Jumpstarting Novice Teachers' Ability to Analyze Classroom Video: Affordances of an Online Workshop

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Abstract

Video analysis of teaching is an important element of teacher education, yet the skills of classroom observation are often assumed rather than explicitly taught. To prepare a group of teacher trainees to interpret videos of their own teaching, the researchers developed a self-paced, online workshop to introduce micro-ethnographic techniques for observing and analyzing teaching through video. A series of video tutorials and activities guides teacher trainees through the process of viewing the same video clip through different lenses. They are asked to reflect on student response opportunities, teacher use of praise, and feedback to student error. Results indicate that this training led to strong learning outcomes, such as seeking specific evidence from the video to support claims and being more cautious about making judgments. Findings also suggest that instruction in video analysis techniques is particularly suited for online learning environments. (Keywords: preservice teacher education, video, online learning)

Increasingly, teachers' route to certification will be tied to a video-based performance measure that will likely require them to select, edit, and analyze video of their own teaching (AACTE, 2010). This assumes the novice teacher will have developed skills in working with the medium of video as a tool in classroom observation, yet this is not a routine part of teacher education programs. Although textbooks on classroom observation, such as those written by Good and Brophy (2000), are full of suggested checklists, tallies, and observation guides that examine aspects of teaching known to correspond to student engagement, these types of observation tasks may not be presented to teachers unless they are taking courses to specifically prepare them to be supervisors. Teaching teachers how to conduct an observation, whether on video or in a real classroom, is a vital step in the analysis of teaching that perhaps is often skipped. To address this gap in teacher preparation and build on the research that indicates the need to scaffold teachers' learning to analyze video recordings of classrooms (Dymond & Bentz, 2006; Lazarus & Olivera, 2009; van Es & Sherin, 2002), the researchers developed an online workshop for teacher trainees. The researchers selected the online format to provide time and opportunity that is not generally available during class sessions for teachers to view and analyze the videos, as well as to create the opportunity for multiple course sections to access a consistent training experience. This research shares the impact of the workshop on participants through the use of a pre- and posttest design.

The research questions this study explored were:

1. In what ways did an online workshop affect teacher trainees' ability to recognize and describe teaching behaviors in a video observation?
2. Do participants believe they will apply their newly acquired observation skills in their own teaching practice?

Effective Video Observation of Teaching

The researchers built the online workshop based on several premises supported by the growing research base on video analysis as a tool in teacher development: (a) the need for a high degree of scaffolding for novices to move away from evaluative and superficial viewing of classroom video, (b) the importance of causing teachers to experience cognitive dissonance by coming to "see" beyond their expectations, and (c) the requirement to replay and review as a means to develop reflective skills.

Scaffolded Viewing as a Support to Video Observation

Empirical research has consistently found that teachers benefit from the immediate, rich, and detailed medium of authentic classroom video as a material in professional learning (Calandra, Dias, & Dias, 2006; Newhouse, Lane & Brown, 2007; Rich & Hannafin, 2009; Sherin & van Es, 2005; Yerrick, Ross, & Molebash, 2005). However, both new and experienced teachers require some guidance in how to observe teaching through this medium. Inexperienced teachers "see" less of the complexity in classroom events than do experienced teachers, and those who have a scaffold with which to interpret their videos of teaching are able to go further in their interpretations (van Es & Sherin, 2002). Hence, "video instruction for novice preservice teachers must be highly structured in order to affect positively their views, knowledge, and skills" (Dymond & Bentz, 2006, p. 99). Research that has described a variety of methods by which novice teachers might explore their own and others' classroom practice has consistently emphasized the need for the video review to be scaffolded by a viewer's guide, which either directs the viewer to do or look at specific items or prompts the viewer to choose his or her own items for investigation in response to guiding questions (Baecher & Connor, 2010). These scaffolds support

Table 1. Components of the Online Workshop

Pretest	Teacher candidates are asked to view a 5-minute video of classroom teaching and provide observations on student engagement. Choice of grade levels (K–2, 3–5, 6–8, or 9–12) to view is provided.
Introduction to Training	Video overviews the value of video-based observations of teaching in contrast to live classroom observation and previews the content of the modules to follow. (Video available at http://podcasting.hunter.cuny.edu/podcasting/files/download/619/VAT_Training_Introduction.mp4.)
Module 1	Introduction video provides an example of teacher's distribution of response opportunities. Teacher candidates are asked to view a 5-minute video of teaching and complete an observation worksheet focused on response opportunities. (Video available at http://podcasting.hunter.cuny.edu/podcasting/files/download/614/Training_Task_Instructions_1.mp4.)
Module 2	Introduction video provides an example of teacher's use of praise. Teacher candidates are asked to view the same 5-minute video of teaching and complete an observation worksheet focused on the teacher's use of praise. (Video is available at http://podcasting.hunter.cuny.edu/podcasting/files/download/617/Training_Task_Instructions_2.mp4.)
Module 3	Introduction video provides an example of teacher's feedback to error. Teacher candidates asked to view the same 5-minute video of teaching and complete an observation worksheet focused on the teacher's feedback to student error. (Video is available at http://podcasting.hunter.cuny.edu/podcasting/files/download/618/Training_Task_Instructions_3.mp4.)
Conclusion to Training	Video reviews what teacher candidates have done in workshop and highlights benefits of continued video analysis of teaching. (Video available at http://podcasting.hunter.cuny.edu/podcasting/files/download/616/VAT_Training_Conclusion.mp4.)
Posttest	Teacher candidates are asked to view a 5-minute video of classroom teaching (same as pretest) and provide observations on student engagement as well as reflect on experience with the online training.

trainees in both the act of teaching and the act of classroom observation.

The Power of Video to Generate Cognitive Dissonance

Cognitive dissonance is created when what teachers remember occurring in the lesson is different from what they witness occurring in the video, yet "dissonance does not need to be negative to lead to learning; it just needs to jar complacency" (Rosaen, Lundeberg, Cooper, Fritzen, & Terpstra, 2008, p. 358). Video analysis has been highlighted as a particularly powerful means to challenge teachers' set ways of interpreting classroom events and to encourage divergent thinking (Calandra, Gurvitch & Lund, 2008; Chan & Harris, 2006; Romano & Schwartz, 2005). Yadav and Koehler (2007) found that without analyzing their teaching on video, "preservice teachers are likely to continue viewing classroom episodes with their prior lenses" (p. 358), and therefore it is particularly useful when used to focus trainees on particular aspects of practice that they were unaware of.

The Capacity for Video to Develop Reflection Skills

During video analysis, teacher candidates can arrive at more fine-grained understanding of practice than what memory-based recall affords, thus providing more data about the lesson for reflection. In addition, the teacher can interpret video in concert with colleagues or a supervisor, thus leading to multiple interpretations of classroom events. Peer video analysis has also proven to support the development of reflection skills, when directed and scaffolded for the novice teacher (Baecher & Tuten, 2011; Borko, Jacobs, Eiteljorg, & Pittman, 2008; Grant & Kline, 2010).

Video has also been researched as a means to move teachers from a focus solely on technical aspects of practice to connecting these practices to a theoretical orientation (Harford, MacRuairc & McCartan, 2010). Particularly in light of the current technical-rational approach to teaching, which breaks teaching down into many small components to be evaluated, video affords the opportunity for holistic self-reflection.

Design of the Online Workshop

To create the modules and embed the online workshop into a Blackboard (online course management system) course site, the support of an educational technologist was provided through a college summer grant program offering resources for faculty innovations with technology. This collaboration was essential to select the appropriate technical tools to match instructional needs. For example, considerations of privacy as well as easy scalability demanded the use of a course management system, such as Blackboard. The video clips that the online workshop used were not created for this workshop, but rather were authentic, unstaged excerpts of teaching that had been previously uploaded to a searchable online library available within the school of education community. This process has become a standard component of all practicum teaching experiences, and trainees are responsible for securing permissions, excerpting a 5- to 6-minute episode of teaching from a full-length lesson, and uploading their clips to this "Video Analysis of Teaching" library. The researchers reviewed clips from this online archive for suitability for this online workshop, in terms of identifying ones that were at various grade levels (K–12), technically and audibly sound, covering easily understood topics (social studies, literature), and representative of "typical" classroom scenes. In this sense, the clips were not "exemplary," nor were they poor examples; they were instead selected to represent a range of common classroom interactions, such as teacher questioning and students responding with teachers providing praise and feedback.

The entire online workshop was designed to take about 3 hours to complete, and participants were allowed one week at the start of the semester to participate in it. It begins with a pre-assessment (see Appendix A, p. 24) and proceeds with a 2.5-minute video introducing video observation of teaching (see Table 1 for overview of components).

Figure 1. Example of the viewer's screen in Module 1.

Module 1 then opens with an instructional video that defines "response opportunities" for new teachers in terms of who the teacher chooses to call on to respond to a prompt or question and whether it is the whole class, a boy, a girl, or a student seated near or far from the teacher. The video shows viewers how to complete the observation worksheet for response opportunities and guides them through one example (see Appendix B, pp. 24–25). Teacher candidates are then asked to look at the whole 5-minute video and find three more examples of "response opportunities" (see Figure 1 for example of the viewer's screen).

The teacher candidates repeat the process in Modules 2 and 3. Each module has a unique explanation of the teacher behavior to observe and a video clip that shows an example. The use of praise in the second module is defined as type of praise (whether general or specific) and purpose of praise (whether instructional or for management). The third module centers on response to error and is the most extensive observation, with teacher candidates asked to look for what the teacher does when a student provides an incorrect answer. Module 2 also involves participants in completing an observation worksheet focused on the teacher's use of praise (see Appendix C, p. 25), and Module 3 follows the same format, this time with trainees observing for the teacher's responses to students' errors (see Appendix D, pp. 25–26). The researchers took foci for the online observation modules from the Classroom Observation Scoring System (CLASS), which was developed for use in live observations of classroom teaching, with teaching behaviors shown to correspond to quality of student engagement (Pianta, La Paro, & Hamre, 2008).

A key pedagogical decision was to invite viewers to view the same video of teaching through three distinct lenses. The researchers believed that if the modules provided three videos, along with three observation tasks, participants might not have realized how much they can learn by looking at the same lesson through various foci. In addition, the researchers asked participants to complete the training independently rather than with a colleague or in interaction with the instructor so that they could truly gauge the capacity of the trainees before and after the online workshop. However, in the teaching seminar course, participants subsequently engaged in weekly video analysis activities that the instructor guided, and peer-viewing tasks were also provided. The online workshop was designed to "jumpstart" the process of video examination, which often meets resistance initially among anxious trainees. The intent of the workshop was to overcome this initial resistance through the cognitive intervention of the online experience, so that trainees would begin the teaching seminar with an intellectual understanding of what they can gain from viewing video and perhaps, then, a greater willingness to engage in this course activity.

The three modules are followed by a posttest (see Appendix E, p. 26), which parallels the pretest in involving participants in viewing the same video they had selected in the pretest, with similar questions about what they are seeing. The posttest asks additional questions about the participants' experience with the online workshop itself. All of the responses were made within Blackboard.

Methodology

Participants in this study were teacher candidates enrolled in four sections of a master's-level seminar in teaching English to speakers of other languages (TESOL), which was taught in a traditional face-to-face format at a large, urban, northeastern college of education. Teacher candidates participated in the online workshop as a supplemental, asynchronous, self-paced tutorial that they completed within the first week of the fall 2010 semester. The online workshop was housed within the course's Blackboard site, where the researchers later aggregated and downloaded anonymous responses.

Forty-seven teacher candidates completed the entire workshop, including the pretest, posttest, and all three training modules, and the Blackboard course captured the results. For each of the three online modules, teacher candidates completed an observation worksheet and then responded to five open-ended questions about that module. The components, outlined in Table 1, also involved a pre- and posttest that asked teacher candidates to select a video of K–12 teaching, either at early, middle, or high school, and respond to several open-ended questions regarding student engagement as viewed in the video (see appendices, pp. 24–26, for worksheets and questionnaires that accompanied the online workshop).

The researchers analyzed data from the pre- and posttests as well as from each of the three modules, when not descriptive statistics, using the constant comparative method (Glaser & Strauss, 1967). The first author first coded and categorized each response, and then the second author checked the assigned coding. Categories emerged, and the researchers placed trainees' comments in categories in an iterative process. The two authors independently analyzed the pre- and posttest responses, then matched and compared them.

Results

Of the 47 teachers who participated in the study, 45% had taught for a year or less, 30% had taught for 2–4 years, 19% had taught 5–10 years, and 6% had more than 10 years of teaching experience.

Table 2. Student Experience with Video and Classroom Observation Prior to Tutorial

	Number of Students	Percentage
Have video-recorded own teaching	29	62%
Have had training on observation of live classrooms	17	36%
Have had training on observation of video-recorded classes	8	17%

Sixty-two percent of the participants had previously video-recorded their own teaching, and 36% had received training on conducting classroom observations, but only 17% had received training on conducting video observations. This confirmed the expectation that, although teachers are asked to video-record their lessons for professional growth, most had not received training to do so (see Table 2).

Responses to Modules 1, 2, and 3

After viewing the instructional video and one example of each observation topic (response opportunities, teacher praise, and teacher feedback to error), participants identified three more examples by transcribing the teacher's question or statement and then checking the column in the worksheet for that activity describing the student or teacher action. Although there was some variation in the choice of questions or statements that participants chose to transcribe, participants were close to 100% consistent in how they coded those statements.

In the first module, participants needed to determine and transcribe examples of teachers' questions, then decide who was responding to those questions (see Appendix A, p. 24, for Module 1 observation worksheet). Almost all of the teacher's questions in the video clip were answered by her calling on a student by name, and this tended to be a boy seated toward the front of the room. In this module, participants chose questions the teacher posed and then coded who responded to them with 100% accuracy.

In the second module, on teacher praise, participants had to determine the example of praise and then categorize it by its type and why the teacher gave it (e.g., to reward student compliance, hard work, etc.). (See Appendix B, pp. 24–25, for Module 2 observation worksheet). These responses showed little variability, as the teacher's utterances of praise were more limited. Almost all the examples of praise from the teacher were saying "good" or "very good" in response to students' attainment of a correct answer. In this module, participants also coded with 100% accuracy.

In the third module, on teacher feedback to error, there was a slightly wider array of responses, given the more complex nature of the observation tool. Participants had to identify when the teacher signaled to a student that he or she had made an error, then determine whether the teacher did that directly or indirectly, and finally determine how the correction proceeded. For example, the teacher could have directed the question at another student or given an explanation himself or herself. (See Appendix C, p. 25, for Module 3 observation worksheet). In this module, most of the teacher's actions involved adding wait time and redirecting to a new student. This module was coded with 98% accuracy. The answers that the participants did not code correctly belonged to the category "adds wait time," which was subjective and therefore interpreted differently.

Change from Pretest to Posttest

After completing the three modules, participants looked again at the video they had analyzed in the pretest and responded to the same questions. The researchers analyzed their responses from the pre- to the postvideo to understand more about the nature of their observations following the workshop. Several categories emerged that represent the key ways that teachers' learning experiences influenced their observations (see Table 3, p. 20).

Table 3. Change from Pretest to Posttest

	Before training, trainees:	After training, trainees:
Seeing below the surface	Described the subject the teacher was teaching as the learning goal	Described the teaching goals the teacher might have had in mind
Caution about making judgments	Made assumptions about the teacher's goals, skills, or teaching	Hesitated to draw conclusions about the teacher or the lesson
	Were decisive and confident in interpretation	Used hedges and disclaimers in interpretation
Use of evidence	Provided general statements about the teaching observed	Provided specific examples seen in video clip, especially regarding the three areas of focus
Understanding of teaching techniques	Noted student behaviors	Noted teacher actions to affect student behaviors
Video observation for professional development	Majority had little experience	Noted value of video to "hone the craft" of teaching

Seeing below the surface. One of the subtle changes from the pre- to posttest video analysis task was that, in the first viewing, participants tended to describe the learning taking place in terms of the content area materials they viewed, whereas in the second viewing they tended to see other skills or learning goals at the heart of the activity. For example, one participant noted that in the pretest, "the lesson was about giving compliments/suggestion statements, for students to understand the difference between a compliment and a suggestion." In the posttest, the participant described the goals of the lesson as really about making suggestions and compliments in peer feedback:

The goal was to create a positive, comfortable learning environment for students through the use of compliments, for opening up a safe environment and space so that students feel they can give each other and the teacher suggestions for improvement, to show the children that their work is important (he reproduced their work and made it bigger)—important enough for others to read and comment on. The ultimate goal for this activity was to give compliments and suggestions to each other about their writing.

Another teacher in the pretest stated, "I think the teacher's goal was to have the students review and determine the significance of the Declaration of Independence. The teacher did this by having the students read a quote and then review some basic facts about the document." In the posttest, the teacher stated, "The goals of this lesson could possibly have been to get students to understand the use and importance of question words in order to identify facts in reading passages; and for writing."

Caution about making judgments. One of the main ways that participants' responses seemed to have changed from the pre-to the posttest was reflected in the language they used, which in the pretest was often declarative and definitive, whereas it was more cautious in the posttest. For example, in the pretest, participants used statements such as, "The teacher's goals were…," "The teacher ultimately wanted students to understand…," and "He wanted to set up an atmosphere of…." These statements imply that the viewer was confident about interpreting what was in the video—what you see is what you get. There was an assumption that the viewer could know the intention of the teacher. However, in the posttest, more statements involved conditionals and hedging: "I think the teacher wanted to…," "The teacher may have wanted to show…," and "It seems that her goal was to…." In the posttest, participants appeared to be less quick to judge the lesson based on the clip.

Use of Evidence

In the first viewing, when asked about student engagement, many participants stated their beliefs about the degree of engagement in broad terms. For example, in the pretest, one participant responded, "The children were motivated and highly engaged in this activity," whereas in the posttest, the response had more specificity to it: "The teacher used props, visuals, pre-made charts, questioning techniques (i.e., 'How would you describe this?'). The layout of the group (on the rug) allowed students to interact with the teacher. The teacher validated students' responses to the questions she posed." Another participant, in the pretest, wrote, "On a scale of 1–10, 1 being not engaged and 10 being very engaged, I would say the students vary from a 5 to 7." In the posttest, the participant stated:

> The students were somewhat engaged. However, the engagement and learning was very topical. There was a moment when a real connection was made between the quote and what the Declaration of Independence stood for, however, the teacher seemed to roll over the moment when the student said something like "it says that all men are equal,"; and goes back to topical knowledge with the fact that it's the "foundation" of our country. The bridge was there, however, it was not highlighted.

Understanding of Teaching Technique

In the pretest, participants noted student behavior and made reference as well to teachers' actions. In the posttest, participants seemed to have an increased awareness of the teacher's actions in terms of how they related to or created student involvement. For example, one participant wrote in the pretest, "The students were very engaged with the task. They were calling out responses to the teacher's questions and they took turns to give compliments to each other and suggestions to the teacher. They focused on the lesson and were excited to find out what was going on behind the black sheet." In the posttest, the participant wrote:

> The teacher was using a lot of positive reinforcement by making positive comments on the students' responses. Also, when one of the students was not paying attention, he called on her to divert her attention back to the lesson. The teacher made the lesson fun by allowing the students to guess what was behind the cloth and had them make drum noises on the table.

Another participant commented in the pretest:

> The students were very much engaged. They were all participating and when the teacher wanted to move on to the next part of the lesson, they did not want to stop complimenting each other. They were so excited to see what was under the black curtain and were making predictions and when what was under the curtain was revealed they were so excited. The students were having a great time and were enjoying the lesson. All students were part of the lesson, nobody was daydreaming or fooling around.

In the posttest, another participant noted more about what the teacher had done to create the engagement:

> One strategy he used was TPR [Total Physical Response]. He did not name out right away what he was teaching, he just immediately started communicating using the target language he was trying to teach on compliments and suggestions without pointing it out on the board. He wanted the students to notice how he was using the language and had the students practice using the right language by using his modeling or using the board if they need help. He asked questions and had them make predictions. The black cloth with the question marks really pulled the students interest by leaving them with an element of surprise and a game of guessing.

Recognition of the Value of Video Observation for Professional Learning

In the pretest, participants indicated the extent of video training they had experienced, along with their years of teaching. Prior to the training, the majority of teachers had little or no experience with video as a tool in their professional development, although many had been teaching for more than 5 years. One of the goals of the online workshop was for participants, by viewing the same 5-minute clip through three different "lenses," to recognize the benefit of analyzing their own videos to discover multiple aspects of teaching. Participants stated:

> The online workshop on video analysis allowed me to more closely examine specific aspects of the same lesson (i.e., questioning, praise, etc). Since watching the video, I have definitely been more aware of my own praise and whom I question. I look forward to watching my own videos in order to identify the strengths and weaknesses in my lessons.

> I am now more cognizant of the things pointed out in these videos—error feedback, praise, and so forth. Watching these videos I am able to see things that I may miss in real life. This helps me to be careful and hopefully more effective in my own practice.

> It was very interesting to observe how one brief episode of the lesson can be analyzed looking at it from different perspectives, and at different aspects…. It helped me to understand how important it is to have an observer (from time to time) in your class, or videotape yourself, and analyze your teaching….

Results of the survey given to the participants at the end of the workshop also echoed their perception that video was important for the teaching profession. To the question of what was valuable in participating in this online workshop, 17% pointed to this idea in statements such as: "I liked that I could go at my own speed. Being able to go back and review videos as many times as I wanted was a great luxury." Another participant wrote:

> It helps me see how valuable a tool the videotaped lesson can be. It helps prepare me for the fact that I will undoubtedly be shocked at my own glaring missteps in the classroom when I see myself on video. But most importantly, I understand that requiring us to videotape ourselves in the classroom has an extremely useful purpose: to help us quickly grasp the misconceptions we may have about what we are doing in the classroom and how effective our teaching practices really are (or aren't)—with an eye to cutting to the chase and honing our craft.

Results of Postworkshop Survey

The survey participants took after completing the workshop included the open-ended question "What was valuable to you in participating in this online workshop?" It served to draw out what participants thought they gained from the experience. The most prominent theme from the responses was self-reflection on one's teaching practices. About half of the participants (53%) pointed out that the training helped them reflect on their own teaching. Example responses included "I think that watching these videos provided me with an opportunity to observe these factors and the questions made me think about my practice and what I would do differently to prevent the patterns that I observed," and "The most valuable aspect being a participant in this online training module is observing other teachers and reflecting upon my own techniques (i.e., questioning, praising, delivery of instruction, etc.)…. I realized there were two areas I need improvement on: questioning techniques and praising methods."

Two other themes that emerged from the survey were related to the skills that the participants had acquired as a result of the workshop. Approximately one-third (30%) felt that they learned

classroom observation and analysis skills from the online workshop. One teacher candidate wrote, "Participating in this online training module honed my observation skills and taught me how to analyze and critically approach the classroom environment." Another said, "I feel that I am in a better position to analyze video effectively, whereas I would not have known what to look for before the training." In addition, 28% stated that they learned teaching strategies from the training videos. An example response was: "This training module allowed me to become more aware of how to praise and critique my students. I also became aware of how to call on students and to make sure that I allow all students to participate."

Limitations

Several comments teachers made after completing the workshop indicated their perception that most of the observed behaviors were negative, rather than simply descriptive categories. Although the video clips were selected to show "typical" classroom behavior, and the participants' awareness was thus heightened in regard to known teacher tendencies, the intent of the workshop was not to show "negative" behavior. Participants therefore expressed a desire to see a "model" lesson in which they could observe more desirable behaviors. This indicates a need to be clearer in the introduction that what the viewer will see are typical examples of teaching, to highlight common aspects of instructional practice. This might serve to counteract the desire to immediately categorize a viewed teaching episode as "good" or "bad."

Discussion

Data collected from teacher candidates' observation worksheets and responses to open-ended questions after each of the three online modules indicated that they were able to see, code, and describe the behavior that they were being directed to observe. Although these teacher trainees were relatively new to video observation of teaching, close to 100% were able to correctly label and provide evidence for the observable teaching behaviors targeted in each observation. The online workshop met the specific goals of teachers recognizing common patterns in classroom interaction. Therefore, the answer to the first research question of "Can an online workshop affect teacher trainees' ability to recognize and describe teaching behaviors in a video observation?" is affirmative.

The data from the posttest and final survey also offer support for the second research question, "Do participants believe they will apply their newly acquired observation skills in their own teaching practice?" The comments participants shared in the posttest indicated their appreciation for the richness of video analysis. Participants also pointed to the possibility of multiple and deep analysis of short segments as a jumping-off point to methodically and carefully investigate and reflect upon their own teaching performance. Research that follows trainees into their experiences using video analysis on their own teaching is needed to understand more about what variables make video observation more useful to some trainees than others.

The use of an online workshop as a pre- or co-requisite could save valuable face-to-face time and enable course instructors and students to go further during class time. Teacher educators could then begin a course with a preassessment of their students' classroom observation skills, making it more feasible to differentiate activities and assignments and provide supplemental support from the outset. Although a number of research projects have shown video analysis to be an effective tool in teacher development, more specifics about how teacher educators can coach, model, and provide feedback on video analysis is needed for practical application.

The online format may be particularly conducive to activities involving observation in video, as video is a tool specifically designed for freezing, rewinding, and replaying. Because the online, asynchronous environment affords students the time and space in which to explore and reach deeper understanding, video-based assignments should certainly be considered for online learning. In addition, a highly structured activity guide that requires targeted viewing and anticipates viewers' misconceptions, prejudices, and inexperience can serve the instructor's pedagogical ends. For instance, prior to beginning the practice of self-evaluation, instructors can prepare video for analysis online by matching available classroom observation guides to a single video, thus supporting trainees in recognizing the nuances of classroom interaction and helping them appreciate the rich data in just a short segment of teaching.

To further this line of research, it would be worthwhile to better understand the types and the extent of scaffolding needed to begin to analyze video in a meaningful way. In addition, it is necessary to understand more about how collaborative interpretations of video could add value in an online format. This can be done either using video from one of the group's members or viewing video of another teacher in collaborative groups.

Another worthwhile area of inquiry would be following teachers into the field, in the short and long term, to see whether and in what ways a focused workshop on video observation translates into their teaching practice. Many teacher training programs ask students to video-record their class sessions and use those recordings as a basis for clinical supervision. Analyzing the discussions between supervisors and trainees can reveal whether trainees have used techniques that they have learned in the online workshop and become better able to dissect their video records of teaching to identify their actions and how these affect students. Teachers' understanding of their practices and, ultimately, their students' progress, are aims for further inquiry.

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Appendix A

Pretest

One of the most powerful ways to understand teaching and learning is to observe classroom interaction on video. Before proceeding through the training tasks of this module, let's first try out observing a short video to determine how you currently approach observing through video.

First, select the video to watch of the grade level you are most familiar with: K–2, 3–6, or 7–12. Then, view the video as many times as you would like. You will then be asked several questions about the teaching and learning in the video. [VIEW]

1. What do you think the teacher's goals for this activity might have been?
2. What do you think the students were learning?
3. How would you describe the students' level of engagement with the task?
4. What techniques would you say the teacher was selecting in order to gain student interest?
5. How comfortable were you in answering questions 1–4?
   a. very comfortable
   b. somewhat comfortable
   c. a little uncomfortable
   d. very uncomfortable
6. Briefly explain your answer to question 5.
7. Have you ever received training as to how to conduct observations in the classroom? (live teaching)
   a. yes
   b. no
8. Have you ever received training as to how to conduct observations of teaching on video?
   a. yes
   b. no
9. Have you ever videotaped yourself teaching?
   a. yes
   b. no
10. How many years have you been teaching (K-adult)?
    a. 0–1
    b. 2–4
    c. 5–10
    d. more than 10

Appendix B

Training Task 1: Response Opportunities

One way teachers maximize student productivity is the way in which they select responders to their questions.

To investigate this aspect of teaching and learning, view the following video clip and, using the instrument below, note three questions you hear being posed. Then, using the checklist, determine in each instance of a question being posed to the class which students are responding.

1. What surprised you or stood out to you after looking at this aspect of teaching in the video clip?
2. What did this observation task make you think of changing in your own teaching?
3. What specific alternatives do you now see could have occurred that might have increased response opportunities in this lesson?

Appendix C

Training Task 2: Investigating the Use of Praise

Creating a positive classroom climate is another way teachers generate student involvement. Teacher's use of praise is one aspect of positive classroom climate.

To investigate this, view the following video clip and, using the instrument below, note each instance of teacher praise that you hear. Then check off all the aspects of that praise that apply. One example has been done for you.

Student Responder	Male	Female	Sitting close to teacher	Sitting far from teacher	Whole-class, choral (calling out) response	Whole-class, partner talk
Example						
1.						
2.						
3.						

1. What surprised you or stood out to you after looking at this aspect of teaching in the video clip?
2. What did this observation task make you think of changing in your own teaching?
3. What specific alternatives do you now see could have occurred that might have further developed the instructional value of praise?

Appendix D

Training Task 3: Investigating Teacher Feedback to Student Error

Categories of Praise	Example:	1.	2.	3.
Vague ("Super!")				
Specific ("You added a lot of interesting details.")				
Perseverance (worked long and hard)				
Effort (trying, guessing, suggesting)				
Progress (relative to past)				
Success (right answer)				
Originality (imagination, creativity)				
Neatness (careful work)				
Obedience (follows rules, pays attention, compliant)				
Prosocial behavior (courtesy, thoughtfulness)				
Other Purposes (Specify)				

1. What surprised you or stood out to you after looking at this aspect of teaching in the video clip?
2. What did this observation task make you think of changing in your own teaching?
3. What specific alternatives do you now see could have occurred that might have deepened student concept understanding?

Appendix E

Posttest

You may have been surprised by being asked to view the same video of teaching several times, each time with a different lens. The observational techniques you just applied asked you to put "blinders" on, thereby increasing your attention to certain aspects of the lesson. There are virtually infinite observation foci and, hence, techniques that have been developed. Selective application of these observational techniques can yield meaningful data about teaching and learning, helping you identify your own practices you may not have been aware of and, in turn, generating alternatives to the approaches you may currently be taking.

Before concluding this training session, let's return to the short video you looked at in the introduction to determine whether the training tasks may be now applied to your observation of video.

Return to the same K–2, 3–6, or 7–12 video you selected previously. Then view the video as many times as you would like. You will then be asked several questions about the teaching and learning in the video.

[VIEW]

Teacher Response to Error	Example:	1.	2.	3.
Directly indicates student is incorrect				
Indirectly indicates student is incorrect				
Pauses, waits, says nothing				
Adds wait time by restating or rephrasing question or student statement				
Asks other students to help provide answer				
Tells student to consult another student				
Tells student correct answer				
Explains to student why answer is correct				

1. What do you think the teacher's goals for this activity might have been?
2. What do you think the students were learning?
3. How would you describe the students' level of engagement with the task?
4. What techniques would you say the teacher was selecting in order to gain student interest?
5. How comfortable were you in answering questions 1–4?
   a. very comfortable
   b. somewhat comfortable
   c. a little uncomfortable
   d. very uncomfortable
6. Briefly explain your answer to question 5.
7. What was valuable to you in participating in this online training module?
8. What would you like to know more about or have answered in regard to video observation?