Academic Leadership: The Online Journal

Volume 5
Issue 3 *Fall 2007*

Article 17

10-1-2007

The Effectiveness of Face-to-Face vs. Web Camera

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Academic Leadership Journal

The Effectiveness of Face-to-Face vs. Web Camera

INTRODUCTION

A major challenge of university faculty and adjunct members in teacher education is the logistics of scheduling and observing remote field experience evaluations of candidates. According to National Educational Technology Standards for Teachers (NETS.T) (2003), observations require an investment of time, scheduling logistics, and trained professionals to observe and analyze evaluation data. The authors of NETS.T (2003) state, “Put another way, observation opportunities are precious and should be designed to make every moment count” (p. 112). Technology, particularly in the form of videoconferencing, is being used to develop and improve the level of communication when observing and evaluating candidates. This mode of delivery is helping to bridge the three themes of transforming identity, collegial relationships, and cultural responsiveness.

According to International Society for Technology in Education (ISTE) (2002), the definition of videoconferencing is video and audio are transmitted live through telecommunications allowing people at remote locations to see and hear each other. Every school setting has a unique set of variables that must be dealt with when observing candidates. As educational experiences in the classroom continue to grow and geographical areas expand, there is a need to find an alternative method to observe candidates effectively.

International Society for Technology in Education (2002) shares that there is a performance profile that includes promoting student conceptual understanding and technology competence to meet the curriculum standards and the school community creating a setting focused on learning for all members of the community. Additionally, ISTE (2002) sets forth conditions in building an ideal environment to support candidates, teachers, administrators, and parents, which include the following:

- Shared vision for technology use in the classroom
- Access to current technologies, software, and telecommunications
- Skilled educators that model technology use that facilitates student learning
- Professional development to aid in applications of technology of teaching
- Technical assistance which requires field experience and is on site to ensure reliability of teaching resources
- Current standards and curriculum resources that requires technology based resources to meet content standards
- Student centered teaching which allows a variety of technology enhanced activities
- Assessment where master teachers work with candidates to assess the effectiveness of student learning and technology

- Community support so candidates teach in partner schools where technology integration is modeled and supported
- Administrative policies that support and reward the use of technology (pp. 256-257)

Today's institutions are in transition (Palloff & Pratt, 1999). As stated by Palloff and Pratt (1999), much of the change we are seeing today is due to economic pressures and a greater number of students with diverse needs attending colleges and universities. Therefore, university faculty members are using technology as a tool for remote field experience observations of candidates. There may be concerns about using videoconferencing to evaluate candidates in the classroom. However, due to the geographical location of some universities, a great need to expose candidates to diversity, and university faculty time spent driving to observe candidates, videoconferencing has been found to be very effective. For educators, videoconferencing allows classes around the globe to meet and communicate, as well as converse one-on-one during an observation (Lever-Duffy, McDonald, & Mizell, 2003). The candidate designs an instructional unit, creates lesson plans, and teaches one of the lessons while being observed via videoconferencing, specifically a web camera. During this time the university faculty supervisor completes a field observation evaluation. A discussion between the candidate, supervisor, and mentor teacher pertaining to the lesson presented follows the field observation evaluation.

Often times there is a breakdown among and between adjunct faculty and faculty teaching the classes on campus. This is often due to a lack of communication. While adjunct faculty may bring a wealth of knowledge in teaching experience, often times they do not have "buy in" to the course requirements. Sometimes the adjunct faculty members are not well versed in technology (International Society For Technology in Education, 2002). For the videoconferencing to be effective and the integration of a seamless well-supported manner each supervisor must be versed in the following (International Society For Technology in Education, 2002):

- Recognize the effective use of technology
- Become aware of current thinking on the use of technology
- Become familiar with core curriculum software
- Be able to coach candidates based on models of good practice (p. 258)

Observations take a great amount of time to schedule, collect data, drive to and from the field location, and analyze the data (National Educational Technology Standards for Teachers, 2003).

According to Palloff and Pratt (1999), there has been a paradigm shift in the culture of the classroom, which may also include candidate observations. Educators are now seeing more virtual classrooms and observations. In a face-to-face setting, typically a sense of community develops among the candidates. This can be applied to observations as well. When observing a candidate remotely, facilitation must occur and interaction by all parties should be included. Some of the desired outcomes indicating an online community, which may apply to videoconferencing has been formed are the following (Palloff & Pratt, 1999):

- Active interaction and personal communication

- Collaborative learning with students and faculty
- Socially constructed meaning
- Sharing of resources
- Expressions of support and encouragement as well as willingness to critically evaluate the work of others (p. 32)

These have been found to be accurate with the videoconferencing used to evaluate candidates teaching mini-lessons in their methods course classes.

STATEMENT of PROBLEM

University faculty and adjunct supervisors in the Department of Teacher Education at Fort Hays State University (FHSUU) face the challenges of candidate observations in remote field experience locations scheduling logistics and diversity requirements set forth by National Council for Accreditation of Teacher Education (NCATE) (2002). The College of Education and Technology at Fort Hays State University defines diversity as differences among groups of people and individuals based on culture, ethnicity, race, socioeconomic status, gender, exceptionalities, language, migrant status, religion, sexual orientation, and geographical area. The university's definition is intended to make explicit the understanding that administrators, faculty, and candidates have about diversity.

To meet the NCATE (2002) diversity requirements, candidates are geographically dispersed throughout Kansas and its surrounding states. University supervisors encourage candidate placement in diverse settings so each candidate may experience presenting a formal lesson to all children regardless of the diversity. Therefore candidates are often placed in different time zones, making it difficult for university supervisors to observe those candidates.

With candidates placed in diverse locations, challenges to observe those candidates develop for university supervisors. Some of the challenges include determining a date and time that will work for all parties involved, driving distance and time for the university supervisor, increased gas prices, use of personal vehicles, and class disruption. Therefore, FHSU supervisors, in collaboration with the local unified school district teachers, explored the use of videoconferencing capabilities to evaluate candidates presenting formal lessons in classrooms through web cameras and video recording software.

RESEARCH QUESTIONS

The topic under investigation was the effectiveness of face-to-face candidate observation evaluations versus candidate remote field observation evaluations using videoconferencing software such as web cameras to conduct the field observations. Utilizing a quantitative and qualitative approach on four case studies, the following research questions were investigated:

1. Will FHSUniversity Teacher Education faculty supervisors acquire training and explore the use of videoconferencing to observe candidates presenting formal lessons in professional development school classrooms?
2. Using inter-rater reliability, will two supervisors score a formal observation in the same manner

whether the observation was face-to-face or via a remote field observation, such as a web camera?

3. Will FHSU University Teacher Education faculty supervisors and candidates reflect positively in regard to their satisfaction with the use of videoconferencing software to conduct the field observations?

METHODOLOGY

Participants

A total of sixty-four (64) candidates were enrolled in one or two of three methods courses taken in conjunction with internship courses during the 2005 fall semester, which represents sixty-two percent (62%) of all candidates enrolled in required teacher education courses. The three methods with corresponding internship courses include reading and language arts methods, social studies methods, and mathematics and science methods. Out of those sixty-four (64) candidates thirty-six percent (36%) of the candidates were classified as juniors and sixty-four percent (64%) were classified as seniors. Disaggregating the candidates by gender, five percent (5%) were males and ninety-five percent (95%) were females.

The four candidates chosen to participate in the case studies were randomly selected from each of the three methods courses. The candidate participating in the first case study (Candidate A) was a female classified as a senior and taught a mathematics lesson. Teaching a science lesson, the candidate participating in the second case study (Candidate B) was a male classified as a senior. The next candidate participating in the third case study (Candidate C) was a female classified as a junior and taught a reading and language arts lesson. Integrating social studies and mathematics, the final candidate participating in the fourth case study (Candidate D) was a female classified as a senior.

Four out of six, sixty-seven percent (67%), of on-campus university supervisors observed and evaluated the candidates participating in the four case studies. Of the six supervisors, one supervisor, seventeen percent (17%), was classified as a full professor; one supervisor, seventeen percent (17%), was classified as an associate professor; three supervisors, fifty percent (50%), were classified as assistant professors; and one supervisor, seventeen percent (17%), was classified as an instructor. Disaggregating those same supervisors by gender, one supervisor, seventeen percent (17%), was a male and five supervisors, eighty-three percent (83%), were females. Prior to the four case studies, all supervisors participated in inter-rater reliability training using the Teaching Evaluation, Form A (Figure 1), for Internships I, II, and III.

Two supervisors participated in the first case study (Case Study 1). The first supervisor in the first case study (Supervisor A) was a female who taught social studies methods. The second supervisor in the first case study (Supervisor B) was a female who taught reading and language arts methods.

Two supervisors participated in the second case study (Case Study 2). The first supervisor in the second case study (Supervisor C) was a female who taught mathematics and science methods. The second supervisor in the second case study (Supervisor B) was a female who taught reading and language arts methods.

Two supervisors participated in the third case study (Case Study 3). The first supervisor in the third

case study (Supervisor A) was a female who taught social studies methods. The second supervisor in the third case study (Supervisor B) was a female who taught reading and language arts methods.

Two supervisors participated in the fourth case study (Case Study 4). The first supervisor in the fourth case study (Supervisor D) was a female who taught other courses in the teacher education program. The second supervisor in the fourth case study (Supervisor B) was a female who taught reading and language arts methods.

Procedure

In the fall of 2005, FHSU (2005) began a two-year Mobile Computing initiative. The Instructional Technology Policy Advisory Committee (ITPAC) and the Provost's Council put forth a joint recommendation of a wireless, mobile computing environment where faculty members and students will be engaged in innovative technology learning experiences. According to FHSU (2005), "This enhanced institutional vision is best realized through a mandated mobile computing initiative preceded by the completion of a ubiquitous wireless campus infrastructure and a performance-based faculty development program" (p. 1). Fort Hays State University Office of the Provost implemented a university strategic planning goal, which is to develop a mobile computing environment. The key performance indicators of this goal include the following:

- Report on five pedagogical applications
- Report on improvement in communication applications
- Report on improvement in productivity applications
- Report on student satisfaction
- Report on % of faculty attending mobile computing workshops

Fort Hays State University Department of Teacher Education's goal is to develop mobile computing use in teacher education classes and apply mobile computing in unified school district classrooms. The key performance indicators of this goal are as follows:

- Candidates integrate technology with teaching
- Develop courseware-based assessments
- Evaluate formal lessons via web cameras
- Faculty research on implementation of mobile computing
- Faculty attends mobile computing workshops
- Faculty develops mobile computing strategies

Fort Hays State University Department of Teacher Education will use a mobile computing pilot project reporting form. The reporting form asks university faculty members to report on the following:

- Personal information and date project was conducted
- Brief description of the project

- Research conducted to measure effectiveness
- How the project is tied to Key Performance Indicator(s)
- Summary of research findings

When observing candidates in remote field experience locations, university supervisors of candidates enrolled in methods courses focused on the Provost's key performance indicator to improve in communication applications and the Department's key performance indicator to evaluate formal lessons via web cameras.

Initial candidates in the College of Teacher Education and Technology at FHSU are guided by a Conceptual Framework, which defines seven goals for professional educators. These goals are aligned with the Kansas State Department of Education (2001) professional education standards. In conjunction with the state standards, the National Council for Accreditation of Teacher Education (2002), an accreditation agency for colleges of education, exercises some control over the quality of teacher preparation programs by requiring universities to provide evidence of the impact of candidate performance on pre-kindergarten through twelfth grade student learning. As outlined in the Conceptual Framework, candidates working toward becoming professional educators will be liberally educated, assume a professional role within the school, combine an understanding of academic organizations, pedagogical theory and research, provide a supportive environment for diverse learners, integrate technology in planning, designing, delivering and evaluating student learning, demonstrate knowledge of multiple assessments, and utilize self-reflection for professional growth. In order to meet university requirements, initial candidates admission to elementary teacher education and concurrent enrollment in the three methods courses with corresponding field experience internships are required. The three courses, Social Studies Methods, Reading and Language Arts Methods, and Mathematics and Science Methods, are followed by a fourth methods course and its corresponding internship, Corrections of Reading Disabilities, which allows initial candidates to tutor elementary students two days a week for ten weeks.

The purpose of a school based field experience internship is to provide an opportunity for initial candidates to obtain experience in the teaching and assessment of social studies, reading and language arts, and mathematics and science. Management of a classroom, making adjustments for individual student needs, utilizing developmentally appropriate practices, and reflecting are enhanced under the supervision of university elementary education faculty and mentor teachers. A minimum of forty hours in a classroom is required for each internship experience. Concepts and skills learned in each methods course will be utilized in the field experience internship.

Before each semester begins, supervisors meet to review the field experience internship-training manual and collaborate to develop the syllabus and revise forms, which are uploaded through the Blackboard course management software. After gaining permission from the superintendent and/or principals, the supervisors send the Mentor Teacher Participation forms to the building principals for dissemination to prospective mentor teachers. Supervisors collect Mentor Teacher Participation forms from the principals in order to create a field experience internship, placement-tracking matrix. In some cases, the supervisor, via a telephone conversation with the building principal, obtains the name of the mentor teacher. In order to meet the goals of the Conceptual Framework, each initial candidate is placed in a kindergarten through sixth grade classroom with a mentor teacher, thereby depicting three

or four unique field experience internships in terms of grade levels, mentor teachers, diverse student populations, and subject areas taught. The placement-tracking matrix displays the candidate's name, school placement, mentor teacher's name, grade level, days and times of the field experience internship, and university supervisor. A confirmation letter is sent to each principal requesting a review of candidate placements in his/her building and informs the mentor teachers involved in the field experience.

Prior to entering the school based field experience, initial candidates submit a TB skin test, which is kept on file in the Department of Teacher Education office. Through self-reporting, candidates complete a Background Check and a Student Educational Field Experience Waiver and Liability Release, which are provided by the university's Professional Services Office. Initial candidates view two videos, Protecting Student Confidentiality in Kansas Schools (2003) and Bloodborne Pathogens In Schools (2002). After viewing the bloodborne pathogens video, initial candidates are tested over the content information. Tests are graded and certificates of completion are placed in the initial candidate's respective files.

Each initial candidate is informed of his/her placement and asked to schedule 40 hours of field experience with the mentor teacher assigned to him/her. Initial candidates meet on campus three times throughout the semester. These dates are aligned as closely as possible with dates that the school district is not in session.

The initial candidate, in agreement with the mentor teacher, schedules one formal observation with his/her university supervisor according to the following schedule:

- Social Studies 1 teaching episode
- Reading and Language Arts 1 teaching episode
- Mathematics and Science 2 teaching episodes (1-mathematics and 1-science)

Using the Teaching Evaluation, Form A (Figure 1), the university supervisor observes a candidate's teaching episode formally each semester in accordance with the field experience internship in which the initial candidate is enrolled. The formal evaluation is conducted either face-to face or via remote field observation. Remote field observation evaluations use transparent technology, such as an iSight web camera through the iChat application. Other informal observations may be made at the discretion or request of the initial candidate, supervisor, and/or mentor.

Research Design

Teacher education faculty, in collaboration with the local unified school district teachers, explored the use of videoconference capabilities to evaluate through web cameras and video recording software, candidates presenting formal lessons in classrooms. In Case Study 1, two university supervisors were at different locations but were able to observe and evaluate the same candidate teaching her/her lesson. Using two iSight cameras and two Mac iBook G4 laptops, Supervisor A was on-site observing Candidate A face-to-face while Supervisor B was in her office at FHSU observing via an iSight camera. The elementary school principal joined Supervisor A to view the process and the chair of the Special Education Department joined Supervisor B. Candidate A taught a formal mathematics lesson to a 3rd grade class at the elementary school. Prior to teaching the lesson, Candidate A personally

handed her lesson plan to Supervisor A and electronically sent her lesson plan to Supervisor B using iChat. During the process Supervisor B was able to take video snapshots of Candidate A's teaching episode. Following the observation, Supervisor A, Supervisor B, and Candidate A met and discussed the procedure. Candidate A wished the process could have been video taped. Upon further investigation, our technology instructor found a conference recording software program that could be purchased for a minimal amount and would record the iSight observation. The conference recording software program was used to videotape other observations.

In Case Study 2, two university supervisors were at different locations and observed and evaluated the same candidate teaching her/her lesson using two iSight cameras and two Mac iBook G4 laptops. Supervisor C was on-site observing Candidate B face-to-face while Supervisor B was at an elementary school observing via an iSight camera. Candidate B taught a formal science lesson to a 1st grade class at the elementary school. Prior to teaching the lesson, Candidate B gave copies of his lesson plan to Supervisor C and Supervisor B. During the process, Supervisor B was able to record and take video snapshots of Candidate B's teaching episode. Following the observation, Supervisor C, Supervisor B, Candidate B, and Candidate B's mentor teacher met and discussed the lesson presented via the iSight camera (Figure 2).

In Case Study 3, two university supervisors were at different locations observing and evaluating the same candidate teaching her lesson using two iSight cameras and two Mac iBook G4 laptops. Following Case Study 2, Supervisor B remained on-site at the elementary school to observe Candidate C face-to-face while Supervisor A was in her office at FHSU observing via an iSight camera. Candidate C taught a formal reading and language arts lesson to a 1st grade class at the elementary school (Figure 3). Prior to teaching the lesson, Candidate C gave copies of her lesson plan to Supervisor A and Supervisor B. During the process Supervisor B was able to record and take video snapshots of Candidate C's teaching episode. Following the observation, Supervisor A, Supervisor B, and Candidate B met and discussed the lesson presented via the iSight camera.

In Case Study 4, two university supervisors were at different locations observing and evaluating the same candidate teaching her/her lesson using two iSight cameras and two Mac iBook G4 laptops. Supervisor D was on-site at the elementary school to observe Candidate D face-to-face while Supervisor B was at a location 30 miles away observing via an iSight camera on a dial-up connection. Candidate D integrated social studies and mathematics to teach her formal lesson to a2nd grade class at the elementary school. Prior to teaching the lesson, Candidate D gave copies of her lesson plan to Supervisor D and Supervisor B. During the process Supervisor B was unable to view Candidate D but was able to listen to the lesson via audio iSight. Dial-up connections were not recommended for future observations because Supervisor B could not view, record, nor take video snapshots of Candidate D's teaching episode. Following the observation, Supervisor D, Supervisor B, and Candidate D met and discussed the lesson presented via the audio iSight connection.

After the observation evaluation, each candidate was asked to write a reflection over the effectiveness of the lesson presented that he/she taught. The candidates were also asked to reflect on the method of the observation using a traditional face-to-face method and an iSight camera. Qualitative and quantitative data was collected on the results.

ANALYSIS of DATA/RESULTS

The topic under investigation was the effectiveness of face-to-face candidate observation evaluations versus candidate remote field observation evaluations using videoconferencing software such as web cameras to conduct the field observations. Four out of six, sixty-seven percent (67%), university supervisors acquired training and explored the use of videoconferencing to observe candidates presenting formal lessons in professional development school classrooms.

Using inter-rater reliability, two supervisors in each case study scored a formal observation in the same manner whether the observation was face-to-face or via a remote field observation, such as a web camera. Upon completion of each case study, it was determined that there was no significant difference in scores of the candidate's face-to-face observation evaluation and a web camera observation evaluation (Figure IV).

In Case Study 1, out of the 72 points possible on the Teaching Evaluation, Form A (Figure 1), observation score sheet, Supervisor A scored a 65 while Supervisor B scored 66, only a 1-point difference.

In Case Study 2, out of the 72 points possible on the Teaching Evaluation, Form A (Figure 1), observation score sheet, Supervisor C scored a 69 while Supervisor B scored 70, only a 1-point difference.

In Case Study 3, out of the 72 points possible on the Teaching Evaluation, Form A (Figure 1), observation score sheet, Supervisor B scored a 65 while Supervisor A scored 64, only a 1-point difference.

In Case Study 4, out of the 72 points possible on the Teaching Evaluation, Form A (Figure 1), observation score sheet, Supervisor D scored a 70 while Supervisor B scored 69, only a 1-point difference.

Candidates reflected positively in regard to their satisfaction with the use of videoconferencing software to conduct the field observations. The candidates were required to write a reflection over the effectiveness of their lesson presented for the formal observation using traditional face-to-face method or transparent technology.

One candidate wrote in his/her reflection, " My primary supervisor, Supervisor A, was in the classroom and Supervisor B was on campus evaluating me via iSight. Both professors scored my presentation, and surprisingly were only one point different. I was really happy to see the actual scores. During my first internship, I had major doubts about the whole system of how the internship was graded. I had talked to my peers and saw how some of them were graded by other supervisors and wondered about the fairness of the scores. After seeing the close grading of the two professors, my doubts are now gone."

Another candidate wrote in his/her reflection, "I can honestly say I wasn't extremely excited about doing my formal observation through iSight with two supervisors and my mentor teacher watching me teach my lesson. This worked to my advantage for classroom management and group participation as I told the students, not only was I watching them, but their classroom teacher, my supervisor, and the supervisor on the camera was watching them. I attribute some of the students' good behaviors and class participation to this. I was pleased to see how similar the scores were and can definitely see

where this type of technology would come in handy."

A candidate wrote in his/her reflection, " My formal teaching was a new experience for me. Not only was it the first time I was formally observed, two supervisors were also grading me. One supervisor was on campus evaluating me using mobile computing and an iSight camera and the other supervisor was observing me in the classroom. Even though I had difficulty with classroom management, both supervisors scored in a similar way."

Another candidate wrote in his/her reflection, "I was particularly amazed at how similar my scores were from the two supervisors. I received almost identical scores even though one supervisor couldn't see me at all (the iSight connection was not working but the audio connection was working). I guess this is where the phrase 'Great minds think alike.' comes in. This is a plus for the college as they can now say there is little discrepancy between an on-sight observer and iSight observer."

University supervisors reflected positively in regard to their satisfaction with the use of videoconferencing software to conduct the field observations. Supervisors were equally pleased at how similar the observation evaluations were closely aligned. A supervisor stated, "This study proved that inter-rater reliability training was beneficial." Another supervisor stated, "Once the observation evaluations were complete, candidates felt comfortable with either face-to-face evaluations or web camera evaluations." One supervisor stated, "Remote field experience evaluations support the Provost's mobile computing environment goal and reinforces the Department of Teacher Education improvement in communication applications by using web cameras along with videoconferencing to evaluate formal lessons." A supervisor stated, "Normally, it would be a tough commute, but using iChat in lieu of driving three hours to observe a candidate has made the task, cost, and time more effective, as well as easy!"

Summary, Recommendations, and Conclusions

FHSU faculty members were trained in observing candidates and scoring the observation evaluations. Several education faculty members have established inter-rater reliability of the scoring process. Data collected from Internship I, II, and III are used for the university accreditation process to meet the requirements set forth by NCATE (2002).

Research has led to generalizations that technology, particularly in the form of transparent technology such as web cameras and videoconferencing, is valuable to the development and improvement of communication when observing and evaluating candidates. Supervisors are becoming more comfortable and willing to use transparent technology to observe and evaluate candidates. Attitudes of candidates are positive toward transparent technology observation evaluations. Technology is no longer used primarily as a tool at FHSU, but is one component of our mobile computing environment.

Using inter-rater reliability, two supervisors scored the same candidate teaching a formal lesson. One university supervisor was face-to-face and the other supervisor used a web camera to observe the candidate. This occurred in four case studies. Upon completion of the field experience observations and teaching evaluations, the average score was 67.25 (93%) and the range of scores was 64-70 (Table 1). Note that the average face-to-face supervisor score was 67.25 (93%) and the average web camera supervisor score was also 67.25 (93%) (Table 1). Significance tests were not conducted on the four case studies but researchers will continue recording the data in a longitudinal study of the

effectiveness of face-to-face versus web camera candidate observation evaluations.

Recommendations for implementation and future research include Marratech videoconferencing software purchased by Kan-ed (2005) for all PK-16 educational institutions to use at no charge. Marratech videoconferencing observations include many of the same features as traditional face-to-face observations, which include specific scheduled meeting times and conversations. Marratech addresses the issues of time and money along with quality. That is, Marratech attempts to simulate an "in the classroom" experience for geographically dispersed candidates, without adding complexity. Marratech is specifically designed to enable communication in a non-obtrusive, productive manner.

The difference with using Marratech compared to an iChatAV is that videoconference solution capabilities could develop into a frequently used, virtual workspace rather than only several observations at pre-arranged times. This allows university faculty to create more opportunities to observe candidates as well as allowing candidates to communicate and collaborate with each other. Once a candidate uses the videoconferencing software application, he/she gains immediate access to all others currently working in the virtual environment.

In many cases, collaboration and interactivity capabilities within the virtual environment can actually provide a better experience than actually being there. For example, candidates having a discussion before class or in the hallway will be able to continue that collaboration and discussion during their internships and student teaching through the videoconferencing method. In addition, in-person meetings rarely allow participants to talk privately (i.e. hold a private chat) without disrupting the flow of the presentation or leaving the classroom room. When productivity is the priority, sometimes it's better to participate virtually than in person.

Finally, videoconferencing enables synchronous or real-time communication. Specifically, videoconferencing acts as a portal, which provides candidates with access to documents, project information, notes, and other synchronous information. These tools foster productive, real-time collaboration. When candidates wish to collaborate in real time, they launch Marratech.

Comparative research conducted on the effectiveness of remote field experience evaluations gave initial candidates the opportunity to receive immediate feedback from multiple sources. Remote field experience evaluations provided evidence of the comparative research conducted on the effectiveness of face-to-face observation evaluations by university supervisors in comparison with observation evaluations using transparent technology, such as a web camera and videoconferencing, using inter-rater reliability. In conclusion, university faculty and adjunct supervisors can overcome the challenges of candidate observations in remote field experience locations, scheduling logistics, and diversity requirements by using web cameras and videoconferencing software.

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Figure 1: Teaching Evaluation-Form A

Figure 2: Case Study 2-Supervisor C, Mentor Teacher, Candidate B, and Supervisor B (insert)

Figure 3: Case Study 3-Candidate C and Supervisor A (insert)

Figure 4: Face-to-Face vs. Web Camera Candidates' Observation Evaluations

Table 1: Face-to-Face vs. Web Camera Supervisors' Scores

72 Point Teaching Evaluation	Face-to-Face Supervisor's Score	Web Camera Supervisor's Score	TOTAL AVERAGE
Candidate A	65 (90%)	66 (92%)	65.5 (91%)
Candidate B	69 (96%)	70 (97%)	69.5 (96.5%)
Candidate C	65 (90%)	64 (88%)	64.5 (89.5%)
Candidate D	70 (97%)	69 (96%)	69.5 (96.5%)

TOTAL	67.25 (93%)	67.25 (93%)	67.25 (93%)

VN:R_U [1.9.11_1134]