ATTITUDES AND EXPERIENCES OF PRESERVICE TEACHERS UTILIZING VIDEO ANNOTATION SOFTWARE: A PHENOMENOLOGICAL STUDY

by

Heather R. Lucas

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Liberty University

2023

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APPROVED BY:

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Abstract

The purpose of this hermeneutic phenomenological study was to explore preservice teachers' experiences with video observations at Central University. The theory guiding this study was Bandura's self-efficacy theory as it provides insights into the internal and external factors that affect an individual's perception of their capabilities. Self-efficacy is a critical component and goal of field experience observations. The central research question for this hermeneutic phenomenological study was: What are preservice teachers' attitudes and experiences using video annotation software during field experience? The study was divided into two phases: individual interviews with preservice teachers, audio-visual elicitation interviews, a letter-writing activity, and qualitative data aggregation. Four themes were derived from the participants' experiences: (a) streamlined reflection, (b) digital detachment, (c) the supervisor variable, and (d) program components' effect on self-efficacy. Interpretations of the themes included four significant interpretations: (a) video annotation software improves reflection capabilities and personal agency, (b) video annotation software is a field supervision tool, not replacement, (c) convenient but not complete: video annotation software asynchronous communication is not enough, and (d) expectations and structure matter.

Keywords: Video analysis, reflection, video annotation software, preservice teachers, self-efficacy, field experience observations, student teaching

Copyright Page

Dedication

To my daughters Evie, Amelia, and Nora. We can do hard things.

Acknowledgments

Soli Deo Gloria, to God be all glory. Thank you to the members of my committee, Dr. Strickland, and Dr. Hogue. I very much appreciate your encouragement and support. I am also grateful to Dr. Chris Widdall, Dr. Deborah DeZure, Mischa Mixon, and the faculty and staff of Northwest University College of Education.

Thank you to the preservice teachers who participated in this research. Your candor, humor, and thoughtfulness made this work a joy to complete. Your future students are blessed to have you.

Finally, I am so grateful for the love and support of my family. Roger, you have always been my biggest advocate and cheerleader. I don't know where I would be without you. Evie, Amelia, and Nora, you are my inspiration and biggest source of pride. I love you.

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List of Abbreviations

Coronavirus Disease 2019 (COVID-19)

Council of Parent Attorneys and Advocates (COPAA)

Educative Teacher Performance Assessment (EdTPA)

Federal Educational Rights and Privacy Act (FERPA)

Health Insurance Portability and Accountability Act (HIPAA)

Interstate Teacher Assessment and Support Consortium (InTASC)

Institutional Review Board (IRB)

Kindergarten through 12th Grade (K-12)

Learning Management System (LMS)

Master in Teaching (MIT)

No Child Left Behind Act (NCLB)

Task-Technology Fit (TTF)

Video Analysis Support Tool (VAST)

Video Annotation Software (VAS)

Video Annotation Technique (VAT)

Video Interactions for Teaching and Learning (VITAL)

CHAPTER ONE: INTRODUCTION

Overview

Teacher preparation programs equip preservice teachers with the competencies and skills necessary to lead 21st-century classrooms. As the United States student population grows more diverse and the skills needed for global interconnectivity become increasingly complex, the scope of what beginning teachers must know and be able to do is staggering (Darling-Hammond & Oakes, 2021; Gorlewski et al., 2021). Advances in technology have provided digital tools for instructional practices that support preservice teacher growth and development. Specifically, video annotation software provides a convenient and innovative way to record teaching practice, provide unbiased evidence for reflection, and allow for targeted, personalized feedback (Ardley & Hallare, 2020; Ault et al., 2019; Nagro, 2022). However, the potential of a technology does not equate to results (Reich, 2021). The success of video analysis as a teacher preparation practice is contingent upon the attitudes and practical experiences of the preservice teachers utilizing the technology (Ardley & Johnson, 2019). This hermeneutic phenomenological study explored the perspectives of preservice teachers using video analysis for field experience observations. This chapter provides a foundation for the study by providing background of the problem, the problem statement, the purpose of the study, significance of the study, the research questions, and relevant terms.

Background

The background and literature relevant to video analysis in teacher preparation are discussed in this chapter. Specifically, the historical, social, and theoretical contexts are explored as they inform the study's purpose, significance, and methodology. Recognizing the intersecting components of teacher preparation practice establishes a greater understanding of how

theoretical ideals and practical reality converge.

Historical Context

Film and video technology have been integral to education for over a century (Saettler, 2005). In 1911, Thomas Edison heralded the vast potential of educational film, believing that it would eventually replace textbooks (Orgeron et al., 2011). While many educational films were created, they did not, in fact, disrupt traditional educational practices (Couch et al., 2018; Reich, 2020). The technology became commonplace in classrooms, but film use remained supplemental throughout the 20th century (Saettler, 2005). As recording equipment became more portable and less expensive, teachers began to use video recording devices to allow students to create their own content (Schultz & Quinn, 2014).

Similar to elementary and secondary educational settings, teacher preparation programs employed video for curriculum purposes and student work. Teacher educators used recordings of classroom teaching for case study analysis and to model instructional strategies (Gaudin & Chaliès, 2015). As early as the 1970s, programs began using video recordings to conduct simulations to train teachers and counselors (Spivack, 1973). However, it was only in the last three decades that preservice teacher video recording became a widespread strategy for promoting beginning teacher reflection and feedback (Gaudin & Chaliès, 2015; Major & Watson, 2018). Early researchers found that video analysis helped develop teacher awareness (Laycock & Bunnag, 1991; van Es & Sherin, 2008), reflective capabilities (Rich & Hannafin, 2009), and cognitive processing (Copeland et al., 1994). Advances in technology also aided adoption. As mobile devices became ubiquitous, preservice teachers could record their teaching practice without special equipment or training (Ardley & Repaskey, 2019). Teacher preparation programs began to include aspects of video analysis in both coursework and field practicums

(Balzaretti et al., 2019; Santagata & Guarino, 2011; Sharma, 2015).

In 2009, the Educative Teacher Performance Assessment (EdTPA) was established (Gitomer et al., 2021). This evaluative program used applicant video recordings as the primary evidence for its standardized portfolio of teacher performance. By 2017, 40 states required teacher candidates to pass the EdTPA to obtain teacher certification (Xiao & Tobin, 2018). As a result, teacher preparation programs began incorporating more experiences with video analysis into their curriculum to better prepare candidates for the assessment (Davis & Wash, 2019).

Video annotation software was used by few teacher preparation programs prior to 2020 (Bollinger & Liu, 2022; Hager, 2020). However, the COVID-19 global pandemic forced program administrators to rethink how faculty taught, observed, and evaluated candidates in the university classroom and in the field (Blumke, 2021; Boniface et al., 2022). During the 2020–2021 K-12 school year, university supervisors were discouraged from observing on campus (Ardley & Hallare, 2020; Quezada et al., 2020). Therefore, programs turned to available technologies to supervise interns remotely (Fisher, 2021). Video annotation software programs provided a secure online platform for teachers to upload recordings of their teaching. Supervisors were able to view the recordings and provide time-stamped annotated feedback linked directly to the video evidence (Ardley & Brucal-Hallare, 2020; Ardley & Hallare, 2020).

Teacher preparation program could now conduct field experience observations unbound by time or place (Boniface et al., 2022). That accessibility has far-reaching implications for the future of preservice teacher supervision (Ault et al., 2019; Schulz & Gaudreault, 2023). As pandemic restrictions lifted, many programs began to consider what technological stopgaps should become permanent instructional strategies in teacher preparation (Stroupe & Christensen, 2023). While video annotation software has great potential, it remains a relatively new tool in

teacher preparation. Only sparse literature exists on the technology's best practices and overall outcomes (Ardley & Brucal-Hallare, 2020; Bollinger & Liu, 2022; Boniface, et al., 2022; Nagro, 2022).

Social Context

Within the social context of teacher training, video observation is becoming a common method for building preservice teacher self-efficacy and instructional skill (Nagro et al., 2017). Research indicates that video analysis is an effective strategy for preservice teacher growth and development (Ardley & Hallare, 2020; Christ et al., 2017; Coogle et al., 2022; Major & Watson, 2018; Nagro & deBettencourt, 2019). However, evidence of effectiveness does not always lead to social acceptance (Joo et al., 2018). The adoption of video annotation software has been met with resistance from both preservice teachers and supervisors (Nagro, 2020; Schulz & Gaudreault, 2023). The literature cites technological challenges, minimal training, and a general lack of confidence in digital practice as reasons that video annotation software has not met its potential (Ardley & Johnson, 2019; Bollinger & Liu, 2022; Boniface et al., 2022; Nagro et al., 2020). Nagro et al. noted that preservice teachers had low levels of enthusiasm for video reflection activities. Similarly, Ardley and Hallare found that both supervisors and preservice teachers sought in-person alternatives to video observations. Both Moran and Marlatt (2022) and Baecher et al. (2013) reported that field supervisors felt disconnected from their supervisees. Teacher preparation programs need to provide socially relevant experiences for reflection and feedback. However, until researchers and practitioners understand the preservice teacher perspective, assessment of video analysis as an instructional practice will be incomplete.

Video observations must also be considered within the overall social context of 21st-century teacher preparation. Teacher preparation programs face intense pressure to prepare

highly qualified teachers in a relatively short period of time (Cochran-Smith et al., 2018; Darling-Hammond & Oakes, 2021). The common length for a master's in teaching program has decreased but is expected to cover all aspects of 21st-century pedagogy (García & Weiss, 2019; Philip et al., 2019). Moreover, education programs receive criticism that they prioritize theory over practice and do not provide enough opportunity for hands-on experience (Yin & Partelow, 2020). The proliferation of nontraditional teacher certification programs and shift to online course offerings following the COVID-19 pandemic increased the difficulty in providing these pivotal experiences (O'Dea & Stern, 2022; Schulz & Gaudreault, 2023; Wojcik et al., 2022). Digital tools and strategies that give preservice teachers the opportunity for reflection and guided feedback are, therefore, exceptionally valuable (Ardley & Hallare, 2020; Bollinger & Liu, 2022; Nagro, 2022). Video annotation software leverages technological capabilities to support the feedback cycle without the burden of aligned time and space (Ardley & Hallare, 2020; Ault et al., 2019).

Theoretical Context

Educational researchers have long recognized the importance of field experience in a preservice teacher's preparation (Buck et al., 1992; Chou, 2019; Darling-Hammond, 2020; Feiman-Nemser & Buchmann, 1985; Risko & Reid, 2019). Vygotsky's (1978) theory of sociocultural development focused on cognitive development as it occurs through discourse with an expert peer or mentor. In field experience, this learning is facilitated through a preservice teacher's relationship with mentor teachers and university field supervisors. Ardley and Johnson (2019) explored whether sociocultural learning could occur for preservice teachers remotely through video annotation software. Other researchers used this theory to explore the importance of a preservice teachers "comfort zone" (Falter & Barnes, 2020, p. 64) and use of reflective

teaching (Nagro, 2022).

When looking specifically at remote and virtual teacher preparation practices, the research has focused on a variety of adoption models and frameworks (Dorner & Kumar, 2017; Kureethara Manuel et al., 2021; Sánchez-Prieto et al., 2019). Kureethara Manuel et al. combined the frameworks of the community of inquiry (Swan et al., 2009) and online collaborative learning (Harasim, 2017). Both frameworks use tenets of social constructivism to suggest how students can collaboratively solve problems more successfully than individual efforts. Dorner and Kumar used the mentored innovation model to consider preservice teachers' overall satisfaction with online mentoring. Sánchez-Prieto et al. also explored preservice teachers' attitudes; the study used the technology acceptance model (TAM) to frame research into preservice teachers' resistance to change when accepting a new technology.

Finally, identifying the specific characteristics of an effective teacher is of paramount importance to both educational researchers and practitioners (Ault et al., 2019; Burroughs et al., 2019; Darling-Hammond & Oakes, 2021). Specifically, self-efficacy has been recognized as a critical factor in a preservice teacher's success (Gröschner et al., 2018; Hagen et al., 1998). Self-efficacy is an individual's belief in their capabilities; it is built upon the four influences of mastery experiences, vicarious experiences, verbal and social persuasion, and emotions and physiological states (Bandura, 1997). Many researchers have used Bandura's theory of self-efficacy to frame their studies of preservice teachers and analyze the instructional strategies employed by teacher preparation programs (Ault et al., 2019; Cansiz & Cansiz, 2019; Clark & Newberry, 2019; Depaepe & König, 2018).

The theories of learning discussed above informed studies of preservice teacher self-efficacy, technology adoption, and field experience. However, there is a gap in the literature

when considering the confluence of these factors. Bandura's (1977) theory has not been applied to the ability of emergent video technology to build pre-teacher self-efficacy during field experiences. Field experience provides meaningful opportunities to develop preservice teacher self-efficacy as well as instructional skills (Clark & Newberry, 2019). Supervisor observations provide preservice teachers with the opportunity for both mastery experience and verbal persuasion. Observations that use video annotation software have altered timing, supervisor-intern interaction, and structure vis-a-vis traditional observations. It is important to determine if preservice teachers consider observations utilizing video annotation software valuable for building self-efficacy. If they do not, it will be difficult to justify their continued use in teacher training, despite logistical advantages.

Moreover, preservice teachers' perception of the effectiveness of video observations contributes to their confidence and sense of preparedness. If preservice teachers do not believe a practice supports their growth and development, self-efficacy theory postulates that, indeed, it will not. Further research is needed to explore the attitudes and experiences of preservice teachers using video annotation software (Ardley & Johnson, 2019; Nagro et al., 2017). With a greater understanding of the preservice teacher perspective, programs can better address concerns and support candidate growth.

Problem Statement

The problem is the world is increasingly complex, and the skills and competencies required of today's students are multifaceted and everchanging (Darling-Hammond & Oakes, 2021; Gorlewski et al., 2021). Teacher programs have the near-impossible task of equipping teachers with not only the content knowledge required but the pedagogical skills necessary to meet the needs of linguistically, culturally, and cognitively diverse students (Ruppar et al., 2022).

This goal can only be achieved through extensive experience, reflection, and performance feedback (Gibbons & Farley, 2021; Keefe, 2020). However, it is very difficult to provide preservice teachers with the guided practice and personalized feedback necessary to develop their teaching skills and self-efficacy (Brown et al., 2021; VanLone et al., 2022). While effective at supporting reflection and feedback, in-person observations can be costly, time-consuming, and disruptive to the classroom environment (Ault et al., 2019; Schulz & Gaudreault, 2023). Many teacher preparation programs have begun conducting remote observations utilizing video annotation software; however, preservice teachers and supervisors are reluctant to embrace the technology (Moran & Marlatt, 2022). Preservice teachers report low enthusiasm for video analysis (Nagro, 2022; Nagro et al., 2020). Supervisors who do not have adequate training or experience with video annotation technology struggle to implement it effectively (Ardley & Hallare, 2020; Ardley & Johnson, 2019; Ault et al., 2019). Teacher preparation programs rapidly adopted remote observations during the COVID-19 pandemic but have not established protocols and best practices for video annotation technology's use (Ardley & Brucal-Hallare, 2020; Kureethara Manuel et al., 2021; Moran & Marlatt, 2022).

While researchers have found that video analysis is effective at supporting the practice, reflection, and feedback cycle, the process is contingent on stakeholder perception of the efficacy of video reflection and feedback (Ardley & Johnson, 2019; Nagro et al., 2017, 2020; Xiao & Tobin, 2018). Video annotation software will not be an effective pedagogical tool for teacher development unless teacher preparation programs explore preservice teachers' attitudes and experiences with the technology.

Purpose Statement

The purpose of this hermeneutic phenomenological study was to explore preservice

teachers' experiences with video observations at Central University. For the purposes of this research, video observation will be generally defined as an evaluative observation conducted by a university field supervisor utilizing video annotation software.

Significance of the Study

This study's significance is clearly demonstrated through its contributions to theoretical, empirical, and practical perspectives. The theoretical framework used to guide the study was Bandura's (1977) theory of self-efficacy. Using observations as an instructional practice builds self-efficacy primarily through the factors of mastery experiences and verbal persuasion (Colson et al., 2017; Hagen et al., 1998; Pfitzner-Eden, 2016). Therefore, it is important to understand the perspectives of preservice teachers and how they perceive observations utilizing video annotation software as affecting self-efficacy development. This study explored participants' perception of factors aiding or hindering self-efficacy development within the video observation process.

Studies related to video analysis have concentrated primarily on the quality of teacher reflection and supervisor feedback (Ardley & Hallare, 2020; Nagro, 2022; Nagro et al., 2017). Literature published following the school closures during the COVID-19 pandemic focused on the practical aspects of shifting observations to an online modality (Ardley & Brucal-Hallare, 2020; Boniface et al., 2022; Quezada et al., 2020). The perspective of preservice teachers and supervisors making the transition has only been minimally explored (Ardley & Johnson, 2019). This hermeneutic phenomenological study gave voice to these preservice teachers' experience with video observations. Building an understanding of the direct experience helps inform future research into the effectiveness of video observations.

This study has the potential to benefit all stakeholders involved in the teacher training

process. Many teacher preparation programs adopted video annotation technology to mitigate the upheavals of pandemic education (Boniface et al., 2022). Now, as traditional K-12 education has resumed, these programs face the question of how to navigate a new instructional landscape that may or may not include video tools piloted in chaos (Blumke, 2021). This study contributes to practitioners' understanding of preservice teacher perspectives on the video observation experience. Better researched and informed program decisions lead to an overall better experience for teacher candidates (Bohan, 2016; Starkey, 2020). Future preservice teachers will benefit from instructional strategies that develop their self-efficacy and skill development (Colson et al., 2017; Moulding et al., 2014). This study helps improve the preparation of preservice teachers and, in turn, create a better school experience for the students they will teach.

Research Questions

The central research question guides the focus and goal of the research. The study's four sub-questions address the underlining elements of this question and build upon each other to support a deeper exploration of participant experiences. The questions were developed using Bandura's (1977, 1997) self-efficacy theory as a theoretical framework.

Central Research Question

What are preservice teachers' attitudes and experiences using video annotation software during field experience?

Sub-Question One

How will preservice teachers describe video observations for building teacher self-efficacy based on their attitudes?

Sub-Question Two

How will preservice teachers describe video observations for building teacher self-

efficacy based on their experiences?

Sub-Question Three

How will preservice teachers describe the advantages and disadvantages of utilizing video annotation software for observations?

Sub-Question Four

How will preservice teachers describe the use of video annotation software as aiding and hindering the feedback cycle?

Definitions

1. *Attitude* – A psychological tendency evident by the assessment of an entity with a level of favor or disfavor (Eagly & Chaiken, 2007).
2. *Field experience* – A preservice teacher's internship within a K-12 school environment (Boyd et al., 2009).
3. *Field supervisor* – A representative from a university-based teacher preparation program who oversees a preservice teacher's field experience (Byers-Kirsch & Jeffery Petersen, 2012).
4. *Preservice teacher* – A individual in the process of gaining teacher certification through a university-based teacher preparation program *(*Dassa & Derose, 2017)
5. *Self-efficacy* – An individual's belief about their capabilities (Bandura, 1977).
6. *Video annotation software* – Digital tool that allows the user to annotate shared video content (Evi-Colombo et al., 2020).
7. *Video coaching* – Instruction practice in which teachers watching and discuss videos of their teaching with a mentor or teacher-educator coach (van der Linden et al., 2022).

8. *Video observation* – An evaluative observation conducted by a university field supervisor utilizing video annotation software (Ardley & Johnson, 2019).

Summary

Teacher preparation programs need to proactively find ways to prepare teachers to teach 21st-century skills to diverse students in a rapidly evolving world (Darling-Hammond & Oakes, 2021). This goal requires a near-constant evaluation of instructional strategies to ascertain the most effective ways to support preservice teachers' growth and development. However, it is equally important to consider these strategies from the perspective of the preservice teachers. Preservice teachers' attitudes and experiences with program strategies and procedures affect both skill development and self-efficacy. This hermeneutic phenomenological study explored the attitudes and experiences of the preservice teachers using video observations during field experiences. Field experience observations are an important component of teacher preparation and a critical experience for developing self-efficacy (Bohan, 2016; Colson et al., 2017; Goldhaber, 2019). This study addresses the gap in video analysis literature and gives voice to preservice teachers using video annotation software for observations. It also informs practitioners in teacher preparation programs' understanding of how both preservice teachers assign meaning to the video observation experience.

CHAPTER TWO: LITERATURE REVIEW

Overview

The purpose of this literature review is to explore the current literature on the use of video annotation software in teacher preparation. The theoretical framework for this review is grounded in Bandura's (1977, 1997) self-efficacy theory. Self-efficacy is a crucial component of teaching success, and it has dual application in this study. First, video analysis must be structured carefully to develop preservice teacher self-efficacy (Nagro, 2020). Second, for video analysis to be successful, preservice teachers need to believe it is an effective tool for their development (Ardley & Johnson, 2019). To contextualize the use of video annotation software in teacher preparation, this review will discuss the evolving priorities of education programs, provide the historical background of video use in teacher training, explore factors influencing video annotation software adoption, and examine the key video analysis components of reflection and guided feedback. Lastly, the challenges of using video for preservice teacher observations will be discussed. Few studies have been conducted on the preservice teacher's perspective of video annotation software use (Ardley & Johnson, 2019; Ardley & Repaskey, 2019). Because success is contingent on preservice teachers' perceptions of the efficacy of video analysis, it is essential to consider their attitudes and experiences with video reflection and feedback tools. Preservice teachers report low levels of enthusiasm for video analysis (Nagro, 2020), and supervisors express a preference for in-person observations (Moran & Marlatt, 2022). Little empirical research exists exploring teachers' attitudes and how these attitudes impact video analysis practices in teacher preparation. There is a need to investigate how experience and attitudinal factors influence reflection and feedback so teacher preparation programs can make pedagogical decisions that support teacher growth.

Theoretical Framework

Developed in 1977 by Canadian–American psychologist Albert Bandura, the self-efficacy theory is a well-researched concept in the field of education (Capa-Aydin et al., 2018). Self-efficacy is defined as a person's belief about their capabilities; it is the foundation for human agency (Bandura, 1977). Belief in one's self-efficacy is not objective, rather, it is subjective to how a person feels about what he or she is able to accomplish. When people believe they are capable of reaching certain goals, they put forth their best effort to attain them. High levels of self-efficacy are linked to healthy lifestyles, stress resilience, improved career performance, and educational achievement (Alhadabi & Karpinski, 2020; Bandura, 1986, 1997; Maddux, 2013).

A growing body of empirical research supports Bandura's (1977) self-efficacy theory and its relationship to teachers' teaching investment, goals, persistence, and resilience (Barni et al., 2019; Guskey & Passaro, 1994; Tschannen-Moran & McMaster, 2009). Self-efficacy impacts job satisfaction and has been found to be negatively correlated with new teacher attrition (Chan et al., 2008; Renbarger & Davis, 2019). High teacher self-efficacy is positively associated with greater student achievement (Zee & Koomen, 2016). Teachers with high self-efficacy are more successful at implementing inclusion practices (Kiel et al., 2020) and maintaining high expectations for underperforming students (Ashton & Webb, 1986; Ekstam et al., 2018). Therefore, developing the self-efficacy of novice teachers is crucial to both teacher and student success (Barni et al., 2019). Teacher preparation programs must prioritize pedagogical strategies that help preservice teachers develop their sense of efficacy in the classroom (Juuti et al., 2018).

Bandura (1997) built upon his previous research and asserted that individuals develop self-efficacy by processing information from four primary sources of influence: mastery

experiences, vicarious experiences, verbal and social persuasion, and emotions and physiological states. The most important of the four sources of efficacy are mastery experiences, defined as direct experiences of successful action (Bandura, 1997; Pfitzner-Eden, 2016). Novice teachers who have experience being successful are more likely to believe they will be successful in the future (Tschannen-Moran & Hoy, 2007; Tschannen-Moran & McMaster, 2009). Bandura (1997) also emphasized the value of observational learning, specifically vicarious experiences. Defined as learning by observing the behavior of others, vicarious experiences are a crucial component of self-efficacy (Mayes, 2015). Preservice teachers benefit from observing effective teachers successfully model instructional strategies and classroom management (Moulding et al., 2014). In teacher preparation, the field experience provides opportunities for preservice teachers to gain the experiences and feedback necessary to build self-efficacy (Rodriguez et al., 2020). Daily teaching practice affords the opportunity for mastery experience, and mentors and peers provide models for vicarious experiences.

Bandura's (1997) third factor of self-efficacy is verbal and social persuasion. Feedback from influential people strengthens a person's belief about what is required for success and their capacity to achieve it. Preservice teachers rely on mentor teachers, program faculty, and field supervisors to provide feedback and support (Ellis et al., 2020; Tschannen-Moran & Hoy, 2007). Their verbal persuasion is critical to building teaching efficacy (Capa-Aydin et al., 2018). Finally, emotions and psychological states influence self-efficacy (Bandura, 1997; Maddux, 2013). Stress reactions, tensions, and emotional responses all affect a person's judgment of their efficacy. Teacher preparation programs should consider the impact of emotion on efficacy when designing program assignments and instructional strategies. Falter and Barnes (2020) urged teacher preparation programs to structure observations and evaluations so as not to add undue

stress to the already demanding task of beginning teaching.

Field experience is considered the most important component of teacher training because it is the most effective way to access Bandura's (1997) four sources of efficacy beliefs (Colson et al., 2017; Moulding et al., 2014). Preservice teachers need ample practice, reflection, and feedback to develop essential skills and teaching competencies (Ardley & Hallare, 2020; Darling-Hammond, 2006a). Field experience observations and evaluations provide this critical feedback to preservice teachers (Akcan & Tatar, 2010; Nagro et al., 2017). As many programs shift in-person field experience reflection and feedback activities to a digital modality, it is important to consider if these activities still support preservice teacher self-efficacy development. If preservice teachers do not believe video observations are as effective as in-person observations, this will affect their sense of preparedness and self-efficacy (Adegbola, 2022; Ault et al., 2019). Therefore, preparation programs must carefully consider preservice teachers' perceptions of video annotation software use and how it impacts their teaching self-efficacy development. Bandura's (1977) self-efficacy theory shapes the research questions of this study, highlighting the importance of perceptions in shaping experience. The data analysis and findings of this research will focus on how preservice teachers perceive video observations as affecting self-efficacy development and growth.

Related Literature

Teacher preparation programs face the increasingly difficult endeavor of equipping novice educators with all the requisite skills of classroom leadership (Darling-Hammond & Oakes, 2021). Teacher training in the United States has been contentiously debated for the past century (Bohan, 2016; Darling-Hammond, 2006a, 2006b). The scope and complexity of what is expected of new teachers have never been greater. Darling-Hammond and Oakes noted a dual

challenge for the field. First, teachers who are ill-equipped to teach 21st-century skills will not be able to provide students with deep, engaging, and applicable learning experiences (Darling-Hammond & Oakes, 2021). Second, teachers who are unprepared to reach *all* students will not be able to meet the goals of 21st-century education (Darling-Hammond & Oakes, 2021; Ruppar et al., 2022). Teacher preparation is, therefore, responsible for training teachers to teach a complex and multifaceted curriculum to the most diverse population of learners ever taught in American education (Gorlewski et al., 2021).

Despite the scope of knowledge required for this ambition, teacher education also faces the common critique that programs are overly reliant on theory and coursework, with an inadequate focus on practical experience and classroom implementation (Darling-Hammond & Oakes, 2021; Goldhaber, 2019; Kim et al., 2023). Preservice teachers need extensive experience working in diverse school settings utilizing a variety of instructional strategies. Indeed, field experience is considered the most impactful component of teacher preparation (Boyd et al., 2009; Darling-Hammond, 2006a; Rodriguez et al., 2020). However, COVID-19 pandemic closures and restrictions have made the placement and supervision of preservice teachers logistically problematic (Ardley & Hallare, 2020; Moran & Marlatt, 2022).

The ability to provide hands-on training is also complicated by the trend to shift in-person preparation to digital modalities (Boniface et al., 2022; Schulz & Gaudreault, 2023). Online teacher certification programs continue to grow, despite a lack of empirical evidence supporting their effectiveness (Hogue, 2022; Mitchell & Romero, 2010). Both institutes of higher education and programs run by for-profit companies seek to meet student demand for learning flexibility while reaping the financial benefits of increased enrollment and reduced expenses (Yin & Partelow, 2020). This growth was tremendously accelerated by the COVID-19 pandemic when

almost all teacher preparation programs pivoted to remote learning as the result of school closures (Quezada et al., 2020). Many programs previously resistant to online class structure continued to offer remote and hybrid options after pandemic restrictions were lifted (Boniface et al., 2022; Schulz & Gaudreault, 2023). The ability to attend classes remotely removed barriers for preservice teachers previously deterred by distance (Keefe, 2020). However, preparation programs faced the compounded challenge of providing practical experience remotely when traditional opportunities were already lacking (Moran & Marlatt, 2022). New tools and strategies, including video, are necessary to help preservice teachers develop practical teaching skills, regardless of distance (Ault et al., 2019; Hogue, 2022).

Video in Education

Video has a long history as a pedagogical tool in education. The motion picture was invented in 1899, and not long after, in 1902, Charles Urban produced the first educational film (Saettler, 2005). Thomas Edison, the inventor of the motion picture camera, believed that educational film would revolutionize education. Films could bring distant places, complex scientific concepts, and new cultures to life. Psychologist John Dewey, however, disagreed (Couch et al., 2018). He argued that while film may be novel, it could not replace hands-on, interactive learning. Many educational films were produced, but often they did not meet teachers' standards for academic merit (Spector et al., 2015).

With its combined audio-visual capabilities, television began gaining popularity in the 1950s (Saettler, 2005). During the educational reforms of the 1960s and 1970s, educational television was seen as a technology capable of closing the perceived gap between the United States and other nations (Aslan & Reigeluth, 2011). However, when technology is developed for both entertainment and information purposes, the tension between commercial and academic

motivations is problematic (Facer, 2011). Educational television failed to live up to expectations and make meaningful gains in the scholastic achievement of K-12 students (Couch et al., 2018).

After JVC developed the Video Home System (VHS) in 1976, both VHS tapes and consumer video recording cameras became common household items for American families (Saettler, 2005). Videos also provided portable, engaging content for teachers of all levels. Students looked forward to videos for supplemental learning. By the 1990s, teachers were experimenting with student-produced video content (Brown, 1993). This development marked a significant shift in the educational nature of the technology (Guo et al., 2014). Once passive recipients of video content, students were now actively engaging in its creation. As video recorders became more convenient and affordable, student video projects became a staple of the high school and college experience (Schultz & Quinn, 2014).

The Changing Role of Video in Teacher Preparation

Paralleling use in K-12 classrooms, video has been an important component of teacher education curriculum for several decades (Christ et al., 2017). Specifically, research indicates benefits to using video for curriculum content, modeling, and observation activities in teacher preparation (Chatlos et al., 2023; Gaudin & Chaliès, 2015; Hogue, 2022; Major & Watson, 2018). Video analysis is one of the strategies teacher preparation programs employ to provide preservice teachers with reflection and feedback activities remotely (Ardley & Repaskey, 2019). Video annotation software and improved technological capabilities have made video increasingly popular in pandemic and post-pandemic teacher preparation (Boniface et al., 2022; Keefe, 2020). A meta-analysis of single-case research conducted by Morin et al. (2019) found that video analysis activities used with both special education preservice and in-service teachers were effective for improving student outcomes. The highlight of the study was flexibility; positive

results were found using a variety of video analysis methods.

Curriculum

Before programs used video to prompt preservice teachers' reflection on their own practice, teacher educators used video recordings as case studies to prompt analysis of authentic classroom environments (Christ et al., 2017; Dymond & Bentz, 2006). Gaudin and Chaliès (2015) conducted a comprehensive literature review of video viewing in teacher education and in-service teacher professional development. Gaudin and Chaliès found that educators used video content from various sources: the internet, program, peer, and student submissions. Teacher educators most often used video viewing for both selective attention and knowledge-based reasoning activities (Gaudin & Chaliès, 2015).

In viewing these videos, preservice teachers witness effective teachers expertly demonstrate teaching methods (Dymond & Bentz, 2006). The instructor can pause the tape and point out teaching elements that would not be easily recognized in casual observation. When the video viewing is paired with discussion, it helps clarify concepts and deepen understanding (Nagro, 2020). Video demonstrations also provide clarity and evidence of theory in practice (Hagen et al., 1998). Finally, video provides access to classrooms not previously accessible to all preservice teachers (Hodges et al., 2020). Video-viewing allows students to observe a comprehensive array of disciplines, practitioners, and diverse student populations (Hollingsworth & Clarke, 2017; Kerkhoff, 2020). Most recently, video viewing has become common practice in online and hybrid courses (Kureethara Manuel et al., 2021). Asynchronous online classes not only use video for curriculum but also to reinforce content and provide clarity for written assignments (Hogue, 2022). Such instructor-created videos lead online students to report higher levels of engagement and connectedness (Dennen, 2011; Underdown & Martin, 2016).

Modeling

Video has also been used very effectively for skill modeling (Chatlos et al., 2023; Collet, 2022; DiGennaro Reed et al., 2018). Special education training often involves in vivo modeling, defined as modeling a procedure in the presence of the teacher (Shapiro & Kazemi, 2017). However, replacing in vivo with video modeling has several advantages. First, video modeling standardizes training. Students are assured of seeing a perfect demonstration of the target skill (DiGennaro Reed et al., 2018). In vivo model teachers, on the other hand, may make slight errors or variations of the skill. Second, students can watch the video multiple times, pausing and reviewing challenging steps. Finally, video can be widely disseminated to a broader audience. This capability provides greater reach, flexibility, and convenience than traditional modeling. Teacher education courses, specifically special education programs, take advantage of video for skill training and review (Chatlos et al., 2023; Shapiro & Kazemi, 2017).

Simulation

As early as the 1970s, college programs used recorded simulations to train teachers and counselors (Spivack, 1973). Simulation is defined as an imitation of an authentic process in an artificial environment (Sharma, 2015). Simulation activities help hone skills and build the self-efficacy of beginning teachers (Codreanu et al., 2021). When structured effectively, simulation helps students improve their performance and practice responsive instruction in a low-stakes environment (Sharma, 2015). Simulations can be conducted in person or using simulation video techniques. In 2003, SimSchool was developed to provide virtual field experiences to preservice teachers (Johnston & Collum, 2018). SimSchool software and other simulation programs offered a space for preservice teachers to try out new strategies and instructional methods with computer-generated students in a virtual space. However, many teacher preparation programs

simply use video recordings of a scripted simulation for reflection and guided feedback (Falter & Barnes, 2020).

Microteaching, a well-research strategy for developing the pedagogical skills of preservice teachers, combines simulation and peer collaboration (Allen et al., 1972; Dunst et al., 2019; Santoveña-Casal et al., 2023). Often, microteaching sessions are recorded for reflection and analysis (Onal, 2019). Preservice teachers not only benefit from viewing their own teaching, but also from viewing the teaching of their peers. During the COVID-19 pandemic school closures, technology-enhanced microteaching became a practical strategy for giving preservice teachers direct instruction practice when they did not have access to student populations (Santoveña-Casal et al., 2023; Zalavra & Makri, 2022).

Reflections and Feedback

Over the last three decades of teacher preparation, the most researched and effective use of video has been for reflection and feedback (Baecher et al., 2013; Gaudin & Chaliès, 2015; Major & Watson, 2018; Nagro, 2020). In the 1990s, programs began using preservice teacher videotaped lessons to develop awareness, prompt reflection, and improve skill through guided feedback (Blomberg et al., 2011; Nagro et al., 2017; Rosaen et al., 2008). Initially, video use required investment in expensive equipment and dedicated technical support (Hager, 2020). As the technology became more economical and easier to manage, more programs recognized the potential of video to improve the learning and performance of beginning teachers (Ault et al., 2019; Keefe, 2020; Weber et al., 2018).

Factors of Video Annotation Software Adoption

Video capabilities and strategies are an established component of teacher training; however, practical use was mostly supplemental (Ardley & Hallare, 2020; Baecher et al., 2013).

Methods changed considerably as the combined factors of technological advances, shifting certification requirements, and pandemic procedures came together to make what was once incidental essential (Hager, 2020; Wiens et al., 2013; Xiao & Tobin, 2018). Improved video capabilities are now being used evaluatively by more education programs than ever before (Quezada et al., 2020). However, the rapid pace of adoption has not allowed all educators to leverage video tools effectively (Ardley & Hallare, 2020; Moran & Marlatt, 2022).

EDTPA and Portfolio Evaluations

In 2001, The No Child Left Behind Act (NCLB) stated that every student was entitled to a highly qualified teacher (Darling-Hammond, 2006a). Among other requirements, states had to ensure that all teachers had full certification to receive federal funds. Certification requirements shifted and changed, but by 2017, 40 states required teacher candidates to pass the Educative Teacher Performance Assessment (EdTPA) to obtain state certification (Xiao & Tobin, 2018). The EdTPA is a performance-based, subject-specific assessment (EdTPA, n.d.). A central component that each candidate must include is videos of their teaching. The uploaded videos are the basis for the candidate's required reflection as well as evidence for the evaluator. Video analysis was once one of many instructional strategies employed by teacher educators. Despite critiques about the evaluation's validity (Choppin & Meuwissen, 2017; Powell & Parkes, 2020), in many states, it is now the key evaluation that determines a candidate's certification to teach (Gitomer et al., 2021).

Additionally, programs utilize video-recorded lessons as evidence in site-based performance assessments (Polly, 2019). Modeled after the National Boards Portfolio, education programs use portfolio assessments to demonstrate mastery of teaching standards and allow candidates to share past lessons with future employers. Portfolios can be viewed by education

faculty, shared with peers, or presented in graduation showcases. According to Nagro and deBettencourt (2019), portfolios are equally valuable for teacher reflection and evaluation. However, Shepherd and Hannafin (2008) found a mismatch between professional and preservice portfolio practices. The researchers found e-portfolios, including video submissions, were effective for teacher reflection but largely ignored in professional practice.

The COVID-19 Pandemic and Remote Observations

Despite increasing availability and sophistication, few education programs used video annotation software prior to 2020 (Hager, 2020; Xiao & Tobin, 2018). In a pilot study of a video annotation software program, Ardley and Johnson (2019) found that the technological ability of both teacher candidates and supervisors hindered adoption. In a follow-up study, Ardley and Hallare (2020) noted that while there was great potential in video observation, transparent procedures and training were necessary to realize that potential. Many educators expected that video annotation software would be gradually implemented into preservice programs only for distant field placements and supplemental reflection (Quezada et al., 2020). However, the COVID-19 global pandemic greatly disrupted both the scope and timeline of that adoption (Boniface et al., 2022). In March 2020, schools across the world rapidly switched to remote learning (An et al., 2021; Stroupe & Christensen, 2023). Throughout the 20202021 school year, as many schools returned to in-person instruction, university supervisors were discouraged from observing on campus, if not prohibited outright (Ardley & Hallare, 2020; Quezada et al., 2020)

Out of necessity, teacher preparation programs found alternative ways to remotely observe, supervise, and recommend teachers for certification (Blumke, 2021; Quezada et al., 2020). Observations utilizing video conferencing software, such as Zoom and Microsoft Teams, sufficed during fully remote learning (Schulz & Gaudreault, 2023). However, when schools

introduced hybrid and limited in-person instruction, teacher education programs began to look for more advanced tools to supervise interns remotely (Fisher, 2021). The merits of the video annotation technology alone did not lead to its rapid and wide-scale adoption. Indeed, as is often the case, innovation is embraced only when current practice is impossible (Kahn, 2018).

Logistical Advantages

Most teacher education programs adopted video annotation out of necessity (Boniface et al., 2022). However, COVID-19 pandemic protocols demonstrated to many teacher preparation programs that video observations utilizing video annotation software were a viable alternative to in-person observations (Ardley & Brucal-Hallare, 2020; Boniface et al., 2022; Schulz & Gaudreault, 2023). Video's capabilities and convenience have important implications for the future of distance learning (Ault et al., 2019; Blumke, 2021; Eady et al., 2023). As video annotation software is neither time nor location-sensitive, university faculty completing video observations have more flexibility in placement and schedule (Ardley & Johnson, 2019). Additionally, video observations were less disruptive to the classroom climate than an in-person evaluator visit (J. Ardley, personal communication, May 20, 2022). A mixed-method study by Ault et al. evaluated face-to-face and remote observations in an alternative certification program focused on rural placements. The researchers found significant cost-saving benefits to eliminating travel expenses associated with in-person observations. Findings also indicated that supervisors reached similar results on an observation form regardless of the method employed. Overall, Ault et al. found remote observations a viable alternative to in-person observations. Similarly, Eady et al. found preservice teachers in rural settings felt better supported through the use of digital tools. Video observations and remote conferences connected isolated preservice teachers with their university supervisors. As programs grapple with costs and faculty time

restraints, video observations have become an attractive alternative to the logistically difficult process of scheduling and arranging multiple visits to individual schools (Boniface et al., 2022).

Technological Capabilities

Neither video evidenced assessment nor widespread remote observation would have been possible without the past decade's technological advances (Hager, 2020). Specifically, video use has proliferated because of the ubiquity of mobile recording devices and the capacity of new programs to compress, upload, and share videos easily and securely (Schulz & Gaudreault, 2023; Xiao & Tobin, 2018). Web 2.0 technologies (O'Reilly, 2005) are collaborative in nature and enable students to learn and disperse information in new ways. Therefore, perhaps the most important transformational shift for education is the ability to conduct reflection and feedback sessions in a remote setting (Nagro, 2022). Video annotation software provides the tools and space to utilize the best practices of video analysis (Ardley & Johnson, 2019).

While there are many video annotation programs, software specifically focused on teaching and instruction is invaluable for teacher training (Alqurashi, 2019; Rich & Hannafin, 2009). The Video Analysis Support Tool (VAST) developed at Northwestern University and Video Interactions for Teaching and Learning (VITAL) from Columbia University were two of the annotation software programs specifically designed for this purpose two decades ago (Rich & Hannafin, 2009). Both were found to support preservice teacher reflection, but the programs were expensive, time-intensive, and training-intensive. More recently, video annotation software has become more intuitive and affordable (Ardley & Johnson, 2019). Leading programs accommodate different video formats, require a secure log-in, and employ cloud-based storage. The digital tools are designed to aid the feedback cycle (Ardley & Hallare, 2020). Time-coding capabilities allow feedback in context and can also be in the form of text, audio, or video

(GoReact, n.d.-a). A class can be structured for instructor-presenter individual feedback or include peer observation and discussion. Video annotation programs are compatible with most major learning management systems (LMS), such as Blackboard and Canvas. Therefore, video assessment can be integrated into an existing LMS grading system. Ardley and Repaskey (2019) also emphasized the importance of aligning feedback to a rubric. Teacher educators using the software can embed rubrics and create customized preset labels, called markers. The instructors can then use these enhancements to provide timely, specific, and standards-aligned feedback in an authentic setting.

Video Analysis as a Culturally Relevant Practice

The focus on 21st-century skills requires teacher preparation programs to carefully consider how they are employing technology in their own practice (Darling-Hammond & Oakes, 2021). It is important that preservice teachers see technology integration successfully modeled (Farjon et al., 2019). Moreover, video creation and analysis are important skills to cultivate as more educational, social, and professional contexts employ digital collaboration (Couch et al., 2018; Gravani, 2019). Additionally, Ardley and Repaskey (2019) advocated for using video annotation software and other Web 2.0 technologies (O'Reilly, 2005) as a culturally relevant practice. Culturally relevant teaching is defined by Ladson-Billings (2021, 1995) as a pedagogy of opposition committed to collective empowerment. A culturally relevant practice includes the criteria that students experience academic success, maintain or develop cultural competence, and develop a critical consciousness that challenges the status quo (Ladson-Billings, 1995). In more recent literature, Ladson-Billings (2021) highlighted youth culture and the prevalence of technology. Similarly, Ardley and Repaskey (2019) argued that a new generation of teachers views information and communication technology as the norm for interaction, not the exception.

To support 21st-century learners in culturally relevant ways, programs are exploring new tools to foster the feedback process.

Using Video Annotation Software in Teacher Preparation

Educational researchers have devoted considerable time to exploring the impact of video on teaching and learning (Christ et al., 2017; Gaudin & Chaliès, 2015). Historically, passive viewing of educational films and videos has not proven particularly effective in improving student performance (Saettler, 2005; Sweetser et al., 2012). However, when video is used in a structured way that promotes active engagement, it is a powerful tool for learning and performance (Mayer, 2021). Teacher preparation programs looked to video specifically to develop instructional awareness and skill (Keefe, 2020; Sherin, 2003; Weber et al., 2018). To this aim, when video viewing is paired with interactive strategies, it offers teacher programs several distinct advantages (Nagro et al., 2017). Video annotation software is uniquely poised to provide the active learning component missing from video viewing activities (Ardley & Johnson, 2019).

Professional and collegiate sports teams have long used game film to critique and evaluate athletic performance. Film sessions help identify program weaknesses and strengths. Most importantly, as college basketball coach Jimmy Dykes (2020) said, “The film doesn’t lie” (p. 4). Embracing the truth in the tape can lead to significant growth and improvement. Similarly, teacher preparation programs use classroom footage to collect evidence of a preservice teacher’s performance (VanLone et al., 2022). Preservice teachers often confront video evidence that runs contrary to their perception of events (Rosaen et al., 2008). In their seminal work with video, Fuller and Manning (1973) noted that when teachers watched a recording of themselves, they experienced a sense of dissonance in reconciling what was viewed with what was remembered.

This dissonance often led to a willingness to reflect and consider the impact of classroom actions. Teachers watching their own teaching builds awareness of teaching skills and classroom realities.

Teacher preparation uses video as an instructional tool for building recognition of a teacher's skill in delivery, instructional strategies, and classroom rapport (Nagro, 2020). Video footage can also be used for both formative and summative evaluations (Gitomer et al., 2021; Shepherd & Hannafin, 2008). Baecher and McCormack (2012) noted that when both the supervisor and preservice teacher have viewed the video, they can enter the post observation conference equipped with observational data to discuss. This practice has the potential to disrupt supervisor-dominated feedback patterns.

Preservice Teacher Reflection in Practice

Much of the research in the past two decades centered around the use of video analysis for teacher reflection (Ardley & Hallare, 2020; Dymond & Bentz, 2006; Nagro et al., 2017; Stapleton et al., 2015). Reflection has long been identified as an essential skill of effective educators; it is the difference between having experiences and learning from them (Rosaen et al., 2008). The key originator of the 20th-century concept, John Dewey (1933), defined reflection as thinking towards the solution of a problem. Dewey suggested that teachers should be more than proficient craftsmen; they could be trained to be thoughtful practitioners, aware of and responsive to students' educational needs (Dewey, 1904; Shek et al., 2021). It requires a clear understanding of the situation and a critical analysis of how the issue should be addressed. Reflection is central to assessment and improvement and, therefore, paramount to beginning teachers (Darling-Hammond & Bransford, 2005; Guo, 2022; Hatton & Smith, 1995).

However, teaching an individual how to be reflective can be a difficult task (Nagro,

2020). Video can be an especially effective instructional tool, as it aids memory and provides margin for analysis (Baecher et al., 2013; Nagro, 2022; Sherin, 2003). Video-aided reflection was found to be more effective than memory-only reflection (Sherin, 2003). Rosaen et al. (2008) concluded that students who used video-supported reflection were more specific in their comments and had increased capacity to address both management and instructional classroom components. Video also gives preservice teachers the luxury of time (Sherin, 2003). Observing and analyzing a lesson without the added burden of simultaneously teaching means video creates space for deeper critical thinking (Ardley & Hallare, 2020; Bollinger & Liu, 2022). With video, preservice teachers can switch perspectives more easily. They can view the lesson from the lens of a student and then better articulate student thinking (Xiao & Tobin, 2018).

Video's shareability also means that reflection can be collaborative. Preservice teachers can easily review their outside classroom performance with peers and instructors, using video as both evidence and discussion point (Major & Watson, 2018; Zaier et al., 2021). Shek et al. (2021) found that preservice teachers who used video annotation tools significantly improved their reflective thinking ability compared to preservice teachers who did not use video annotation tools. Their research suggested that learning was enhanced by reducing communication barriers resulting from preservice teachers' tendency to avoid direct critiques of their peers' teaching. Indeed, video has been cited as an effective tool for increasing peer support for both preservice and in-service teachers (Balzaretti et al., 2019; Quinn et al., 2018). In a randomized study, Quinn et al. (2018) found video technology to be an effective tool for improving instruction and faculty collaboration, suggesting that peer observation and support help de-privatize instruction, and video allows collaboration despite the logistical challenges of individual classrooms. Similarly, Balzaretti et al. (2019) found that peer coaching using 360-degree video technology supported

preservice teachers' ability to construct and co-create pedagogical meaning despite distance. Video enables preservice teachers to maintain a collaborative environment regardless of the geographical distance of student teaching placements.

Building Preservice Teacher Awareness. Professional vision is defined as a teacher's reflective ability to notice features of the classroom that affect student learning (Goodwin, 1994). This vision is reliant on prior content and pedagogical knowledge, specifically domain-related pedagogical principles and concepts (Sherin, 2003; van Es & Sherin, 2002). There are two component processes of professional vision reflection: *noticing,* a teacher's ability to direct their attention to classroom events and *knowledge-based reasoning*, the cognitive processing of those events (van Es & Sherin, 2008). Santagata et al. (2021) described noticing as a specific set of skills that link teacher disposition and teaching behaviors. Video provides a useful tool for supporting the development of this noticing (Kosko et al., 2021). Viewing and analysis of video evidence allows preservice teachers to slow down instructional activities and break set (Putnam & Borko, 2000) with routine teaching practices to focus on components of instruction and student behavior (Santagata et al., 2021).

Profession vision is built through experience (Choy & Dindyal, 2020; van Es & Sherin, 2002). In Seidel and Stürmer's (2014) study, preservice teachers identified fewer critical classroom events than experienced teachers. They also applied theoretical knowledge less effectively in classroom situations. Video analysis is used to highlight classroom events and scaffold professional reasoning to improve professional vision skills (Prilop et al., 2019; Weber et al., 2018). Similarly, Hollingsworth and Clarke (2017) discussed how video renders visible aspects of pedagogy that can often go unnoticed by the casual observer. Watching and rewatching videos of instruction can lead to a data-driven discussion of the subtle practices of

good teaching.

Specifically, video can be used to learn from student behavior (Ganda & Boruchovitch, 2018). Video evidence recorded from the teacher's viewpoint provides preservice teachers the opportunity to isolate the student's perspective. Santagata and Guarino (2011) recommended analyzing student thinking and learning before turning attention to teacher behavior. Using a quasi-experimental design, Michalsky (2021) found that preservice teachers who analyzed both student and teacher behaviors demonstrated greater improvement in teaching and student learning than teachers who reflected on teacher behavior alone. Video can widen the lens of what is noticed and provide time to analyze how it should be addressed.

While teacher preparation programs often pair video annotation software with recordings of preservice teachers' practice, the technology is also beneficial to use with videos of others (Nagro, 2020; Steffen & Pouta, 2022). In video annotation technique (VAT), videos are provided as a stimulus to evoke participant teachers' thoughts and knowledge use (Pérez-Torregrosa et al., 2017). Teachers' comments on what they observed in a classroom video example can be used to evaluate their ability to notice and interpret cues from the classroom. In observations, expert teachers are more focused and knowledge-driven in their comments than novice teachers (Santagata & Yeh, 2016; Wolff et al., 2016). Video annotations can be an effective data source for measuring professional vision (Goodwin, 1994; Steffen & Pouta, 2022). Steffen and Pouta argued that VAT can operationalize teachers' noticing and provides a suitable technique for data triangulation. The annotations can be evaluated to answer qualitative, quantitative, or mixed-method research questions.

Developing Preservice Teacher Reflection Skills. Reflection allows beginning teachers to evaluate their instructional strengths and weaknesses, consider strategies for improvement,

and develop proficiency as a teacher-leader (Calandra et al., 2008; Nagro et al., 2017). When feedback is only given via external evaluation, preservice teachers start to see it as an enactment of supervisory control (Baecher et al., 2013). However, when teachers are invited to examine their own performance, they become active agents in the development process (Towndrow & Tan, 2009). Additionally, Civitillo et al. (2019) found that the most culturally responsive teachers had elaborate patterns of self-reflection. Reflection was the impetus for meaningful classroom connection and change.

Reflection is not merely an instructional strategy, but a competency required in the Interstate Teacher Assessment and Support Consortium (InTASC) teaching standards (Council of Chief State School Officers, 2022). As a result, teacher preparation programs prioritize both the skill of reflection and the learning acquired during reflection activities (Bollinger & Liu, 2022; Darling-Hammond & Bransford, 2005). To better facilitate reflection through video analysis, supervisors must be trained in active listening techniques that prompt critical thinking (Ardley & Repaskey, 2019). Reflection should be viewed not as the final step of analysis but as the first step of transformation.

To aid this transformational growth, it can be helpful to conceptualize reflection on a continuum of ability (Nagro, 2020). The progression ranges from simply recalling past events to planning for future ones. Robinson and Kelley (2007) developed a continuum of eight dimensions of reflection. Participants' written reflections are scored zero to seven, with more points indicating deeper levels of reflection. Helping preservice teachers include multiple dimensions of reflection, in addition to deeper analysis, can provide helpful insight into perspective and practice (Nagro, 2020). The goal of video analysis should be for preservice teachers to describe instructional choices, analyze why they made those choices, evaluate their

success based on student learning, and apply insights to future teaching (Nagro et al., 2017).

Video has already shown to be a valuable tool in teacher preparation programs; improved technological capabilities mean it will be used more widely and often (Bollinger & Liu, 2022; Schulz & Gaudreault, 2023; Xiao & Tobin, 2018). Specifically, video annotation software is an important advancement for reflection. It allows for interaction within the platform, providing an opportunity for deeper reflection (Stapleton et al., 2015). As the instructor and presenter can both annotate video evidence, reflection and guided feedback can be simultaneous and cyclical (Fisher, 2021). Rubrics can be embedded within the program; therefore, a structured format is easier to maintain.

Feedback

Reflection is of little value if it does not lead to perceptible improvement (Mathew et al., 2017). In addition to facilitating preservice teacher reflection, video analysis can improve instructional skills (Major & Watson, 2018). Knight et al. (2018) found video-based instructional coaching more effective than coaching that did not include video evidence review sessions. Video was especially beneficial in demonstrating the embodied, implicit, and spontaneous elements of teaching (Rowland et al., 2021; Xiao & Tobin, 2018). Video can highlight the importance of delivery, body positioning, and presence clearly for the teacher candidate. These elements are often understudied in education coursework (Almond, 2018). Additionally, software tools such as markers and audio-video commenting make feedback richer and more personal. Instructors and candidates can record demonstrations or re-attempts of instructional techniques, provide links to online resources, or ask for follow-up to previous input (Ardley & Johnson, 2019; Zaier et al., 2021).

A foundational study by Calandra et al. (2008) explored if preservice teachers could

transition from reflective awareness to improvement. Calandra et al. (2008) found that student teachers used reflection techniques to recognize classroom elements; however, only with guidance were they able to move to marked skill improvement. Without direction, candidates were more likely to focus on narrative descriptions and feelings (Calandra et al., 2008). Similarly, Weber et al. (2018) found that preservice teachers placed in peer and expert feedback groups significantly outperformed teachers placed in peer-only feedback groups. Evaluative procedures such as critical analysis, judgment, and future planning were observed more often when reflection was aided by a mentor teacher or university instructor (Kalk et al., 2014; Weber et al., 2018).

Both reflection and feedback are necessary for improvement (Ardley & Hallare, 2020). Video analysis is most effective when teacher candidates and instructors collaborate to improve the process. Nagro et al. (2017) defined guided video analysis as explicit video analysis procedures paired with a self-evaluation rubric and written feedback. In their study, Nagro et al. (2017) found that guided video analysis was significantly more effective than traditional video analysis. Preservice teachers improved both their reflective ability and instructional skill while the control group stagnated. Furthermore, the researchers found that the teachers with the greatest levels of growth were candidates who received ongoing guidance and feedback. Knight et al. (2018) reported similar findings; teachers who reviewed their video recordings with an instructional coach were significantly more likely to change their instructional practice than those who completed the reflection alone. A trusted coach or supervisor can validate analysis, provide constructive input, and brainstorm next steps with the candidate (Damico et al., 2019). This critical friend is the key component of transitioning reflection into instructional improvement (O'Dwyer et al., 2019).

Current Challenges

Despite documented reflection and feedback capabilities, video annotation software has encountered resistance from preservice teachers and field supervisors (Nagro, 2020). Technological challenges, sparse training, and lack of confidence in the practice have all been cited as reasons for video annotation software not yet reaching its potential (Ardley & Johnson, 2019; Boniface et al., 2022; Nagro, 2020). Current literature explores these challenges and potential solutions.

Technological Challenges

Prior to video annotation software adoption, preservice teachers employed a variety of strategies to record and upload videos of their teaching. A study by Ault et al. (2019) utilized Logitech ConferenceCam CC3000e cameras installed in classrooms. Supervisors viewed the camera synchronously through Skype. Other programs utilized preservice teachers' personal laptops and mobile devices to record lessons. These teachers then uploaded their submissions to YouTube channels and learning management system platforms (Ardley & Johnson, 2019; Nagro et al., 2017). There were often issues with recording, storing, compressing, and viewing these submissions (Sánchez-Prieto et al., 2019). Programs using video annotation software also encountered difficulty ensuring preservice teachers uploaded videos promptly to the correct online location (Ardley & Hallare, 2020).

Additionally, preservice teachers had communication and compatibility issues between the software and their mobile devices (Ardley & Hallare, 2020; Bollinger & Liu, 2022). Field supervisors also encountered difficulty accessing video submissions (Moran & Marlatt, 2022). Ardley and Brucal-Hallare recommended extensive training on handling software, security, and privacy issues. School district privacy policies made recording difficult, if not impossible, for

some preservice teachers (Prilop et al., 2019).

It is interesting to note the prominence of technology challenges in literature prior to the fall semester of 2020 (Ardley & Johnson, 2019; Ardley & Repaskey, 2019; Xiao & Tobin, 2018). COVID-19 pandemic remote learning accelerated both faculty and student adoption of digital capabilities (Boniface et al., 2022). As individuals gained more experience with digital learning tools, technological competence increased. Literature published after 2020 does not appear to focus so intently on the technological challenges present before the pandemic (Boniface et al., 2022; Coogle et al., 2022; Nagro, 2022).

Privacy Concerns

Many researchers also noted the challenges of navigating the technology safety protocols put in place by K-12 schools (Alqurashi, 2019; Ardley & Brucal-Hallare, 2020; Prilop et al., 2019). During COVID-19 pandemic closures, schools assumed the difficult task of providing technological access that protected students' data but did not limit their academic capabilities (Zimmerle, 2021). Many schools require parental permission to record the faces or voices of K-12 learners. It was challenging for preservice teachers to obtain these permission forms, especially during remote learning (Ardley & Brucal-Hallare, 2020). Many preservice teachers instead choose to block the faces of non-consenting students or position the camera only to show the teacher. Unfortunately, focusing exclusively on the teacher's action severely limits the scope of feedback and reflection (Balzaretti et al., 2019). Michalsky (2021) and Santagata and Guarino (2011) emphasized the importance of analyzing student behaviors in video analysis.

Prilop et al. (2019) also noted that data-privacy laws have inadvertently impaired empirical research on video analysis. Studies can have only partial randomization based on school protocols of video use. Sample sizes in most quantitative studies have been small

(Gröschner et al., 2018; Tripp & Rich, 2012). Additionally, K-12 schools are reluctant to grant permission to use software that has not been vetted through the district (Zimmerle, 2021). In essence, video annotation software must be jointly adopted by both teacher preparation programs and K-12 institutions for successful implementation.

Video annotation software has become more widely used in education, in part because it is FERPA, COPAA, and HIPAA compliant (GoReact, n.d.-b; Hager, 2020). Video recordings are uploaded and stored in a secure, password-protected system (Johnston, 2022). Preservice teachers and supervisors access the recordings within this storage space. Hager and Johnston stressed that the confidentiality of a closed system is critical. However, it is also important that preservice teachers, mentors, and field supervisors understand and actively work to protect student data at all stages of the video analysis process (Ardley & Brucal-Hallare, 2020). This understanding requires extensive training on handling minor children's digital security and privacy issues (Zimmerle, 2021).

The Need for Prerequisite Skills

The goal of teacher preparation is to equip educators to implement best practices that meet the needs of diverse students (Darling-Hammond & Oakes, 2021; Nagro, 2020). Programs have long wrestled with balancing theory and practice to achieve this goal. Current policies emphasize the importance of practical experience gained through observations, peer-teaching, and field practicums (Darling-Hammond, 2020). However, these experiences are ineffective if the preservice teacher cannot interpret classroom events and recognize how instructional methods are adapted to meet the needs of students (Rock et al., 2016). Therefore, it is crucial to explicitly teach educators not only what to notice but how to notice it (Rosaen et al., 2008). Foundational skills are imperative for preservice teacher success in classroom practicums; these

skills are most often acquired through modeling and guided practice (Blomberg et al., 2011).

If video is to be used for teacher reflection and analysis, candidates must first be taught how to identify critical classroom events (McFadden et al., 2014). These events are linked with specific teaching elements that serve as evidence for reflection. In a study by Wiens et al. (2013), preservice teachers were able to identify effective classroom organization but had greater difficulty articulating examples of good instruction. When instructors provided clear explanations coupled with video examples, students were better able to identify instructional elements in subsequent activities (Wiens et al., 2013). Before being required to demonstrate good teaching, candidates should understand aspects of effective instruction and be able to identify them in classroom scenarios (Nagro, 2020).

It can be beneficial for teaching programs to use a stepping-stone approach to video analysis (Nagro, 2020). Instructors who use video evidence of other teachers can help candidates learn to identify critical classroom events and teaching elements. By observing and critically thinking about a teacher's performance, preservice teachers hone their ability to view evidence through the lens of a teacher (Sherin & Linsenmeier, 2011). Developing this professional lens will, in turn, enrich a candidate's reflection of their own performance.

Viewing classroom videos as case studies exposes candidates to diverse teaching environments (Major & Watson, 2018). This method models instructional strategies and aids the exploration of other aspects of the teaching craft, such as classroom management (Weber et al., 2018). Candidates can observe and analyze challenging experiences before being called upon to manage them as classroom leaders. Additionally, video can be paused or replayed to highlight an individual aspect for discussion (Sherin & Linsenmeier, 2011). Whereas a practicing teacher must be aware of dozens of classroom elements simultaneously, video can reduce the sphere of

attention to a single component. This focused attention provides time and margin for dedicated skill identification and analysis (Nagro, 2020).

Introducing video analysis through the video of others allows preservice teachers to gain comfort with the video reflection process (Falter & Barnes, 2020). Teachers with limited video experience can find self-analysis uncomfortable and anxiety-inducing. Their reflections then focus on elements only adjacent to teaching practice: appearance, clothing choice, or the sound of their recorded voice (McFadden et al., 2014). While analysis of voice quality and presentation can be beneficial, a preoccupation with these characteristics limits the critical analysis of the reflection. Watching video evidence of another teacher models analysis, highlights elements to consider, and demystifies the video reflection process (Nagro, 2020). It is a relatively low-stakes activity that provides both modeling and scaffolding for teacher candidate reflection (Nagro, 2022).

Lack of Focus and Structure

Discussing case study videos can be an effective strategy for building foundational reflection and critical thinking skills (Kerkhoff, 2020; Nagro, 2020). However, video analysis must be anchored to a reflective model. This principle is equally true for case studies and self-analysis. Nagro et al. (2017) noted that without tangible guidance rooted in a model of reflection, preservice teachers remain self-focused and technical in their reflective abilities. These teachers are then less likely to change their preexisting perceptions or skills. Structure serves both preservice teachers and supervisors. Baecher et al. (2013) reported that supervisors who had not used video reflection in their own teacher careers were often uncertain about how to incorporate video into field experience supervision. Standardizing pre- and post-conference procedures helped anchor observations to a reflective model. Rubrics and checklists can serve as both an

agenda of activities and a method for measuring abilities (Sherin & Linsenmeier, 2011). These frameworks are useful for guiding the focus and reflection of beginning teachers and university supervisors.

Even when carefully structured, classroom video analysis can result in an overabundance of information (DeCuir-Gunby et al., 2012). Candidates can be overwhelmed by all the aspects observed simultaneously within a classroom environment. It can be helpful for the instructor or candidate to choose one or two elements on which to focus during each video session. Often, these are components of the established framework (Hollingsworth & Clarke, 2017; Nagro, 2020). The Danielson (2013) framework, for example, includes 22 teaching components, with 76 elements in four domains of teaching responsibilities. It would not be reasonable to use one video lesson to assess all dimensions of the framework. Alternatively, the teacher candidate can limit reflection and analysis to a selection of elements within a relevant portion (Nagro et al., 2020). Narrowing the focus allows for more complete reflection, deeper analysis, and detailed future planning (Ardley & Repaskey, 2019). Hollingsworth and Clarke also reported that allowing preservice teachers to choose the observational focus within the framework improves teacher agency and, therefore, learning. Purposefully structuring the scope of an observation is a particularly advantageous strategy when multiple recordings are planned throughout a field placement. The target elements can be scheduled ahead of time to ensure the framework is covered in detail over time (Xiao & Tobin, 2018).

Task-Technology Fit

The task-technology fit (TTF) model was developed by Goodhue and Thompson (1995) to explain the correlation between user and technology. It provides a meaningful way of quantifying the effectiveness of a technology in achieving a given objective. The model

postulates that the match between a technology's features and the requirements of the task will predict the utilization of the technology and an individual's performance (Goodhue & Thompson, 1995). Gupta (2014) advocated for educators to use this theory-driven model to align the educational tasks with a proposed technology's features to evaluate the underlying fit. Subsequent studies have examined the task-technology fit of other Web 2.0 technologies such as e-textbooks (Jardina et al., 2021), MOOCs (Khan et al., 2018), and gamification for training in higher education (Vanduhe et al., 2020). However, there is no current literature on the task-technology fit of video annotation software for preservice teacher observations and evaluations (Maina et al., 2018). Teacher preparation programs do not have enough data on the effectiveness of video annotation software's characteristics to address the objectives of preservice teachers' reflection and skill development (Nagro et al., 2020). Further investigation is needed to see if preservice teachers and supervisors consider the technology a good fit for evaluating the objectives of field experience (Ardley & Johnson, 2019).

Preservice Teachers' and Supervisors' Attitudes

Researchers recommend training, technical support, foundational skill-building, and a clear framework to guide analysis using video annotation software (Ardley & Johnson, 2019; Ardley & Repaskey, 2019; Nagro et al., 2017). With these supports in place, researchers believe video analysis has great potential for preservice teacher development and growth. However, the literature also acknowledges that adoption has met resistance (Baecher et al., 2013; Nagro et al., 2020; Schulz & Gaudreault, 2023; Shepherd & Hannafin, 2008). In Nagro et al.'s mixed design study, preservice teachers reported low levels of enthusiasm for video reflection activities during field experience. Similarly, Ardley and Hallare (2020) reported that preservice teachers would often seek in-person alternatives to video observations. Baecher et al. discussed that preservice

teachers often have a sense of disembodiment when reviewing their video lessons. During their post-observation conference, supervisors reported that preservice teachers were less engaged and invested compared to an in-person observation.

Field supervisors also expressed a preference for in-person observations. Moran and Marlatt (2022) described how video supervision made it difficult for supervisors to see the big picture of classroom management. Supervisors reported that video observations narrowed their field of vision; they felt they missed critical classroom events occurring off camera (O'Neil et al., 2017; Schulz & Gaudreault, 2023). Moran and Marlatt (2022) also reported a disconnection between preservice teachers and field supervisor when supervision took place solely using video submissions and remote meetings. Similarly, in Baecher et al.'s (2013) study, supervisors reported that they were better able to provide emotional support and "really hear the students" (p. 8) during live observation. Supervisors expressed concern that they were unable to view the entire classroom environment and worried that some preservice teachers deliberately cut video segments to present a more positive image. Ardley and Johnson's (2019) pilot study explored supervisors' perceptions, reporting that 50% of participants thought more training with video annotation software was necessary. The study found that field supervisors were willing to use video annotation software but needed additional support to implement it effectively. Ardley and Johnson (2019) also called for further examination of teacher candidates' perspectives to determine video annotation software's effectiveness for their feedback needs. This research is essential to effectively using video annotation software in teacher preparation programs. Without understanding and supporting the needs of the preservice teacher, video analysis will continue to be a powerful tool unable to meet its potential.

Summary

Teacher quality is one of the most important factors in a child's academic achievement (e.g., Darling-Hammond, 2000). Therefore, every effort must be made to ensure that beginning teachers enter their first classroom with the self-efficacy and competence necessary for success. Video is an effective tool for developing self-efficacy and instructional skill to meet this goal (Walshe & Driver, 2019). Video observations document a mastery experience, offer opportunities for verbal and social persuasion, and allow preservice teachers time and space to reflect on their own practice (Morin et al., 2019; Nagro et al., 2017). However, these benefits can only be realized when video analysis is thoughtfully structured and collaboratively examined (Nagro, 2020). More research into the perspectives of preservice teachers is required to understand the advantages and limitations of leveraging this new technology.

CHAPTER THREE: METHODS

Overview

The purpose of this hermeneutic phenomenological study was to explore preservice teachers' experiences with video observation at Central University. For the purposes of this research, video observation will be generally defined as an evaluative observation conducted by a university field supervisor utilizing video annotation software. This chapter explores the qualitative, hermeneutic phenomenological design used and includes a discussion of the methodology, setting, participants, research positionality, and the role of the researcher. A description of the procedures, data collection, and data analysis follow. Finally, the chapter concludes with a discussion of the study's trustworthiness, ethical considerations, and a concise summary.

Research Design

I used a hermeneutic phenomenological approach to qualitative research (Heidegger, 1962; van Manen, 2016) to explore the attitudes and experiences of preservice teachers utilizing video annotation software for field experience observations. As a method of inquiry, qualitative research prioritizes the individual and the role of context and relationships in shaping behavior (Roller & Lavrakas, 2015). Non-numerical data is collected and analyzed to ultimately lead to a greater understanding of opinions, concepts, or experiences (Creswell & Poth, 2018). It is an approach best used to explore an issue that requires complex understanding. As education technology continues to influence both teacher training and K-12 curriculum and instruction, educational researchers must understand the composite motivators that propel successful implementation or rejection. Because video analysis as an effective teacher preparation strategy relies on the intersecting influences of self-efficacy, preparedness, and disposition, a qualitative

approach was appropriate for this study.

Phenomenology is a study of the world as individuals experience it (van Manen, 2016). The goal is to give a voice to individuals by developing a composite description of their lived experiences (Moustakas, 1994). Researchers use phenomenology to explore and describe phenomena or concepts as they are consciously experienced (Heidegger, 1962; van Manen, 2016). The aim of the approach is to use individuals' experience with a phenomenon to "grasp of the very nature of the thing" (van Manen, 2016, p. 177). Researchers extrapolate meaning among the lived experiences of individual teachers and examine the data for common themes (Creswell & Poth, 2018; Moustakas, 1994). I chose a phenomenological approach because the purpose of this study was to understand the experience and attitudes of preservice teachers utilizing video annotation software and scale those stories to grasp the very nature of the experience and the meaning the participants describe (van Manen, 2016). The emphasis is not solely on the description of the phenomenon but also on the meaning individuals give it.

There are various philosophical approaches to phenomenological qualitative research. This study will adhere to the tenets of hermeneutic phenomenology developed by van Manen (2016) based on the work of earlier philosophers, Heidegger (1962) and Husserl (1970). van Manen (2016) states that individuals make sense of the world by being in it. Indeed, looking at an experience in parts gives a greater understanding of the whole. Hermeneutic phenomenology is interpretive, and the researcher's understanding of the phenomenon is open and flexible (Vagle, 2018). The researcher is permitted to use their own experiences to contribute to the greater understanding of the phenomenon. In contrast, transcendental phenomenologists use the process of epoche to bracket preconceived notions and biases (Moustakas, 1994; Sheehan, 2014). van Manen (2016) argued that true neutrality, however, is impossible. Bias is inevitable,

especially when examining a subject of passion or interest. I am a researcher who works with preservice teachers, and I have first-hand experience utilizing video annotation software in field experience. Hermeneutic phenomenology allowed me to use these experiences, not attempt to ignore them.

Research Questions

The central research question guides the focus and goal of research. The study's four sub-questions address the underlining elements of this question and build upon each other to support a deeper exploration of participant experiences.

Central Research Question

What are preservice teachers' attitudes and experiences using video annotation software during field experience?

Sub-Question One

How will preservice teachers describe video observations for building teacher self-efficacy based on their attitudes?

Sub-Question Two

How will preservice teachers describe video observations for building teacher self-efficacy based on their experiences?

Sub-Question Three

How will preservice teachers describe the advantages and disadvantages in utilizing video annotation software for observations?

Sub-Question Four

How will preservice teachers describe the use of video annotation software as aiding and hindering the feedback cycle?

Setting and Participants

The following section describes the setting for this study and includes a rationale for why it was chosen. The recruitment and sampling of participants are also discussed.

Setting

The research was conducted at a medium-size state university in the northeastern region of the United States. Central University is the pseudonym used to protect the site's identity and study participants. The suburban campus has an enrollment of 6,691 undergraduate and graduate students (Institute of Educational Sciences, n.d.). In-state residents make up 97% of the student body. In the 2022–2023 academic year, the racial and ethnic make-up of the student population was 75% White, 13% Hispanic, 5% Black or African American, 1% Asian, 3% unknown, and 2% identifying as more than one race. Women made up 54% of all degree-seeking students.

Central University's School of Education has the largest comprehensive teacher preparation program in the state. There are 22 different undergraduate teaching education majors and 17 teacher education graduate programs (Council for the Accreditation of Educator Preparation, n.d.). All the university's teacher education programs follow the requirements set forth by the state's education department for initial teacher certification and include mandatory supervised field placement. The site was chosen because the university began using GoReact video annotation software to conduct field experience observations in response to COVID-19 pandemic restrictions. As pandemic restrictions eased, the university continued to utilize video observations. Many teacher preparation programs across the country also chose to use remote options for supervision (Ardley & Brucal-Hallare, 2020; Boniface et al., 2022; Moran & Marlatt, 2022). The chosen site represents one example of a larger trend toward technology-enhanced observation strategies in teacher education.

Participants

The participants for this study were selected using the purposeful sampling technique from the teacher education programs within a medium-size public university (Marshall & Rossman, 2014). I included 11 preservice teachers who had experience utilizing video annotation software during their field experience. I consulted with the site key informant to compile a comprehensive list of preservice teachers who meet the qualifications of the participant sample group. Each participant had to be a fluent English speaker over the age of 18 who was in good standing at the university. They must be enrolled or have recently graduated from a Central University teacher education program that leads to initial teacher licensure. Each participant must have used video annotation software during their final student teaching experience in 2023 and have continued access to the videos within the platform. No participant could have started their first professional teaching assignment. The group was purposefully bound by these parameters so that the teachers will be experiencing the phenomenon of preservice teacher preparation observations, not as a part of their first in-service teaching position. Participants were recruited from all demographic groups within Central University's teacher education programs. The final number of participants was determined based on data saturation. I continued data collection until saturation was achieved and no new information was presented that resulted in new themes (Moustakas, 1994; van Manen, 2014, 2016).

Researcher Positionality

I am a teacher educator serving as the Masters in Teaching (MIT) program lead at a small, private university. The university currently utilizes video capabilities for field experience observations. The motivation for conducting this study stems from my belief that looking at this phenomenon from the perspectives of preservice teachers will help me gain knowledge and

understanding of the experience of video observations. This awareness will inform future program decisions about the viability of using video analysis strategies with preservice teachers (Ardley & Johnson, 2019).

Interpretive Framework

As a teacher with a background in theater and literature, I am drawn to the idea of learning as a socially mediated process (Erbil, 2020). Constructivist Lev Vygotsky discussed human development as the intersection of interpersonal, cultural, and individual factors (Trudge & Scrimsher, 2003). My work with preservice teachers relies heavily on social-constructivist applications such as metacognitive strategies, peer collaboration, and appropriate scaffolding (Hughes & Partida, 2020; Nagro, 2022; Santoveña-Casal et al., 2023). A constructivist paradigm allows me to focus on an individual teacher's process of becoming an educator. The candidates are actively involved in building their own teaching identity through understanding content and pedagogy (Dassa & Derose, 2017). Learning takes place in real-world settings and is built on prior experiences and reflective practice (Guo, 2022; Mathew et al., 2017). Similarly, my work as a researcher reflects these beliefs. Knowledge is actively constructed by the learners, and their experiences determine their reality.

Phenomenology explores these structures of consciousness through first-person accounts (Gebser, 2020). Husserl's (1970) concept of intentionality is grounded in the idea that the world and self are inseparable. Objects, imaginary or real, exist to the person who perceives them. Perception of objects is the source of knowledge and differs based on background, experience, and a variety of other factors. Noema is the act of perceiving. It must be unified with noesis, which is the act of experiencing. This allows the researchers to arrive at the very essence of a phenomenon which is the goal of phenomenology (van Manen, 2016).

Philosophical Assumptions

Philosophical assumptions are shaped by past experiences and determine the direction of a researcher's study and its evaluation (Creswell & Poth, 2018). Both the researcher and reviewer must be aware of these assumptions and their effect on a study's findings. My own assumptions are outlined below.

Ontological Assumption

Ontological assumptions consider the nature of reality. One must consider if there are multiple realities or a single, unchanging entity. I believe phenomena can be viewed from multiple perspectives. A shared event is experienced very differently depending on a person's point of view. However, these perspectives do not equate to reality. A person's emotions and motivations affect their view of reality, but not the nature of reality itself. There is one reality that researchers seek to understand by giving a voice to multiple perspectives. In 1 Corinthians 13:12, Apostle Paul reminded the Church, "Now we see through a glass, darkly; but then face to face: now I know in part; but then shall I know even as also I am known" (*King James Bible,* 2017). The true nature of reality may not always be discernable in this life. That awareness is as essential as recognizing my own perception of reality is also unreliable. I agree with the words attributed to Saint Augustine, "Better that I find you, God, and leave the questions unanswered, than to find the answers without finding you" (Vaught, 2003, p. 25).

Heidegger et al. (1993) advocated that ontology, the study of being, could only be accessed through phenomenological analysis of the human experience. The essence of a phenomenon is understood through careful analysis of conscious experiences (Husserl, 1970). I agree that first person point of view is essential to ontology; an individual's perspective constructs their view of reality. Therefore, phenomenology focuses on reality as the individual

experience of human existence.

Epistemological Assumption

According to Holloway (1997) and Creswell (1994), epistemology is a researcher's theory of knowledge, which is essential for guiding the procedures of studying social phenomena. Epistemological assumptions consider what can be known and how we know it (Schunk, 2020). As a social constructivist, I believe the best way to understand a phenomenon is to hear the experiences of those who have lived it. Meticulous recording is required for fidelity; microanalysis is essential to extracting true meaning. Collecting data in the field allows for an authentic, context-conscious understanding of the interplay between individuals and their environment. The farther we remove a person from their natural context, the greater the chance we change the dynamics that affect understanding and meaning. In short, we understand an experience by proximity, not extraction.

Axiological Assumption

The purpose of articulating axiological assumptions is to examine the role values play in research. It is impossible for a researcher to remain genuinely objective. I have chosen a hermeneutic phenomenology research design because of this assumption. Rather than assuring that my research is unbiased and value-free, I openly disclose my subjectivity. I am a teacher–educator who has spent the last two decades in education and coaching positions. I have worked as a high school English teacher, theater director, leadership coach, field supervisor, and university instructor. This study's research topic and questions are influenced by those positions and experiences. While conducting research, I must outline my biases as they may affect the interpretation of the data.

Researcher's Role

It is important to clearly articulate my role as the researcher of this study. My past experience as a field supervisor and current position as Masters in Teaching (MIT) program lead have profoundly influenced its inception and procedures. My interest in video annotation software stems from my piloting its use at my place of employment during the 2020–2021 school year when opportunities for in-person observations were limited. As a field supervisor, I was initially reluctant to embrace the technology. I considered it a stopgap measure necessary for navigating observations hindered by pandemic restrictions. Preservice teachers often had technical difficulties uploading the videos to the online platform. When viewing the recording, it was challenging to hear students answer or see the visual cues to which the teacher was responding. Simply put, I felt my field of vision was severely limited by the single camera perspective. It was difficult to gain whole-class awareness and appreciate all aspects influencing the teacher's instructional choices. Additionally, video observations did not allow me to informally consult with the mentor teacher about the preservice teacher's progress. I felt disconnected from both the classroom and the school community.

However, I also found the video annotation program helpful in presenting preservice teachers with unbiased evidence of their teaching. This evidence served as an excellent resource for reflection and feedback. Replaying key moments of a lesson allowed the teacher to come to important realizations, often without my prompting. The focus was less on *what* happened and more on *why* it occurred. I also found my video observation annotations were quite different from my in-person observation notes. My in-person observation notes are very descriptive; I describe the classroom environment and directly quote teacher statements. The goal is to provide objective data to discuss with the teacher. This type of notetaking is not necessary with video

recording; the data is readily available. My video annotations are more probing and evaluative. This realization made me consider if preservice teachers also noticed a difference in the type of feedback they received during video observations.

While I found video observations very effective for providing feedback on classroom presence, delivery, questioning strategies, and pacing, I did not find them as beneficial for discussing classroom management, whole-class awareness, and rapport with students. I remain conflicted in my assessment of video as a teacher preparation tool. However, the ability to supervise remotely, without being bound by time or place, is appealing to both supervisors and preservice teachers. My institution is exploring keeping video observations as part of the field experience. I was aware of my own experiences and attitudes about video annotation software, but I was genuinely curious about the experience from the preservice teachers' perspective and how well they believe video observations prepares them for in-service teaching. This information will help my institution determine the most appropriate and effective practices to follow when using video observations, if video observations should continue to be conducted at all. While I have experience with video observations, I remained neutral about the practice's continued use. I was not seeking to validate or invalidate the practice. I authentically sought to listen, document, and learn from the perspectives of preservice teachers.

Qualitative research requires the researcher to be reflective before and during the research process (Sutton & Austin, 2015). Biases should not be simply ignored but instead acknowledged and articulated so readers can better understand the views that shaped the research. As the researcher, I recognize and acknowledge my personal biases. While I initially planned to complete this research at my own institution, I recognized that my position as a faculty member within the College of Education and my relationships with preservice teachers in the program

would make it difficult to control researcher and participant bias. Therefore, I chose to complete this research at a university site where I have no connection to the teacher preparation program or participants. I was then able to focus on the preservice teacher perspective of the video observation experience with fresh eyes (van Manen, 2016).

Procedures

Clear procedures allow the study to be replicated from the description. This study was completed in the following sequential order. First, I obtained permission from Liberty Institutional Review Board (IRB). Liberty University served as the IRB of record, and I recorded my approval letter and protocol with Central University's IRB. With the permission of Central University IRB, I recruited participants, screened potential volunteers, and obtained consent from each participant teacher. Data collection began with audio-recorded virtual individual interviews. Audio-visual elicitation interviews were held immediately following individual interviews or, if the participant preferred, at an additional scheduled time. At the conclusion of the interviews, I explained the letter-writing activity for the participant to complete on their own. I requested that the letter be submitted to me within one week of the interview. After the data was collected, I started data analysis following the hermeneutical recommendations of van Manen (2016). I reached out to participants to request answers to optional follow-up questions as needed during the data analysis process. Transcripts and thematic summaries were sent to all participants for member-checking before results were shared. Throughout the procedures, safeguards were in place to ensure trustworthiness. A more detailed discussion of each procedural step is included in chronological order below.

Permissions

Prior to data collection, I obtained permission from Liberty University's IRB. This

approval is included in Appendix A of this study. While Liberty University was the IRB of record, the Central University IRB requested that I file both my approval letter and protocol with their office. After procedures had been followed with both IRBs, I contacted my site key informant at the School of Education at Central University. I requested that she compile a list of emails for students who completed field experiences that included video observations as part of course requirements. Informed consent was obtained from each participant (Holloway, 1997). This consent was obtained using the form approved by the Liberty University IRB. The consent form was emailed to participants before the scheduled interview. At the scheduled interview time, I reviewed the document with the participant and gave them an opportunity to ask any questions. Once the participant verbally consented to participate, I asked that they electronically sign the consent form. The signed form was then automatically emailed to me. After I confirmed receipt, I was able to begin the audio-recorded individual interview.

Recruitment Plan

The participant pool is the total population from which to select participants for the study (Polkinghorne, 2005). For this research study, the participant pool included all preservice teachers within the chosen university utilizing video annotation software for field observations. While a minimum of 10 participants is warranted, participants continued to be recruited until thematic saturation was reached (Patton, 2014). Saturation is achieved when no new information can be learned by interviewing additional participants (Merriam & Tisdell, 2016; Patton, 2014).

I used a purposeful criterion sampling approach. Criterion sampling is an effective way of identifying who has experienced a specific phenomenon (Gentles et al., 2015). Selected participants should be information rich (Patton, 2014), and be able to describe their personal experiences with video observations. Snowball sampling is the process of identifying future

study participants through the recommendations of current participants (Goodman, 1961). Snowball sampling was also used in this study to identify participants.

The key site informant identified physical education and early childhood/childhood as two teacher education programs that had embedded video observation activities into field experience course requirements. Preservice teachers within these programs were emailed a recruitment letter inviting them to participate in the study. This letter included the purpose of the study, the activity, and the time commitment anticipated. A link to a screening survey was included in the letter. This survey was designed to determine if an individual met the criteria for study participation (see Appendix D). After reviewing information from the screening survey, potential participants were notified by email of their acceptance or rejection to participate in the research. Selected participants were then sent a consent form to review before the scheduled meeting time. See Appendix E for the preservice teacher consent form.

Data Collection Plan

This study employed a phenomenological approach to research. van Manen (2016) advocated that understanding can only be achieved through experience and "actively doing it" (p. 8). Therefore, all data collection allowed for first-person accounts of the phenomenon as it is understood by participants. The study's goal was to explore the attitudes and experiences of preservice teachers using video annotation software for field experience observations. Groenewald (2004) recommended that questions focus on participants' experiences, beliefs, and attitudes about the phenomenon being studied. To better understand these experiences, beliefs, and attitudes, I collected data in a variety of approaches, including semi-structured individualized interviews, audio-visual elicitation interviews, and a letter-writing activity.

Individual Interviews Data Collection Approach

All phenomenological studies should include data collection through interviews (Hycner, 1985). Patton (2014) noted that effective researchers use interviews to gain information about subjects that are not readily discernable, such as feelings, thoughts, and attitudes. Therefore, this study used semi-structured personal interviews as the primary data collection method. The interviews used open-ended comments and questions to create a comfortable and relaxed environment for the participants (Creswell & Poth, 2018). Moustakas (1994) recommended that interviews focus on answering two broad questions: How have you experienced the phenomenon?, and What contexts or situations have influenced your experiences of the phenomenon? Therefore, all the questions in the study's interviews were tied to the sub-questions of the central research question. The goal was to explore the different facets of the central research question: What are preservice teachers' attitudes and experiences using video annotation software during field experience? Due to the nature of a semi-structured interview, research questions were modified or adjusted for clarity or follow-up on participant responses (Patton, 2014).

Interviews took place remotely, using the Zoom video conferencing platform. Each interview lasted between 45 minutes and an hour. An additional half-hour was reserved for pre- and post-interview processing. Interviews and audio-recording only took place after I obtained informed consent from each participant. I let the participant know that the audio-recording was for transcription purposes. The recording would not be shared with the participants' field supervisors or other university faculty. Field notes were taken throughout the interview. Following each interview, I used the audio-recording software Otter.ai to record my reflective notes about the interview. Both field and post-interview notes were transcribed for later analysis.

Interview questions below are coded with the research sub-question to which they refer.

Individual Interview Questions

1. In general, how would you describe your student teaching experience? CRQ
2. How would you describe your experience using [video annotation software] for observations? SQ2
3. What went well in video observations and what did not? SQ2
4. How do you feel about video observations as a strategy for developing preservice teachers? SQ2
5. Before using [video annotation software], how would you describe your impressions or feelings about video observations? SQ1
6. If your attitude towards video observations changed throughout the field experience, what caused this change? SQ1
7. What are the advantages of using [video annotation software] for preservice teacher observations? SQ3
8. What are the disadvantages of using [video annotation software] for preservice teacher observations? SQ3
9. The feedback cycle means practicing, reflecting, and getting feedback before practicing again. How do video observations help the feedback cycle? SQ4
10. How do video observations hinder the feedback cycle? SQ4
11. Tell me about a time when the reflection-feedback process in video observations was meaningful to you. SQ4
12. Think about watching a video of yourself in action. What helps or hinders you from making changes in your practice based on this experience? SQ4

13. Tell me about a comment your supervisor made that caused you to make a realization about your teaching or caused you to think differently about your practice. SQ4
14. On a scale of 1-5, with 5 being very prepared and 1 being not prepared at all, how prepared do you feel to begin your first teaching position? Please explain why. SQ1
15. What two things in the video observations process supported your preparedness? SQ1
16. Is there anything else you think I should know about how video observations supported or hindered your teaching development? CRQ

Interview questions were reviewed by Liberty University experts in the field of education. Additionally, two pilot interviews were completed to evaluate and refine interview questions prior to data collection. Interview questions continued to be refined throughout the data collection process. These 16 questions were chosen to gain participant perspective on the central research question through the four sub-questions. Bandura's (1977, 1997) self-efficacy theory serves as the guiding theoretical framework. Question One was intended to establish rapport with the participant by using a *grand tour question* (Marshall & Rossman, 2014). McCaslin and Scott (2003) advocated beginning with a grand tour question to combine the primary colors of the problem statement and the purpose of the study in one composition. It is also a helpful strategy for creating a relaxed and comfortable environment for participants (Moustakas, 1994). This question asked participants to describe their field experience in general before focusing on video observations during that experience.

Questions two through four were intended to explore the participants' experiences with video annotation software use during field experience. Bandura (1997) contended that self-efficacy is developed through four sources: mastery experiences, vicarious experiences, verbal and social persuasion, and emotional and psychological states. The most important of these

factors is mastery experiences (Bandura, 1997; Palmer, 2006; Pfitzner-Eden, 2016). Asking preservice teachers about their experiences with video observations was the first step in delving into their perception of video observation as effective or ineffective for building teaching self-efficacy.

Questions five and six were also intended to collect data relevant to participants' self-efficacy. However, these questions focused on preservice teachers' attitudes about video annotation software. The questions concentrated on different factors of self-efficacy, emotional, and psychological states. A positive mood strengthens self-efficacy, while a negative one limits it (Bandura, 1997; van Dinther et al., 2011). People's attitudes affect how they perceive and interpret information (van Dinther et al., 2011). These questions asked participants to describe their feelings and impressions before and after using video observations to capture participant responses to how the observations influenced attitudinal changes and their connection to overall self-efficacy.

Questions seven and eight focused on the advantages and disadvantages of using video annotation software for observations. Addressing sub-question three, these questions asked participants to use their attitudes and experience to identify overall positive and negative factors of video observations. Research notes many advantages of video analysis in teacher preparation (Ardley & Repaskey, 2019; Nagro et al., 2017; Xiao & Tobin, 2018). However, the literature also acknowledges the challenges of using the technology (Ardley & Brucal-Hallare, 2020; Moran & Marlatt, 2022; Nagro et al., 2020). The perspective of the preservice teacher is needed to address the gap in the literature on video analysis' effectiveness (Ardley & Johnson, 2019; Nagro et al., 2020).

Questions nine through 11 continued this exploration by specifically addressing the

preservice teachers' perceptions of the feedback cycle in observations. The literature cites video analysis as particularly apt for aiding the feedback cycle (Ardley & Hallare, 2020; Nagro, 2022; Nagro et al., 2017; Walshe & Driver, 2019). However, the benefit is contingent on participant belief in the method's effectiveness (Ardley & Johnson, 2019). These questions built an understanding of the preservice teachers' authentic lived experience with video observations.

Phenomenology is the study of meaning (Husserl, 1970). Questions 12 and 13 delved into the meaning that participants assign to the video observation experience. Specifically, the question focused on how meaningful participants find the reflection and feedback given in observations. Questions 14 and 15 addressed participants' sense of preparedness and confidence in their ability to lead a classroom. Aybek and Aslan (2019) found a significant relationship between teachers' sense of preparedness and their self-efficacy beliefs. If participants do not believe video observations are effective for their development, this will affect their sense of preparedness and self-efficacy (Adegbola, 2022; Ault et al., 2019). These questions delved into the relationship between video observations and overall teacher self-efficacy. Finally, question 16 gave participants the opportunity to share anything else they believed to be relevant to their video observation experience. I wanted to ensure I was accurately capturing the experience and the authentic participant voice (van Manen, 2016).

Individual Interview Data Analysis Plan

Qualitative research creates a wealth of information that must be organized effectively for themes to emerge. I used the following computer applications to assist in the data analysis: Zoom, NVivo, Otter.ai, Rev, and Microsoft Word. The transcription function of Otter.ai was used to provide the initial transcription of individual interviews completed by video conference. I then hand-checked the transcription and made the necessary corrections. I used Rev on my

mobile device as a back-up recording method. NVivo was utilized to sort and organize data for coding, and all word processing was done in Microsoft Word.

In an evidence-driven world, member-checking is an important strategy for giving qualitative research trustworthiness and validity (Birt et al., 2016; Lincoln & Guba, 1985). I used a member check to validate each participant's data. At the end of the interview, I asked participants if they were willing to answer up to three follow-up questions via email. If a participant consented, I emailed any questions about the data that arose during analysis. Interviews were transcribed verbatim. After individual interviews had been transcribed, I asked each participant to read through the written document to check for inaccuracies or misinterpretations. Participants also had the opportunity to review the thematic summary and findings and offer feedback on their accuracy.

The data analysis process described by van Manen (2016) focuses on exploring meaning. The methodology prioritizes describing how the human experience of the chosen phenomenon was lived, including its effect on the individual. Hermeneutic phenomenology provides an opportunity for the researcher to reduce the experience of many individuals into a description of its essence. The underlining interpretive philosophy of the approach allows meaning to arise from the emerging description. This study utilized Saldaña's (2021) first and second cycle coding to reveal emerging patterns that inform understanding of the phenomenon. Coding is an iterative process requiring meticulous attention to transcript details (Linneberg & Korsgaard, 2019). I read each interview transcript thoroughly several times. van Manen (2016) recommends reading over each participant's anecdote and asking, "What is its meaning, its point?" (p. 87). The goal was to immerse myself in the participant's lived experience (van Manen, 2016). Exploring the data from the participant's perspective included analyzing the specific words used

during the interviews (Creswell & Poth, 2018). In Saldaña's (2021) first cycle of coding, the focus is structural (Miles et al., 2020). I reviewed interview transcripts sentence by sentence and assigned each individual sentence a code. A summative statement of meaning, each code served as an encapsulated interpretation of each statement.

In the second level of coding, I worked to collapse and expand codes to reveal patterns in the data. These patterns could be recognized by frequency, sequence, similarity, or difference (Linneberg & Korsgaard, 2019). Also called meta-coding, pattern coding condensed the initial codes into more meaningful and congruous units of information (Saldaña, 2021). The codes generated through second cycle coding formed the foundation of the thematic development in data synthesis.

Audio-Visual Elicitation Interview Data Collection Approach

Edmund Husserl, regarded as the fountainhead of phenomenology (Vandenberg, 1997), described the aim of the approach as returning "back to things themselves!" (Kruger, 1988, p. 28). Therefore, in a study of video annotation software, it is appropriate to examine the video recordings of preservice teacher observations and accompanying field supervisor annotations. However, these artifacts do not represent the participants' lived experiences (Bronfenbrenner, 1979). Only through the participants' interaction with the artifacts can information be gained about their experiences. Therefore, this study employed a data collection method similar to photo elicitation (Harper, 2002).

Photo elicitation is a research technique in which photos are used during an interview to evoke deep reflection and analysis (Harper, 2002). Aligned with the qualitative methodologies of portraiture (Lawrence-Lightfoot, 1997) and appreciative inquiry (Cooperrider et al., 2008), photo elicitation evokes deeper elements of the human consciousness than mere words (Harper, 2002;

Richard & Lahman, 2015). Because visual processing is a separate cognitive function, photo elicitation provides not just *more* information, but a different *kind* of information (Harper, 2002). Words and pictures represent two different forms of symbolic representation, both valuable in a phenomenological study of meaning. In this study, audio-visual artifacts served to aid memory and deepen reflection. Recorded videos evoked the experience of the initial teaching and the subsequent evaluation. Viewing the video with the participant allowed the researcher to better understand the participant's experience and their assigned meaning to the phenomenon.

The audio-visual elicitation interview took place directly after individual interviews. If the participant preferred, it was scheduled for a different date and time. Following individual interview questions, I asked each participant if they would be willing to show a clip from one of their video submissions. The clip was of the participant's choosing and approximately one to three minutes in length. Accompanying supervisor annotations were included and viewable.

Participants accessed the video annotation platform on their own device. As interviews were conducted using video conferencing software, screen-sharing capabilities were used to view and discuss the clip. This mediating process provided an extra level of protection to participants' privacy. Videos and annotations were only viewed within the password-protected platform. I did not download the clip or view the video outside of the participant's presence. The decision not to video record this interview was done to further protect the privacy of the participant's videos and annotations with the platform. After the participant identified a clip to share, we watched the video together and read the accompanying annotations. I took detailed field notes throughout this process. After viewing the video, I asked the participant three interview questions related to the artifact.

Audio-Visual Elicitation Interview Questions

1. Please describe what happened in the video we just watched. SQ1
2. Tell me what you are thinking and feeling about as you watch this video. SQ1
3. Why did you choose this video clip to share? SQ2

Question one asked the participant to describe the video clip verbally. Because the audio-visual elicitation interview was audio-recorded only, it was important that the transcript reflect the content of the video shown to the researcher. Additionally, the question asked the participant to consider the essential elements of the clip. Question two and three addressed the first sub-question of the central research question. In accordance with photo and video elicitation methods, the question used the artifact to center participant reflection (Harper, 2002). The audio-visual elicitation interview took place at the conclusion of the participant's individual interview. As a result, question three probed participants to consider why they chose this particular clip to share. This often related back to information shared in the interview. The question also prompted participants to share what was meaningful about this experience, aligning with the purpose of phenomenological research (Moustakas, 1994).

Audio-Visual Elicitation Interview Analysis Plan

This data source provided another opportunity to explore participants' lived experiences of video observations. Specifically, participants' videos are artifacts that showed the result of the preservice teacher observation process. As stated earlier, the artifact itself cannot be used to represent an individual's lived experience (Bronfenbrenner, 1979). However, using the artifacts as part of an audio-visual elicitation process provided unique data not accessible in traditional interviews (Harper, 2002).

The data analysis process adhered to van Manen's (2016) hermeneutic approach and

utilized Saldaña's (2021) first and second cycle coding for its coding methodology as outlined in the individual interview data analysis plan. Transcripts of the audio-visual elicitation interview were member checked. It was especially important to review journal notes taken during this data collection. van Manen (2016) writes that writing mediates reflection and action; it "fixes thought on paper" (p. 125). Journaling captured information from artifact viewing that could not be encapsulated in the interview transcription. Initially, audio-visual elicitation interview data was analyzed separately from individual interview data. Analysis was specifically focused on participant responses to why they choose this specific video and how this informs the researcher's understanding of the participants' experience. Allowing participants to select the video and articulate the meaning of that choice highlights not only the participants' voices but their assertion of the experiences' significance (Harper, 2002).

I coded the data for common themes related to video choice and participant-assigned meaning. These themes formed a common idea (Saldaña, 2021). At this point in the analysis, I combined both data sources to refine essential themes. Audio-visual elicitation interview data collection provides an important, unique source of data and helps create corroboration among the data sources. Using a variety of collection methods is important for data triangulation and overall study credibility (Gall et al., 2007; Lincoln & Guba, 1985; Patton, 2014).

Letter-Writing Data Collection Approach

The final data collection approach was a letter-writing activity. Candidates were asked to write a letter to a preservice teacher who was beginning field experience and would be utilizing video annotation software for observations. Letter-writing provided participants an additional outlet to reflect on their experience and its meaning. van Manen (2016) acknowledged the additional burden on participants requested to compose a letter or journal; individuals often find

it easier to speak than write. However, like other forms of open inquiry, letter writing often promotes deeper reflection and evokes quiescent emotions (Adler et al., 2019; van Manen, 2016). Participants have more time to think about their responses than is afforded during an individual interview. In this research design, letter-writing was sequenced at the end of the study to allow this additional time for reflection.

At the conclusion of the individual interview, I provided the participant with verbal instructions for completing the letter-writing activity and a link to the online submission form. I also emailed the instructions to the individual (see Appendix H). The instructions included a link to an online form with the letter-writing prompt. I requested that participants complete the letter within one week of the interview. When the participant submitted their form, their response was automatically recorded. Once I had confirmation of the recorded response, I emailed the participant a $50 Amazon gift card in appreciation of their time and effort.

Letter-Writing Prompt

The prompt provided to candidates was to **"**Write a letter to a Central University preservice teacher just starting student teaching. What would you want to tell them about video observations?" The intent of each letter was to ask participants to share experiences and information they would have liked to have known prior to their first observation. Asking the individual to address their letter to a future teacher required they reduce the whole of their experience to essential elements of transferable knowledge. In keeping with the phenomenological approach, the prompt focused not just on the participant experience but the meaning the individual ascribed to it (van Manen, 2016).

Letter-Writing Data Analysis Plan

As each response to the letter-writing prompt included the original words of the

participant, no transcription was needed. Saldaña's (2021) first and second cycle coding procedures were used to analyze the data. First cycle codes were developed based on each sentence of the participant's prompt response. Second cycle coding consolidated and refined these codes to identify trends in the data. These two levels of coding then supported the creation of synthesized themes from all three data collection methods.

Data Synthesis

The hermeneutic circle conceptualizes the process of scrutinizing individual parts of an individual's experience and, through synthesis, understanding the shared social phenomenon (Heidegger, 1962). Neither the whole data collection nor individual contributions can be understood without reference to the other (Grodin, 2015). I employed the hermeneutic circle to be able to read, reflect, and interpret details of the phenomenon meaningfully. Participant data were analyzed individually and then synthesized as a whole. Using the three sources of data, individual interviews, audio-visual elicitation interviews, and participant letters provided a richer, more profound description of the unique phenomenon. Throughout the process, I used reflexive journaling to record experiences, interpretations, and assumptions (Gadamer, 1975). Reflection is a vital component of all stages of phenomenological research. Reflexive journaling allowed me to replace prior assumptions with current ones as the research progressed.

Once words and meaning units had been organized into categories and meaningful codes have been created, I looked for patterns and theories to emerge (Wicks, 2017). Saldaña (2021) defined themes as interpretive explanations developed by the researcher to describe the patterns that emerge from the data. Themes were created for each data collection source. Individual data component analysis allowed me to synthesize the information and extract composite meaning from the amalgam of sources. Finally, I synthesized these themes into a description of the

phenomenon (van Manen, 2016). This description represented the themes that repeatedly appeared in all or most of the participants' transcripts. Hermeneutics focuses on the researcher's interaction with and interpretation of the data. Coding and recoding were necessary to truly arrive at the essence of the video observation process as experienced by preservice teachers.

Trustworthiness

Lincoln and Guba (1985) described trustworthiness as a study's staying power. It reflects the degree of confidence in the research data, the interpretation, and the methods used to validate the study (Polit & Beck, 2014). To establish rigor, quantitative research uses internal and external validity, reliability, and objectivity measures (Lincoln & Guba, 1986). Qualitative research meets this requirement through parallel criteria of credibility, transferability, dependability, and confirmability (Guba & Lincoln, 1982; Lincoln & Guba, 1985). In this section, I will address Lincoln's and Guba's (1985) criteria and the methods used to ensure a rigorous and ethical study.

Credibility

Credibility was established through member-checking, triangulation of data, and peer-debriefing. Credibility refers to confidence in the truth of a study's findings. It is one of the most important factors of trustworthiness because it reflects the extent to which the findings accurately describe reality (Lincoln & Guba, 1985; Shenton, 2004). Establishing credibility requires verifying that the realities of participants have been authentically represented (Guba & Lincoln, 1982).

Member-Checking

Shenton (2004) referred to member-checking as the most significant way to establish credibility. Member-checking refers to the process of asking participants to evaluate the accuracy

and comprehensiveness of statements made in the research document (Gall et al., 2007). It is a continual process throughout the study and allows the participant to react to the researcher's reconstruction of what has been recorded (Lincoln & Guba, 1986). In this study, I asked each participant to review interview transcripts and created themes and descriptions from interview data. I also asked permission to send up to three follow-up questions through email. Those participants who agreed answered questions that arose as I analyzed the data. The member checking process ensures that all statements and descriptions of the participant match their intention and experience. Asking participants to verify the content and accuracy of their data helps ensure the study's overall credibility.

Triangulation

Triangulation of data is the collection of data in multiple forms (Shenton, 2004). Triangulation procedures help identify themes across sources and corroborate evidence presented by participants (Creswell & Poth, 2018). The process also allows researchers to guard against allegations of single investigator bias (Erlandson et al., 1993). In this study, I conducted individual and audio-visual elicitation interviews and analyzed participant-written letters. These sources allowed me to gather detailed and rich descriptions of participants' lived experiences with video observations.

Peer Debriefing

Credibility was also enhanced through peer debriefing. Peer debriefing provides researchers with a sounding board to test ideas, perceptions, and interpretations (Marshall & Rossman, 2014). It is also an effective way to recognize researcher bias. I discussed my findings with colleagues at my institution and solicited feedback about my conclusions and possible bias.

Transferability

Transferability is the extent to which research can be applied to other cases (Connelly, 2016; Lincoln & Guba, 1985). I cannot guarantee transferability in a phenomenological study; I can only create the conditions for it. Transferability is accomplished by developing thick descriptions to relay research findings (Geertz, 2008; Korstjens & Moser, 2017). In this study, transferability was, therefore, established by providing rich and thick descriptions of the participants' lived experiences with video observations. However, it is important to note that the goal of transferability is to provide enough detail so readers can decide if the result will transfer to other contexts (Hays & Singh, 2011).

Dependability

An additional factor of trustworthiness is dependability. Dependability is the degree to which study findings are consistent and can be replicated by future researchers (Connelly, 2016; Lincoln & Guba, 1985). Rigorous and organized procedures result in the stability of findings over time. This study includes detailed procedures that are thorough enough to allow future researchers to effectively replicate my study. An inquiry audit was conducted through my committee and qualitative director review. Korstjens and Moser (2017) also noted that dependability entails participants' evaluation of the findings and recommendations of the study as supporting the data received. In addition to this member-checking, I shared my results with leaders in the School of Education at Central University.

Confirmability

Lincoln and Guba (1985) defined confirmability as the degree of neutrality in a study. It is the extent to which findings are clearly derived from data, not the result of researcher bias. I sought to ensure the confirmability of my study through an audit trail, triangulation, and

reflexivity. Audit trails ensure the data is grounded in participant viewpoints, not the researchers (Carcary, 2009). Member-checking strengthens confirmability. This study's audit trail (see Appendix K) provides a clear path that connects my procedures, participant data, data analysis, and final report. Triangulation was achieved by collecting and analyzing different forms of data. This study includes individual interviews, audio-visual elicitation interviews, and participant letter-writing. Finally, I used journaling to note and process my preconceived judgments and achieve reflexivity. Reflexivity refers to an individual's ability to examine their own feelings, motives, and reactions (Pillow, 2003). This process was done throughout data collection and analysis.

Ethical Considerations

Researchers must consider and plan for any ethical issues that might arise during the research process (Creswell & Poth, 2018). To begin, permission was obtained by Liberty University and Central University IRBs before any data collection. In this study, all digital data collected was saved and stored in a password-protected computer. Physical data was stored it in a locked filing system. To ensure the confidentiality and privacy of participants' identities, I was the only individual with access to digital and physical data. Per Liberty University's IRB requirements, all data will be stored for three years and then deleted or destroyed.

Confidentiality is paramount in this study (Creswell & Poth, 2018). Pseudonyms were put in place for participants and site names. I was mindful of assigned pseudonyms when discussing data collection and analysis with dissertation committee members. When peer debriefing, I used pseudonyms and omitted identifying details from discussion.

It is important to note that participation in this study is voluntary. All participants were informed of their right to end an interview at any time. Each individual was asked to sign a letter

of informed consent that disclosed the study's purpose and possible risks of participation. These ethical considerations ensured study participants were treated with dignity and respect.

Summary

This hermeneutic phenomenological study sought to understand the video observation experience of preservice teachers at Central University. The proposed procedures for that research were described in this chapter. The research employed qualitative data collection and analysis methods, following the recommendations of van Manen (2016). To fully explore the experience of video observations, three forms of data were collected: individual interviews with preservice teachers, audio-video elicitation interviews, and participant written letters (Lincoln & Guba, 1985). Study characteristics, including participant, site, and procedures were discussed. Finally, the trustworthiness of the outlined methods, data collection, and analysis procedures were considered in terms of their credibility, dependability, confirmability, and transferability (Korstjens & Moser, 2017).

CHAPTER FOUR: FINDINGS

Overview

The purpose of this hermeneutic phenomenological study was to explore the experience of preservice teachers with video observations at Central University. This chapter presents the findings obtained from individual interviews, audio-visual elicitation interviews, and a letter-writing activity. The chapter begins with a description of the participants as a whole, followed by individual profiles containing information relevant to the study. The study's findings are then presented in the form of themes and sub-themes developed through the process of hermeneutic phenomenological reduction. Then, I present the thematic findings relevant to the research questions, aligned with the theoretical framework, and conclude with an overall chapter summary.

Participants

The participants in this study consisted of 11 preservice teachers from Central University who had recently completed their final student teaching placement and met the requirements for university program recommendation for initial teaching certification. All participants utilized video annotation software during their final student teaching field experience. The participants were selected using purposeful sampling and snowball sampling procedures. The key site informant compiled a list of preservice teachers enrolled in Central University teacher education programs that included using video annotation software (VAS) as part of course requirements. The list included preservice teachers enrolled in early childhood (PK-2), childhood (K-6), and physical education undergraduate and graduate programs. These potential participants were contacted via email (see Appendix C). Interested participants then filled out a screening survey to determine if they were eligible for inclusion in the study (see Appendix D). Eligible

participants were contacted to schedule an interview and were provided with a copy of the consent document (see Appendix E). This consent document was reviewed and signed before the initial individual interview commenced.

Out of the 11 undergraduate and graduate participants, six were female, and five were male. The participants represented two programs, with three participants enrolled in childhood or early childhood programs, and the remaining eight enrolled in physical education programs. This breakdown mirrors the demographics of Central University's teacher education program, where physical education preservice teachers made up 76% of the potential participant pool.

All participants successfully completed their student teaching in the final semester of their degree. Their placements were spread across the state, with travel time ranging from five minutes to four hours from the university campus to the school site. Participants had between zero and six in-person observations and between two and 11 video observations. Each participant had a different supervisor, with no supervisor overseeing more than one of the study's participants. Table 1 includes the demographic data of the participants.

Table 1

Participant Demographic Information

Preservice Teacher Participant	Gender	Teacher Education Program	Number of Video Observations	Number of In-Person Observations
Erin	Female	Physical Education	11	4
Matty	Female	Early Childhood/ Childhood	6	5
Megan	Female	Early Childhood/ Childhood	6	4
John	Male	Physical Education	6	2
Tom	Male	Physical Education	5	4
Kyle	Male	Physical Education	5	3
Bridget	Female	Physical Education	6	0
Billy	Male	Physical Education	5	0
Eli	Male	Physical Education	5	0
Gianna	Female	Physical Education	5	0
Mary	Female	Childhood/Inclusive Early Childhood (Special Education)	2	6

Erin

Erin completed both an elementary and middle school physical education placement during the final semester of her undergraduate degree in physical education. The placements

were approximately an hour and 15-minute drive from campus. She continued to work in before-school and after-school childcare programs throughout student teaching. Next year she plans to substitute teach while pursuing a dual masters in adaptive physical education and health. Erin completed either a video or in-person observation almost every week of her student teaching – 11 video observations and four in-person observations. The constant reflection helped her identify areas of improvement: “I’m used to listening to myself and rewatching everything, so I was able to kind of fix it once I caught myself.” However, Erin was one of the few candidates who expressed feeling overwhelmed by the preponderance of feedback from her supervisor, both in-person and through video: “Hearing the same things over and over and over again, I’m like, “Okay, I know I need to hear this, I really do, but hearing it this many times at once is not going to help me remember.”

Matty

Matty, an early childhood/childhood education major, described her student teaching experience as being as “seamless and as stress-free as it could have been. I was stressing about it for a very long time, probably my whole four years of college, and it ended up being a very good experience.” After a successful fall field practicum, Matty stayed on as a student teacher in her host teacher’s third-grade classroom in a school that was a 20-minute drive from campus. During the 16-week spring semester, she completed five in-person observations and submitted six videos. Five of those videos were recordings of the same lesson the supervisor observed in person. She appreciated that video observations allowed her to “go in and fix a lot of things that I didn’t even notice.” Matty enjoyed her relationship with both her supervisor and the other Central University student teachers at her placement school: “We went to her [supervisor’s]

house for dinner often, and she was just super sweet and very understanding, and really supportive of us."

Megan

Megan graduated from Central University with a dual endorsement in early childhood and childhood education. She completed her fall semester practicum and final semester student teaching placement in the same second-grade classroom 20 minutes from campus. She describes student teaching as "a really wonderful experience all around" due to her "great relationship with [her] host teacher and with the school." She recently accepted an in-service teaching position at the same school for the upcoming academic year. Megan completed four in-person observations and six video observations during her final semester. She appreciated the reflective capabilities of VAS and stated that "being able to watch back your teaching is really powerful." However, she found that VAS was "great for the reflection piece, but I also don't think that it should replace in-person observations." She reported that she did not feel entirely prepared for in-service teaching: "Learning it in the classroom at a college is one thing; putting it into practice is a whole different ballgame."

John

John graduated with a physical education bachelor's degree from Central University, where he was awarded student teaching honors and named one of the top graduates in the program. He completed his student teaching placements four hours away from campus at a high-needs middle school and bilingual elementary school. John described his elementary experience as "phenomenal," but his middle school placement as "a little rough." During the 16-week semester, John had two in-person observations and six video observations. "Initially, I personally was not the biggest fan of [VAS]. I do still like in-person observations from the supervisor more.

But in terms of personal reflection, I like that [VAS] gave me an opportunity to film myself and strategically go through my teaching qualities that I targeted." John and his supervisor debriefed immediately following in-person observations and, for video observations, communicated asynchronously through the VAS platform.

Tom

A physical education major, Tom completed his student teaching at two placements: an elementary school and a high school four hours from the Central University campus. He found student teaching "very eye-opening, seeing how much actual classroom management I would have to do as a teacher." Over the 16-week semester, Tom completed four in-person observations and five video observations. He had a good relationship with his supervisor and received verbal feedback after in-person observations and written feedback on his video submissions. Tom appreciated the observation balance: "I think the way that my supervisor did was probably best for me. I liked when she came in person; I liked the 50-50 where you had some of it in person, some of it online." In general, Tom found video observations not very "different than being observed in person. It didn't seem too strange to me, honestly. I mean, that's probably because of COVID, though. Most things are being recorded now, so it's kind of like the new norm."

Kyle

Kyle recently completed his master's degree in physical education. He spent eight weeks in a high school placement and eight weeks in an elementary physical education placement. Both schools were located a two-and-a-half-hour drive from campus. Kyle preferred the secondary setting. "I just like the older kids. I think my skill set is more tailored towards that." He completed three in-person observations and five video observations. He found video observations helpful for reflection, "It's nice to watch yourself sometimes because it's one thing

to have your peers or whoever telling you feedback, but it's another thing definitely to see yourself." He had a positive relationship with his "very nice" supervisor but felt the video assignment parameters needed more flexibility.

Bridget

Bridget completed both a high school and elementary placement in physical education. "I really thought that I was going to like the high school a lot more, and once I got to the elementary school, I loved it because the kids, they came in, they were so excited. It was great." Bridget's field experience supervision was fully remote; she had no in-person observations and six video observations. She felt that with virtual supervision,

> There's the pros and the cons. The pro was I wasn't as nervous as I would've been if somebody did come in person. But also, I'm the type of person who wants to be graded hard, and I'd rather him see the whole lesson than just what can be recorded in 15 to 45 minutes.

She had a positive relationship with her supervisor, communicating through the platform and with texts, emails, and phone calls. Next year she plans to substitute teach as she completes her one-year master's degree program.

Billy

Billy completed a Bachelor of Science in physical education. His final field experience semester was split between two different placements, a high school and an elementary school. At his high school placement, he felt "kinda thrown into the mix," whereas at his elementary placement, he progressed gradually from observing the classroom to the point where he capably "ran the show." His high school placement was located within 15 minutes of the Central University campus, and the second placement was four hours away. Billy completed five videos

and did not have any in-person observations. Billy acknowledged, “I was expecting my supervisor would come in and observe me, along with using [VAS], and make comments and giving me feedback. But that never took place.” His communication with his supervisor was minimal during his placement: “I reached out to him several times via email, and he never even responded back.” All interactions took place asynchronously through the VAS platform. In general, Billy “enjoyed not being observed because of the pressure that it could have added to it. But, I think, in a way, it also hurt me because I wanted him to … give me corrective feedback.”

Eli

Eli recently graduated from Central University with a degree in physical education. He completed his final semester of field experience in a middle school and elementary school setting an hour and 45-minute drive from campus. Overall, he enjoyed both placements, which had “tons of diversity, tons of different learning styles and abilities.” Eli’s university supervision was fully remote; he had five video observations and no in-person observations during the final semester of his program. His supervisor communicated through cohort calls, texts, and asynchronously through the VAS platform. Eli was generally positive about his fully remote supervision, finding video observations less stressful than in-person observations. He was very upfront about the showcasing aspect of preservice teacher-chosen videos: “Anyone who is using [VAS] is just going to pick their best class and their very best lesson. And as soon as that’s over, all their other work could be really poorly done. Everything else could just be acting.” Eli reported feeling prepared for his first in-service teaching position due to his previous coaching experience and different professional development opportunities. Student teaching was “just the cherry on top.”

Gianna

Gianna was a physical education major and received student teaching honors. She completed five video observations at middle school and elementary school placements 40 minutes from campus. She met her supervisor in person, but due to a scheduling error, he did not arrive at the right time to see her actively teach. No other in-person observations were scheduled. Gianna found VAS helpful for self-reflection and evaluation "because it makes you realize what you might need to change when you actually see yourself." However, she was disappointed not to complete any in-person observations with her supervisor. "I did not like it in place of [my supervisor] coming in and giving me feedback. But I think it was good because I could watch myself teach and kind of analyze it." She received minimal supervisor feedback on her video submissions and admitted that "might have changed how I felt about it." Even though Gianna will earn physical education teaching certification, she is pursuing other career paths. She recently began classes for a master's degree in management of leisure services.

Mary

Mary graduated with a dual degree in childhood education and inclusive early childhood education (special education). She completed both of her student teaching placements at the same school, eight weeks in a general education elementary classroom and eight weeks in a special education setting for grades kindergarten through second grade. She recalls:

> I got really lucky in the sense I was able to move into my special ed placement at the same location. I'm actually working there next year because I think that helped being in the same spot. I'll be a special ed. teacher next year.

The school was a 35-minute drive from the Central University campus. Mary had six in-person observations and two video observations. She reported a positive relationship with her supervisor

and appreciated her “entire sheet of feedback” after in-person observations. However, Mary did not “really like [VAS] that much. I think that it’s difficult to get the full perspective because it all depends on where you place the video.” The two video observations she completed occurred at the beginning and end of her semester-long student teaching experience.

Results

Using a hermeneutic phenomenological design, the purpose of this study was to explore preservice teachers’ experiences with video observations at Central University. The data collection methods included individual interviews, audio-visual elicitation interviews, and a letter-writing activity. Data from audio-visual elicitation interview and letter-writing activity are specifically identified within the findings; statements not otherwise noted are sourced from individual interviews. van Manen’s (2016) data analysis process was used to focus on the exploration of meaning. This study also used Saldaña’s (2021) first and second cycle coding to uncover patterns in the data. Meta-coding formed the foundation for the thematic development. During data synthesis, four primary themes and 13 sub-themes emerged. The primary themes and correlating sub-themes are presented in Table 2. Figure 1 shows a treemap of codes compared by number of coding references.

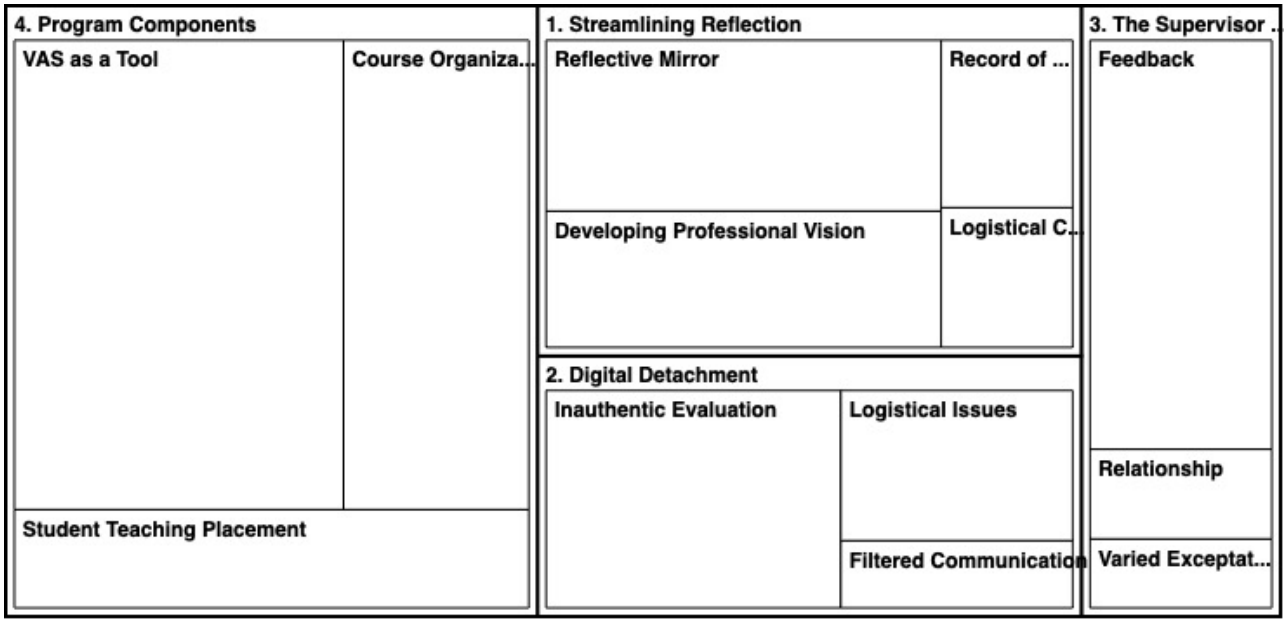
Table 2

Primary Themes and Sub-Themes

Themes	Subthemes
Streamlined reflection	Logistical convenience
	Record of growth
	Developing professional vision
	Reflective mirror
Digital detachment	Logistical issues
	Filtered communication
	Inauthentic evaluation
The supervisor variable	Supervisor-preservice teacher relationship
	Varied expectations
	Video feedback
Program components' effect on self-efficacy	Course organization
	Student teaching placement
	VAS as a Tool

Figure 1

Codes Compared by Number of Coding References



For preservice teachers in this study, their experiences utilizing video annotation software during field experience included four main themes: (a) streamlined reflection, (b) digital detachment, (c) the supervisor variable, and d) program components' effect on self-efficacy. A table of codes and corresponding themes and sub-themes is included in Appendix J. Participants identified significant reflective and logistical advantages to using video annotation software. However, participants also noted that the asynchronous communication of the platform stunted communication and connection with the supervisor. Differences in program components and supervisor involvement greatly affected a participant's individual experience with VAS.

Streamlined Reflection

Based on the analysis processes, the theme of streamlined reflection includes data regarding how Central University preservice teachers recognized many advantages of using video annotation software for student teaching observations. In this theme, I present the data showing the participants perceptions of logistical conveniences, the capability to create a record of growth, and using VAS as a reflective mirror. The participant's ability to watch their own teaching and come to their own conclusions about their practice has profound implications for reflective opportunities and personal agency.

Logistical Conveniences

In the theme of streamlined reflection, the preservice teachers appreciated the logistical conveniences of using VAS for video observations, including the ability to teach at school sites farther from campus, the financial benefits afforded by that freedom, and the flexibility to record observations when it suited their schedule. Eli completed his student teaching an hour and 45 minutes from campus but close to his family, "I did it from home, so that was very nice. I got to stay at home with my family and drive a closer distance." With the option of fully remote

supervision, students could complete their student teaching with supervisors who matched their teaching focus but not necessarily their geographic location. Billy remarked, “If you’re gonna have different placements that are far away from each other, and your supervisor isn’t able to make them … I think that using a platform such as [VAS] to submit your videos, that’s definitely a plus.” Matty observed that this remote capability is becoming commonplace after the upheavals of the COVID pandemic. She suggested that VAS helps “fill in the gaps and connects the dots” when meeting in-person is not feasible.

For Bridget and Eli, living and working close to home had critical financial benefits. In addition to student teaching, Bridget worked at an after-school program near her host school. She professed, “I was broke. I was really, really broke, which really stunk.... If I stayed up at school, I wouldn’t have been able to [work]. I know that for a fact.” Eli joked, “I’d love to see a study on how much student teachers spend on gas money because you don’t get paid for student teaching. Every week, you just lose like $50 every single week.” Having placements close to home with remote supervision allowed some participants to live at home, save money on gas and rent, and work part-time.

The final point that emerged in the analysis regarding logical convenience included scheduling flexibility. Most participants noted this convenience. Theoretically, videos for observations could be recorded during any lesson on any teaching day. Mary appreciated that if her supervisor could not make it to her classroom in person, “If I really needed to get an observation in, I could have just uploaded video of it, and it would’ve been perfectly fine.” Bridget had a fully remote supervisor and appreciated that her observation reflection and feedback were asynchronous. She emphasized, “Just finding a time to meet with him would have just been too stressful, so I didn’t mind the delay … I was just so busy that it would’ve been

more of a hassle to meet with him in person, honestly." While the burden of traveling to and from school placements for observations usually falls on supervisors, participants were grateful not to have to arrange observations within the time restraints of their supervisor's schedule.

Record of Growth

Within the theme of streamlined reflection, preservice teachers utilizing VAS appreciated that completing video observations created a record of growth by documenting teaching evidence and providing an opportunity for the perception of growth over time. The video, personal reflection, and supervisor feedback were all stored digitally within the platform, which Erin pointed out "makes it [organization] a lot easier. I wish that all [in-person and video observation documents] could be online just so I didn't have to carry an entire stack of papers everywhere." Having observation recordings and annotations easily accessible also made students more likely to revisit past practice. Kyle noted, "You can always go back and look at it, which is nice compared to any other type of reflection. You have the evidence right there." This ability to review observations later was also mentioned by Bridget in her letter to future preservice teachers, "In terms of having feedback that I can keep, as long as my [VAS] account is active, I am able to log on and watch the videos as well as see my comments and my supervisor's comments." Participants appreciated that the evidence, reflection, and feedback were all captured in the same space.

Many participants remarked that they were surprised by and proud of their growth over the course of their student teaching. Bridget reflected on revisiting her videos, "I think this is helpful because it allows me to see my improvement and how far I came since the beginning of the semester." For Megan, VAS became "a place where I could look back at the progression of my skills." In her writing prompt, Megan assured future preservice teachers, "You will see

incredible growth in yourself over the course of student teaching. Isn't it amazing to have that growth recorded for you to look back on at any time?" Erin, who recorded the most videos of all the participants, remarked on her changed attitude towards VAS,

> I liked how many videos I did. At the time, it was a lot because you're like, 'Oh, see another video come on.' But looking back at it, I have 11 videos ... Even right now, I'm creating a PE curriculum for one of my summer camp jobs with the before-school and after-school [program]. So, I'm able to look back at all those feedbacks and those remarks to implement for this PE curriculum that I'm creating.

Both the accessibility and visual nature of VAS seemed to appeal to the participant teachers.

During the audio-visual elicitation interviews, almost all participants commented on how much they had grown from the time they recorded the video we were watching together. After watching her video clip, Megan said, "I can see the growth that I've made, which is another thing that I do like about [VAS] is I have this video versus the last lesson that I taught during my student teaching experience, and it's vastly different." When answering why he had chosen this particular video to share, Tom explained, "I picked that one because it was, I think, the most growth I've had. It was kind of like what I've been building up to throughout my entire experience." Erin experienced "a lot of mixed emotions right now. I haven't seen these videos in a while, so there's definitely things I would've done different." Tom echoed his audio-visual elicitation interview sentiments in his writing prompt to future preservice teachers,

> Video observations also help you realize how much you have improved by being able to go back and watch your first video and comparing to your last video of student teaching you will notice some major differences in how you present yourself as a teacher and how confident you are as a teacher.

Eli found the record of his growth encouraging: “I still think just the fact that you get to watch yourself teach, that is just kind of overpowering the hindrances.” Other participants used the video to pinpoint specific elements of growth. During the audio-visual elicitation interview, Tom pointed out, “I’m a lot more thorough with my introductions.” Also in her audio-visual elicitation interview, Megan noticed, “My classroom management is different. My proximity is different. I’m circling the classroom more, so being able to reflect on the first to the last lesson has been really cool.”

Developing Professional Vision

In the theme of streamlined reflection, preservice teachers shared their experiences using VAS to develop their professional vision (Goodwin, 1994; Santagata et al., 2021). VAS provided the visual material for candidates to improve the reflection component processes of *noticing* and *knowledge-based reasoning* (van Es & Sherin, 2008). Specifically, video served as a memory aid and helped participants notice student and teacher behaviors during the lesson.

Memory Aid. Participants shared that they found VAS beneficial for helping them remember what happened during a lesson, providing unbiased evidence, lending visual support, and allowing them to notice things previously missed. Matty, Mary, Gianna, and Tom all spoke of a form of teacher amnesia. Megan explains,

> A lot of the things that I've talked to my friends about who are also preservice teachers is that, especially those first few lessons that you teach during student teaching, you almost black out. You feel like, ‘Oh, here I go.’ It just kind of came out, and then reflect, ‘What even happened? What did I even just teach?’ So, having that solid recording is like, ‘Oh, this is what I did well, or this is what didn’t go so great.’ And I never would have been able to reflect on that if I didn’t have that recording.

Mary concurred, “During the whole lesson, you’re like, “Okay, let’s just do this.” Looking back at it, you’re just like, “Oh, what did I do?” So, it’s nice to be able to go back and see exactly what you did.”

Similarly, many participants reported noticing that their perception of events differed from what was captured on video. Gianna acknowledged, “I would watch my videos, and I would think I was being too loud or something with the kids. But, in reality, I kind of wasn’t, and I could have had a more commanding teacher voice.” More generally, Eli mused, “Everyone thinks they’re either way better or way worse than they are. You don’t know until you actually watch yourself.” Both Kyle and Tom discussed how VAS also provided visualization for the classroom. Kyle discussed feedback he received to position himself throughout the room as he taught. He found it difficult to understand the issue or how to correct it fully. However, when Kyle watched the video, he could see, “Oh, okay, I should have moved maybe a few feet back to have a better view here. Or maybe I could’ve positioned myself in a different spot for this demonstration, that might’ve been a little bit more effective.” He appreciated that the video had created the “visual component [that unlike] when I’m just thinking about it, I’m having to recreate all that in my head.”

Eight of the 11 participants specifically mentioned noticing events and behaviors previously missed. Matty shared with future preservice teachers in the writing prompt, “As you watch yourself, you notice things that you never have before.” Similarly, Tom also noted in his writing prompt, “It is also extremely helpful to be able to watch yourself and how you teach because you might notice something that you did not realize as you are teaching, such as how well you can project your voice.” Mary echoed this idea when she recounted, “In one of my videos, I forgot to call on three kids, and I noticed that, so I made it a point for my next lesson to

go in a certain way instead of just random popcorn picking." Video provided a way to widen the lens of the participants' vision.

Noticing Student Behaviors. Video can be a powerful tool for analyzing student behavior (Ganda & Boruchovitch, 2018; Michalsky, 2021). Participants gave examples of how watching their recorded teaching gave them valuable insight about their students. Gianna recalled, "I'd see kids standing by the camera, and they were saying something by the camera, and I didn't catch that. So, then that made me realize I have to start circulating more." Megan mused, "I think that, always, it's motivating to see the students…. They're who you are teaching this lesson for. And if they're off task, we gotta fix it." Erin was able not just to notice corrections that needed to be made but also to appreciate positive student engagement. She recalled being delighted to see the students' excitement on video: "You know that they're excited, but just seeing their excitement. Because you might be looking at one student while the other student might be in your peripheral vision, but you don't 100% see their reaction." Erin was also able to use video to see how she related individually with students. She would watch her interaction with different students and notice that they were "completely different, but it's what the students need[ed]. So, seeing myself being able to flip interactions so quick is really interesting. And being able to adapt my voice now and adapt my conversations for those students' needs."

Noticing Teacher Behaviors. Initially, many participants expressed a degree of discomfort watching themselves on video. Megan admitted, "I hate watching myself on video; watching yourself on video is like the weirdest thing ever. But I feel it is necessary for a preservice teacher." Mary found her discomfort was more personal than pedagogical. While watching her videos she remembers thinking, "'Ew, I'm standing weird.' Why did I think of that?

Nothing having to do with the teaching aspect of it, it's more of just myself." She continues, "I'm able to move past it in the sense of getting my work done … but I deleted the videos off my phone, and I was like, 'I'm never looking at these again.'" Kyle also recognized the challenge of encountering yourself on video. In his letter to future preservice teachers, he reminded them,

> No one will really see these videos and the people that do just want to see you improve as an educator so don't feel awkward or embarrassed! Be sure to actually watch the videos back and assess yourself. It may be uncomfortable at first, but it will make you a better educator and teachers need to feel comfortable talking in front of large groups of people.

All 11 participant teachers specifically mentioned explicit teaching behaviors they noticed when watching their video. In their interviews, eight of the 11 discussed aspects related to delivery and presence. Erin disclosed, "I did not realize I had such a monotone voice until I was watching my videos back." Mary discussed catching herself using informal language: "Where it started was by watching the [videos]. I was like, 'Oh, I should not be saying that.'" Gianna noted, "I used filler words too much. Or if I was talking too much, because sometimes when I'm trying to explain something and make it simpler for kids, I realized I would talk a little too much." Some participants were also able to notice positive characteristics of their teaching. Tom explained: "Watching my videos and seeing like, okay, I look confident in the videos. I may not feel it when I'm actually teaching a lesson, but I definitely feel like I look confident when I'm teaching those videos."

Participants were also able to use video observations to notice classroom elements. Specifically, participants identified aspects of differentiation, engagement, collaborative learning, classroom management, procedures, and transitions in their videos. Matty discussed her differentiation of a small group math lesson, "It was validating to see that I was working with

two different groups of students on two different levels, but I was still able to change the lesson just that much to reach those students." John was able to identify issues in group work; he emphasized, "They may be best friends, but they may not do the best work together. So that's what the video also helped me realize." John was also able to appreciate student engagement: "It was nice to see the students being cognitively engaged, and I noticed this time, rather than before, how many students were actually raising their hand and possibly knew the answer to the question compared to before." Tom made changes to his procedures based on an issue he saw in the video. After implementing the change, Tom reported, "the next time I saw [the element in the video,] it was better. And students didn't have to move around as much."

Reflective Mirror

The final sub-theme of streamlined reflection is the preservice teachers' perception of VAS as a reflective mirror through awareness and self-reflection. All 11 participants mentioned the use of VAS for reflection multiple times across all points of data collection. Participants discussed VAS for reflection in their interviews, highlighted specific moments of reflection during the audio-visual elicitation interview, and stressed the reflective benefits of VAS in their letters to future preservice teachers. Specifically, participants discussed VAS for scaffolding reflection, using self as the curriculum, improved agency through video reflection, and specific instances when reflection was more meaningful than expert feedback.

Scaffolding Reflection. Many participants found VAS useful for providing structure and focus for their reflection. In her letter to future preservice teachers, Megan found that using VAS "made my reflections on my teaching practices more meaningful." Similarly, John, who used the VAS markers feature to specifically label teaching elements, noted that VAS "gave me an opportunity to film myself and strategically go through my teaching qualities that I targeted."

Participants especially appreciated the ability to pause the hectic pace of the classroom and focus specifically on individual elements of good teaching. Kyle discussed classroom events that he "probably wouldn't have noticed too because it's so fast in the moment, you're able to come back, and you're like, 'Oh, okay, now this is slowed down. I can watch it and analyze every little thing.'" Mary also mentioned this ability to isolate evidence when she described the difference between in-person and video observations: "On the video, you can exactly pinpoint it, and point out at three minutes, this is what you did, and this is what I liked."

Erin, Eli, Tom, and Kyle all discussed that their reflection became more meaningful when paired with supervisor feedback. As Eli asserted, the ability "to have a professional comment on it [element in the video], in addition to doing your own self-reflections, it's metacognition in itself." Erin agreed; she found VAS more beneficial because it was not "sitting and waiting to do the feedback just by myself; I'm also looking at it through someone else's eyes as well." Feedback from supervisors also helped ground preservice teacher reflection that may have been too self-critical. Kyle considered this idea, "There were times where I would comment on something where I'm like, 'I could have been better in this way,' and maybe my supervisor would go, 'I think it's fine how you did it.'" However, participants also noted that the ability to pause the video and note each element could also feel overwhelming. Gianna, specifically, argued for quality over quantity: "You can't realistically notice 18 different things about your teaching and just redo them the next time you teach. It's more realistic to maybe pick a few and focus on them the next time."

Self as Curriculum. Participants found VAS structured reflection so that the self was the curriculum. VAS was identified as a valuable tool for this personal development. Ten of the 11 participants specifically mentioned using VAS for self-recognition and self-assessment. This

point was made by several participants in their letters to future preservice teachers. Bridget wrote, “I found that commenting on my own videos was a way for me to reflect and observe what areas I was doing great in and what areas needed improvement.” John also found this an important point to emphasize in his letter, postulating that VAS allows you to “acknowledge your effectiveness as an educator.” Kyle encouraged future teachers to focus “less on the end goal or result of getting a passing grade and more on trying to improve as an individual.” In her letter, Megan was perhaps the most effusive in her appreciation of VAS for reflection:

> I credit video observations for a large part of my growth as an educator. Being able to watch my habits, good and bad, was powerful. So, while it might feel like just another assignment, I promise that there is tremendous value in video observations.

Agency. The reflective mirror of video analysis provided participants with clear evidence of their teaching and also clear direction. Participants reported that VAS helped them not only recognize areas of improvement but also identify a specific plan to address issues. Mary described this empowerment. Using VAS, she was able to “look back at myself and do it. Watching through my video and looking at myself, being able to be like, “Okay, I did this differently, and how can I switch that so that it goes better next time?” Tom agreed, he appreciated, “Being able to see myself teach, being able to go back and look at what I can change.” In their individual interviews, four participants identified a classroom element that needed improvement and outlined a plan of action. Mary wanted to work on her ability to respond to all students:

> Some of the students were raising their hands, and I just didn’t see it. I was just focused on one part of what I was doing or focused on getting this one kid to pay attention and sit with us or lay in the circle with us. So, going back and seeing like, oh, I missed that

> student raising their hand. And then, for my next lesson, making it a point in my head to be like, 'Okay, make sure you're scanning all the kids and make sure that you're picking on everyone.'

During the audio-visual elicitation interview, several participants pointed out a specific aspect of their instruction and immediately described how they would address it. Eli voiced annoyance that in his video,

> The bouncing of the ball was kind of obnoxious, and no one could hear what I was saying. So maybe, next, if I were watching this in hindsight, I'd be like, 'Let's put all the balls away, then go to your attendance spots.'

The video sharpened participants' professional vision and provided an impetus for improvement.

Reflection More Meaningful than Feedback. Participants found video reflection particularly meaningful when they were able to self-identify areas of growth. Several participants found these were elements that their supervisor may have missed in observations. When discussing a growth area she saw in herself, Matty said, "Maybe my supervisor didn't even point it out to me when we were reflecting after. Or something that she didn't notice, and I noticed, that I wanted to change." Erin credited this discernment to careful viewing and reflection: "I watched my videos very in-depth to where if I found something that they didn't find." Several participants viewed themselves as more perceptive and critical than their supervisor. Kyle argued,

> He definitely thought I was doing well, and everything, and I think I was. But I think I'm like a lot of people are. We hold ourselves to that little higher standard and we know what we're capable of. So, I'm maybe nitpicking myself at little things or things where I'm like, 'Okay, this is good, but how do I make it great or make it something a little bigger

> or deeper?'

All participants affirmed the value of their supervisor's feedback. However, they also recognized the power of their own evaluation. Matty asserted, "The feedback I got from my supervisor was beneficial, but I found that I noticed more things when I watched myself teach on video." Mary echoed this idea. After watching herself on video, she was able to change how she referred to her students in direct instruction.

> I think for some people, it could be their advisor says, 'I noticed this. You should really just keep it general and say friends, kindergartners.' That might make a difference for them. But for me, I heard myself, and I was like, 'I need to switch that.'

Participants recognized the validity of their own evaluation. Kyle noted, "It's one thing to have your peers or whoever telling you feedback, but it's another thing, definitely, to see yourself."

Digital Detachment

The data from Central University preservice teachers revealed the theme of digital detachment. Participant detachment based on their digital experience was related to logistical issues, filtered communication between the supervisor and preservice teacher, and the perception that observations conducted using VAS were an inauthentic evaluation of a teacher's skills. School privacy policies and student distractibility made recording videos in the classroom challenging. Additionally, preservice teachers struggled to understand and incorporate feedback given asynchronously on the VAS platform. Preservice teachers also discussed how it was difficult to evaluate a teacher's performance and classroom environment when limited by the constraints of the video's frame.

Logistical Issues

Within the theme of digital detachment, preservice teachers experienced several logistical

issues when utilizing VAS. Specifically, the data drew attention to the perception that video recording was distracting to students and, therefore, disruptive to the video observation. Participants were split in this perception of video recording as distracting for students in the classroom. For Megan, the "biggest problem that I ran into was the kids were very distracted by it [video recording device]." During the audio-visual elicitation interview, Billy drew attention to student behavior during an elementary school physical education lesson. He complained that he had to keep "iterating and reiterating for the students to stop doing what they're doing, stop fooling around, and messing around. Because they noticed the camera on top, so they think it's okay to mess around." In their letters to preservice teachers, several participants used the opportunity to provide advice on how to place the camera to lessen student distractions. Mary warned future teachers, "The video device should be hidden to a degree so that your students are not getting distracted by it (which will happen if they see it)." Erin recommended that future preservice teachers, "Put a black piece of paper on your screen so the students will not be able to watch the video as it is being recorded and stay focused on the class."

However, some participants found that video recording was not a notable distraction for students, particularly at the secondary level. Tom suggested, "I guess the younger students probably get more distracted, but the older ones were kind of used to recording themselves." Referring to his secondary physical education placement, Kyle remarked, "They didn't really care. I don't even think they noticed." Gianna found that while it was initially a novelty, the video recording did not provide an enduring hindrance to learning. She acknowledged, "I thought it would affect it more, but it didn't really seem to. I think that's because they're used to it. At their age, they all have phones; they all are used to being recorded all the time."

A second logistical challenge for preservice teachers was navigating the student privacy

policies of the school site. Erin had difficulty getting permission from her host school to record any videos: “They didn't want the kids being recorded, and that was a problem just because like, ‘Hey, you can’t record.’ And I’m like, ‘Okay, how am I supposed to hand this in then?’” Kyle found his elementary school placement was “more conscious and strict of recording students.... The students have to opt-in to be recorded. So, there was just some logistics around that.” To protect student privacy, many school sites required parent permission slips before children could be recorded on video. Policy compliance was especially difficult for elementary physical education teachers, who often interacted with all the students at a school site. To avoid distributing hundreds of permission slip letters, preservice teachers often chose only one class to record. Erin found this restricted recording limiting, “I wish I could have done it all [recorded all classes] because I noticed that something worked for one lesson and I started to do it for another lesson, I couldn’t record my progress for those lessons.” Other teachers blurred students’ faces or recorded only the teacher’s perspective to comply with video policies. However, this significantly narrowed the classroom elements the video was able to capture.

Filtered Communication

Within the theme of digital detachment, Central University preservice teachers discussed the concept of filtered communication. VAS’ capability to facilitate communication without shared space and time conversely inhibits the exchange. Participants struggled to achieve clear communication with their supervisors when exchanges were mediated by a screen. Specifically, the data pointed to the limitations of asynchronous communication and miscommunication.

Asynchronous Communication. Many participants acknowledged the limitations of asynchronous written communication. All Central University participant teachers conducted video observations entirely within the VAS platform. The preservice teacher would first watch

the video and make time-stamped annotations; then, the supervisor would watch the video and make annotations. Eli, whose supervision was fully remote with no in-person observations, found that this made him doubt the sincerity of his supervisor's feedback:

> Reading words off the screen versus getting someone's tone and attitude towards you…. For all I know, he [his supervisor] could be typing this, just making it up. He might not have watched the video and just was like, 'Oh, yeah, that was good.' If it was in person, you'd be like, 'I know he watched it; I can tell he wasn't lying or, you know, downplaying any of the compliments or comments he made.' I can tell by his body language what he meant exactly.

Often, the full video observation process at Central University would take over a week. Six participants, John, Eli, Billy, Gianna, Megan, and Tom, noted the difficulty of receiving delayed feedback on their teaching. John preferred in-person observations because of this. He appreciated the:

> Instant gratification of being able to communicate right when he [his supervisor] went through the lesson. We were able to go piece by piece, in person, and we were able to bounce back and forth ideas. You know, what went right, what went wrong, without that interruption in time because our schedules may not align.

Megan concurred, preferring in-person observations "because the feedback is immediate." Furthermore, Gianna felt timing affected a preservice teacher's ability to implement feedback effectively: "If we're given that feedback at the end of the whole segment, we've had no opportunity to utilize it and actually see its effects and how it would change our teaching style."

Miscommunication. Filtered communication between the supervisor and preservice teacher also led to miscommunication. Matty emphasized that when "you're talking remotely or

through email or whatever, things aren't really as clear. So, I think that that is what's really missing [from video observations]." Tom found communication with his supervisor easier in person, especially when clarifying misconceptions: "I was able to talk to her more and have her explain things to me. If I had a question, I could ask her when she was giving feedback." Eli, who previously mentioned that asynchronous communication made him doubt his supervisor's authenticity, also found VAS stunted his communication: "If I want to, like, disagree with him – I wouldn't do that on [the VAS platform]." The platform appeared to limit the nuanced, back-and-forth communication found in synchronous conversation.

Inauthentic Evaluation

For the preservice teachers at Central University, the final and most important aspect of the theme of digital detachment was their perception that VAS represented an incomplete or inauthentic evaluation of their teaching skills. Participants complained that the video assignments could feel like busy work and that evaluation of their teaching based on video represented an incomplete picture of their practice that lent itself to performative showcasing. Participants' attitudes and experiences varied wildly within this theme, with the conflicting viewpoints and range of emotional intensity reported in the findings below.

Busy Work. Gianna, Kyle, Bridget, and Erin discussed video observations as busy work. Kyle admitted, "After a while, the videos became a box to check rather than something that I was getting a lot of value out of." Gianna and Bridget both commented that their attitude was partially based on feeling fatigued from their workload. Gianna commented, "I felt like it wasn't very useful the farther I went into student teaching. And I think that was mainly because, well, partly, I was just kind of burnout from everything we were doing." However, participants noted that tedious academic assignments are an accepted reality of university study. Bridget remarked,

"It was for me to graduate, so it is what it is. I would've been studying for a test if it was last semester." Kyle took a broader but similar view: "It was as useful as any other thing. I don't think it was crazy different than any other reflection I've done, but it was good. Yeah, reflection is always good."

Incomplete Picture. Participants rejected the idea that a video recording of their classroom teaching truly represented the reality of their teaching experience. Gianna, who did not complete any in-person observations, was adamant that video is not "a full understanding of what the student teacher is capable of." She strived to articulate the missing elements:

> Classroom atmosphere, and the culture of the school, and things like that, that you just can't get from watching a 30-minute video. Versus coming in and meeting the host teacher, meeting the students, and things like that. I feel like it's hard to gauge those things really and entirely be able to see what's going on in the class, what the student teacher actually needs to be doing there.

Gianna noted that this disconnection to the class climate made her reluctant to accept feedback given during video observations.

> If he [her supervisor] told me something based on the video, I would have thought, well, you should come in person and see how it actually is. And I don't know how true that is, but that's kind of how I felt. I was like, you can watch the video and kind of judge what I'm doing from the video, but I don't think that's the full truth.

Eli, Megan, Gianna, Kyle, and Bridget all stipulated that video observation only represented a specific moment in time. In-person observations are similarly constrained by time parameters, but participants noted that preservice teachers could cut and clip video recordings to misrepresent and omit difficult transitions or lesson segments. Bridget admits, "When I cut the

video off, they [supervisors] don't know what I'm doing in the gym. I could tell them [the students] to do a totally different test."

Mary, Gianna, Matty, Megan, Kyle, and Bridget all confirmed the visual limitations of VAS. When reviewing her video during the audio-visual elicitation interview, Mary described the student activity happening outside of the video frame, "Right behind the green chair over there, there were students rolling around on the ground, very distracting … you can't see stuff like that." Megan struggled to show the entire class and her instruction simultaneously: "I only had about four of my students at a time in the video because there was never a great place to set the camera up where everybody was in view." Additionally, the camera is often intermittently blocked. Kyle pointed out, "If a kid walks in front of the camera, you might miss a shot." Matty expressed frustration, finding it impossible to use proximity with students and also stay in the frame: "When you're teaching, you're not just standing in one spot, you're moving around the classroom…. There's just a lot you don't see when you're just using a camera." Gianna had similar issues: "I would be out of the frame when students would be coming up asking me for certain things. So, you just didn't even know that that happened because I was too far away to hear." VAS could not visually capture the classroom in a way that participants felt was accurate and authentic.

Showcasing. Closely related to the sub-theme of the VAS's incomplete picture is the concept of showcasing in video observation. Participants noted that the ability to choose and edit their video submissions allowed them to cherry-pick the best lesson, curate the video selection to supervisor preferences, and mask teaching struggles. Eli openly admitted choosing videos that presented his teaching in the best light: "Oh, you're not going to watch me in person the whole day? I guess I can make it so that you only see my best side." Eli also carefully selected where to

film: “I’m not gonna lie; obviously, I picked the better school, like, the higher income school. The kids are a little better behaved there.” Participants were often encouraged to do this cherry-picking by others. Gianna recalls, “My host teachers were always saying, you know, ‘Take a video, do this class. They’re a really good class, so they’ll behave and show your lesson.’ So, sometimes I would do that.”

Participants also recorded multiple videos before selecting the right one to submit to their supervisor. Tom explained this technique in his letter to future preservice teachers: “When being observed on video, you are able to record yourself multiple times and then choose which recording you think is the best before submitting it to your supervisor.” Billy also selected his best video but recognized this might not be advantageous in the long run: “I took several videos to get the best one possible in order for me to submit. So, I think that, you know, just doing that alone, was kind of a negative.” Ironically, participants seem to recognize the inauthenticity of showcasing while also seeking the benefits. Eli, who had no in-person observations, admits that video “doesn’t really display how good a PE teacher is overall. You can’t judge how good someone’s going to be based on five videos. I feel like it’s how they handle the bad classes that really kind of show that.”

However, recording and watching multiple videos before submission also helped students identify areas of their development and growth. During the audio-visual elicitation interview, Tom discussed his process:

> I probably watched it [the video] about three or four times after I submitted it and a bunch of times before I submitted it. I recorded a few different ones before I picked which one I was going to submit.

In his letter to preservice teachers, he described this as a strategy for growth: “Video

observations give you multiple opportunities to perfect your lesson before submitting it for review. So, if you make a mistake, you can always fix it next time." Billy ensured his video observations followed the supervisor's suggestions on previous videos. He recalls, "My supervisor mentioned that I shouldn't use that word … Okay. So, then I think, in the next one, I made sure I left it out of my video." Regardless of whether Billy successfully incorporated his supervisor's feedback into his practice, he ensured it would at least not be recorded in his next video submission.

Many participants noted the ability to mask struggle was a distinct drawback of video observations. Bridget speculates, "I feel as though it may appear that a lesson is perfect when, in reality, there are 25 other minutes not filmed that the supervisor has no idea what was happening." Eli, however, presented this to future preservice teachers as a benefit: "Do not worry about having a few classes with difficult students because you will be able to just videotape the better ones, and no one will know if you struggle to control difficult students." Similarly, Tom noted that if something goes wrong during an in-person observation,

> There's no taking that back. But if something, say, a student is acting out way too much, and something goes wrong, and someone falls and hurts themselves during a video, I can be okay, I'm not going to use that video, and then I can just use another one.

The ability to edit teaching performance to forward a specific narrative prompted some participants to declare video submissions more performance than observation. In her letter, Gianna reminded future preservice teachers, "This experience is about learning, adapting, and growing, not about implementing a perfect lesson where nothing goes wrong, and everyone does exactly what you say. That is not real teaching." Eli chided that video teaching "could be just be acting, right? You're just pretending for the one specific time point. So, it's hard to say, can you

really tell I'm a good teacher overall?" Video submissions appear to limit an observation to what the preservice teacher wishes the supervisor to see.

The Supervisor Variable

Central University preservice teachers' data related to the third theme of the supervisor variable included aspects of the supervisor-preservice teacher relationship, varied student teaching expectations, and quality of video feedback. The supervisor had a tremendous effect on the participants' overall student teaching experience, independent of the breakdown of in-person and video observations. The influence of the supervisor in relation to VAS cannot be completely isolated; a supervisor's efficacy was apparent regardless of the primary observation method. This assertion was supported by participants' data suggesting that effective supervision can be remote; however, it must include multiple synchronous touchpoints outside the VAS platform.

The Supervisor-Preservice Teacher Relationship

In the theme of the supervisor variable, Central University preservice teachers recognized that a supportive and beneficial relationship with their supervisor relied on both communication and connection. Preservice teachers craved consistent, timely, knowledgeable communication from their supervisor; they felt unsupported when this communication was lacking or delayed. Preservice teachers with no connection to their supervisor outside of the VAS platform reported a distinct lack of connection and support of their overall growth.

Central University preservice teachers experienced very different levels of communication with their supervisors. Billy and Gianna both reported being dissatisfied with their supervisor's ability to communicate effectively. Billy corresponded with his supervisor entirely asynchronously. He submitted videos in the VAS platform and received grades on assignments submitted through the online LMS. Billy was puzzled by the lack of

communication:

> I have a lot of friends that were in my [supervisor's] group. So, I was like sending them text messages and everything, saying like, you know, 'Is he ever going to come in? Is he ever going to come in?' And they responded back saying, 'What do you mean? Like he's observed me like, you know, five times already!' And I was like, 'Wow, that's weird. I'm the only one.'

Gianna has a similarly disheartening situation with her supervisor: "He was very behind on grading, so I actually never got feedback from him watching the videos. He still hasn't graded some of them, and I'm already graduated." Gianna was disappointed by the lack of connection with her faculty supervisor but also noted, "He [her supervisor] is very nice. I think he just, he was very busy, and I don't think he was supposed to have student teachers."

Matty had both in-person and video observation. She hypothesized that when a preservice teacher is "fully remote, you're not able to really make that relationship with the supervisor, which I think is important, especially when you're getting feedback from that person." However, other participants, including those with fully remote supervision, reported excellent communication and connection with their supervisors. Eli, who had fully remote supervision, communicated with his supervisor through group calls, zoom video conferences, and emails. He confirmed, "I would email him, and if it was a complicated question, he would call me, so that was nice. I liked being able to talk over the phone because it gets the message across quicker." Other supervisors, such as Bridget's, maintained a group text for their supervisees. Erin enthused, "My supervisor was very amazing with being flexible around my schedule … we were able to meet up, or have a phone conversation, or a Zoom conversation, WebEx, whatever it was, or just emailing back and forth." Similarly, John spoke with his supervisor on the phone "at least

once a week … if I had a really good lesson that I want him to see in person, he would come in, so we had a good relationship."

Several participants were frustrated when their supervisor was not knowledgeable about university assignments and policies. An unexpected LMS change to assignments left Bridget confused and annoyed when her supervisor did not know how to help: "Our supervisor is the one that we're supposed to be going to, and he's supposed to be the one that we can trust to stay on track with it, so that got really frustrating." Eli echoed this assertion that supervisors were ill-informed about course components. He reported his supervisor would "have us do most of the problem-solving on our own."

Varied Expectations

Within the theme of the supervisor variable, the data showed perceptions of varied supervisor expectations. Central University preservice teacher were often confused and frustrated by the wide-ranging expectations of their supervisors and how often those expectations deviated from the preservice teacher's own understanding of program components and video assignment instructions. Both Gianna and Billy expected to be observed in person at several points during the semester. Gianna asserted that Central University faculty informed her that her experience was "going to be hybrid. It'll be up to them [the supervisor]. But I'm pretty sure at least one time, they were supposed to come in for each placement, one or two. And it just didn't end up happening." Billy had similar expectations, "I was expecting my supervisor would come in and observe me, along with using [VAS] and, you know, making comments and giving me feedback. But that never took place."

Participants also expressed confusion about what was expected from them in their VAS video reflective comments. During her audio-visual elicitation interview, Gianna noticed,

> They told us to make comments and use the markers, but I didn't know if we were supposed to be commenting on what we did well, or what needed to be changed, or just on anything in the video at all. So, going back and reading over my comments, I'm seeing that I'm just explaining what I was doing and maybe kind of explaining why certain things I did were good.

Some supervisors required only reflective comments, while other supervisors made extensive use of VAS features such as markers, replies to comments, and the ability to attach supplemental materials. Megan noted that in her student teaching placement, she was not required "to use those little bubble features [markers], but in my practicum, [the professor] required us to do it. We were required to go through and make the annotations and then also attach our lesson to the video." Mary noted, "I think that it depends on your [supervisor]…how useful they think it is and how to get feedback with that part." However, some supervisors did not give any direction about the quality or quantity of reflection comments. Billy revealed that his supervisor "didn't really care if we used [VAS markers] or not. All he really wanted to see was just us typing as the video played."

Video Feedback

Within the supervisor variable theme, Central University preservice teachers sincerely appreciated and sought supervisor feedback in person and in video comments. Megan believed, "When your supervisor tells you something, you really are trying to take in that information because they are veteran teachers, usually, who have a lot of great feedback for you." Mary noted that she felt very prepared because she had her supervisor's support. "She was very good at feedback, and gave us a whole entire sheet of feedback when she was observing us in person, and it had check marks on certain points that we made." Matty also found the expert perspective

during her in-person observation very valuable: “I got very useful feedback, and she always was there to give advice and give suggestions because she was a teacher for 30-some years, so she had a lot of insightful things to add to our experience.”

In video feedback, participants found supervisor feedback helpful when paired with their own reflection. Eli appreciated,

> Having a supervisor that could also go through and be like, ‘Yeah, I agree with you.’ or ‘This, you could do this a little better. This was awesome.’ That I feel like was also something that I took as pretty high value, having a professional who knows what the targets are, being able to go through, that way was pretty helpful.

Matty described an experience where her supervisor:

> One of my first observations, she was like, ‘You just have to keep your head on a swivel. You’re always looking in one spot. There are students all around the classroom. You have to constantly just keep your head on a swivel.’ And then when I watched that lesson back, I was like, ‘Wow. Behind my back, those kids are just going nuts. And I had no idea.’

However, participants often did not find video feedback from supervisors as rich and in-depth as in-person observation feedback. While reviewing video annotations during her audio-visual elicitation interview, Bridget commented, “I just felt like a lot of the stuff could be a lot more in-depth on his [her supervisor’s] end.” Matty agreed, also pointing out during her audio-visual elicitation interview, “One thing that I just noticed is that my comments are super lengthy, and hers [her supervisor’s] really aren’t.” Kyle also found his supervisor’s video comments to be “pretty short and sweet, or a lot of the times, he would just hit it with the tag [marker].” Participants clearly desired substantive feedback, but comments from supervisors were often

disappointing in their detail or practical application. Bridget explained, “I just felt like sometimes the comments on [VAS] were super general.” She wanted more insightful comments and more evaluative remarks: “I don’t know, I guess I just graded myself too hard. But there is one assignment I got a 20 out of 20 on, and I know I shouldn’t have gotten a 20 out of 20.” Participants were eager for specific feedback, negative or positive, that would help them develop as a teacher.

Unfortunately, several participants received minimal or no comments on their video submissions; their evaluation consisted solely of a grade. Billy scored 10 out of 20 on one of his videos, but there were no accompanying comments to justify the score. While reviewing his video in the audio-visual elicitation interview, Billy noted the absence of comments, then pointed out that “it did say that he graded it. It gave me like a green checkmark there – that’s saying that it was graded by him.” Similarly, Gianna reported that she “got grades but no comments.”

This lack of feedback was discouraging. Gianna described how her weekly LMS assignments directed her to incorporate supervisor feedback from their last observation into the subsequent reflection. However, she objected, “I didn’t get any feedback back, so I had nothing to use.” After not receiving substantive feedback over a series of weeks, Gianna admitted:

> I stopped self-analyzing as much as I did with the first couple of videos … I wasn't getting any feedback from my supervisor. I figured if he’s not going to be doing anything, then ... I just don’t care about it as much.

While personal reflection can be transformative, pairing it with expert feedback gives it necessary validity.

Program Components Effect on Self-Efficacy

The final theme of data created from Central University preservice teachers' experience with video observations is program components' effect on self-efficacy. Programs components of course organization, student teaching placement, and using VAS as a tool all affected preservice teachers' self-efficacy during student teaching. The focus was program components specifically related to video observations; however, there is overlap with participants' attitudes and experiences about their overall student teaching experience.

Course Organization

Course organization was an important subtheme within the theme of program components effect on self-efficacy. How teacher preparation programs structure field experience can aid or hinder development (Moulding et al., 2014). Field experience is considered one of the most important ways to build teacher self-efficacy (Colson et al., 2017; Moulding et al., 2014). It provides opportunities for mastery experiences, vicarious experiences, and social and verbal persuasion (Bandura, 1997). Data from Central University preservice teachers who utilized VAS discussed course elements that aided or hindered their growth and development, specifically the observation split and video assignments completed in the student teaching university course.

Assignments. The student teaching course organization provided both structure and confusion to participant preservice teachers. Eli appreciated the integrated structure of the VAS and LMS. He remarked, "It was nice that it was just one specific video per week for each topic." In his letter-writing activity, Kyle encouraged future preservice teachers to start their semester organized: "Read ahead about all the assignments, if possible! You want to have a plan for what you are going to record before recording it, and it may take some time to coordinate." Several

participants remarked that the structure was “pretty straightforward” (Gianna) and “not too challenging to get to understand how to submit things” (Eli).

However, some students found the online assignments confusing, especially at the beginning of the semester. John recalled, “The [VAS] was not posted into our [LMS]. So, for the first week or two, I didn’t upload a video because I had no idea how to utilize it.” Bridget recounted, “After February break, all of our work got messed up, so none of the weeks aligned. We were all confused, and the supervisor that I had, he couldn’t give us the answer as to what we should be doing.” There was also confusion about which video submissions were optional and which were required. Matty completed all the assignments, optional and required. She recounted, “I think it was a misunderstanding on my part because I did make comments on all of them, but I never received a grade, and my supervisor never commented on them.”

Megan, Kyle, and Bridget recommended that the assignments have more flexibility. Kyle noted that focusing on a specific target on a specific week did not always align with the parameters of his placement: “I would’ve done this one [specific video assignment] at the high school. I had a great lesson for this ... It would’ve been more impactful for me. But it ended up being just a video that I had to get done.” The assignment structure was less rigid in the early childhood/childhood programs. Megan confirmed, “I had the choice. It didn’t have to be like, science first, then math, you know, it was whatever lesson I taught in the moment I uploaded it, and then I checked it off my list.” Kyle recognized that it is difficult to balance structure and autonomy in assignments. He thought flexible assignments would have “worked well for me, and hard to say with other people. I think, being a little older, I like having more space and autonomy. But I think some of the younger students probably don’t like that as much.”

Observation Split. Within the program components theme, preservice teachers at Central University believed their in-person and video observation split affected their development and growth. Some participants preferred more in-person observations, and some voiced a preference for primarily utilizing video observations. Gianna did not have any in-person observations but would have preferred they had been part of her experience: “I would have preferred in-person evaluations because then [my supervisor] would experience the entire classroom atmosphere.” Tom had a balance of video and in-person observations. He discerned, “I honestly really preferred it [video observations], so I didn’t have too many complaints or anything about disadvantages.” Kyle agreed, “I think I got more probably out of the [video observations] because the notes were very specific in timestamps, whereas just getting a general, the in-person one is one of those rubrics.”

Most participants advocated including in-person and video observations in the student teaching experience. However, they disagreed significantly on how many video and in-person observations reflected the ideal combination. Mary proposed the program maintain her observation split. She found “six in-person and beginning with an online video and ending with an online video was a really good layout. It wasn’t too much online because I feel now that we are fully in-person again, why not be in person?” John, who had two in-person and six video observations, preferred adding more in-person observations: “Even though I feel like I do a good reflection, having a highly skilled supervisor who’s been in the field for years, there’s some things that he may notice that I may still miss.”

On the other hand, Matty thought it would be worthwhile to keep her six in-person observations and simultaneously record each lesson for video reflection as well. She adds, "I definitely think that all six should be required, and you should have to reflect on all of them. As

painful as it was, I did not like doing it at all, but it was so beneficial." Tom advocated for an even split, "I think the way that my supervisor did it was probably best for me … I'd like the 50-50 where you had some of it in person, some of it online." Although they disagreed on the split between in-person and video, all participants desired more feedback throughout the semester. Not one participant argued that the number of observations should be reduced.

Student Teaching Placement

The data from the theme of program components showed Central University preservice teachers emphasized the importance of their student teaching placement for building self-efficacy and their teacher identity. Student teaching built participants' confidence through experience and relied on the guidance of an encouraging host teacher. Central University preservice teachers spoke specifically of a juxtaposition of theory and practice. Megan acknowledged that being in the classroom made her realize that "the real world is totally, totally different." Tom agreed: "I teach there [in Central University classes] with my peers who actually paid attention, listened, and we were on task and everything. And then to elementary school students who were all over the place." This realization is not always comfortable, and participants felt unprepared. Megan professed,

> It's almost like college teaches you the rainbows and butterflies of teaching. Then you get there, and a kid is trying to rip a Chromebook out of your hands while you're also trying to keep the rest of the class safe. We're not prepared for that in college.

Despite their anxiety, most participants gained confidence over the course of the semester. Billy reflected on his growth, "I kind of struggled in the beginning and then got better throughout." In her letter to future preservice teachers, Gianna reported, "I learned so much simply because I was

in ‘real-world’ teaching.” Bridget called student teaching “the best thing that could have happened.”

Gianna, Erin, Matty, Mary, Megan, and Kyle all shared that the support and feedback of their host teacher were foundational for their growth. Matty believed, “I had a really good student teaching experience, but I also had a very good host teacher that helped with that.” In her letter to future preservice teachers, Gianna wrote, “I would say the most important part of student teaching is getting to know your host teacher and learning as much as you can from them.” Kyle said he made up for the sparse feedback from his supervisor with guidance from his host teacher: “The host teacher sees me each day and is giving me things to work on and get better. So that was where I was getting more of that relationship.”

Host teachers supported video observations in a variety of ways. Many served as camera operators and decoys. Bridget recalls, “I had my host teacher film the plan, and I would tell them when to start, when to stop.” Megan had her “host teacher there to distract the kids with something else” while she set up the camera. Erin noted she appreciated having “my mentor’s feedback along with my own feedback personally watching it [her video lesson].” Across all data points, participants gave examples of host teachers offering practical, pedagogical, and emotional support through the student teaching experience. Most participants considered the relationship with their host teacher central to their teaching success.

VAS as a Tool

In the theme of program components, a particular focus of VAS is as a field experience tool. Central University preservice teachers shared their impressions of program features, preparation for use, and the technical difficulties encountered. Participants highlighted specific software components they found valuable while recognizing technical difficulties and elements

where the technology fell short of its potential. Generally speaking, Central University preservice teachers found the VAS platform intuitive and straightforward. In her letter to future preservice teachers, Matty described the software as "a very useful tool and easy to maneuver." Tom agreed the VAS platform was "very simple to learn. Actually, I liked it. It was my first time using it." Mary said, "There's definitely a few things that tweaking could help, but I think overall [VAS] is a really good tool in a classroom and a good option for teachers." While Kyle agreed, he also explained that his difficulty with video observations did not stem from the software:

> It wasn't the tool itself. I actually really think [VAS] is very intuitive. It is how professors use it. So, it's a disconnect on the technology side. But it's like if we have assignments that aren't very structured, then it's like you're not getting the full potential of it, essentially.

Program Features. The video annotation software Central University preservice teachers utilized in this study included several features used during video observations: time stamps, attachments, direct uploads, and markers. The platform featured a split screen of the video recording and accompanying comments. The time stamp feature allowed viewers to see the exact moment a comment applied. During his audio-visual elicitation interview, Eli described how he would read his supervisor's annotation and then rewatch that portion of the video: "I can click on it, and I can see exactly what part of the video he was talking about." Matty appreciated this feature when making her own reflective comments:

> The number one thing that I loved about [VAS] was immediately when you started to write a comment, any key that you hit on the keyboard, the video automatically stopped, and it made a timestamp. I felt that that was super helpful and a really good tool.

Megan noted this was a distinct advantage over other video reflection activities she had completed in the past. Megan explained in those assignments, the university instructor "just says like 'record yourself and then write a reflection,' but never one where they were also able to view the recording with the comments."

In addition to what the instructor can view, Megan noticed the time stamp feature changed her reflection. In the past, she would "watch the whole video and then do one big reflection. Instead of now, as I'm watching it, being able to reflect on a specific moment. It's a more in-depth reflection because I'm able to stop at those specific points." Bridget found this helpful for combining reflection with supervisor feedback. She explains, "I could just pick apart my own video, but then also my supervisor would see where I was picking it apart, and then he could respond to what I was responding to."

The VAS program used by Central University had the capability to upload directly to the cloud-based platform. This feature allowed teachers to record videos on their devices without overloading memory storage. Matty said she would "record it directly to [the VAS platform], and then just stop it and then watch it back later. You didn't have to go through the rigamarole of recording now on your phone." However, most participants reported that the internet capabilities of their host schools were not robust enough to enable this feature. The VAS platform also allowed preservice teachers to include attachments with their videos. Bridget reported she found it useful she "could upload other stuff to it [the video submission] once you have the video. You can upload your assessment. You can upload your lesson plan. That way, your supervisor can follow along what you were supposed to hit."

Markers are color-coded labels customized by the Central University teacher education program to reflect essential classroom elements. Some supervisors used the markers to label

elements within the preservice teacher's video and asked the preservice teacher to use them as well. Other supervisors did not require marker use in video observations. During her audio-visual elicitation interview, Bridget said, "I love these markers. They're great." She told future preservice teachers in her letter that she thought the markers were "very helpful because I was able to easily identify what was happening without stopping the video for too long." John appreciated using the markers, "I was able to highlight when the students were being physically active…the transition stage going from activity to activity … there was a lot of different ways to target and specify the good qualities of the lesson."

Mary found the markers useful for collaboration with her instructor: "She would have us pin where we thought that we hit those markers, and then she would go back and either say 'yes' or 'no' and then explain where it might have been in a different spot." Gianna found labeling classroom elements with markers useful. Using the marker *Routines* multiple times in her video helped her realize, "Okay, let's keep this routine the same. Let's always go sit in the same place if we can, make it simple. So, I did like the little letter tags [markers] for that."

Other participants did not think the markers beneficial. Bridget found her supervisor's use of the markers confusing. During her audio-visual elicitation interview, she pointed to annotation where her supervisor had included five different markers:

> What does all this mean? Why click all these if you're not going to explain them to me? On his end, I think if he's going to click one, he should write out what he thinks is good, what he thinks is bad.

She did not object to the marker feature but rather the supervisor's seemingly arbitrary use of markers without context or explanation. Eli complained, "There was so many different markers that I was sometimes felt like I couldn't concentrate." Gianna admitted, "It was a bit

confusing, and a lot of the time, I just ended up putting them in because I knew I needed at least one of everything." Markers helped structure reflection for some preservice teachers and impeded the reflection of others.

Preparation. Participants noted previous experience with VAS was beneficial to their use of the platform for video observations. Many of the participants used VAS in previous university coursework. Gianna reported, "I've been using [VAS] for the past year and a half. During the start of COVID, my classes started using it. So, I already kind of knew how to do it." Matty described her experience the semester before, "I had a really good professor who prepared us for student teaching. So, I had previous experience with [VAS] because she had exposed us to it and had us teach lessons on it." Tom recalls, "The semester before I student taught, we had a class that prepares us for student teaching, and they showed us briefly one [video observation]. We did one class where we made a video. It was very simple and straightforward." Participants generally found the technological training adequate. Bridget recalled, "It was really confusing for everyone, though, at first." However, Megan disagreed. She felt, "We're all young and know how to use technology, and [VAS] is very simple. We probably don't need this silly tutorial on how to do it."

While Central University provided training on the software, there was no explicit training on best practices for video reflection and analysis. Megan discussed this reflective component:

> That's what I feel was missing. I know how to watch a video of myself, but then really being able to strategically make comments is what I feel like a lot of people who are in preservice teaching programs don't know how to do because a lot of the times, we make comments that are just like 'Oh, that was good,' but that's not really reflective of your

> practice, of what you've been doing. So, I don't think that we were ever really shown how to make thoughtful comments on [VAS].

Gianna felt this lack of clarity resulted in confusion about preservice teacher comment requirements: "We didn't have a lot of description of exactly what was wanted from the comments, other than, 'Okay, just now give comments on your video.'"

Technical Difficulties. After an initial adjustment period, Central University preservice teachers generally had minimal difficulty navigating the platform. However, there were two pervasive recording issues that plagued many participants: sound quality and uploading speed. John, Mary, Gianna, Erin, Tom, Kyle, and Bridget all reported difficulty with video sound. John recalled, "The voices weren't able to be heard because it's such a large gymnasium, and then I was in the smaller gymnasium, and there was a lot of echoing." Bridget agreed, "I filmed on my phone. The sound quality wasn't always good." Cross noise was also a challenge. Mary described in her video, "There was a group over here doing something, a group over there, and then me. So, it was harder to hear everything and get the full picture with that." Erin found the sound issue a barrier to her reflection: "It was a lot harder because there were some parts of the video where I was like, 'I can't hear what I said. I don't remember what I said.'" The nature of the class space, the teacher's movement, and the recording device's limitations all contributed to the sound issues experienced by preservice teachers.

The second major technical challenge for preservice teachers was uploading video recordings to the VAS platform. Nine of the 11 participants reported issues with upload speed and file size. Mary complained, "It is always annoying doing the upload part," and Erin declared it "an absolute mess." Megan explained that the process "takes a really long time. It's the video size, especially when I'm teaching a lesson that's an hour long…. So, I had to block out this

chunk where I didn't need my phone in order to upload these videos." Participants also encountered difficulties getting the video to format correctly within the software. John recalls, "One of my videos, when I uploaded it, it went fine on my computer, then once it got to [VAS,] it was echoing the entire time. I actually had to delete the entire lesson and resubmit a different one." Participants found the technical challenges to be frustrating and time-consuming, but not insurmountable obstacles.

Outlier Data and Findings

During the data collection process, the information gathered from the participants aligned with the study's central research question and sub-questions. One participant qualifies as an outlier in this study. Kyle completed his Master of Science in physical education and is the only graduate student in the study. Most of Kyle's statements aligned with the data collected from other participants. However, his general attitude was more relaxed and self-assured than other participants. Several times he described his attitude about aspects of VAS as "neutral." When discussing his level of preparedness for in-service teaching, he asserted, "I'm just ready. I'm ready to get paid. And yeah, I don't know. I'm a little older. I think that helps.... A lot of my peers are like, 'Oh, I'm nervous.' And I'm like, "I'm not.'" This attitude was a unique perspective compared to the other 10 participants, who expressed more apprehension about their experience and skill level.

Research Question Responses

The purpose of this hermeneutic phenomenological study was to explore preservice teachers' experience with video observations at Central University. The central research question and sub-questions provided a framework for the study and addressed the current literature and theories surrounding video in teacher preparation and self-efficacy. This section provides a

narrative summary of participant responses to the research questions. Table 3 below describes the alignment of the research questions to the themes.

Table 3

Thematic Alignment with Research Questions

Themes	Subthemes	Research Question
Streamlined reflection	Logistical convenience	SQ3
	Record of growth	SQ2
	Developing professional vision	SQ1
	Reflective mirror	SQ1
Digital detachment	Logistical issues	SQ3
	Filtered communication	SQ4
	Inauthentic evaluation	SQ4
The supervisor variable	Relationship	SQ2
	Varied expectations	SQ1
	Feedback	SQ4
Program components' effect on self-efficacy	Course organization	SQ2
	Student teaching placement	SQ2
	Vas as a tool	SQ3

Central Research Question

What are preservice teachers' attitudes and experiences using video annotation software during field experience?

Preservice teachers perceived that using video annotation software during field experience provided logistical advantages and a powerful tool for self-reflection. However, they also experienced feelings of digital detachment. Asynchronous communication through VAS limited feedback and stunted the supervisor-preservice teacher relationship. Preservice teachers also believed video observations provided an incomplete and sometimes inaccurate picture of a

teacher's skills. Participant experiences and attitudes about VAS were highly influenced by the supervisor's feedback, expectations, and communication, regardless of the number of in-person and video observations they completed. Overall, participants found VAS to be an effective tool for reflection and feedback if structured well and accompanied by knowledgeable and engaged supervisor support.

Sub-Question One

How will preservice teachers describe video observations for building teacher self-efficacy based on their attitudes?

Initially, preservice teachers were skeptical about using video annotation software for field experience observations. When writing to future preservice teachers, Megan revealed, "Video observations, especially at first, can feel like just another assignment on top of your already hectic workload. I had been recording my lessons and thought that using [VAS] was a pointless extra step. However, I was totally wrong." Over the course of the semester, preservice teachers came to value the reflective capabilities of VAS. Mary appreciated that, "on the video, you can exactly pinpoint it, and point out at three minutes, this is what you did, and this is what I liked. So, I like that you're able to have a replay of it." Video reflection provided a sense of agency for the preservice teacher and often was more impactful than supervisor feedback. Matty wrote to preservice teachers, "The feedback I got from my supervisor was beneficial, but I found that I noticed more things when I watched myself teach on video."

Preservice teachers also perceived video observations as representing an incomplete picture of their teaching ability. Gianna described this missing piece: "There's part of the classroom atmosphere, and the culture of the school, and things like that, that you just can't get from watching like a 30-minute video." Preservice teachers were also able to choose and edit

video observations that showcased their best abilities. Eli describes this strategy, “Anyone who’s using [VAS] is just going to pick their best class and their very best lesson. And as soon as that’s over, all their other work could be really poorly done.” Although most participants discussed using aspects of showcasing in their own video observations, they were also troubled by the capacity of video editing to mask struggle and impede authentic evaluation.

Sub-Question Two

How will preservice teachers describe video observations for building teacher self-efficacy based on their experiences?

Preservice teachers used VAS to create a record of growth. The videos submitted for observations served as unbiased evidence. Over the semester, preservice teachers used their videos to recognize their teaching skill and development. In his letter to future preservice teachers, Tom wrote, “Video observations help you realize how much you have improved … you will notice some major differences in how you present yourself as a teacher and how confident you are as a teacher.” In essence, video observation provided a digital record of mastery experiences and social persuasion (Bandura, 1997).

However, preservice teachers’ descriptions of video observations for building self-efficacy were also influenced by their communication and connection with their supervisor. Matty had “a really good relationship with my supervisor. We really saw eye to eye … she was just super sweet and very understanding and really supportive of us.” However, others with less involved supervisors did not receive feedback and support, in-person or remotely. Gianna noted her supervisor “was very behind on grading, so I actually never got feedback from him watching the videos. He still hasn’t graded some of them, and I’m already graduated.” The verbal and

social persuasion factor of self-efficacy was significantly impacted by the field supervisor's comments and communication on and off the VAS platform.

Sub-Question Three

How will preservice teachers describe the advantages and disadvantages of utilizing video annotation software for observations?

Preservice teachers recognized distinct logistical advantages to using video annotation software for observations. Specifically, preservice teachers could teach in school sites any distance from campus and had the flexibility to record observation lessons based on their own scheduling preferences. Eli taught near his home four hours from campus and explained, "If I stayed [on campus,] I'd be spending money on room, board, and a lot more gas money." However, there were logistical challenges as well. Video observations required strict adherence to schools' digital privacy policies, and students were often distracted by teachers recording during class time. Uploading video submissions to the VAS required long upload wait times, and once uploaded, the videos often had sound issues.

Preservice teachers found there were distinct advantages to using VAS for reflection. Several participants described teacher amnesia similar to Megan's experience when teaching: "You almost black out … like, what did I even just teach? ... I never would have been able to reflect on that if I didn't have that recording." Participants found video observations helpful for visualization, evaluating when their perception differed from reality, and noticing classroom elements they had missed. Bridget used her reflection to direct her self-improvement. She explained that through VAS, "You can see all the comments you were missing. I kind of went and reviewed, saw what I was missing. That way, for the next one, I could prepare and be like, 'Okay. I'm hitting this, this, and this.'"

Preservice teachers appreciated the VAS features of timestamped comments, attachments, direct uploading, and markers. However, their ability to maximize the effectiveness of these features relied on course organization, supervisor buy-in, and school Wi-Fi capabilities. In general, they found that the success of VAS wasn't solely reliant on the tool itself. Kyle noted, "It is how professors use it. So, it's a disconnect on the technology side. If we have assignments that aren't very structured, then it's like you're not getting the full potential of it, essentially."

Sub-Question Four

How will preservice teachers describe the use of video annotation software as aiding or hindering the feedback cycle?

Preservice teachers found video annotation software to significantly aid personal reflection but lacked the ability to provide substantive expert feedback. Megan noticed a classroom element where she could improve during her video reflection. She found it "super helpful. I don't know if I would have changed so quickly if I didn't have the video. Eventually would have figured it out, but because of the video, I was able to do it the very next lesson."

However, many preservice teachers found supervisor feedback on their video submissions lacked depth and substance. Kyle found his supervisor's annotations "tended to be more general … he didn't give me a lot of big things to change." Other participants struggled with the asynchronous delay. John preferred in-person observations because the feedback was immediate. He elaborated that when in person, his supervisor could "throw an idea out, and then I can have an initial response right away. Whereas when it's online, he may do it when he has time available, and then I can only respond once I have time available." When supervisors did not provide quality feedback, it, in turn, affected the preservice teacher's reflection. When Gianna didn't receive any significant input from her supervisor for several weeks, she admitted,

“I would still reflect, but not as much. Because he just wasn't giving me any comments. I still should have, but I was just done with the whole thing.” Supervisors’ video feedback must be targeted, in-depth, and timely to be effective for preservice teachers.

Summary

In this chapter, I presented findings in the study of the attitudes and experiences of preservice teachers utilizing video annotation software during field experience. A detailed description of each of the 11 participants was provided. Rich and thick narratives were then shared in relation to their corresponding theme. Four themes emerged through the process of hermeneutic phenomenological reduction: (a) streamlined reflection, (b) digital detachment, (c) the supervisor variable, and d) program components’ effect on self-efficacy. These themes corresponded to the central research question and four sub-questions. Results from the individual interviews, audio-visual elicitation interview, and letter-writing activity determined that participants appreciated VAS’s reflective and logistical benefits. However, they experienced digital detachment that affected their relationship with their supervisor and their ability to receive quality, substantive feedback.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this hermeneutic phenomenological study was to explore preservice teachers' experiences with video observations at Central University. Eleven Central University preservice teachers who used video annotation software during their field experience shared their perspectives. This final chapter will include my interpretation of the findings, implications for policy and practice, theoretical and methodological implications, and limitations and delimitations. I conclude with my recommendations for future research and a final summary of the study.

Discussion

Through this hermeneutic phenomenological study, I explored the lived experience of preservice teachers utilizing video annotation software during field experience. Bandura's (1977) self-efficacy theory was used as the theoretical framework. I conducted individual interviews, audio-visual elicitation interviews, and a letter-writing activity to answer the central research question: What are preservice teachers' attitudes and experiences using video annotation software during field experience? van Manen's (2016) hermeneutical processes guided data collection and analysis, and I followed Saldaña's (2021) cycles of coding processes. The data were individually coded and organized into themes and subthemes. These themes were structured to provide an interpretation of the participants' lived experiences using video annotation software during field experience.

The following four themes emerged from my analysis: (a) streamlined reflection, (b) digital detachment, (c) the supervisor variable, and d) program components' effect on self-efficacy. In this section, the study's findings are supported by empirical and theoretical sources.

The discussion includes the following subsections: interpretation of the findings, implications for policy and practice, theoretical and empirical implications, limitations and delimitations, and recommendations for further research.

Interpretation of Findings

Central University preservice teachers utilizing VAS during their field experience appreciated the platform's streamlined reflection capabilities. Preservice teachers were not required to choose a school site based on proximity to campus; supervisors could conduct observations remotely and asynchronously. VAS provided preservice teachers with a record of growth: a digital database of their teaching, a visual display of their improvement, and a space to revisit growth over time. Participants found that watching a recording of their teaching aided their memory and significantly improved their ability to notice teacher and student behaviors. Most importantly, VAS served as a reflective mirror for preservice teachers. Video reflection increased preservice teachers' ability to evaluate their own teaching abilities and improved their agency for pedagogical growth. Preservice teachers remarked that they learned more from their own video reflections than from their supervisor's feedback.

While preservice teachers using VAS experienced significant reflective advantages, they also shared attitudes and experiences of digital detachment. Central University's video observations took place asynchronously, and preservice teachers disliked the logistical issues involved with recording students and the delay in receiving feedback. Preservice teachers missed the intangibles of synchronous conversation, specifically, the ability to use non-verbal feedback for context, clarify small misconceptions, and collaboratively dive deeper into classroom challenges.

Many participating preservice teachers viewed video observations as an inauthentic

evaluation. Some participants expressed the opinion that submitting videos constituted little more than busy work. They doubted their supervisor watched their teaching on video with as much care as they would during an in-person observation. In terms of evaluation, preservice teachers discussed VAS as an incomplete picture of a teacher's effectiveness. They lamented video's limited frame and its inability to capture classroom climate and relationships. With acknowledged irony, preservice teachers simultaneously appreciated and bemoaned video observations capability for masking struggle. Preservice teachers could showcase their best class and reshoot any lesson that did not go well. This editing ability led many participants to question if they could indeed be authentically assessed through video observation, so limited by its narrow frame and the candidate's careful curation.

Across all data points, it became clear that a knowledgeable and supportive supervisor was central to a preservice teacher's positive attitude and experience with video observations. Supervisor expectations and video observation requirements varied tremendously. Preservice teachers were often confused how to interpret their supervisor's comments and understanding the expectations for their own reflective comments. Regardless of whether observations were conducted in person or on video, preservice teachers craved in-depth feedback, clear communication, and a supportive relationship with their supervisor. Preservice teachers who reported positive relationships with their supervisors communicated synchronously outside the VAS platform. When preservice teachers received no communication outside of the VAS and minimal feedback on their videos, this negatively affected their own reflection and overall teaching self-efficacy. However, even preservice teachers who communicated well with their supervisor found supervisor video annotations too general and lacking practical application.

Field experience program components greatly affected preservice teachers' self-efficacy.

Student teaching has long been an experience that purposefully pursues the cognitive dissonance that occurs when ideals meet classroom reality. A supportive school site and encouraging host teacher are essential to turning a preservice teacher's initial bewilderment into a mastery experience. Additionally, preservice teachers in this study appreciated the structured course organization and how VAS integrated into the course LMS. However, some candidates found the assignments confusing or lacking necessary flexibility. Preservice candidates in this study had a wide range of required observations. Most preferred a hybrid of in-person and video observations. Some advocated for more in-person observations, and some preferred more video observations. However, all participants explicitly sought to increase their quotient of expert feedback on their practice.

Preservice teachers generally viewed the VAS platform as intuitive and easy to use. VAS training and prior experiences in other courses helped preservice teachers feel confident using the software effectively. Unfortunately, most participants encountered issues with sound quality and difficulty uploading large files to the platform. Preservice teachers appreciated the time-stamp feature that pinpointed comments to the exact point in the video to which it referred. Participants found this feature made their reflections more in-depth and targeted. Participants found the use of VAS color-coded labels, called markers, to be both a scaffold and a crutch. Some preservice teachers found it helpful to clearly label classroom elements as they encountered them in the video. Other preservice teachers found the markers confusing or simply a mindless mouse click that relieved the viewer of the responsibility for true insight.

Summary of Thematic Findings

The purpose of this study was to explore preservice teachers' experiences with video observations at Central University. Based on the four themes presented in the findings and

reviewed above, four significant interpretations are offered: (a) VAS improves reflection capabilities and personal agency, (b) VAS is a field supervision tool, not replacement, (c) convenient but not complete: VAS asynchronous communication is not enough, and d) expectations and structure matter. These interpretations provide insight into how the use of video annotation software in teacher education can be enhanced to better support preservice teacher self-efficacy.

VAS Improves Reflection Capabilities and Personal Agency. Reflection can be described as the difference between having experiences and learning from them (Rosaen et al., 2008). Being a reflective learner is considered an essential competency of an effective educator. Therefore, improving and supporting preservice reflection is a crucial task in teacher preparation (Darling-Hammond & Bransford, 2005; Guo, 2022; Hatton & Smith, 1995). Researchers have found video analysis effective for promoting teacher reflection (Baecher et al., 2013; Nagro, 2022; Sherin, 2003), and the findings in this study support that assertion. Central University preservice teacher data showed video analysis aided memory (Sherin, 2003) and developed professional vision (Choy & Dindyal, 2020; van Es & Sherin, 2002). Participant reflection practices during video observations helped preservice teachers notice classroom events (Prilop et al., 2019), student behavior (Ganda & Boruchovitch, 2018), and teacher behavior (Santagata et al., 2021). Participants appreciated the ability to pause the action (Sherin & Linsenmeier, 2011) and analyze classroom elements individually.

Clearly, this study aligns with the current literature: video analysis is an effective strategy for promoting preservice teacher reflection. The surprising finding from this study was the connection between video observations and improved preservice teacher agency for pedagogical change. Mary demonstrated this in her description of her video observation process: “Watching

through my video and looking at myself, being able to be like, “Okay, I did this differently, and how can I switch that so that it goes better next time?” Several participants shared specific examples where they noticed an element in the video and immediately created a clear plan for improvement. As Kyle noted, it’s one thing to have others “telling you feedback, but it’s another thing definitely to see yourself.” It is easier for preservice teachers to accept needed correction when the identification of the problem and solution both come from themselves. The visual aspect of video appears to unite personal awareness with personal responsibility in a way that memory-only reflection cannot.

VAS is a Field Supervision Tool, Not Replacement. Bandura’s (1977, 1997) self-efficacy theory posits that individuals develop self-efficacy from four primary sources of influence: mastery experiences, vicarious experiences, verbal and social persuasion, and emotions and physiological states. The third factor, verbal and social persuasion, constitutes input from influential people that strengthens a person’s belief about their capabilities. In the student teaching experience, preservice teachers rely on host teachers and field supervisors to provide both feedback and support (Ellis et al., 2020; Tschannen-Moran & Hoy, 2007). Their verbal and social persuasion is critical for building self-efficacy (Brown et al., 2021).

In this study, however, several participants received minimal supervisor feedback during their video observations. This essentially removed the supervisor component from the video observation experience. If the preservice teacher’s supervision was completely remote, VAS served as the only opportunity for the supervisor to view the preservice teacher’s practice. Video observations with minimal supervisor feedback became reflective activities rather than collaborative experiences with an expert teacher. Ardley and Hallare (2020) found that both reflection and feedback are necessary for preservice teacher improvement. Video observations

that rely solely on preservice teacher reflection for development miss a critical component of the feedback cycle. Knight et al. (2018) demonstrated that teachers who reviewed their videos with an instructional coach were significantly more likely to improve their practice. In this study, all participant preservice teachers desired more feedback from their supervisor during observations. Supervisors must understand the vital role their feedback plays in building a preservice teacher's self-efficacy. For remote supervision and video observations to be effective strategies in teacher education, supervisor feedback must equal or exceed the feedback standards of an in-person observation. VAS can be a tool to enhance and expand field supervision. However, it cannot, and should not, replace it.

Convenient but not Complete: VAS Asynchronous Communication is not Enough. Analysis of participant data revealed a clear theme of digital detachment. Preservice teachers had difficulty building relationships with their supervisors, in part, due to the limitations of VAS asynchronous communication. Participants craved immediate feedback on their practice; they wanted to use non-verbal cues and vocal emphasis to understand the nuance and intention of supervisor comments. Preservice teachers using VAS for observations lacked the ability to clarify misconceptions quickly with minimum personal risk in the interaction. In essence, preservice teachers longed for the back-and-forth conversations that, until recently, would have been an assumed part of a preservice teacher's supervision (Väisänen et al., 2017).

Asynchronous video observations offer many logistical advantages to both supervisors and preservice teachers (Ardley & Johnson, 2019; Ault et al., 2019; Schulz & Gaudreault, 2023). However, the convenience comes at the cost of human connection. Successful remote supervisions were observed in participant data. However, these positive partnerships all included social support outside of the VAS. Participants reported contact with their supervisor through

phone calls, video conferences, texts, informal meetings, in-person observations, debriefs, and in one instance, a cohort invitation to dinner at the supervisor's home. In order for video observations to be successful, VAS cannot constitute the entirety of a preservice teacher's supervision (Eady et al., 2023). Preservice teachers must have social support that transcends the platform (Orland-Barak & Wang, 2021; Väisänen et al., 2017).

Expectations and Structure Matter. An interesting finding in participant data was the vastly different video observation expectations for preservice teachers, often within the same degree program. Erin and Billy were both undergraduate physical education majors. However, Erin had 11 video observations and four in-person observations, and Billy had five video observations and no in-person observations. John and his supervisor used markers to identify classroom events in every video observation, whereas Mary and her supervisor did not use any VAS features, including time-stamp annotations. Mary's supervisor watched the video within the VAS platform and then emailed remarks back to Mary in a word processing document. Some supervisors made extensive comments on the VAS rubric. However, as revealed during audio-visual elicitation interviews, five of the 11 participants did not even know that their scored evaluations included a rubric. There is a clear need to calibrate field experience expectations with both preservice teachers and supervisors.

Participants viewed video observations as an inauthentic evaluation, in part because decisions of video selection, camera positioning, and editing were in the hands of the preservice teacher. When a preservice teacher created a video submission, they, in essence, selected their own evaluation material. There is a need for clear recording directions, submission guidelines, and comment requirements that support video evaluations that more accurately reflect a preservice teacher's abilities. Standardization of program requirements could also help address

technical difficulties and clarify expectations for supervisor feedback.

It is difficult to capture the essence of the preservice teacher experience with video observations when the experience at the same institution, in the same program, during the same semester, varied so wildly. However, that initial frustration has become the interpretation. When video observations are structured well and supported by an engaged and knowledgeable supervisor, it is a positive strategy for building preservice teacher self-efficacy. However, the inverse is also observed. When video observations lack structure, and the supervisor is disengaged, video observations are not an effective strategy for building preservice teacher self-efficacy. How programs structure video observations and the understanding and engagement of both preservice teachers and supervisors greatly influence the effectiveness of the strategy.

Implications for Policy or Practice

This hermeneutic phenomenological study yielded significant policy and practice implications in relation to preservice teachers' use of video annotation software during field experience. These implications are derived from the data collected in the study and are consistent with its theoretical framework. The policy implication is for state educator standards boards to support the adoption of video analysis and reflection strategies in teacher education programs. Practice implications include teacher preparations programs sequentially structuring video-based reflection practice into coursework and establishing clear supervision parameters during field experiences.

Implications for Policy

In the field of teacher education, policy decisions governing teacher preparation programs are made at the state level. State professional educator standards boards oversee teacher preparation, certification, and development (Washington State Professional Educator Standards

Board, 2023). Research clearly supports the use of video reflection in teacher education (Ardley & Hallare, 2020; Bollinger & Liu, 2022; Nagro, 2022). Furthermore, reflection is not simply an effective development strategy, but a competency required in the InTASC teaching standards (Council of Chief State School Officers, 2022). Therefore, all practitioners in teacher preparation programs should be encouraged to identify digital tools and strategies that provide preservice teachers with opportunities for deeper reflection and guided feedback (Bollinger & Liu, 2022; Darling-Hammond & Bransford, 2005). State standards boards should consider adding a video reflection component to their curriculum and instruction recommendations. A program's use of video analysis in both coursework and field practicums could be discussed and evaluated during program review procedures. Many states require preservice teachers to pass the EdTPA for initial certification. The preservice teacher's video is the central component of the EdTPA evaluation. Therefore, it is equitable and wise to support all teacher preparation programs' use of video reflection methods and strategies to prepare their teachers for this evaluation as well as their teaching career.

Implications for Practice

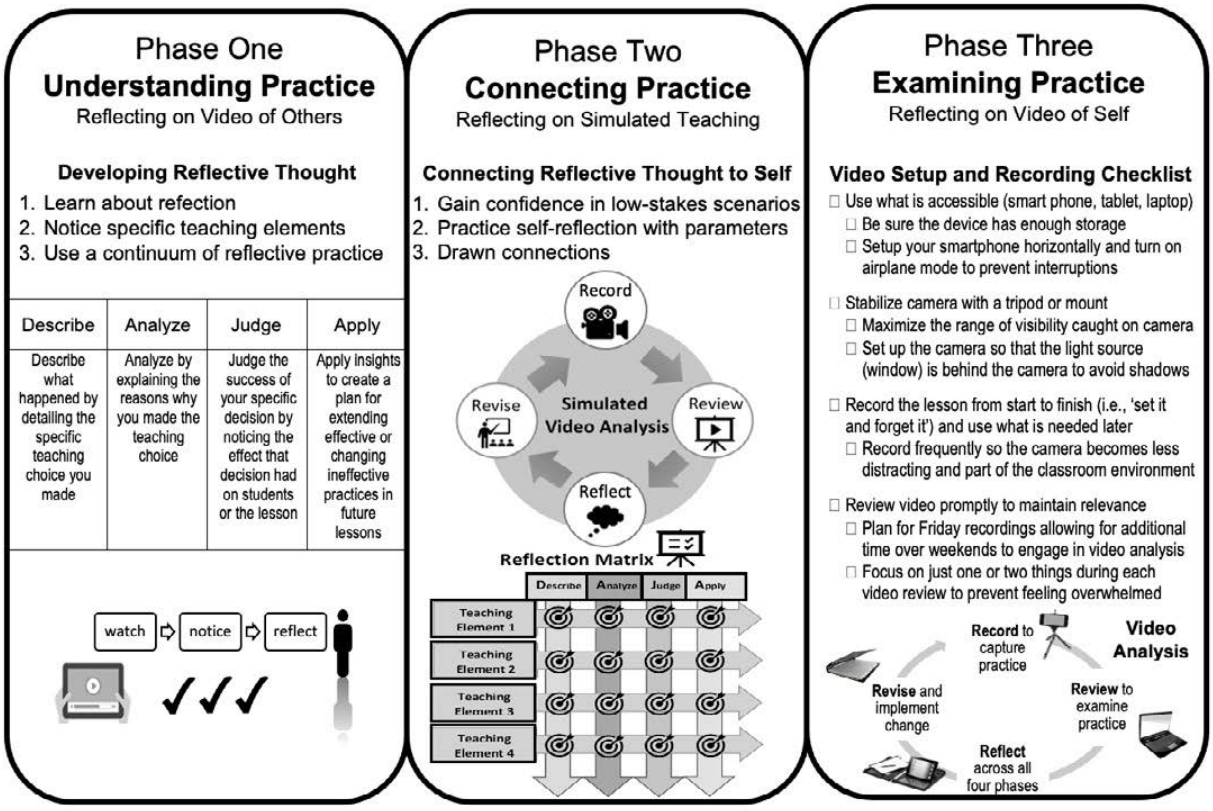
The focus of this research lends itself to practical implications for teacher preparation programs. This study revealed that preservice teachers appreciated VAS's reflective capabilities but were not always able to use the platform to receive meaningful feedback on their teaching. The implications in this section aim to expand and enhance VAS reflective practices and improve the VAS feedback cycle.

Sequentially Structured Video-Based Practices. Video analysis has been an established teacher preparation instructional practice for over three decades (Dymond & Bentz, 2006; Rosaen et al., 2008; Sherin, 2003; Xiao & Tobin, 2018). Video annotation software makes video

analysis more accessible and allows for targeted reflection (Ardley & Repaskey, 2019; Nagro & deBettencourt, 2019). All teacher programs should consider building video-based reflection activities into their course work to improve their reflective abilities and better prepare preservice teachers for video observations during field experience. These activities are valuable for preservice teachers' development regardless of whether VAS is used for supervised observations. Nagro (2022) recommends a three-phase approach to video-based reflection. Figure 2 presents a visual sequencing of Nagro's (2022) three phases of reflection activities.

Figure 2

Three Phases of Sequencing Video-Based Reflection during Teacher Preparation



Note. This figure appears in "Three Phases of Video-Based Reflection Activities to Transition Teacher Candidates from Understanding to Examining Practice," by S. Nagro, 2022, *Journal of Special Education Preparation, 2*(1), p. 31. Copyright 2022 by Creative Commons Attribution.

In phase one, preservice teachers observe videos of others teaching to build foundational reflection skills and recognize instructional decision-making. In phase two, preservice teachers practice self-reflection in low-stakes scenarios. Preservice teachers practice making and assessing the depth of their reflective comments. They learn how to effectively use VAS features and work through common technical challenges, such as sound quality and compressing videos for faster uploading. Once preservice teachers can recognize meaningful reflection and are comfortable recording and reviewing their teaching on video, they are ready to examine their practice in an authentic setting. It may also be helpful to redesign the VAS rubric to assess reflective capabilities in addition to instructional skills.

Guided reflection is more impactful than individual reflection (Damico et al., 2019; Knight et al., 2018; Nagro et al., 2017). Teacher preparation practitioners should also consider collaborating with mentor teachers in using VAS. As a guest reviewer on the VAS platform, mentor teachers can comment on a preservice teacher's video, much like a supervisor would. However, the mentor teacher would have the advantage of understanding the classroom climate and watching the preservice teacher in person. Preservice teachers in this study were eager for as much targeted, specific feedback as possible. Using VAT with mentors is another strategy that could help achieve that aim.

Establish Clear Supervision Parameters. In this study, participants' attitudes and experiences with video annotation software were greatly influenced by the quality of their supervisor's feedback and communication. When a candidate had minimal feedback on their videos and marginal contact outside the platform, it negatively affected their view of VAS and overall teaching self-efficacy. Teacher preparation program practitioners should consider creating explicit expectations for supervisors, especially policies to guide the supervision of fully

remote candidates. For example, it would be helpful for a program to clearly state that evaluating videos within VAS is only a part of a field supervisor's duties and require synchronous contact at specific touchpoints during the semester.

Participants also perceived that supervisor feedback on videos was general and sparse. Teacher preparation programs may want to review their supervisor training and assess if they are providing enough information on course requirements and how to give quality feedback during video observations. Just as preservice teachers would benefit from instruction and practice in reflective capabilities, so would supervisors benefit from training in crafting effective VAS feedback. Teacher education programs should consider meeting synchronously with supervisors before the semester to review established norms of communication with preservice teachers, program components and assignments, and technological walk-throughs of VAS features. Additionally, time should be set aside to discuss what makes feedback effective, review exemplars of quality VAS feedback, and provide an opportunity to practice giving feedback within the VAS platform.

Teacher preparation program practitioners might also consider synchronous debriefs of video observations. Using video conferencing software and screen share capabilities, preservice teachers and supervisor can meet and debrief the video observation together. The debrief might include reviewing supervisor comments and preservice teacher reflection, clarifying any confusion about feedback, and discussing challenges and next assignments. A video debriefing meeting could address preservice teachers' communication concerns and allow the supervisor to learn more about the school's climate and any extenuating circumstances that might have affected the preservice teacher's student teaching experience.

Theoretical and Empirical Implications

The purpose of this hermeneutic phenomenological study was to explore preservice teachers' experience with video observations at Central University. This section presents the theoretical and empirical implications of the study. The theoretical implications used Bandura's (1977) self-efficacy theory and drew from the findings of this study. One empirical implication was identified and is discussed below with support from empirical literature.

Theoretical

The theoretical framework of this study was Bandura's (1977) self-efficacy theory. Self-efficacy is defined by a person's belief about their capabilities. It is built through four primary sources of influences: mastery experiences, vicarious experiences, verbal and social persuasion, and emotions and physiological states (Bandura, 1997). This research adds to the extensive literature on self-efficacy development in teacher education.

The descriptions of preservice teachers' attitudes and experiences with VAS have theoretical implications. Consistent with previous studies, participants found student teaching an opportunity to learn from their mentor through vicarious experiences (Moulding et al., 2014) and gain their own mastery experiences (Tschannen-Moran & Hoy, 2007; Tschannen-Moran & McMaster, 2009). In this study's findings, VAS supported these experiences by documenting the progression of growth. Preservice teachers could use VAS to view their improvement over time and revisit mastery experiences. Additionally, VAS included supervisor feedback that provided the factor of verbal and social persuasion. Finally, several participants shared that they perceived video observations as less stressful than in-person observations. Falter and Barnes (2020) urged teacher educators to structure observations to avoid unnecessary stress to preservice teachers. For some preservice teachers, video observation created an emotional and physiological state more

conducive to self-efficacy development than in-person observations.

While VAS may be an effective tool for building self-efficacy, its success ultimately relies on the individuals who use it. VAS has the capacity to provide preservice teachers with the self-efficacy factor of verbal and social persuasion through supervisor video comments. However, if supervisor comments are delayed, minimal, or non-specific, they will not be a significant source of verbal and social persuasion for preservice teachers. Given the capacity of VAS to support reflection, it is worthwhile to seek ways to improve the verbal and social persuasion capabilities of video observations.

Empirical Implications

In order to structure the use of video annotations software in teacher education, researchers recommend building preservice teachers' foundational skills, offering technical support and training, and providing a clear framework to guide reflection (Ardley & Johnson, 2019; Ardley & Repaskey, 2019; Nagro et al., 2017). This study's findings are consistent with those recommendations. Video observations will be more successful when preservice teachers are better prepared for the experience. Current research also noted, however, that preservice teachers reported low levels of enthusiasm for video reflection activities during field experience (Nagro et al., 2020). This finding was supported by other researchers who acknowledged that VAS adoption had met with preservice teacher and supervisor resistance (Baecher et al., 2013; Nagro, 2022; Schulz & Gaudreault, 2023; Shepherd & Hannafin, 2008).

The preservice teacher's perspective on the cause of VAS resistance had not been explored. This study gives voice to preservice teachers' experiences using video annotation software during field experience. A missing component to current research on the use of video annotation software for field experience observations is the importance of supervisor timely

feedback, synchronous communication, and clear observation expectations. The preservice teacher's overall experience with video observations is inextricably intertwined with the skill and engagement of their field supervisor. Acknowledging this reality and finding ways to support the supervisor-preservice teacher relationship are key to developing VAS into a successful platform for field experience observations.

Limitations and Delimitations

All studies contain limitations and delimitations. Limitations are influences that impact the study but cannot be controlled by the researcher (Patton, 2014). In this study, there are several limitations present. The research is limited by geography, as it focused on one university teacher education program in the northeastern region of the United States. Another limitation is the self-selected participant pool and the relatively small sample size of 11 participants. Within the recruitment parameters, the researcher could not control who chose to participate and who did not. The demographic makeup of the participants was determined by who volunteered to participate.

The final limitation is the nature of hermeneutic phenomenological research itself. It is difficult to replicate phenomenological research as the data is sorted and analyzed through the lens of the researcher's own experience. Future researchers will view the data through their own lens of personal bias and experience. The transferability of the study cannot be guaranteed; I can only create the conditions for it. The rich and thick descriptions of the experience aim to provide enough detail that readers can decide if the study findings transfer to other contexts (Geertz, 2008; Hays & Singh, 2011; Korstjens & Moser, 2017).

Delimitations are exclusionary decisions made by the researcher (Theofanidis & Fountouki, 2018). They constitute purposeful boundaries of the study (Creswell & Poth, 2018).

This study focused on preservice teachers' attitudes and experiences utilizing video annotation software. I used purposeful sampling and snowball sampling techniques when selecting my participants. Participants had to be over the age of 18, fluent in English, a student or recent graduate from Central University, and enrolled in a teacher education program that utilized VAS during their 2023 final student teaching course. Participants must be able to access their video annotation software account and share a video clip of their teaching during the audio-visual elicitation interview. Finally, participants could not be currently employed as a full-time in-service teacher. The delimitations were important and necessary to ensure that accurate and reliable data was gathered to answer my research questions. Participants who met the criterion would be the most likely to provide rich and thick descriptions of the phenomenon being studied.

The research design of this study is the final delimitation. I chose a qualitative method because the approach prioritizes the individual and the role relationships and context play in shaping behavior (Roller & Lavrakas, 2015). It is an approach best used when an issue requires complex understanding. A quantitative research study would not have been able to capture the nuanced and interconnecting factors at play in the preservice teacher's experience with video observations. A phenomenological design allowed me to explore and describe the phenomena as it was consciously experienced by participants (Heidegger, 1962; van Manen, 2016). While I initially planned a transcendental approach, I recognize that my personal experience using video annotation software in teacher education would make true epoche impossible (Moustakas, 1994; van Manen, 2016). Hermeneutic phenomenology allowed me to use my experience to explore the perspectives of preservice teachers using VAS; it was the most appropriate approach for this study.

Recommendations for Future Research

The findings of this study revealed the need for further research to ensure the perspectives of preservice teachers using VAS in field experience are fully realized. Other researchers are encouraged to build upon this study. As mentioned in the limitations section, this research took place at a single site. A more complete understanding of the preservice teacher perspective could be reached by expanding this study to include participants from different teacher preparation programs, including fully remote and non-traditional programs. Quantitative studies using measurable surveys such as the Teachers Sense of Efficacy *(*Tschannen-Moran & Hoy, 2001) would generate more data with more participants. Moreover, as this study involves participants who had recently completed their teacher education program, a longitudinal study may provide insight into how preservice teacher self-efficacy changes over time, throughout field experience, and into the first years of in-service teaching.

Study findings revealed the important influences of supervisor feedback and program components on preservice teachers' experience with VAS. More research is needed on the teacher's perspective of what constitutes quality feedback. Of particular interest would be preservice teachers' perceptions and experience with video feedback and how and why it differs from in-person feedback. Further research is recommended to explore the broader topic of remote supervision of preservice teacher field experience. A comparative case study that examines how different programs structure the use of VAS for remote supervision would benefit the field of teacher education. Further research is also merited on this study's finding that video reflection builds preservice teacher agency for pedagogical change. It would be worthwhile to explore this concept further or study if video reflection also builds in-service teachers' agency for pedagogical change.

Conclusion

The purpose of this hermetic phenomenological study was to explore preservice teachers' experience with video observations at Central University. Understanding the attitudes and experiences of preservice teachers using video annotation software in field experience helps teacher preparation programs address concerns and better support preservice teacher growth. The study utilized Bandura's (1977) theory of self-efficacy as a framework to answer the central research question, what are preservice teachers' attitudes and experiences using video annotation software during field experience? The 11 participants for this study were chosen using purposeful and snowball sampling methods. Data was collected through individual interviews, audio-visual elicitation interviews, and a letter-writing activity. Using hermeneutic phenomenological processes described by van Manen (2016) and Saldaña's (2021) first and second-cycle coding procedures, patterns emerged across the data, and themes were created. Four themes were identified during data analysis: (a) streamlined reflection, (b) digital detachment, (c) the supervisor variable, and d) program components' effect on self-efficacy.

A thematic analysis of the data revealed important findings: (a) VAS improves reflection capabilities and personal agency, (b) VAS is a field supervision tool, not replacement, (c) convenient but not complete: VAS asynchronous communication is not enough, and d) expectations and structure matter. Teacher education programs should consider sequentially structuring video-based practices and establishing clear supervision parameters for video observations. Further research is recommended to expand the understanding of the preservice teacher perspective on video annotation software, supervisor feedback, and the effect of video reflection on preservice teacher agency for pedagogical change.

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Appendix A

Liberty University IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

April 18, 2023

Heather Lucas
Mary Strickland

Re: IRB Exemption - IRB-FY22-23-1215 Attitudes and Experiences of Preservice Teachers Utilizing Video Annotation Software: A Phenomenological Study

Dear Heather Lucas, Mary Strickland,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

Appendix B

Central University IRB Approval

[redacted]

Institutional Review Board
(IRB)

April 26, 2023

Dear Ms. Lucas,

The [redacted] Institutional Review Board has reviewed the application, IRB approval notice and supporting documents for the study, "Attitudes and Experiences of Preservice Teachers Utilizing Video Annotation Software." I understand that you plan to work with Dr. [redacted] in the Childhood/Early Childhood Education Department to conduct this research on the [redacted] campus. I have determined that the protocol meets our criteria for exempt review, however, based upon the fact that you are completing this study in partial fulfillment of your dissertation requirements at Liberty College and have already received approval for the protocol from the Liberty College IRB, we will not require you to submit this protocol to the [redacted] IRB for a second review.

The Liberty College IRB will be the IRB of Record for this protocol. I ask that you please copy the [redacted] IRB on any reporting of adverse events, or protocol modifications that relate to the study.

Please let me know if you have any further questions or concerns about this matter. I wish you every success with your new research project.

Sincerely,

[redacted]

[redacted], Chair
Institutional Review Board
[redacted]

[redacted]

Appendix C

Recruitment Letter for Preservice Teachers

Dear [ ] Teacher Education student,

As a doctoral candidate in the School of Education at Liberty University, I am conducting research on the attitudes and experiences of preservice teachers utilizing video annotation software. The purpose of my research is to explore the video observation experience of preservice teachers at [ ], and I am writing to invite you to join my study.

Participants must be [ ] School of Education students who have completed or will complete student teaching in 2023. These participants must have graduated or will graduate from a [ ] teacher education program that leads to initial teaching licensure, as well as used [ ] video annotation software during their student teaching experience. Participants, if willing, will be asked to:

- Complete a one-on-one, audio-recorded interview remotely on Zoom (45-60 minutes).
- Use screen share to access a [video annotation software] video clip of their teaching and discuss it with the researcher (30-45 minutes).
- Participate in a letter-writing activity (30-45 minutes).
- Review the interview transcript and developed themes to confirm accuracy

It should take approximately 2 - 2.5 hours to complete the procedures listed. Names and other identifying information will be requested as part of this study, but the information will remain confidential (participant identities will not be disclosed).

To participate, please click [ ] to complete the screening survey. If you meet my participant criteria, I will contact you to schedule an interview.

A consent document will be emailed to you if you meet the study criteria one week before the interview. The consent document contains additional information about my research. If you choose to participate, we will schedule an interview time and review the document together. You will be asked to electronically sign the consent document before we begin the interview.

Participants will receive a $50 Amazon gift card after completing the procedures listed above. Thank you for your considering participating in this research.

Sincerely,

Heather R. Lucas
Doctoral Candidate
XXX-XXX-XXXX

Appendix D

Screening Survey for Preservice Teachers

The purpose of my study is to explore the video observation experience of preservice teachers at [ ]. I am seeking to interview School of Education students who have used [ ] video annotation software in student teaching. This survey is designed to determine your eligibility to participate in this study.

1. Are you over the age of 18?
   Yes/No

2. Are you fluent in English?
   Yes/No

3. Are you a current student or 2023 graduate in good standing at [ ]?

4. Were you enrolled in a teacher education program at [ ] in 2023?
   Yes/No

5. Did you video record your teaching and use [ ] Video Annotation Software during your final student teaching course in 2023?
   Yes/No

6. Are you able to access your [ ] video annotation software account on a laptop or personal computer?
   Yes/No

7. Would you like to participate in this research study about your experience with video observations?
   Yes/No

8. Would you be willing to view and discuss a video clip of your teaching? *Participant will choose a short clip (1-3 min) and access it through the* [ ] *platform during the interview. The researcher will not have access to the video outside your presence.*
   Yes/No

9. Are you currently working as a full-time in-service teacher? *(If you have been hired for the 2023-2024 school year, but have not yet begun your contract, select 'No')*
   Yes/No

10. Name: _____

11. Contact email: _____

12. Contact phone number: _____

Thank you for taking the time to complete this survey. If you have any other comments or questions about the study, please write them below.

I will be in touch shortly to let you know if you have been selected to participate.

Heather Lucas
Doctoral Candidate
XXX-XXX-XXXX

Appendix E

Consent Form

Consent

Title of the Project: Attitudes and Experiences of Preservice Teachers Utilizing Video Annotation Software
Principal Investigator: Heather Lucas, Doctoral Candidate, School of Education, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a SUNY Cortland School of Education student or recent graduate who has or will complete student teaching in 2023. You also must have graduated or will graduate from a SUNY Cortland teacher education program that leads to initial teaching licensure, as well as used GoReact video annotation software during their student teaching experience. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to explore the video observation experience of preservice teachers at SUNY Cortland.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

1. Participate in a remote, audio-recorded interview that will take approximately 45min to an hour.
2. Use Zoom screen-share to access a GoReact video clip of your teaching to share and discuss with the researcher. The short (1-3 min) clip will be of your choosing and the audio-recorded discussion will take between 30-45 minutes.
3. Participate in a letter writing activity and return the letter to the researcher within one week of the interview. This activity is estimated to take between 30-45 minutes.
4. Review the interview transcript and researcher-created themes to confirm accuracy. This activity is estimated to take 15 minutes.
5. The research may also reach out to you through email with follow up questions after your interview. These option questions will take approximately 10-15 minutes to complete.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be kept confidential by replacing names with pseudonyms.
- Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data collected from you may be used in future research studies. If data collected from you is reused or shared, any information that could identify you, if applicable, will be removed beforehand.
- Data will be stored on a password-locked computer. After three years, all electronic records will be deleted.
- Recordings will be stored on a password locked computer until participants have reviewed and confirmed the accuracy of the transcripts and then deleted. Only the researcher will have access to these recordings.

How will you be compensated for being part of the study?

Participants will be compensated for participating in this study. After completing the interview, discussing the video recording, and emailing the researcher the letter-writing activity, participants will receive a $50 Amazon gift card. Any participant who chooses to withdraw from the study after beginning but before completing all study procedures will receive a $10 Amazon gift card.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Heather Lucas. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted] or [redacted] You may also contact the researcher's faculty sponsor, Mary Strickland at [redacted]

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

☐ The researcher has my permission to audio-record me as part of my participation in this study.

_____
Printed Subject Name

_____
Signature & Date

Appendix F

Interview Questions for Preservice Teachers

1. In general, how would you describe your student teaching experience?
2. How would you describe your experience using [video annotation software] for observations?
3. What went well in video observations and what did not?
4. How do you feel about video observations as a strategy for developing preservice teachers?
5. Before using [video annotation software], how would you describe your impressions or feelings about video observations?
6. If your attitude towards video observations changed throughout the field experience, what caused this change?
7. What are the advantages of using [video annotation software] for preservice teacher observations?
8. What are the disadvantages of using [video annotation software] for preservice teacher observations?
9. The feedback cycle means practicing, reflecting, and getting feedback before practicing again. How do video observations help the feedback cycle?
10. How do video observations hinder the feedback cycle?
11. Tell me about a time when the reflection-feedback process in video observations was meaningful to you.
12. Think about watching a video of yourself in action. What helps or hinders you from making changes in your practice based on this experience?

13. Tell me about a comment your supervisor made that caused you to make a realization about your teaching or caused you to think differently about your practice.
14. On a scale of 1-5, with 5 being very prepared and 1 being not prepared at all, how prepared do you feel to begin your first teaching position? Please explain why.
15. What two things in the video observations process supported your preparedness?
16. Is there anything else you think I should know about how video observations supported or hindered your teaching development?

Appendix G

Audio-Visual Elicitation Interview Questions for Preservice Teachers

1. Please describe what happened in the video we just watched.
2. Tell me what you are thinking and feeling about as you watch this video.
3. Why did you choose this video clip to share?

Appendix H

Letter-Writing Prompt

Dear [ ],

Thank you for participating in this research study. As part of your participation, **please write a letter to a [ ] University preservice teacher just starting student teaching. What would you want to tell them about video observations?** Use this link [ ] to submit your response. Your letter is completely confidential and will only be used as a data collection method in this study. It will not be distributed to anyone.

Please submit your letter within one week of your interview. Once I have confirmation of your response, I will email you a $50 Amazon gift card in appreciation of your time and effort. Thank you for your participation in this study. If you have any further questions, please call or text me at [ ] or email me at XXXXXXXXX.

Sincerely,

Heather Lucas
Doctoral Candidate, Liberty University

Appendix I

Reflexive Journal

Date	Notes
January 29, 2023	I recognize that I will need to address both participant and researcher bias in my research design. I am considering three avenues to address: 1. Working with a research assistant for intercoder reliability. 2. Using recruitment methods not tied to a specific site. 3. Finding a new site to complete research. I am currently reaching out to potential university sites. Additionally, I am narrowing my scope to focus solely on the attitudes and experiences of preservice teachers. This will require me to reexamine my focus group data collection source. I am considering a preservice teacher focus group or a letter-writing data collection source.
February 15, 2023	I have decided to change the focus group data collection source to letter-writing. This will allow participants time to reflect after their interview. The letters will be future focused, addressed to preservice teachers new to the video observation experience. I continue to reach out to university sites. Securing IRB approval without being associated with the university has proven difficult. My next plan of action is to pursue recruitment via social media.
February 20, 2023	I have been in contact with a university program that is willing to serve as a research site. The IRB chair at that institution has given permission for me to continue the process. I will work with the assistant dean of the School of Education to facilitate the research.
March 18, 2023	In an effort to safeguard participant privacy, I am updating some of my research procedures. I will audio-record instead of video-record interviews. I will update consent form to outline time requirements and include follow up. Finally, I will update all participant materials to reflect IRB current requirements.

April 17, 2023	I have decided on several technology applications to aid in data collection and analysis. Otter.ai will be used for audio recording and auto-transcription. This application was chosen because it allows for audio recording without video. NVivo will be used for data analysis. This software was chosen because of its intuitive design and positive reviews from peers.
April 25, 2023	Met with site key informant to discuss protocol and participant recruitment. We discussed if it would be best to send out the recruitment email to all 300 students or limit recruitment to students in specific programs. The decision was made to limit recruitment to specific programs that had video annotation software activities built into course requirements. Specifically, I will begin with recruiting students from the physical education, early childhood, and childhood education programs. This may help address committee sampling concerns.
May 4, 2023	Recruitment email was sent out to 133 potential participants. I was anticipating a high response rate, but initial screening survey returns have been slow. If I am not able to get enough participants, I will send a follow-up email or ask the key site informant to help identify additional potential participants.
May 16, 2023	I have completed four interviews, but I am having difficulty identifying additional participants. I drafted a social media post and have submitted it to Liberty University IRB for approval. If approved, I will explore posting it in Central University education social media groups.

June 1, 2023	Through a combination of follow-up recruitment emails and snowballing sampling, I have just completed my tenth individual interview. I did not end up needing to use a social media post for recruitment. I have solid data for the PE preservice teacher perspective. However, I would like to find at least one more Early Childhood/Childhood candidate to interview. The data collection process has been fascinating, and I look forward to going more in-depth during data analysis.
June 10, 2023	I have spent the last few weeks steeped in level one and two coding. I am surprised by how this has affected my practice. I work as a field supervisor, and I am completing final observations with my master in teaching candidates. My conversations with participants have improved my observation process. Recently, I have tried to be very intentional about making substantive, action-orientated video annotations. I call out elements of good teaching when I see them, and then play back the video so students can recognize them. Finally, I explicitly ask if there is confusion about any of my comments and give candidates an opportunity to respond in a synchronous conversation.

Appendix J

Coding

Streamlining Reflection

- *Logistical Convenience*
  - Distance
  - Financial Considerations
  - Scheduling Flexibility
- *Record of Growth*
  - Documenting Evidence
    - Digital Evidence
    - Growth Record
    - Replaying Later
  - Perceiving Growth
    - Comparing Beginning to End
    - No Change
    - Overall Growth
    - Pinpointed Elements
- *Developing Professional Vision*
  - Memory Aid
    - Perception Different from Reality
    - Previously Unnoticed Elements
    - Teacher Amnesia
    - Visualization
  - Noticing Student Behavior
    - Student Behavior
    - Student Relationships
  - Noticing Teacher Behavior
    - Delivery
      - Body Placement
      - Filler Words
      - Look Confident
      - Presence
      - Volume
      - Word Choice
    - Seeing Classroom Elements
      - Differentiation
      - Engagement
      - Off-task Behavior
      - Procedures
      - Transitions
- *Reflective Mirror*
  - Scaffolding Reflection
    - Choice of Focus
    - Combined with Expert Feedback
    - Pause
    - Quality over Quantity
  - Self as Curriculum
    - Metacognition
    - Personal Development
      - Intentionality
      - Perfectionism
    - Understanding Self
      - Self-Assessment of Skills
      - Self-Identifying Growth Area
      - Recognition Growth over Time
  - Agency
    - Clear Plan of Action
    - Impetus for Action
    - Need for Action
    - Targeted Area
  - More Meaningful than Feedback
    - What Supervisor Didn't See
    - When You See it for Yourself

Digital Detachment

- *Logistical Issues*
  - Distraction
    - Students Distracted
      - Affecting Lesson
      - Frustration
      - Strategies to Address

- Students Not Distracted
  - Not a Big Issue
  - Not an Issue
- Student Privacy
  - Limiting
  - Not Concerned
  - School Policies
    - Hoops
    - Not Showing Student Faces
    - Permission Slips

Filtered Communication

- Limitations of Asynch Communication
  - Delayed Feedback
  - Non-Verbal Feedback
- Miscommunication

Inauthentic Evaluation

- Busy Work
  - Checking the Box
  - Not helpful
  - Tedious
  - Unsure if Watched
- Incomplete Picture
  - Can't Capture Climate
  - Slice of Time
  - Visual Limitations
    - Action Off Camera
    - Blocked Camera
    - Limited Student View
    - Teacher Moves
- Showcasing
  - Cherry-picking
    - Choosing Best Class
    - Choosing Best Video
  - Curated Video Selection
  - Masking Struggle
  - Video Acting

The Supervisor Variable

Relationship

- Communication
  - Lacking
  - Not Knowledgeable about Logistics
  - Supportive
- Connection
  - Lacking
  - Supportive

Varied Expectations

- In Person Expectations
- Video Expectations

Feedback

- In Person Feedback
  - Helpful
  - Issues
    - No Documentation
    - Overwhelming
    - Too General
- Video Feedback
  - Helpful
    - Combined with In-Person Feedback
    - Expert Feedback
    - In Depth
    - Replies to Comments
      - Reflective Mirrors
      - Response to Teacher Comments
  - Issues
    - Absent Feedback
    - Confusing
    - Minimal Feedback
      - No Replies to Comments
      - Rubric Only
      - Sparse
      - Too General
        - Not Substantive
          - But Positive

Program Components Effect on Self-Efficacy

- *Course Organization*
  - Assignments
    - Confusing
      - Evaluation
      - LMS Integration
      - Requirements and Parameters
    - Need More Flexibility
      - Autonomy
      - Structure Too Rigid
    - Structured for Reflection
  - Observation Split
    - Hybrid Split
      - Half and Half
      - Include More In-person
      - Include More Recordings
      - Record In-person Lessons
    - In Person Observations
      - For Classroom Placement
      - Preference for In-Person
    - Video Observations
      - Video Less Stress than In-Person
      - Preference for Video
- *Student Teaching Placement*
  - Theory vs Practice
  - Confidence through Experience
  - Host School
    - Diversity
    - Multilingual Learners
    - Student Behavior
  - Host Teacher
  - Host Teacher Feedback
    - Pairing HT Feedback to Video
    - Value of Host Teacher Feedback
  - Host Teacher Relationship
  - Host Teacher Responsibilities
    - Camera Operator
    - Observation of Host Teacher
- *VAS as a Tool*
  - General Impressions
    - For Video Analysis
    - Good Tool
    - Intuitive
    - Not Difficult
      - Easy to Use
      - No Issues
      - Simple
    - Not to Potential
  - Features
    - Attachments
    - Direct Uploading
    - Markers
      - Negative
        - Confusing
        - Disconnect
          - In Place of Comments
        - Surface Level Analysis
          - Limiting
          - Mindless
      - Positive
        - Collaborate with Supervisor
        - Identify Elements
        - Identify Classroom Elements
          - Literal
          - Starting Point for Reflection
          - Time Saver
    - Timestamp
  - *Preparation*
    - VAS Training
      - Confusing
      - Minimal
      - No Reflective Training
      - Unnecessary
    - Past Tech Experiences
      - During Covid Pandemic
      - Previous Coursework - VAS
  - Technical Difficulties

Sound Issues
- Can’t Hear
- Can’t Remember What Was Said
- Cross Noise

Uploading
- File Too Big
- Impractical for Whole Lesson
- Long Time to Upload

Appendix K

Audit Trail

Date	Task Completed
February 20, 2023	Confirmed research site permission
March 22, 2023	Defended proposal, proposal accepted
March 22, 2023	IRB application submitted
April 18, 2023	IRB approval letter received
April 19–21, 2023	Conducted pilot interviews, made minor changes as needed
April 25, 2023	Met with key site informant to review protocol and participant recruitment
April 27, 2023	Host site IRB approval letter received (Liberty University remains IRB of record)
May 3, 2023	Recruitment email sent
May 9 – June 6, 2023	Data collection
June 9, 2023	Member checking of transcripts complete
June 26, 2023	Member checking of findings complete