-2 3-4 5+

Q5a. How many times did your faculty supervisor provide feedback for classroom walkthroughs this semester?

0 1-2 3-4 5+

Q6: How many times have you had a virtual coaching conference with your faculty supervisor this semester?

0 1-2 3-4 5+

Q7: How many times have you had a face-to-face coaching conference with your faculty supervisor?

0 1-2 3-4 5+

YOUR EXPERIENCE WITH THE FACULTY SUPERVISOR

The following questions are about your beliefs related to your student teaching experience. Please answer them to the best of your ability. Please read each statement and decide how strongly you agree or disagree.

Q8: I received the appropriate amount of **coaching** from my faculty supervisor.

- Strongly Agree
- Agree
- Slightly Agree
- Slightly Disagree
- Disagree
- Strongly Disagree

Q8a. The quality of my faculty supervisor's **coaching** was _____.

- Excellent
- Very Good

- Good
- Fair
- Poor

Q9: I participated in the appropriate amount of observations by my faculty supervisor.

- Strongly Agree
- Agree
- Slightly Agree
- Slightly Disagree
- Disagree
- Strongly Disagree

Q9a. The quality of my faculty supervisor's observations were _____.

- Excellent
- Very Good
- Good
- Fair
- Poor

Q10: I received the appropriate amount of feedback on my lesson plans from my faculty supervisor.

- Strongly Agree
- Agree
- Slightly Agree
- Slightly Disagree
- Disagree
- Strongly Disagree

Q10a. The quality of my faculty supervisor's feedback on my lesson plans was _____.

- Excellent
- Very Good
- Good
- Fair
- Poor

Q11. I received the appropriate amount of feedback on **delivering lessons** for my students from my faculty supervisor.

- Strongly Agree
- Agree
- Slightly Agree
- Slightly Disagree
- Disagree
- Strongly Disagree

Q11a. The quality of my faculty supervisor's feedback on **delivering lessons** was _____.

- Excellent
- Very Good
- Good
- Fair
- Poor

Q12. I received the appropriate amount of feedback on differentiating instruction to meet the individual learning needs of my students from my faculty supervisor.

- Strongly Agree
- Agree
- Slightly Agree
- Slightly Disagree
- Disagree
- Strongly Disagree

Q12a. The quality of my faculty supervisor's feedback on differentiating instruction to meet the individual learning needs of my students was _____.

- Excellent
- Very Good
- Good
- Fair
- Poor

Q13. I received the appropriate amount of feedback on how to assess student learning from my faculty supervisor.

- Strongly Agree
- Agree

Questions 25-40 are answered using the following likert scale:

Strongly Agree Agree Slightly Agree Slightly Disagree Disagree
Strongly Disagree

- Q25. I am confident I can design lesson plans that meet the needs of my students.
- Q26. I am certain I can design lesson plans that build on the prior knowledge of my students.
- Q27. I am sure I can design lesson plans that provide appropriate time for lesson closure.
- Q28. I am confident I can design lesson plans that have measurable goals.
- Q29. I am certain I can deliver engaging lessons for my students
- Q30. I am confident I can deliver lessons that provide visuals that support student learning.
- Q31. I am confident I can deliver lessons that include modeling that demonstrates performance expectations.
- Q32. I am sure I can deliver lessons that include concise communication.
- Q33. I am sure I can I differentiate instruction to meet the individual learning needs of my students.
- Q34. I am confident I can incorporate students' interests into my instruction.
- Q35. I am certain I can incorporate students' cultural heritages into my instruction.
- Q36. I am sure I can anticipate student learning difficulties when planning for instruction.
- Q37. I am confident I can I assess student learning.
- Q38. I am confident I can use data from student assessment to guide new instruction.
- Q39. I am sure I can use assessment data to determine if individual students have met lesson objectives.
- Q40. I am certain I can use student assessment to provide feedback to students.

Thank you for participating in this research study. If you have any questions, please contact the researcher, Robert Morse at robert.morse@asu.edu, or his dissertation chair Dr. Ray Buss at ray.buss@asu.edu

APPENDIX D

TEACHER CANDIDATE POST-INTERVENTION INTERVIEW QUESTIONS

1. What is your overall reaction to virtual supervision and coaching?
2. From your perspective, what was the quality of the supervision and coaching you received using the virtual supervision and coaching approach?
3. What challenges did you experience when participating in virtual supervision and coaching?
4. From your perspective, what were the benefits of virtual supervision and coaching?
5. In what ways was virtual supervision and coaching effective?
6. To what extent did the faculty supervisors' use of virtual supervision and coaching provide you with support?
7. How did virtual supervision and coaching influence your development as a teacher?
8. How did virtual supervision and coaching influence your self-efficacy for teaching?
9. What changes need to be made to the virtual supervision and coaching process to make it more effective?
10. What other information or ideas would you like to share about virtual supervision and coaching?

APPENDIX E

TEACHER CANDIDATE RETROSPECTIVE, PRE-INTERVENTION SURVEY

The purpose of this survey is to better understand the current situation with respect to ASU Site Leads (your supervisor) having limited time to conduct classroom observations and provide quality feedback during student teaching. All answers will remain anonymous and confidential.

We ask you to create your own unique identifier so that we can match you pre-survey responses with those from your post-survey. The unique identifier consists of the first three letters of your mom's name and the last four digits of your phone number. For example, for a student whose mom's name was Sarah and whose phone number was (623) 123-4567, the unique identifier would Sar4567.

Q1: Unique identifier (first three letters of your mom's name, and last four digits of your phone number): _____

Q2: Gender

Male

Female

Prefer not to answer

YOUR PLACEMENT

The following items are about your current student teaching placement. Please answer them to the best of your ability.

Q3: In what grade range are you completing your student teaching?

K-2

3-4

5-6

7-8

Q4: In what program are you completing your undergraduate certification?

Elementary Education

Special Education/Elementary Education (Dual Cert)

Early Childhood/Early Childhood Special Education (Dual Cert)

English as a Second Language/Bilingual Education (Dual Cert)

Secondary Education

Masters and Certification (MAC)

The following questions are about your beliefs related to your teaching practice. Please answer them to the best of your ability. Please read each statement and decide how strongly you agree or disagree.

Questions 5-20 are answered using the following likert scale:

Strongly Agree Agree Slightly Agree Slightly Disagree Disagree
Strongly Disagree

- Q5. I am confident I can design lesson plans that meet the needs of my students.
- Q6. I am certain I can design lesson plans that build on the prior knowledge of my students.
- Q7. I am sure I can design lesson plans that provide appropriate time for lesson closure.
- Q8. I am confident I can design lesson plans that have measurable goals.
- Q9. I am certain I can deliver engaging lessons for my students
- Q10. I am confident I can deliver lessons that provide visuals that establish the purpose of the lesson.
- Q11. I am confident I can deliver lessons that include modeling that demonstrates performance expectations.
- Q12. I am sure I can deliver lessons that include concise communication.
- Q13. I am sure I can differentiate instruction to meet the individual learning needs of my students.
- Q14. I am confident I can incorporate students' interest into my instruction.
- Q15. I am certain I can incorporate students' cultural heritage into my instruction.
- Q16. I am sure I can anticipate individual student learning difficulties when planning for instruction.
- Q17. I am confident I can assess student learning.
- Q18. I am confident I can use data from student assessment to differentiate instruction.
- Q19. I am sure I can use assessment data to determine if individual students have met lesson objectives.
- Q20. I am certain I can use student assessment to provide feedback to students.

APPENDIX F
IRB APPROVAL LETTER



EXEMPTION GRANTED

Ray Buss
Division of Educational Leadership and Innovation - West Campus
602/543-6343
RAY.BUSS@asu.edu

Dear Ray Buss:

On 9/11/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Virtual Supervision of Student Teaching
Investigator:	Ray Buss
IRB ID:	STUDY00008793
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">• Recruitment and Consent Letter, Category: Consent Form;• IRB Protocol, Category: IRB Protocol;• Interview Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 9/11/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

APPENDIX G

IRB MODIFICATION APPROVAL LETTER



EXEMPTION GRANTED

[Ray Buss](#)
[Division of Educational Leadership and Innovation - West Campus](#)
602/543-6343
RAY.BUSS@asu.edu

Dear [Ray Buss](#):

On 11/17/2020 the ASU IRB reviewed the following protocol:

Type of Review:	Modification / Update
Title:	Virtual Supervision of Student Teaching
Investigator:	Ray Buss
IRB ID:	STUDY00012285
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">• IRB Protocol, Category: IRB Protocol;• Recruitment Consent Letter, Category: Recruitment Materials;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 11/17/2020.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at research.integrity@asu.edu to determine if additional reviews/approvals are required. Changes may include but not limited to revisions to data collection, survey and/or interview questions, and vulnerable populations, etc.

Sincerely,

IRB Administrator