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# Supervising Teaching Candidates Using Face-to-Face and Virtual Observations: Perceptions and Preferences of Special Educators

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Supervising Teacher Candidates Using Face-to-Face and Virtual Observations:  
Perceptions and Preferences of Special Educators

Barbara M. Smith

A dissertation submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Doctor of Education

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## ABSTRACT

### Supervising Teacher Candidates Using Face-to-Face and Virtual Observations: Perceptions and Preferences of Special Educators

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Department of Educational Leadership and Foundations, BYU  
Doctor of Education

Providing effective supervision of student teachers and interns is critical in preparing quality special education teachers. To decrease the time commitment of supervisors, researchers have suggested using virtual observations which are generally viewed as a valuable resource. This study examined the experience of teacher candidates supervised with a combination of face-to-face visits and video observations. Groups of university faculty (supervisors) and students (teacher candidates) from a western university participated with both methods of supervision over three years and provided feedback to researchers. Results highlighted participants' satisfaction with the supervision process, including advantages and concerns with each type and ways the combination of methods gave added value and efficiency. Benefits of using the combination of observation types, which was most valued by both supervisors and candidates, were convenience and flexibility of scheduling, opportunities for self-evaluation, and the nature and timeliness of feedback. Future research might focus on using the combination of supervision methods with licensure candidates in other groups of professionals and teachers or examine specific aspects of using the technology.

Keywords: special education, online video analysis, student teachers, teaching observations, supervision

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This dissertation has come to fruition with contributions by many individuals for which I am grateful. I appreciate the many ideas and insights shared and the excellent feedback given.

My unselfish and supportive colleagues in the Counseling Psychology and Special Education Department participated as supervisors in this study. These are co-workers who daily inspire me to become better. We have been blessed to teach excellent students. Research assistant Haley Staten and consultants Michael Johnson and Melissa Heath have given excellent support and made valuable contributions to this project.

The faculty in Educational Leadership and Foundations at BYU have all contributed to my learning and growth as a doctoral student. Their knowledge and wisdom has inspired me. Specific thanks to Scott Ferrin, who has been my guide in the search for truth. Always encouraging and hopeful, he was willing to guide and support my ideas as they emerged into something valuable for educators. The merit of this dissertation is the result of a committee who patiently answered my questions and then asked more. I hope this dissertation is work that Gordon Gibb, Buddy Richards, Julie Hite, and Sterling Hilton can look upon with satisfaction. It has also been a privilege to participate with each member of my 2014 doctoral cohort.

Motivation to complete this degree has come from my family. It has been a wish of my husband, Brian, for many years and his support has made it possible. For each of our children and grandchildren, I have tried to show by my example the importance of life-long learning, progression, and service to others. I am grateful to my parents and to my Heavenly Father who blessed me with gifts of faith, focus, courage, and curiosity. I have felt His assurance and assistance to accomplish this work from beginning to end.

## TABLE OF CONTENTS

TITLE PAGE .....	i
ABSTRACT .....	ii
ACKNOWLEDGMENTS .....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	vi
DESCRIPTION OF DISSERTATION STRUCTURE .....	vii
Introduction.....	1
Supervision History.....	1
Mentoring Theory .....	2
Supervision Methods.....	4
Self-Evaluation.....	4
Methods.....	6
Sampling.....	6
Data Collection.....	7
Data Analysis .....	10
Results.....	11
Perceptions of GoReact.....	11
Preferences for Supervision .....	13
Reactions to GoReact .....	17
Reactions to Face-to-Face Supervision.....	20
Benefits and Concerns of Using Both Observation Methods .....	22
Experience of University Supervisors.....	23
Experience of Teacher Candidates.....	24
Discussion.....	25
Theoretical Implications.....	25
Future Research.....	26
Practical Implications.....	27
Conclusions.....	31

References.....	33
APPENDIX A: EXPANDED REVIEW OF LITERATURE.....	39
APPENDIX B: EXPANDED METHODS.....	52
APPENDIX C: FIGURES AND ILLUSTRATIONS.....	61
APPENDIX D: SURVEY QUESTIONS.....	63
APPENDIX E: EXPLANATION OF TERMS.....	65
APPENDIX F: INSTITUTIONAL REVIEW BOARD APPROVAL.....	66
REFERENCES.....	67

## LIST OF TABLES

Tables	Page
1. Data Collection Time Periods and Participant Groups.....	8
2. Focus Group Questions Organized Under Numbered Research Questions.....	9
3. Means and Standard Deviations from Teacher Candidate Survey Items That Address Supervision Experience Using GoReact .....	12
4. Means and Standard Deviations from Supervisor Survey Items that Address Supervision Experience using GoReact .....	12
5. Desired Elements in the Supervision Process by Role and Participant Group.....	14
6. Desired Elements as Themes According to Supervision Methods by Participant Groups.....	16

## DESCRIPTION OF DISSERTATION STRUCTURE

This dissertation, *Supervising Teacher Candidate Using Face-to-Face and Virtual Observations: Perceptions and Preferences of Special Educators*, follows a hybrid format recommended by the Department of Educational Leadership and Foundations. A hybrid dissertation requires a journal-ready article along with elements required for a traditional dissertation. Elements of the article include introduction, methods, results, and discussion. The hybrid format has fewer chapters but does include an expanded review of literature (Appendix A) and an expanded methods section (Appendix B). Additional appendices follow: Appendix C, Figures and Illustrations; Appendix D, Survey Questions; Appendix E, Explanation of Terms; and Appendix F, Institutional Review Board Approval. The hybrid dissertation, including a manuscript for publication in a scholarly journal, is approved by the McKay School of Education at Brigham Young University.

The journal article for this hybrid dissertation targets *Teacher Education and Special Education (TESE)*, the journal of the Teacher Education Division (TED) of the Council for Exceptional Children (CEC). *TESE* supports the organization by publishing articles on critical issues which shape the future of teacher education. *TESE* requires the American Psychological Association sixth edition format and seeks to publish articles that are thorough and comprehensive, yet within a length of about 20 pages excluding tables and references. Editors advise authors to explicitly address why their efforts are important to teacher educators and how the findings can be applied.

## **Introduction**

Research in the literature on teacher supervision has generally verified my observations as a clinical professor in Special Education. University faculty are assigned to supervise teacher candidates during student teaching, but they have additional responsibilities that sometimes conflict. University faculty are motivated to provide appropriate supervision but often struggle to find adequate time (Fry & Bryant, 2006; Schmidt, Gage, Gage, Cox, & McLeskey, 2015). In teacher preparation we see supervision during this culminating experience as critical to the success and longevity of beginning teachers. What can be done to increase the quantity and quality of supervision in the schools? Is there another way to support with feedback, and evaluate teaching as teacher candidates prepare for graduation and licensure?

Some researchers have studied the feasibility of observing teacher candidates' lessons using technological tools (Knight, 2014; Rock, Gregg, Gable, & Zigmond, 2009), including video capture and internet capabilities. This may be one way to eliminate travel and wasted time in the traditional supervision process, but some question whether the goals of supervision can be achieved without face-to-face interaction.

## **Supervision History**

Many perspectives of 20th century education have influenced supervision. The scientific approach to schooling (Cubberley, 1916; Wetzel, 1929) influenced measures of student learning such as individual student assessment, clear measurable learning objectives, and reliable progress testing to determine teacher effectiveness. Another approach to schooling influenced supervision by focusing on social development and democratic values (Coleman, 1945; Dewey, 1938) such as assuming initiative, understanding human interactions, and engaging in shared decision making.

Clinical supervision (Cogan, 1973; Goldhammer, 1969) includes a systematic approach based on pre/post conferences, close observation, and data collection. Supervisors observe classroom teaching, make notes following prescribed methods, analyze the observation notes, and share results of the observation with the teacher, assuming that the feedback will help the teacher improve her performance. Following this approach, Hunter included a common language of instruction, purposes for conferences, and practice of scripting, along with the Hunter model of lesson design (Hunter, 1980, 1984). Her prescriptive approach was followed by an era of developmental and reflective models (Glatthorn, 1984; Glickman, 1985) which considered teachers' goals, giving them more input and sense of control over their own and their colleagues' development. A study conducted by the RAND Corporation (Wise, 1984) described supervision and identified consistent problems, listing recommendations. To conclude the 20th century, Danielson (1996, 2007) delineated knowledge, skills, and dispositions necessary for teacher candidates to demonstrate their classroom competence. Her updated framework—consisting of planning, environment, instruction, and professionalism—continues to be used in supervision. Marzano, Frontier, and Livingston (2011) recently defined the purpose of supervision as “the enhancement of teachers’ pedagogical skills, with the ultimate goal of enhancing student achievement” (p. 2).

### **Mentoring Theory**

The construct of mentoring means that a person possessing a skill or ability coaches a person who desires to master that skill or ability. A mentor commonly helps someone in a new situation or through a transition period (Allen, 2016). Mentoring can occur across multiple settings and for a variety of purposes, which include developing organizational and interpersonal skills, giving technical assistance, and clarifying roles and responsibilities (Northouse, 2013).

Extensive literature addresses mentoring roles (Davis, 1979; Levinson, 1978; Schein, 1978; Sheehy, 2006) and provides key theoretical frameworks (Knight, 2007, 2014; Kram, 1988). Mentoring theory, first developed and utilized in leadership and business, is now widely used in education as a theoretical base for preparing and supervising teacher candidates.

Knight applied mentoring theory to coaching new teachers in the induction phase (2007, 2014), having mentors partner with teachers to focus on reflection, dialogue, and application. Among Knight's valuable ideas, the most impactful and applicable to this study is video self-evaluation—which he called a potential *game changer*. He quoted a student comment: “I am realizing more and more that my willingness to open the door that video opens up is where growth happens” (Knight, 2014, p. 2). Knight indicated, as have other researchers, that teachers attain a growth mindset by seeking feedback through video analysis, supporting their desires to improve their practice and achieve their best (Dweck, 2006; Knight, 2014).

When mentoring accompanies supervision, new teachers develop many practical skills for success. Allen (2016) elaborated,

Individuals who are mentored advance more rapidly, earn higher salaries, have greater job satisfaction, and have fewer intentions to leave the organization. Research also indicates that being mentored is related to greater socialization, career planning, involvement, motivations, and self-efficacy (confidence in achieving work tasks).

(Benefits section, para. 1)

Induction-level mentoring is important for all teachers, but critical in special education, where risks include a disconnect between teacher preparation and new special educators' classroom experiences, feelings of isolation, or absence of peer teachers in the same school (Hunt, Powell, Little, & Mike, 2013).

## **Supervision Methods**

This research focuses on two general methods of supervision including (a) the traditional face-to-face observation and consultation by a university supervisor visiting a candidate's classroom; (b) a virtual visit to the candidate's classroom as the supervisor observes a recorded lesson and consults through the software program, GoReact (GoReact, 2017). The evaluation form and the written feedback may be the same for both methods, but a live observation furnishes immediate verbal feedback and question response.

In contrast, distance supervision uses video technology to allow supervisors to view candidates' lessons from home or office. Distance supervision can be synchronous or asynchronous: supervisors may watch live or recorded video. Asynchronous recorded video supervision enables supervisors and teacher candidates to view lessons multiple times with options to rewind, fast forward, and pause, creating significantly deeper reflection than evaluation without video. Thus, supervisors may provide richer feedback, including ideas for improvement in teaching methods and classroom management (Ardley, 2009; Dieker, Hynes, Hughes, & Smith, 2008; Elford, Carter, & Aronin, 2013). Candidates may notice mannerisms and habits that they typically would not recognize, along with specific instances in a lesson where they might have felt impressed by their performance or have seen needs for improvement.

## **Self-Evaluation**

Multiple researchers have considered video a powerful self-examination tool that may foster candid questions about one's own practices, among many advantages (Knight, 2014). In the asynchronous process, a teacher candidate records a classroom lesson, then watches the recording and takes reflective notes or completes an observation form alone or with the university supervisor. Individually or together they set goals to increase student learning.

Researchers have reported that self-evaluation using video increases teachers' self-awareness (Baecher, Kung, Jewkes, & Rosalia, 2013; Criswell, Calandra, Puvirajah, & Brantley-Dias, 2015; Eröz-Tuğa, 2012; Mettiäinen, 2015; Orlova, 2009), helps them focus on student learning (Baecher, McCormack, & Kung, 2014; Beck, King, & Marshall, 2002; Romano & Schwartz, 2005), enables a more objective view of their teaching skills (Orlova, 2009), and promotes faster skill development (Beck, King, & Marshall, 2002).

Self-evaluation using video offers clear advantages. Teacher candidates who evaluate their own video may take a more active role in analysis and collaboration with supervisors (Baecher et al., 2014; Malinovski, Vasileva, Vasileva-Stojanovska, & Trajkovik, 2014; Schmidt et al., 2015; Sewall, 2007), increase the quantity and depth of their reflective comments (Baecher et al., 2014; Criswell et al., 2015; Kaneko-Marques, 2015; Sewall, 2007; Teo, McNamara, Romeo, & Gronn, 2015), improve their own performance and raise their grades (Baecher et al., 2013; Eröz-Tuğa, 2012; Orlova, 2009), make better teaching decisions as they implement feedback (Kaneko-Marques, 2015), focus on instruction rather than management (Rosaen, Lundeberg, Cooper, Fritzen, & Terpstra, 2008), reduce anxiety regarding observations (Eröz-Tuğa, 2012), and develop a vision for future development as a teacher (Kaneko-Marques, 2015; Sewall, 2007).

However, researchers also noted possible drawbacks of using video to self-evaluate, including limitations in the view of the classroom and challenges associated with using technology (Baecher et al., 2014; Fry & Bryant, 2006; Garrett & Dudt, 1998; Heafner, Petty, & Hartshorne, 2011). More than one study noted that self-reflection alone is not enough to facilitate improvement. Teachers must receive professional guidance (Capizzi, Wehby, & Sandmel, 2010; Romano & Schwartz, 2005).

The purpose of this study was to examine student and supervisor perceptions regarding the quality and effectiveness of using both remote video observation and in-person observation methods together during student teaching. In addition, questions were asked about the participants' perceptions of using video for supervision and their perceptions about face-to-face supervision as individual methods.

### **Methods**

This study employed focus group interviews and online surveys to obtain rich data and explore the effectiveness of a supervision treatment. After obtaining institutional review board approval and consent from the participants, over a three-year period, university supervisors and teacher candidates participated in remote video observation in addition to in-person observation methods. This supervision took place in five different school districts, which educate a total of approximately 180,000 school children and employ over 7,000 teachers.

### **Sampling**

Two groups of subjects—university supervisors (USs) and teacher candidates (TCs)—were invited to share their perceptions of the video, face-to-face, and combined observation methods. Of the 15 faculty members who supervised, 67% were female and 33% were male. All were between the ages of 40 and 62, with between two and 22 years of supervision experience. Of the 118 undergraduate teacher candidates, 95% were female and 5% were male, consistent with enrollment in the school of education generally (94% female, 6% male). All TCs were between 19 and 50 years of age, the median being 25, and all were seniors in their last year of undergraduate status. As all groups were predominantly Caucasian, the research groups were limited in ethnic diversity and gender equity. TCs were all enrolled in culminating special education courses of internship or student teaching.

The university required a minimum of six observations of each TC by a US, including feedback, each semester. For this study, half of the observations were conducted in person and half were completed online using GoReact (GoReact, 2017), an internet-based platform for uploading and viewing video. GoReact was developed to help presenters improve and designed to keep video secure and ready for viewing by authorized individuals ([get.goreact.com](http://get.goreact.com)). TC training prior to observations included how to record (using computers or provided iPads), upload, self-evaluate using GoReact, and notify the supervisor when the video was ready to be viewed. USs were also trained on how to use GoReact for viewing TC videos and providing feedback.

Faculty members were assigned to supervise teacher candidates at the beginning of each semester. USs provided feedback directly on GoReact for video observations and in person during face-to-face observations. All USs had access to videos uploaded by their assigned TCs throughout the semester of student teaching or interning. After completing the video, the TCs were required to self-evaluate their teaching and leave comments on the video directly on GoReact or on the department's Direct Instruction Observation Form available on the GoReact website. They then notified their USs by email that the video was ready for reviewing and feedback. The USs viewed and added feedback comments to the video, notifying the TC when this was completed. Follow-up dialogue, typically by email, could be added to further explain the written feedback. TCs then used the feedback to develop an action plan to improve their teaching.

### **Data Collection**

Data collection for this study involved two instruments for the TCs and USs: an online survey and an interview protocol designed for use in focus groups. At the conclusion of student

teaching each semester, TCs and USs both completed the Qualtrics survey and participated in a focus group. Table 1 provides the data collection time periods and number of focus and survey groups. Gift cards (\$20) were given as incentives for attending a focus group.

Table 1

*Data Collection Time Periods and Participant Groups*

Year	Semester	Group ID	Focus Groups (n=14)		Survey Groups (n=9)	
			US (n=4)	TC (n=10)	US (n=4)	TC (n=5)
2014	Fall	1	0	1 (5)	1 (7)	1 (18)
2015	Winter	2	1 (8)	3 (16)	1 (8)	1 (19)
2015	Fall	3	1(4)	1 (6)	0	0
2016	Winter	4	0	0	0	1 (19)
2016	Fall	5	1 (6)	3 (19)	1 (7)	1 (20)
2017	Winter	6	1 (7)	2 (21)	1 (8)	1 (26)

*Note 1.* (#) Indicates the number of participants.

*Note 2.* Focus group and/or survey data is missing for some semesters due to technological issues with recording and saving.

*Note 3.* Some semesters included multiple focus groups for teacher candidates to accommodate schedules.

*Note 4.* US abbreviates “university supervisors” and TC abbreviates “teacher candidates.”

The focus group questions, derived from the research questions (see Table 2), asked both the USs and TCs about their supervision experience using GoReact. USs were asked by the primary researcher to describe the observation process, what their experience was like, whether they felt the method was effective, whether they liked this combination of methods, and how the methods affected their quality of feedback to students. TCs were asked to reflect on their experience with supervision in multiple areas such as how the technology worked, whether they felt the feedback was helpful, whether they improved their teaching, how individuals in the classroom reacted to video recording, and what pros and cons were apparent for both methods. Each focus group was audio recorded and transcribed for analysis.

Table 2

*Focus Group Questions Organized Under Numbered Research Questions*

## 1. What were participants' perceptions about using video for supervision?

Did participants like the distance supervision process? What benefits and challenges did they find? How did participants feel about introducing video to the supervision process through GoReact?

## 2. What were participants' perceptions about face-to-face supervision?

Did the participants like the face-to-face supervision process? What benefits and challenges did they find?

## 3. What were participants' perceptions about using both video and face-to-face supervision methods together?

What benefits and challenges were found in using both methods together? Did supervisors have a good experience using the duo-method? Did teacher candidates? Did feedback from both types of mentoring help TCs make specific improvements in their teaching? Did the use of the dual-observation method surpass the use of either method alone?

A total of 104 TCs and 30 USs completed the Qualtrics survey. The TC response rate varied by semester, ranging from *poor* (7 responses, 30%) to *very good* (20 responses, 87%) out of a possible average field of 23 TCs. Of the 10 USs, the response rate was consistently *high* (7 or 8 responses, 70-80%).

In the surveys and focus groups TCs participated one time, but the USs may have participated multiple times. Over the study period, faculty turnover (approximately 35%) resulted in about four new faculty added for the last three semesters which could have impacted their responses as evolution or refinement of perceptions. Participants had a five-day window in which to complete the survey. The TC survey contained seven Likert-scale items about the process of using video supervision through GoReact, and the US surveys contained eight Likert-scale items on the same topic. The survey items used a five-point rating scale on which 5 represented *strongly agree* and 1 represented *strongly disagree*. On both TC and US surveys,

five open-ended questions followed the Likert-scale items. The survey instrument was limited in that it was self-developed and not previously tested on a larger sample.

### **Data Analysis**

Qualitative data from USs and TCs were obtained from 14 focus group transcriptions and the open-ended survey items from nine semester groups of Qualtrics surveys, for a total of 23 source groups. These data were imported into NVivo software (NVivo, 2002) for qualitative analysis to identify supervision preferences, benefits and challenges of face-to-face and distance supervision separately, and benefits and challenges of both methods used together.

Through open and axial coding, researchers identified prominent themes from the qualitative data based on the research questions. The initial open coding of the data, including reviewing and categorizing ideas into specific nodes by topic, yielded the hierarchical list of 23 parent (primary category) nodes and 48 child (secondary category) nodes. Data from the open-ended survey questions and focus groups were initially coded by individual statements within source groups and then clustered by source groups and analyzed at the group level. Identification of representative source-group themes required a 50% threshold of representation from the 23 source groups (see Table 1). In the findings, themes were identified by the percentage of source groups (focus and survey) in which they were found and were analyzed at the group level because individual participants could not be identified within focus groups. In axial coding, analyses used queries and matrices to explore and identify thematic patterns, again using the 50% threshold for source groups, by role (university supervisor or teacher candidate), by data collection method (survey or focus group), and by differences in opinion on method of supervision (distance versus face-to-face).

The final step in the data analysis included calculating aggregated means for the four survey source groups relating to their supervision experience using GoReact. This analysis was done at the individual level and informed the findings regarding participant opinions on using GoReact over time.

In addition, as a researcher who experienced my own participation in supervision, planned the study, conducted the focus groups, considered the data, kept a researcher's journal, and teased out the findings, my perspective and knowledge of the process can be seen as a data source. Likewise for the research team, the conclusions we made from this study revealed new implications about supervision that we had not known before and may be helpful to others who wish to implement the combined method.

## **Results**

Analysis of the 23 source groups, both survey and focus group data, indicated that all participants preferred the *combination* of both face-to-face and online observations. While both TCs and USs considered this combination of methods to create a valuable and gratifying supervision experience, some differences between TC and US perceptions and preferences were identified. Each type of data produced specific findings.

### **Perceptions of GoReact**

Based on the Likert-scale survey items, analyzed at the individual level, a majority of USs and TCs had positive perceptions about their experience using GoReact. With a range of 1 to 5, the overall means for survey items ranged from 3.22 to 3.87 for USs and from 3.39 to 4.54 for TCs (see Tables 3 and 4), demonstrating that a majority of participants agreed that their personal experience using GoReact for distance observations and feedback had been positive.

Table 3

*Means and Standard Deviations from Teacher Candidate Survey Items That Address Supervision Experience Using GoReact*

	First Two Semesters <i>M (SD)</i>	Last Two Semesters <i>M (SD)</i>	Overall ( <i>n</i> =102 surveys) <i>M (SD)</i>
#1 Easy to use	3.87 (0.81)	3.72 (0.89)	3.78 (0.86)
#2 Useful feedback	3.41 (0.94)	3.91 (0.89)	3.73 (0.04)
#3 Efficient feedback	3.22 (1.19)	3.86 (0.94)	3.63 (1.08)
#4 Valuable to Learning	3.24 (1.12)	3.86 (0.97)	3.64 (1.07)
#5 Adjustments to teaching	3.57 (1.00)	3.88 (0.89)	3.76 (0.94)
#6 Sufficient perspective	3.62 (1.05)	4.22 (0.64)	4.00 (0.86)
#7 Improved performance	3.57 (1.05)	3.92 (0.81)	3.79 (0.92)

*Note 1.* Numbers are based on a 1-5 rating scale.

*Note 2.* (#) indicates the standard deviation.

Table 4

*Means and Standard Deviations from Supervisor Survey Items that Address Supervision Experience using GoReact*

	First Two Semesters <i>M (SD)</i>	Last Two Semesters <i>M (SD)</i>	Overall ( <i>n</i> =30 surveys) <i>M (SD)</i>
#1 Sufficient training	4.07 (0.68)	3.40 (1.20)	3.73 (1.03)
#2 Felt comfortable	4.27 (0.57)	3.87 (0.81)	4.07 (0.73)
#3 Met needs	4.27 (0.57)	4.00 (0.82)	4.13 (0.72)
#4 Useful tool	4.53 (0.50)	4.07 (0.77)	4.30 (0.69)
#5 Equivalent feedback	3.40 (0.08)	3.53 (1.02)	3.47 (0.92)
#6 Facilitated improvement	3.66 (0.47)	3.60 (0.61)	3.63 (0.55)
#7 Easy to incorporate	4.07 (0.77)	3.87 (0.96)	3.97 (0.88)
#8 Adequate perspective	3.53 (0.81)	4.00 (0.89)	3.77 (0.88)

*Note 1.* Numbers are based on a 1-5 rating scale.

*Note 2.* (#) indicates the standard deviation.

The few negative survey responses regarding GoReact were from TCs who either never received feedback from their US via GoReact or received feedback too late in the semester to be valuable to them (noted in their open-ended survey responses and analyzed in NVivo).

Surprisingly, results indicated changes in means between the two semester groups. The time comparison was added because we anticipated that over the course of the study the participants perceived it differently. Item means on the TC surveys mostly increased over time, which may be a reflection of process improvements made by the researchers over the course of the three-year period. Item means on US surveys mostly decreased over the same time. Through supervising and directing the study, we noted possible reasons for the decline in supervisor satisfaction during this time period: (1) faculty turnover, even though they received similar training, (2) increased personal expectations, and (3) recurring technical difficulties. During the course of the study, about four to five seasoned supervisors (35%) were replaced with new supervisors who were required to do less supervision. Overall, USs were somewhat more positive than TCs about their experience using GoReact. However, given that TCs and USs did not have the same survey items, means for specific items cannot be compared across these two groups. Their respective means do represent the two groups' overall satisfaction with the experience.

### **Preferences for Supervision**

The Likert-style survey findings indicated that both TC and US participants perceived GoReact as providing effective supervision. However, focus group and survey data from open-ended questions indicated that both participant groups preferred the combination of video and face-to-face observation methods (surveys, 66%; focus groups, 71%). Many participants felt unable to choose between methods because they found value in specific elements of both.

Table 5

*Desired Elements in the Supervision Process by Role and Participant Group*

Patterns by Roles	Desired Elements in the Supervision Process	University Supervisors			Teacher Candidates		
		Focus Groups (n=4)	Survey Groups (n=4)	All Groups (n=8)	Focus Groups (n=10)	Survey Groups (n=5)	All Groups (n=15)
University Supervisors and Teacher Candidates	Convenient, flexible scheduling	75%	100%	86%*	80%	100%	87%*
	Self-evaluation	75%	50%	63%*	100%	100%	100%*
	Time-stamped feedback	75%	100%	86%*	90%	80%	87%*
	Increased ability to see entire classroom and hear teacher candidate	75%	50%	63%*	90%	80%	87%*
	Supervision without classroom disruption	25%	75%	50%*	100%	100%	100%*
	Human interaction and support	50%	100%	75%*	70%	60%	67%*
	Written, permanent feedback	75%	25%	50%*	80%	60%	73%*
Ability to ask questions and converse about feedback	75%	25%	50%*	90%	80%	87%*	
University Supervisors	Feedback that is non-disruptive to the classroom and class schedule	50%	50%	50%*	50%	20%	40%
Teacher Candidates	Immediate feedback	25%	25%	25%	100%	80%	93%*

*Note 1.* \*Indicates theme surpassing 50% source group threshold in the *All* columns.

*Note 2:* Survey group data are from open-ended survey responses.

A clear theme was that the majority of participants preferred the combination of methods over either method alone. The following response is representative of the combination preference:

I like a lot of things about the in-person, but I see the advantages of GoReact and if you split them the way you do right now we get to see things in the moment with the comments or we get to talk to [supervisors] afterwards and discuss. (FG:US<sup>1</sup>)

A range of participant opinions emerged concerning the advantages and disadvantages of each method. Several themes and patterns were apparent regarding aspects of supervision that were most desired and valued by USs and TCs. Table 5 identifies patterns, analyzed at the group level, expressed by a majority of TCs and/or USs based on the data-collection method.

Both participant groups valued the same supervision elements, except for non-disruptive feedback and class schedule (USs only) and immediate feedback (TCs only). No patterns of changes over time were apparent: Elements valued in 2014 were also valued in 2017. Table 6 identifies the desired supervision elements by participant group and supervision method. For all but one supervision element (supervision without classroom disruption), a clear theme was that both USs and TCs agreed on their clear preferences for one observation method over the other (GoReact or face-to-face) for each supervision element. Data sources were focus group and open-ended survey responses and were analyzed at the group level.

The only supervision element for which TCs and USs did not agree upon the method was *supervision without classroom disruption*. This difference in participants' perception for this supervision element may have been due to differences in specific classrooms. Having been present as the distractors, USs reported that GoReact observations created fewer classroom distractions. TCs had mixed reactions, claiming that the makeup of the students in their class

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<sup>1</sup> The following citation structure is used for quotations: FG=focus group; S=survey; US=university supervisor; TC=teacher candidate; exponent=semester group number.

determined which method created less distraction as voiced in focus group discussions and open-ended survey responses.

Table 6

*Desired Elements as Themes According to Supervision Methods by Participant Groups*

Themes	US		TC		Methods		
	Face-to-Face	GoReact	Face-to-Face	GoReact	Face-to-Face	GoReact	Both Methods
Feedback that is non-disruptive to the classroom and class schedule	0	100%	0	100%		✓	✓
Time-stamped feedback	0	100%	0	100%		✓	✓
Convenient, flexible scheduling	0	100%	2%	98%		✓	✓
Self-evaluation	9%	91%	2%	98%		✓	✓
Written, permanent feedback	13%	87%	6%	94%		✓	✓
Supervision without classroom disruption	0	100%	56%	44%	✓	✓	✓
Increased ability to see entire classroom and hear teacher candidate	88%	12%	93%	7%	✓		✓
Human interaction and support	100%	0	100%	0	✓		✓
Immediate feedback	100%	0	95%	5%	✓		✓
Ability to ask questions and converse about feedback	100%	0	93%	7%	✓		✓

Note 1. US abbreviates “university supervisors” and TC abbreviated “teacher candidates.”

Note 2. Lines between rows separate the method themes were found in.

Note 3. Percentages in US and TC columns are group data from focus groups and open-ended survey questions.

TCs observed how factors such as age, disability, location of the recording device, etc. could influence the students’ ability to focus. Thus, some TCs found their students more

distracted by the camera, while others noted the physical presence of an unknown person captured more student attention.

### **Reactions to GoReact**

Written, time-stamped, and non-disruptive feedback was clearly valued by both TCs and USs, while convenient and flexible scheduling, supervision without disruption, and self-reflection also stood out as GoReact benefits, as indicated in Table 6. Typical participant responses are provided as evidence.

**Feedback.** Participants valued many aspects of online feedback. One TC wrote, "It was more organized. . . . Nice having it written down. And I was able to go back and keep checking it." TCs also appreciated time-stamped comments showing specific moments referenced in their feedback. For example,

When she was viewing my recording, she could put her comments right next to that portion, so I could go back and see exactly what she was talking about in her comments.

So it's just more detailed than even when she was there in person, I think. (FG:TC<sup>2</sup>)

Another TC from the same group agreed, "I think, especially having time-stamped comments, you know more clearly exactly in which parts you could have done something different" (FG:US<sup>6</sup>). One US appreciated the same benefit:

In GoReact I can comment on the certain behaviors . . . [so that] they see the behavior occur and they get my comment saying "Time." I can't do that while they are teaching, can't say "error correction, do it this way" . . . . [They] see their behavior and get feedback on that behavior in close proximity. (FG:US<sup>6</sup>)

An aspect of GoReact feedback valued by both TCs and USs was that giving feedback did not take up class time following the observations. A TC expressed this:

I liked how it didn't interrupt my class or my students or my day, because I felt like when my mentor came in [to observe] she'd want to talk to me afterwards, and I still had a group coming or already there. And they're running around the classroom, and [we're] just sitting there talking away . . . so it was really nice just to be able to do it [with technology] . . . and keep going with my day. (FG:TC<sup>3</sup>)

USs felt the same way: "I was able to give feedback much more frequently because I didn't need to interrupt during the lesson; after a lesson the time for collaboration or debriefing is short" (S:US<sup>6</sup>).

Survey respondents and focus groups considered GoReact feedback invaluable, but expressed concern about the time lapse involved giving and receiving it. The asynchronous format could cause enough delay for feedback to lack timeliness. Some TCs reported feedback was too slow to help them improve their teaching:

I had all of my videos uploaded before I even got comments on one of them. I don't know if she watched the whole video, and there's maybe ten comments on a 30-minute video. . . . more prompt feedback would be more helpful. (FG:TC<sup>3</sup>)

Supervisors also voiced concerned with timeliness:

We all know that the most effective feedback is immediate . . . . It takes a couple days for us to sit down and actually watch it, and we put in our feedback and it probably takes several days. So there's a long lag time there. (FG:US<sup>7</sup>)

**Scheduling.** Scheduling convenience and flexibility was an overarching positive aspect of GoReact observations. Online observations do not require aligning schedules. One TC specified that, "you didn't have to try to coordinate with someone else when you could do it" (FG:TC<sup>7</sup>). Another TC expanded, "I think it was easier for both of us because then it didn't

require us to be perfectly on time with our schedule if something threw it out of place, like a behavior or something” (S:TC<sup>3</sup>).

Although the majority cited convenience as a positive theme, a few respondents suggested convenience was not positive for all aspects of supervision. As a US pointed out, “It’s a great convenience to have, but sometimes it’s so flexible I can’t discipline myself to get it done” (FG:US<sup>3</sup>). This minority view deserves further attention, as it suggests a need for more responsibility when completing online observations and supervision.

**Disruption.** Most USs considered using GoReact less invasive than being physically present in the classroom: for example, “I am not a physical presence in the classroom. . . . It doesn't disrupt the students” (S:US<sup>3</sup>). Some TCs agreed with the majority opinion of USs, reporting that GoReact observations were less intrusive in their classroom, the following being typical:

I really like that I was able to let the computer run and do its thing without the teacher being there interrupting the class. I feel like my class was interrupted way more when there was actually someone there because the students were all turning around saying, “Who’s that?” (FG:TC<sup>3</sup>)

Conversely, many TCs considered face-to-face observations less invasive and distracting because the video camera caused their students to act out:

My students are used to there being lots of people observing or helping in the room, so they are not phased at all when we have someone watching us. However, they are extremely distracted by the laptop recording our lesson. I would cover the screen, but they would still be purposefully naughty in front of the camera. (FG:TC<sup>2</sup>)

Many TCs reported their students looking at the camera and misbehaving: “Yeah I had kids that liked to turn around and make faces at the camera, and I’m like, ‘No, eyes right here’ (FG:TC<sup>7</sup>). It’s important to note that one person mentioning this issue coded it for the entire group.

**Self-reflection.** Opportunities for TCs to watch their own videos and self-reflect was one of the most prevalent themes. Overwhelming positive response supported previous research on self-evaluation. One TC summarized, “I liked being able to watch myself teach. I feel like I’m my harshest critic, and so I was able to see more things I could improve on when I was able to see it myself” (FG:TC<sup>7</sup>). A few TCs indicated that self-evaluation provided better feedback than they received from their university supervisors.

USs also found the self-evaluation aspect valuable: “I also like that my students have a chance to reflect on their teaching and then again on my feedback. I believe this strengthens their teaching” (S:US<sup>6</sup>).

### **Reactions to Face-to-Face Supervision**

As with online GoReact observations, participants reported various benefits and concerns with face-to-face supervision. The main benefits involved obtaining feedback and receiving human interaction. The main concern involved scheduling, which reflects the initial reason for integrating video observations.

**Feedback.** Participants expressed benefits of feedback via face-to-face observations. TCs appreciated the immediacy of face-to-face feedback because they could implement suggestions in their classrooms immediately, rather than waiting to receive feedback online. They also liked the opportunities to ask questions and discuss the feedback with their supervisor: for example, “In person is a better way to get clarification and ask questions” (S:TC<sup>6</sup>). Similarly, some USs

appreciated face-to-face discussion: “You can say, ‘here’s what I saw, let’s talk about it’ and ‘what do you want to do for next time?’” (FG:US<sup>7</sup>)

Contrarily, some participants found face-to-face feedback disruptive to their typical classroom schedule. Some TCs found that on-site observations did not allow time for adequate feedback due to the necessity to continue with instruction immediately following observations. A TC recalled, “When I was observed in person, I often had to pick up another group of students following the observation, which made it difficult to find enough time to receive quality feedback” (S:TC<sup>5</sup>).

**Human interaction.** A few TCs reported receiving more support from their mentors in face-to-face observations, particularly due to human interaction. This statement is representative:

There's . . . a degree of validation that comes from the in-person feedback, at least for me, that GoReact does not [provide]. Sometimes you just need a friendly face to come in and say that they love you no matter what. Especially for those beginning ones. (FG:TC<sup>5</sup>)

Human interaction is one aspect participants valued from face-to-face observations that virtual observations lack. This again demonstrates that both distance and face-to-face methods have their individual pros and cons. The combination of the two methods allows for participants to have a positive supervision experience, and obtain desired elements they could not obtain using just one method or the other.

**Scheduling.** Face-to-face observations are more challenging for USs and TCs to schedule and traveling to the schools can require significant US time. One US stated,

I love being able to observe my student teachers without having to leave my office, walk to where my car is parked, drive to the school, observe/meet, drive back to the office,

search for a parking place, and walk back to the office. The time spent traveling is not efficient. (S:US<sup>6</sup>)

USs noted many time restraints in their schedule interfering with travel for face-to-face observation. Scheduling difficulties were a primary reason for initial implementation of distance observations. Even with a reduced number, face-to-face observations were much harder to schedule than online experiences.

### **Benefits and Concerns of Using Both Observation Methods**

As both types of observation and feedback offer specific valued benefits along with some drawbacks, combining the two methods created the strength of enabling participants to obtain desired elements they could not obtain using just one method or the other. This combination of methods also identified a few implementation issues to consider.

**Combination benefits.** Table 6 shows which observation methods were indicated by research subjects to result in particular benefits, representing how combining the methods allows USs and TCs to obtain each desired supervision element identified. This data demonstrates that the combined method is likely more effective than either method alone.

The combined approach reduces US travel time and provides schedule flexibility yet maintains the benefits of personal relationships by providing some face-to-face observations. The potential to include each desired element is a great strength of combining face-to-face and distance supervision.

**Combination concerns.** Although most research subjects reacted positively to the combination, data indicated two implementation issues that reached the threshold level: (a) determining the best ratio of face-to-face and distance observations (74%), and (b) providing the

additional training required to implement both methods (78%). Respondents offered varying opinions about the ratio of methods:

- “More face to face first semester, and more GoReact second semester” (FG:TC<sup>3</sup>)
- “Two to one? Like two face to face and one video” (FG:TC<sup>3</sup>)
- “In-person for the first couple times . . . and then just go straight to GoReact” (FG:TC<sup>3</sup>)

No particular ratio of face-to-face to GoReact observations received overwhelming support.

The need for more training and instruction will require additional demands on the time of USs and TCs prior to beginning the supervision process. Participants felt the needed additional training and guidance on how to best carry out video observations as expressed in the following quotes: (1) “It would definitely be beneficial to have more guidance before we use this—even before student teaching” (FG:TC<sup>6</sup>) and (2) “More in-depth training to learn all the features would have helped me a lot” (FG:US<sup>6</sup>). One TC even expressed wanting a class on GoReact to provide the necessary training and prior experience: “We should do a class on GoReact” (FG:TC<sup>3</sup>).

### **Experience of University Supervisors**

Overall, USs reacted positively throughout their experience using both methods, with the majority expressing satisfaction in their comments on surveys (100%) and in focus groups (75%). They indicated enthusiasm in 75% of their focus groups and on 50% of their surveys. Concerning emotions, very few comments expressed stress or sadness, but a possibly puzzling result was that frustration was expressed in 100% of supervisor survey responses, but in none of supervisor focus groups. Possibly specific questions on the surveys influenced USs to reflect on frustrating aspects of their experience that were not significant enough to be voiced in focus groups. Also phenomena like groupthink (Janis, 1982) or the attendance of focus group administrators might have affected the USs’ more public responses. They seemed to bandwagon

on each other's comments in the focus groups, which may have resulted in dissenting opinions being withheld.

USs reported scheduling as a principle motivation for implementing online observations. USs felt that GoReact observations fulfilled their original purpose for observation and also allowed them to save time previously wasted with traveling. A typical comment expressed,

One thing I liked about the process . . . is scheduling. I mean we talked about how much time it saved in actually having to go [to the school], but [additionally] it's kind of a pain sometimes to schedule a time that you're not teaching and they're teaching a class.

(FG:US<sup>7</sup>)

USs described GoReact observations as “easy” and “a time saver,” among other things, suggesting that online supervision helped remove some rigid time restraints that made supervision inefficient.

### **Experience of Teacher Candidates**

Findings of this research imply that TCs felt the combined supervision method provided them with a sufficient and satisfying experience. Nearly all TCs thought GoReact feedback was sufficient to let them know what they were doing well and what they needed to work on, regardless of whether they considered it more or less effective than face-to-face feedback. On the survey, TCs agreed that feedback was valuable, allowed them to make adjustments to their teaching, and improved performance in their classrooms. One TC remarked, “Like everyone said, I think both of them were good in different ways” (FG:TC<sup>7</sup>). GoReact observations helped TCs improve their teaching due to factors including self-evaluation:

I loved that I could go back! I like watching myself teach. That helped me see what I needed to improve about my own teaching . . . like a permanent product that I could go back to . . . [and] look at what I needed to fix and what I needed to work on. (FG:TC<sup>3</sup>)

Overall, comments by TCs seemed to imply that most felt satisfied from their mentoring experience despite having stressful incidents. Comments reflecting stress and satisfaction were found at similar rates in both TC survey groups (60%) and focus groups (80-90). Thus, individual moments of supervision stress did not ruin TCs' overall satisfaction with the combined supervision experience.

### **Discussion**

The results generally align with research literature and suggest both theoretical and practical implications. However, additional research is needed to determine if combining face-to-face and distance supervision should become an integral part of pre-service supervision.

#### **Theoretical Implications**

In this study, distance supervision using video observation was considered more convenient than traditional methods, supporting findings from the literature (Ardley, 2009; Dieker et al., 2008; Elford et al., 2013). Additionally, TCs reported that students in their classes seemed more authentic on video (Beck et al., 2002; Knight, 2014), and TCs showed more self-awareness and objectivity when using video (Baecher et al., 2013; Criswell et al., 2015; Eröz-Tuğa, 2012; Kaneko-Marques, 2015; Mettiäinen, 2015; Orlova, 2009).

Another finding from this study, consistent with the literature, is that those being observed valued and implemented the rich feedback they received online, which can lead to faster skill development (Beck et al., 2002; Tripp & Rich, 2012). Viewing their teaching and simultaneously self-evaluating according to established guidelines made the online method more

helpful to TCs (Baecher et al., 2013; Baecher et al., 2014; Eröz-Tuğa, 2012; Knight, 2014; Malinovski et al., 2014; Mettiäinen, 2015; Orlova, 2009; Schmidt et al., 2015; Sewall, 2007).

The finding of the importance of this timely and simultaneous feedback aligns with the literature's conclusions on feedback during supervision (Hattie, 2008; Wiggins, 2012).

Findings are also consistent with the endorsement of e-mentoring in mentoring theory. The potential of online feedback to support novice teachers (Eröz-Tuğa, 2012; Knight, 2007; Nagro & Cornelius, 2013) was evidenced in TCs valuing of their GoReact experience. Research confirms that mentoring in multiple forms during the induction phase of teacher preparation has provided the assistance to build confidence and success (Capizzi et al., 2010; Grier & Holcombe, 2008; Rock, Gregg, Gable, & Zigmond, 2009; Tripp & Rich, 2012). Again, the findings of this study align with prior research, reinforcing the use of a dual method of supervision, such as the combination of both GoReact and face-to-face methods.

### **Future Research**

While combining face-to-face and video observation was perceived by USs and TCs to be effective, more research is needed before use of both observation methods is accepted by the pre-service education community. Additional research is also needed to examine the effectiveness of video analysis as an evidence-based supervision practice. Given that inadequate diversity among faculty and TCs was a limitation in the current study, future research should include more diverse participants. Further research should also examine the benefits for USs and TCs in using a combination of supervision methods in other educational disciplines. School psychologists, speech and language pathologists, and even school administrators may find this tool helpful. The ratio of distance observations to face-to-face observations can be changed in upcoming research based on circumstances and preferences of TCs and USs. We suggest that it

could be beneficial for the TC and US to watch the video together and then jointly decide on a goal for improvement. In addition to preservice special education TCs, this method might be used with other preservice licensure candidates or those evaluated for teacher development.

Participants noted that technology sometimes failed or created barriers when TCs used computers and the internet in schools. Researchers could explore and evaluate the supervision process to determine how a checklist on using the technology and also a support helpline could improve the process and minimize the difficulties. Different cameras, camera placements, tools, methods of uploading, and other technology could be examined to see which methods and tools are more efficient. Further research should also examine the implications of various methods on the type, extent and timing of training for all participants.

### **Practical Implications**

The results of this study can inform administrators in special education preparation programs regarding improved supervision for TCs. The majority of TC participants preferred the combination of two methods, as they received sufficient quality and quantity of feedback, with mentoring that helped them improve their teaching and meet their goals. Most USs as well as TCs indicated with Likert scale selections that the mentoring experience with combined methods was positive and effective—a better use of faculty resources.

The findings of the research along with our lived experience during the research project both support several recommendations for using a combination of observation methods that may enhance maximum satisfaction and success. Most suggestions in this section are based on findings, but are refined a little because of things we learned through the process. For example, in the next paragraph the recommendation is based on comments by TCs that they needed to see their supervisor and talk face-to-face. TCs also mentioned that they desired their supervisor and

their cooperating teacher to discuss things and be on the same page, so we provided the structure of the first and last visit being done face-to-face. This facilitated agreement in evaluation of TCs and allowed USs to see the whole classroom environment and see the students (which also were mentioned in the comments).

**Implementing the combined method.** We recommend using face-to-face visits for the first and last observations. Several TCs and USs expressed a need for the physical presence of USs at the beginning and end of the TCs' experience. As one TC affirmed, "That first one, I needed to see someone . . . [I] just know understands and is there to help" (FG:TC<sup>6</sup>).

We also recommend allowing USs and TCs to decide the ratio of face-to-face to GoReact observations based on their individual preferences and circumstances. For example, a TC in need of extra support may request more face-to-face observations than a TC who feels comfortable with the GoReact observations. Individual pairs consisting of US and TC will decide their own ratio of observation methods. One TC expressed,

I think it just depends on what type of supervisor you have and what they prefer. . . . I felt like I . . . got more from the written than in person, but I don't know if it was just who I was with and [the supervisor] didn't know what to say to me or I just didn't get as much advice as I felt like they could have given me. (FG:TC<sup>1</sup>)

**Using the technology successfully.** To provide USs and TCs the training they need for success in using online observations, we recommend having TCs gain experience with GoReact by completing assignments using the program before student teaching or interning begins. A short additional training should be conducted during practicum orientation to answer questions and guarantee that all participants are exposed to all GoReact features. Finally, USs and TCs should receive updates if new features are added to GoReact, and they should have access to

contacts who will help them if questions or problems arise. Following these training steps may serve to reduce confusion and questions regarding GoReact.

Participants mentioned several technology recommendations for optimal experiences using GoReact. First, TCs stressed setting the video camera up in the classroom for an extended time before actually recording, thus allowing students to become accustomed to the camera and increase their acting authentically while being recorded. TCs encountered problems when students could see themselves on the recording device while being filmed (with a front-facing camera on an iPad). Thus, we recommend using a recording device on which students cannot see themselves during filming, setting the video camera up in a location that allows the US to get an adequate view of the classroom, and considering use of a microphone if audio without a mic seems insufficient. Such steps may ameliorate concerns with inadequate audio and video quality in the footage.

We also recommend TCs perform a test run of recording before the lesson begins, making sure everything is working properly so they can avoid having to re-record due to technical problems. Additionally, participants discussed untimely uploading of videos in 60% of surveys and in 80% of focus groups. TCs expressed frustration with uploading, and likewise USs expressed hearing from their TCs about uploading issues, as demonstrated by the following quote: “The TCs complain regularly about uploading the videos” (FG:US<sup>7</sup>). To eliminate excessive time needed to upload videos, we recommend training on the GoReact app for uploading videos at a quicker speed and uploading at a location with good bandwidth. Efforts to remove technology problems will decrease frustration among participants and create a more effective and efficient way of conducting online observations.

**Improving quality and efficiency of observations.** To maximize the benefits of online observations, we recommend USs provide feedback on videos within two or three days. Having deadlines for online feedback will ensure TCs receive timely feedback, allowing them to implement the suggestions they receive more quickly. To increase efficiency when using GoReact, we recommend that USs and TCs notify one another when they have uploaded videos or left feedback. Finally, we suggest TCs use a checklist and double check the video before uploading a lesson to make sure their video is sufficient for a US to review (e.g., the audio works throughout, the TC is audible throughout, the video shows a large majority of the classroom and students).

For face-to-face observations, we recommend that a three-way meeting of TC, US, and cooperating teacher at the beginning and ending of the capstone experience. Some TCs reported sensing a disconnect in communication between their US and cooperating teacher. A TC represented the problem:

I mean, they just didn't communicate at all. . . . We had our orientation meeting together, but after that, it has [seemed] like she would slip in and . . . he would step out . . . so there just wasn't any communication . . . . There was no three-way conference. . . . Some communication would have been nice. (FG:TC<sup>6</sup>)

During a three-way meeting, the US and cooperating teacher can discuss strategies for ensuring that in-class visits go as smoothly as possible, as well as discuss how to best support the TC in the student teaching or interning experience. We also recommend scheduling face-to-face observations far in advance to ensure that the time is convenient for the students, the TC, the cooperating teacher, and the US. Doing so may avoid last-minute lesson preparation and make face-to-face observations less stressful for TCs and their cooperating teachers. Based on the

findings from this study we project that these recommendations will promote success when using a combination of face-to-face and video observation methods.

### **Conclusions**

Like teaching itself, supervision of teaching should be an efficient and purposeful but caring and supportive—uniquely human—experience. Preferences of supervisors and candidates revealed that this can be accomplished through using both methods of supervision. Benefits of this are increased flexibility, efficiency, and teacher growth, along with the support, encouragement, and immediacy of feedback for a beginning teacher.

This study found that in general our subjects recognized useful features in the two different supervision methods, but they overwhelmingly thought it was advantageous to combine the two methods. Almost all supervisors and teacher candidates preferred the combination of distance and face-to-face methods as this combination added efficiency and a close view of the teacher's performance for both self-evaluation and supervisor feedback while maintaining the benefits of a supportive mentor with a realistic understanding of the classroom.

From our view as researchers, the data has supported these conclusions and our personal experience also shows that while people value efficient methods that work, they derive satisfaction from interpersonal feedback and problem-solving dialogue. According to our research, GoReact can effectively facilitate growth of student teachers, and is best when paired with traditional face-to-face supervision. Over the years of this study, as we sought to understand the experience and process of mentoring pre-service teachers, we seem to have discovered that teachers and faculty value supervision that is convenient and flexible and utilizes current technology. However, we would caution that technology must serve the educational and

pedagogical ends we find most important as we work to develop committed and prepared teachers.

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## APPENDIX A: EXPANDED REVIEW OF LITERATURE

The current educational climate requires more teachers to fill positions in an increasing number of schools both public and private. This school year a large number of classrooms nationwide lacked a certified teacher, and trends predict a national shortfall of 112,000 teachers by 2018 (Ostroff, 2017). But while numbers are decreasing, lawmakers still expect more academic efficiency. Increasing student achievement requires a sufficient number of highly qualified teachers. Universities and other institutions of higher education are attempting to recruit, train, graduate, and license the educators required to fill the deficiency as their colleges of education struggle with tight budgets and limited faculty time.

One area where resources are limited is supervision of teacher candidates. Usually the final aspect of teacher preparation is student teaching—a candidate teaching away from campus in a school classroom under the direction of a licensed teacher, demonstrating the required competencies for a teaching license. In addition to this cooperating teacher, a university supervisor observes and conducts a necessary on-site evaluation of the candidate's teaching. Professors of education are required to conduct research and teach courses and are expected to fulfill committee assignments, travel, give special presentations, and perform professional service—supervision can add considerably to this calendar. University faculty desire to provide appropriate supervision to candidates, but the time to do so can be daunting. As a possible solution to this dilemma, researchers have begun to study the feasibility of observing teacher candidates' lessons using technology; one option is to use video and the internet.

Current literature provides a general background of supervision history, mentoring methods, innovative technology, timely feedback, and qualitative research methods. Specific methods used in this study are focus groups, surveys, candidate self-evaluation, and goal-setting.

All of these topics are reviewed as they pertain to this study. A new online technology for video, titled GoReact, (GoReact, 2017) is used in this research in conjunction with traditional in-person observation of the teacher candidate, as explained in Supervision Methods. Appendix E, Explanation of Terms, defines other less familiar terminology.

### **Supervision History**

Development of public schools during the 1800s required well-trained teachers. Thus supervisors were assigned to train and mentor teachers, then considered public servants, in reaching their full potential. Although clergy, government committees, and parents had been the primary supervisors during the 1700s, the spread of public schools created a supervisory position requiring someone trained and qualified. In the mid-1800s supervision became more focused on improving instruction (Marzano, 2011).

Two main perspectives of education impacted supervision during the following century. The scientific approach to schooling (Cubberley, 1916; Wetzel, 1929) addressed measures of student learning such as individual assessment of students, clear measurable learning objectives, and reliable measures of progress to determine the effectiveness of a teacher. Another approach to schooling focused on social development and democratic values (Dewey, 1938; Coleman, 1945), such as taking initiative, understanding human interactions, and engaging in shared decision making.

Clinical supervision (Cogan, 1973; Goldhammer, 1969; Oliva, 1993) followed a systematic approach, based on pre- and post-conferences, close observation, and data collection. Madeline Hunter (1980, 1984) articulated a common language of instruction and purposes for conferences, along with scripting, in her Hunter Model of lesson design. Following her prescriptive approach came an era of developmental and reflective models (Glatthorn, 1984;

Glickman, 1985) that considered teacher goals and gave teachers more input and sense of control over their own and their colleagues' development. The comprehensive study by the RAND Corporation (Wise, 1984) described supervision, identified its consistent problems, and listed recommendations. To conclude the twentieth century, Charlotte Danielson (1996) identified knowledge, skills, and dispositions necessary for candidates' classroom competence. Her updated framework of four domains—planning, environment, instruction, and professionalism—is prevalent in today's teacher supervision. Evaluation of teacher effectiveness has been the focus moving classroom observation forward (Allen, Perl, Goodson, & Sprouse, 2014; Bransford, Brown, & Cocking, 2000). Marzano (2011) designated the purpose of supervision as “the enhancement of teachers' pedagogical skills, with the ultimate goal of enhancing student achievement” (p. 2). Supervision had become an integral part of teacher training.

### **Mentoring Theory**

Mentoring, now an integral aspect of training new teachers, was previously recognized in leadership and business. The construct of mentoring involves a person possessing a skill or ability coaching a person who desires to master it, with the assumption that having gone through a learning process qualifies one to guide others. Mentoring gives support and confidence the novice needs to begin and succeed in a new situation or a transition period. Mentoring occurs across multiple settings for a large variety of reasons (Northouse, 2013), which include developing organizational and interpersonal skills, offering technical assistance, and clarifying and teaching new roles and responsibilities. Mentoring roles have been examined by Anderson, Major, and Mitchell (1992), Davis and Garrison (1979), Levinson (1978), Schein (1978), and

Sheehy (2006). Kathy Kram (1988) published *Mentoring at Work*, which offered a theoretical foundation to mentoring theory.

Gail Sheehy and Daniel Levinson were among the first to explore mentoring roles and their effects. In *Passages* (1974) Sheehy discussed a mentor's potential role in a young person's development; in *Seasons of a Man's Life* (1978) Levinson provided further insight into the mentoring relationship. Edgar Schein's *Career Dynamics* (1978) distinguished seven kinds of mentoring, with mentors fulfilling many separate roles. As mentoring theory became more widely accepted, Kram dedicated much of her life to researching and publishing on the topic. She wrote *Mentoring at Work* (1988) as well as articles published in a wide range of journals, co-edited a mentoring handbook, and has regularly met with organizations to form practices and cultures that foster effective mentoring and coaching. She has collaborated on the upcoming *Peer Coaching at Work: Principles and Practices* (Parker, Hall, Kram, & Wasserman, 2018).

Knight has recently applied mentoring theory to coaching teachers during induction (2014), encouraging partnerships focused on reflection, dialogue, and application. Possibly his most impactful contribution is video self-evaluation, which he calls a "game-changer." In self-evaluation teachers examine a recording of their lesson, and they learn and improve as they can step back and see what is happening in the classroom. A growth mindset (Dweck, 2006) is fostered in teachers when they give themselves feedback through video analysis, and this supports a teacher's personal desire to achieve his or her best.

In the mentoring process accompanying supervision, candidates develop assorted practical skills for teaching success. "Specifically, individuals who are mentored advance more rapidly, earn higher salaries, have greater job satisfaction, and have fewer intentions to leave the

organization. Research also indicates that being mentored is related to greater socialization, career planning, involvement, motivation, and self-efficacy” (Allen, 2016).

In special education the need for induction level mentoring has been acknowledged as critical, due to a disconnect between candidate preparation and classroom experiences, to feelings of isolation, or to lack of peer teachers in the same school (Hunt, Powell, Little, & Mike, 2013). Research suggests that e-mentoring has the potential to support novice teachers.

### **Supervision Methods**

Clinical supervision (Cogan, 1973; Goldhammer, 1969) refers to the mentoring a teacher candidate receives while teaching in a school classroom. Clinical supervision, as originally designed, incorporates conferencing, observation and data keeping, analysis, suggestions, and goal setting. Supervisors observe, make notes (following prescribed methods), analyze the notes, and share results with the candidate, assuming that the feedback will help improve performance; some view supervision as bridging theoretical learning in a college class to practical teaching in a public school.

#### **Face-to-face Supervision**

For traditional observation the supervisor travels to the school where the teacher candidate teaches under the direction of the regular classroom teacher. The supervisor usually sits in on a class, often at the back, and observes the candidate and the students to identify teaching benefits and challenges that affect learner growth. The cooperating teacher and the supervisor usually do not participate in the lesson, other than watching.

After the lesson a conference between the supervisor and the candidate (and possibly the cooperating teacher) enables sharing data, mentoring, giving suggestions, and making goals to

improve. Afterward the supervisor leaves and the classroom returns to *business as usual*. The supervision occurs in real time and is described as face-to-face.

### **Distance Supervision**

Because candidate supervision has continuously been significant to teacher training, attempts have been made to improve the process. Two major complaints have been time and finance. To eliminate travel time and cost, teacher preparation programs began experimenting with distance supervision, using video technology to enable supervisors to view lessons taught by their teacher candidate from their own home or office (Gruenhagen, McCracken, & True, 1999). As distance supervision has become more common, users have found that the lessons teacher candidates record are more authentic than those viewed in person, as the supervisor's presence is not affecting student behavior.

Distance supervision can be synchronous or asynchronous: watched live or visited at a later time. As schools across the world have experimented more with distance supervision, conclusions show that asynchronous distance supervision creates new opportunities for supervision and evaluation that have not previously been available (Fadde & Sullivan, 2013). For example, with asynchronous video supervision the candidates are able to view lessons multiple times, enabling them to notice mannerisms and habits they typically would not notice. They also have options to *rewind*, *fast forward*, and *pause*. These affordances create a significantly deeper reflection than evaluations without video. Additionally, with asynchronous video the candidates have opportunities to find and show specific instances in a lesson where they felt impressed by their performance or thought they needed improvement.

Asynchronous distance supervision is also beneficial for supervisors, allowing them to observe the teacher candidate's lesson as many times as needed. As a result, they can provide

richer feedback and a greater variety of ideas for the candidate to improve teaching ability and performance (Hung, 2016).

### **Bug-in-the-Ear (BIE) Supervision**

Virtual bug-in-ear technology was developed over 30 years ago for use in NFL sports coaching and later used for other mentoring interactions. More recently, education researchers have employed this technology to assist with coaching teacher candidates in practicum. Using a computer, a web cam, a Bluetooth-enabled earpiece and adapter, and a voice over internet protocol (VoIP) technology, such as Skype, a professor observing the teacher through the camera can give immediate coaching that is private and discreet (Rock, Gregg, Gable, & Zigmond, 2009). The supervisor views and hears the classroom through the camera and computer. The adapter permits the earpiece to be paired with the computer. Only the candidate can hear the coach's comments.

Positive effects of this virtual coaching have been shown through numerous studies (Dieker, Hynes, Hughes, & Smith, 2008), including coaching in a virtual classroom called TeachLivE. Benefits to instructional practice include better classroom management, more opportunities to respond, stronger explicit instruction, and improved delivery of feedback (Elford, Carter, & Aronon, 2013).

### **Self-Evaluation**

Video is a powerful self-examination tool. The process of engaging in self-assessment fosters candid questions about one's own practice. In studies using video observation, multiple researchers have concluded that watching oneself on video has many advantages for the learner, applicable to self-evaluation for teacher candidates. A candidate records a lesson in the classroom, then watches that lesson, focused on certain criteria or skills to assess the quality of

the actual performance. This can occur with the university supervisor or alone. The candidate usually takes reflective notes or completes an observation form, eventually setting goals to adjust instruction to increase the learning of all students.

Some common findings from the research on self-evaluation are that it increases candidates' self-awareness (Baecher, Kung, Jewkes, & Rosalia, 2013; Criswell, Calandra, Puvirajah, & Brantley-Dias, 2015; Eröz-Tuğa, 2013; Mettiäinen, 2015; Orlova, 2009), helps the teacher focus on student learning (Baecher, McCormack, & Kung, 2014; Beck, King, & Marshall, 2002; Romano & Schwartz, 2005), enables a more objective view of their teaching skills (Orlova, 2009; Snoeyink, 2010) and promotes faster skill development (Beck et al., 2002; Colwell, 1993). Teachers evaluating their own video take a more active role in analysis and collaboration with the supervisor (Baecher et al., 2014; Malinovski, Vasileva, Vasileva-Stojanovska, & Trajkovik, 2014; Schmidt, Gage, Gage, Cox, & Mcleskey, 2015; Sewall, 2007), increase the quantity and depth of their reflective comments (Calandra, Gurvitch, & Lund, 2008; Criswell et al., 2015; Kaneko-Marques, 2015; Sewall, 2007; Teo, McNamara, Romeo, & Gronn, 2015), improve their own performance and their grades (Baecher et al., 2013; Eröz-Tuğa, 2013; Orlova, 2009; Rich & Hannafin, 2008), make better teaching decisions as they implement feedback (Kaneko-Marques, 2015), focus on instruction rather than management (Rosaen, Lundeberg, Cooper, Fritzen, & Terpstra, 2008), reduce anxiety regarding observations (Eröz-Tuğa, 2013), and develop a vision for future development as a teacher (Kaneko-Marques, 2015; Sewall, 2007).

Researchers noted possible weaknesses of using video to self-evaluate, such as a limited view of the classroom and challenges associated with using technology (Baecher et al., 2014; Fry, & Bryant, 2006; Garrett & Dudt, 1998; Heafner, Petty, & Hartshorne, 2011). More than one

study noted that self-reflection alone is not enough to facilitate improvement. It is important that teachers seek out professional guidance as well (Capizzi, Wehby, & Sandmel, 2010; Romano & Schwartz, 2005).

### **Survey Research**

Studies of teacher perceptions and satisfaction with face-to-face and distance supervision methods have provided useful information for practitioners. Most studies have employed survey research using questionnaires, interviews, or both to assess participants' thoughts, opinions, and feelings. Respondents can be selected as a representative sample or a census of a study population. A questionnaire contains a predefined series of questions, which can be conveyed in written form, online, or by telephone or mail. Interviews are conducted in person with an individual or a group.

These carefully planned discussions in a permissive and accepting environment are designed to reveal the participants' perceptions about a specific experience, topic, or activity (Massey, 2011). Responses often deal with attitudes, beliefs, observations, and preferences related to the interview questions. Many researchers have adopted the use of focus groups to obtain rich qualitative data and explore the effectiveness of a treatment (Cheng, 2007; Ryan, Gandha, Culbertson, & Carlson, 2014).

The goal of focus groups is to capture purposeful interaction between participants and generate data on the different ways the participants interacted. These articulated, attributional, and emergent data are then analyzed qualitatively to search for common themes (Massey, 2011). Another advantage of these data is that stakeholders get verbatim statements to use as concrete evidence for making changes (Nestel et al., 2012). Focus groups prove to be beneficial because they provide new perspectives from researchers and participants, give a voice to the

underrepresented population, empower individuals, and yield high participation (Sagoe, 2012; Shoaf & Shoaf, 2006).

Conversely, focus groups also have weaknesses, which include sharing subjective opinions, fostering participant sensitivity, risking dominant voices overpowering the interview, and lacking generalizability of data due to small sample size. Some have criticized focus groups for being unnatural and unscientific, with the potential for bias and lack of uniform participation (Franz, 2011; Ho, 2006; Shoaf & Shoaf, 2006). An ethical concern for researchers is to be sensitive to status, position, and specific needs of participants and to reassure them of data sensitivity and confidentiality (Parker & Tritter, 2006)

### **GoReact**

GoReact (2017) is a video-based skill-training internet platform that allows instructors to interact easily with students' video assignments. Originally developed in a university classroom, this tool is touted as a premier platform for skill training using video across teaching disciplines such as American Sign Language, teacher education, public speaking, and the performing arts. It also has application in corporate sales and training and wherever coaches help to improve performance skills. GoReact puts the entire demonstration and feedback process in the cloud where it can be watched by the teacher for self-evaluation and by the instructor for review and feedback as many times as needed. GoReact offers many advantages for the presenter and the observer. One such feature includes a presenter recording, selecting, and uploading a demonstration which he thinks is a good representation of his skills. He chooses what device he uses to record, which lesson he wants the coach to see, and when and where he will submit the video. Another helpful feature is that the performance is live and authentic but the observer can view it at a convenient place and time, wherever internet access is available.

Forms for evaluation can be included along with accompanying documents from the performer. The observer annotates the video with auto-synced comments and time-codes. Feedback can be shared in multiple forms such as text, audio, and video comments. In addition, peers and other individuals in the organization can receive access to the video for more extensive feedback. Comments can become discussion threads. Analytics and assessments such as rubrics, markers, ratings, scores, tests, and reports can be generated to enhance the value of the feedback. Most components can be timed and measured for comparison. More information can be found at [get.goreact.com/teachers](http://get.goreact.com/teachers).

### **Timely Feedback**

Giving effective feedback has been identified as a major mentoring strategy by many researchers. To make feedback effective at helping improve their practice, leading to greater student achievement, teacher candidates want feedback as soon as possible. Evidence in the literature shows that immediate specific instructional feedback supports continuing growth. Timely feedback has been shown to have a higher impact on changing teacher behavior, as the supervisor is immediately correcting the target behavior. Long term behavioral changes in the student teacher are noticed more often when immediate feedback is given. Feedback that was given after a delay is shown to be less effective (Darling-Hammond, Amrein-Beardsley, Haertel, & Rothstein, 2012; Gormally, Evans, & Brickman, 2014; Marzano, Pickering, & Pollock, 2001; Nasatir, 2016).

If feedback cannot be delivered immediately, then *timely* feedback—feedback that is given as soon as possible after the teaching experience—has been identified as of most worth to practicing teachers. A few ways of disseminating more timely feedback have been suggested. In addition to oral or written feedback from a supervisor at the time teaching is observed, feedback

can be delivered in sources such as peer review or self-evaluation assisted by technology (Wiggins, 2012). Using an internet-based video observation tool, the supervisor watches the lesson at a later time and gives feedback to the teacher for the purpose of instructional improvement. Timely feedback in this situation would occur within a few days. With a face-to-face observation the supervisor and candidate usually meet following the lesson for a consultation which includes feedback and questions to help improve the teacher's practice.

### **Qualitative Research**

Using surveys involves asking questions to assess thoughts, opinions, and feelings of respondents selected as a sample of a population or a census, which is the official count of a population. Information is solicited through questionnaires and interviews. Interviews are conducted in person with a single individual or a group. A questionnaire, which is a predefined series of questions, can be conducted in written form, online, by telephone, or by mail. It has in recent years become commonly labeled as a survey.

To obtain rich qualitative data and explore the effectiveness of a treatment, many researchers use focus groups, a type of interview now popular in businesses, universities, research workrooms, and schools. Focus groups are carefully planned discussions in a permissive and accepting environment, designed to reveal viewpoints, beliefs, and perceptions of the participants about a specific experience, topic, or activity (Ho, 2006; Massey, 2011). Responses often deal with attitudes, observations, and preferences related to interview questions. A focus group typically has four to 12 participants who meet to answer a series of open-ended questions posed by a mediator. Group interviews typically last 45 to 120 minutes, depending on participants' time availability and the mediator's question quantity. This method capitalizes on discussion, interaction, and synergy (Parker & Tritter, 2006).

Focus groups are set up to capture purposeful interaction among participants and generate data on the different forms of interaction they experience. The resulting articulated, attributional, and emergent data are then analyzed qualitatively to search for common themes (Massey, 2011). From these data the stakeholders obtain verbatim statements to use as concrete evidence for making changes (Nestel et al., 2012). Focus groups have proven beneficial because they provide new perspectives from researchers and participants, give a voice to underrepresented populations, empower individuals, and yield high participation (Sagoe, 2012; Shoaf & Shoaf, 2006).

Conversely, focus groups have weaknesses, which include sharing subjective opinions, fostering participant sensitivity, risking dominance of particular voices, and having small sample sizes that reduce generalizability of the data. Some have criticized focus groups for being unnatural and unscientific, with the potential for bias and uneven participation (Ho, 2006; Shoaf & Shoaf, 2006). An ethical concern for researchers is to remain sensitive to status, position, and specific needs of participants and to reassure them of data sensitivity and confidentiality (Parker & Tritter, 2006).

## APPENDIX B: EXPANDED METHODS

A description of the plan for this study includes information about the two groups of subjects, followed by methods for collecting data on the participants' perceptions of the treatment using electronic surveys and face-to-face focus groups. Methods for analyzing data are then addressed.

This study employed focus group interviews and online survey methods to obtain rich data and explore the effectiveness of a supervision treatment. Over a three-year period university supervisors (USs) and teacher candidates (TCs) participated in both remote video and face-to-face observation methods. The supervision took place in five school districts which educate a combined total of about 180,000 school children and employ over 7,000 teachers.

### **Participants & Procedures**

The participants consisted of two groups. The primary group included university special education faculty who mentor and evaluate both student teachers and interns during their preparation for licensure. The second group was comprised of undergraduate teacher candidates enrolled in the preparation program for special educators, both mild/moderate and severe, at Brigham Young University during the 2014, 2015, and 2016 academic years.

Of the 15 faculty members who participated, 67% were female and 33% were male. All were between the ages of 40 and 62, with 2–22 years of experience in supervision. All were employed at BYU, having a range of academic rankings from adjunct clinical professors to full professors. Of the 118 undergraduate teacher candidates (TCs), 95% were female, which is consistent with enrollment in the college of education generally (94%). The remaining 5% were male. All were between 19 and 50 years of age, with the median being 25. They were upperclassmen in their last year of undergraduate status. All were predominantly Caucasian,

making the research groups limited in ethnic diversity and gender equity. TCs were all enrolled in culminating special education courses of internship or student teaching.

This study did not utilize sampling techniques because it included entire populations. Participants were all of the students enrolled in student teaching and internship courses (CPSE 486, 487, and 496) in the Department of Counseling Psychology and Special Education (CPSE) during the three years (2014–2017) of the study. Participants in the CPSE faculty group were all the members assigned as university supervisors (USs) during this same time period. The supervision took place in schools belonging to the BYU-Public School Partnership, a collaborative unit joining the university with five school districts located in the central part of the State of Utah.

Each teacher candidate was assigned a placement for student teaching by the department coordinator in collaboration with the district special education directors, with the exception of those who had signed a contract with a school district to teach as an intern in a placement assigned by the district administrator (see Appendix E: Explanation of Terms). Placements varied in grade level, district and location, type of classroom, and emphasis chosen by the candidate — mild/moderate or severe. A cooperating teacher was carefully selected for each TC.

Supervisors were expected to inform the cooperating teacher and the teacher candidate of mentoring expected for successful completion of the course, including portfolio assignments, teaching observations, and a passing score on the overall final evaluation tool. Students were required by the university course of study to be observed and given feedback by their supervisor six times each semester. During this study half of the observations were conducted in-person and half were completed online using GoReact (2017), an internet-based platform for uploading and viewing video, developed to help presenters improve and designed to keep video secure and

ready for viewing by authorized individuals ([get.goreact.com](http://get.goreact.com)). Teacher candidate training prior to observations included how to record (using computers or provided iPads), upload, self-evaluate, and notify the supervisor when the video was ready to be viewed. Supervisors were trained on how to use GoReact for viewing teacher candidates' videos and leaving feedback.

Faculty members were assigned as university supervisors for the teacher candidates at the beginning of each semester. Supervisors provided feedback directly on GoReact for video observations and in person during face-to-face observations. Each US had access to videos uploaded by their assigned TCs throughout the semester of student teaching or interning.

After each video was completed, the TCs were required to self-evaluate their teaching and leave comments on the video directly on GoReact or on the department's Direct Instruction Observation Form available on the GoReact website. They were then expected to notify their supervisor by email that the video was ready for reviewing and feedback. The university supervisors viewed and added comments to the video as feedback for the teacher candidate. Supervisors were expected to notify the teacher candidate when review and feedback were completed. Follow-up dialogue, typically by email, sometimes occurred between supervisors and teacher candidates to further explain the written feedback. Teacher candidates then used the feedback to develop an action plan to improve their teaching. Figure 2 in Appendix C provides visual representation of the processes of online observation and live observation.

### **Data Collection**

Two instruments were used to collect data in this study including (a) an electronic survey (two forms); (b) an interview guide designed for focus groups or individual interviews. Supervisors and teacher candidates had separate surveys with different Likert-scale questions and open-ended questions.

The faculty group and the candidate group were administered separate Qualtrics (2002) surveys, sent electronically to each participant during the final week of classes each semester. The supervisor survey consisted of nine Likert-scale questions, followed by a few open-ended questions. The teacher candidate survey consisted of seven Likert-scale questions, again followed by a few open-ended questions. Supervisor and teacher candidate survey items were all different and thus could not be compared. Preliminary questions were generated by the primary researcher in consultation with a research specialist engaged in online learning in his work at the BYU Center for Teaching and Learning (CTL). He was instrumental in the initial formulation of the process and the implementation of the on-line observations. A pilot study gave valuable feedback on the survey effectiveness, which led to revision and appropriate changes in the questions.

Three supervisors and seven teacher candidates participated in a pilot study during winter semester of 2014. Each supervisor made the traditional three or four visits to the school where an assigned teacher candidate was teaching and gave feedback. In addition, the university supervisor did two or three online observations and provided feedback using GoReact. At the culmination of student teaching, each university supervisor and each teacher candidate was invited to complete the appropriate Qualtrics survey and participate in a focus group to assess the study in multiple areas, including how the technology worked, whether the TC felt the feedback was helpful, whether the TC had improved as a teacher, how individuals in the classroom reacted to the video recording equipment and process, and what pros and cons were associated with both methods. At the end of each survey, TCs were prompted to add their name if they were willing to participate in a focus group; \$20 gift cards were used as incentives for teacher candidates to participate in focus groups, and \$40 gift cards were used as incentives for supervisors to

participate. Gift cards were sent out after the focus groups had taken place. The information gathered from surveys and focus groups led to needed changes in the process of providing feedback, which included adding the step of having teacher candidates self-evaluate before submitting their video. The feedback also led to refinement of the survey questions. Examples of these questions can be found in Appendix D.

In this study each cohort was measured at a different time, but at the same relative point immediately preceding graduation. Answers to the survey were compiled by Qualtrics. After each focus group, transcriptions of the recorded meetings were uploaded into NVivo (Nvivo, 2002), a tool for evaluating qualitative data. Survey responses were anonymous for faculty and candidates, but identified and stored according to time period. See Table B-1 for a description of the time periods in which data were collected. Participants had a four or five day window in which to complete the survey. The response rate (out of the total number of participants for each semester) varied from *poor* (7 responses) to *very good* (20 responses). This was optional for the supervisors and teacher candidates. Limitations for this instrument include that it was self-developed, had a narrow scope, and was not tested on a large sample.

Participants were interviewed on campus in group settings held at times convenient for group members. During some semesters, multiple focus groups were held for teacher candidates to accommodate varying schedules. Supervisors and teacher candidates attended separate focus groups where they discussed follow-up items derived from the survey questions, probing for clarification, examples, and experience diversity. Attendance was voluntary, but the gift cards and lunch were provided to increase participation. Each focus group interview was audio recorded, transcribed, and then qualitatively analyzed. The researcher's notes were written in a

journal after each focus group. Transcriptions by department secretaries and research assistants were reviewed by the primary researcher for possible errors.

Table B-1

*Data Collection Time Periods & Participant Groups*

Year	Semester	Group ID	Focus Groups ( <i>n</i> =14)		Survey Groups ( <i>n</i> =9)	
			US ( <i>n</i> =4)	TC ( <i>n</i> =10)	US ( <i>n</i> =4)	TC ( <i>n</i> =5)
2014	Fall	1	0	1 (5)	1 (7)	1 (17)
2015	Winter	2	1 (8)	3 (16)	1 (8)	1 (22)
2015	Fall	3	1(4)	1 (6)	0	0
2016	Winter	4	0	0	0	1 (19)
2016	Fall	5	1 (6)	3 (19)	1 (7)	1 (20)
2017	Winter	6	1 (7)	2 (21)	1 (8)	1 (26)

*Note 1.* (#) Indicates the number of participants.

*Note 2.* Focus group and/or survey data is missing for some semesters due to technological issues with recording and saving.

*Note 3.* Some semesters included multiple focus groups for teacher candidates to accommodate schedules.

*Note 4.* US abbreviates “university supervisors” and TC abbreviates “teacher candidates.”

Data in this study have been carefully stored to protect personal information and knowledge regarding students in the public school classrooms, teacher candidates, and their supervisors. Survey data have been collected using Qualtrics. All videos will remain on a secure, password-protected website. Information will be stored in multiple secure places to prevent loss of data. Hard copy data will be kept in a locked office at the primary researcher’s residence. Only those people who are working on the study will have access to the data collected. The study protocol adheres to ethical principles.

### **Research Design**

This qualitative study employed electronic surveys and focus groups to identify the perceptions of individuals using two methods of supervision for beginning teachers. Participants

were assessed after a combination of online video and face-to-face observation had been used by supervisors to mentor and evaluate student teachers and interns. All responses were recorded, transcribed, and analyzed using Nvivo (NVivo, 2002) to determine themes and patterns.

The questions for this study addressed both the supervisors' and the teacher candidates' perspectives. Supervisors were asked what their experience was like, whether they felt the method was effective, whether they liked using a combination of methods, and how the methods affected the quality of instruction they gave to students. Teacher candidates were asked what their experience was like, whether they liked using a mixed method of supervision, and whether they felt it provided high-quality mentoring that helped them improve their teaching.

This research explored whether a combination of face-to-face and online methods of observing teacher candidates would be perceived as effective by the participants. Perceptions, details, and insights of supervisors and candidates were collected and analyzed regarding this question.

The audience for this study included university administrators, deans, and department chairs, as these individuals have responsibility for directing and providing efficient supervision of candidates and make decisions about how supervision is accomplished. They also care that those involved in supervision believe the methods being used are effective. The following questions, derived from the main research questions, were studied as shown in Table B-2.

### **Data Analysis**

At the conclusion of the data collection via surveys and focus groups, statements from the open-ended survey questions and the transcriptions from focus groups were entered into NVivo, a qualitative research tool for analysis. Through open and axial coding researchers were able to identify the prominent themes from the data, even in instances where only one form of coding

Table B-2

*Focus Group Questions by Research Questions*


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1.	What were participants' perceptions about using video for supervision?  Did participants like the distance supervision process? What benefits and challenges did they find? How did participants feel about introducing video to the supervision process through GoReact?
2.	What were participants' perceptions about face-to-face supervision?  Did the participants like the face-to-face supervision process? What benefits and challenges did they find?
3.	What were participants' perceptions about using both video and face-to-face supervision methods together?  What benefits and challenges were found in using both methods together? Did supervisors have a good experience using the duo-method? Did teacher candidates? Did feedback from both types of mentoring help TCs make specific improvements in their teaching? Did the use of the dual-observation method surpass the use of either method alone?

---

was used. The Likert scale responses on the surveys were also analyzed for findings and are summarized in the results and recommendations sections.

Responses from USs and TCs were obtained from 14 focus group transcriptions and the open-ended survey items from nine semester groups of Qualtrics surveys and were uploaded into NVivo software (NVivo, 2002) for qualitative analysis. The initial open coding of the data, including reviewing and categorizing ideas into specific nodes by topic, yielded an hierarchical list of 23 parent (primary category) nodes and 48 child (secondary category) nodes. The threshold of 50% of the 23 group sources (see Table 1) were considered as representative themes. It is important to note that the data from open-ended survey questions and focus groups were coded by individual statements within source groups. No difference was acknowledged between individual statements and statements shared by multiple subjects during the coding process, which is a limitation. Themes displayed in this study are expressed by the percentage of focus groups and survey groups in which participants in a survey or focus group brought up each

theme. In axial coding, analyses used queries and matrices to identify patterns by role (university supervisor or teacher candidate) and by data collection method (survey or focus group), again using the 50% threshold. Open-ended survey questions and focus group comments were used to determine overall supervision preferences, benefits and challenges of face-to-face and distance supervision separately, and benefits and challenges of using both methods together. Survey and focus group responses from USs and TCs were compared for differences in opinion and experience between the two participant groups, differences in opinion between surveys and focus groups, and differences in opinion on method of supervision (distance versus face-to-face). A final step in the analysis included a review of the Likert-scale survey responses from the semester groups to find averages and outliers for each Likert question. This information was synthesized as participant perceptions on using GoReact over several semesters.

## APPENDIX C: FIGURES AND ILLUSTRATIONS

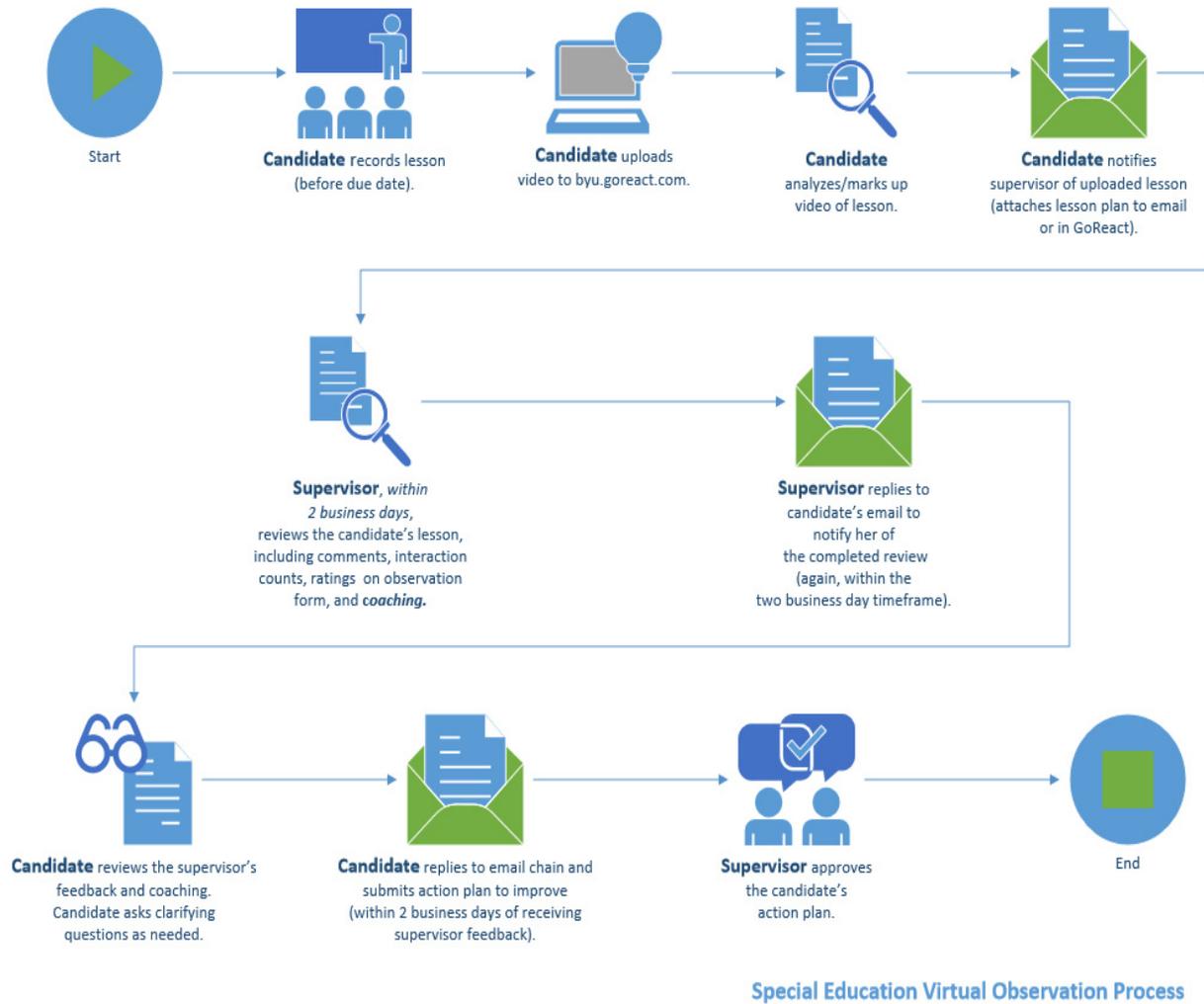
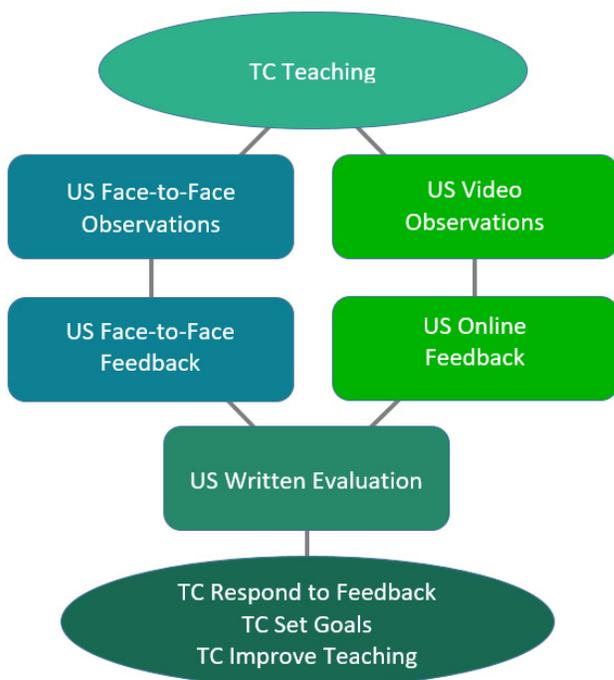


Figure 1. Flow of participant responsibilities in a study video observation.



*Figure 2.* Simplified comparison of two supervision methods.

## APPENDIX D: SURVEY QUESTIONS

The following survey questions were sent out to teacher candidates and supervisors at the end of each semester. These questions were also the basis for the focus group discussions in which the conversation sometimes migrated to related topics.

### Teacher Candidate Survey

Q1 Please respond to the following statements.

	Strongly Disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
GoREACT was easy to use (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The feedback I received via GoREACT was useful (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GoReact was an efficient way to receive feedback from my supervisor (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The quality of feedback I received was valuable to my learning (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to make adjustments to my teaching based on my supervisor's comments through GoREACT (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Video perspective was sufficient enough to see my own performance and made sense with the feedback I received from my supervisor (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to translate feedback I received from GoREACT into improved performance in my classroom (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2 How did your cooperating teacher seem to feel about the recordings in comparison with in-person evaluations?

Q3 How do you feel the feedback from GoREACT compares with feedback from an in-person evaluation? How was it better? How was it worse?

Q4 How did you use the feedback from your observations, whether they be in-person or recorded, in your future teaching?

Q5 How did recording the video affect you, as a student teacher, and the students in your class? Which would you say is preferable: video recording, or in-person observations?

Q6 Describe your experience when your university supervisor visited your classroom.

## University Supervisor Survey

	Strongly Disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
The GoREACT training I received was sufficient (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt comfortable using GoREACT (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GoREACT was appropriate to meet my needs as a university supervisor (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally, I feel that GoREACT is a useful tool for supervising teacher candidates (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the evaluations I gave within GoREACT were equivalent to feedback I could provide during an in-person evaluation (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving feedback in GoREACT facilitated improved performance in those I supervised (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GoREACT was easy to incorporate into what I am already doing (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The video perspectives that GoREACT provided were sufficient for me to give adequate feedback to those I supervised (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The observation form within GoREACT was not sufficient to meet my needs (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2 Describe your experience when you went to visit a teacher candidate's classroom.

Q3 What went well with the process of supervising at a distance? What did you like about the process?

Q4 How did the quality of feedback you were able to provide using GoREACT compare with the feedback you gave through in-person evaluations?

Q5 What comments do you have about GoREACT and its features? What would make the GoREACT software easier to use?

Q6 What additional support would be needed, if any?

## APPENDIX E: EXPLANATION OF TERMS

1. *Asynchronous*, in the context of this article, refers to the fact that supervisors do not watch their students' recordings as the lessons being recorded take place, but watch the videos later and again if needed.
2. *Distance supervision* indicates that supervisors are not on site where their observation is taking place. Supervisors use online tools to watch and evaluate their candidates' videos in any location that has Wi-Fi.
3. *GoReact* is an online tool that facilitates distance supervision by enabling supervisors to watch videos uploaded by their teacher candidates and leave feedback which either of them is able to consult at a later time.
4. *Intern* is used in this study to designate an individual working as a first-year teacher of record while still completing pre-service requirements under the direction of an experienced teacher. These interns are typically paid half salary.
5. *Mentoring*, sometimes considered synonymous with coaching, involves discussing challenges and solutions along with giving instructional feedback based on professional experience.

## APPENDIX F: INSTITUTIONAL REVIEW BOARD APPROVAL

AUTHOR NOTE: When we began the study in 2014, this study was previously approved with exempt status. However, when we decided to publish and generalize the findings we sought additional approval. This IRB approval is in response to our second requested permission.



INSTITUTIONAL REVIEW BOARD  
FOR HUMAN SUBJECTS

**Memorandum**

To: Professor Barbara Smith

Department: CP&SE

College: EDUC

From: Sandee Aina, MPA, IRB Administrator

Bob Ridge, PhD, IRB Chair

Date: March 21, 2018

IRB#: E18113

Title: *"Observations of Special Education Student Teachers Using Two Methods: Distance and Face-to-Face"*

Brigham Young University's IRB has approved the research study referenced in the subject heading as exempt level, category 4. The approval period is from **March 21, 2018 to March 20, 2019**. Please reference your assigned IRB identification number in any correspondence with the IRB. Continued approval is conditional upon your compliance with the following requirements:

1. Any modifications to the approved protocol must be submitted, reviewed, and approved by the IRB before modifications are incorporated in the study.
2. All recruiting tools must be submitted and approved by the IRB prior to use.
3. In addition, serious adverse events must be reported to the IRB immediately, with a written report by the PI within 24 hours of the PI's becoming aware of the event. Serious adverse events are (1) death of a research participant; or (2) serious injury to a research participant.
4. All other non-serious unanticipated problems should be reported to the IRB within 2 weeks of the first awareness of the problem by the PI. Prompt reporting is important, as unanticipated problems often require some modification of study procedures, protocols, and/or informed consent processes. Such modifications require the review and approval of the IRB.
5. A few months before the expiration date, you will receive a continuing review form. There will be two reminders. Please complete the form in a timely manner to ensure that there is no lapse in the study approval.

IRB Secretary  
A 285 ASB  
Brigham Young University  
(801)422-3606

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