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Video Review and Reflection for Ongoing Inservice Teacher Professional Development

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Purpose
In this chapter we describe how a rubric-style observation instrument for observing classroom writing instruction was used to focus and optimize collaborative video analysis sessions among teachers and researchers spread across six states. As part of a 3-year Institute of Education Sciences (IES) development grant, we used videos of classroom instruction both as data for researchers studying the nature and impact of a specific instructional approach, Strategic and Interactive Writing Instruction (SIWI), and as a vehicle for collaborative teacher professional development-- for both teachers and teacher leaders.

Design
By tying video analysis to a shared observation instrument, we were able to target video clip selection for discussion, and focus our analysis to support teachers across several states and school settings implementing a new approach to writing instruction. After a brief overview of the project for which videos were used, we describe the tools and protocols developed over time to ensure the efficient and powerful use of collaborative video analysis. We also share our experiences on the nature and outcomes of these collaborative sessions both in terms of teachers' involvement and changes in practice over time.

Findings
We argue that the use of a common rubric to guide video clip selection, discussion, and analysis allowed teachers to strategically engage in "data reduction" - i.e. not be overwhelmed by the amount of video data - and to use the videos as catalysts for conversations as well as evidence of what works well for individual students. As researchers, these sessions allowed us to ensure collaborative video analysis sessions were focused, efficient, and growth-oriented as well as sources of data for understanding trends in challenges and trajectories of growth for teachers implementing a new approach to instruction.

Practical Implications
This work illustrates how researchers can use video for dual purposes--to conduct literacy investigations and to provide teachers with professional development involving video review and reflection.

Keywords: Literacy, Writing, Elementary Education, In-Service Teacher Development, Video Tools, Reflection

Introduction

In this chapter we describe how a rubric-style observation instrument for observing classroom writing instruction was used to focus and optimize collaborative video analysis sessions among teachers and researchers spread across six states. We argue that the use of a common rubric to guide video clip selection, discussion, and analysis allowed teachers to use the videos as catalysts for conversations as well as evidence of what works well for individual students. As researchers, these sessions allowed us to ensure collaborative video analysis sessions were focused, efficient, and growth-oriented as well as sources of data for understanding trends in challenges and trajectories of growth for teachers implementing a new approach to instruction. This work illustrates how researchers can use video for dual purposes-- to conduct literacy investigations and to provide teachers with professional development involving video review and reflection.

The current chapter is based on the data associated with a 3-year development grant funded through the Institute of Education Sciences. The project objectives were to develop curriculum and materials for Strategic and Interactive Writing Instruction (SIWI), including an instructional fidelity instrument (see Appendix A), for use with elementary teachers of the deaf and hard of hearing (d/hh). These materials were then implemented in an experimental study assessing the efficacy of the fully formed intervention in the third year. Prior research on SIWI mainly involved middle grades students, resulting in statistically significant improvements in writing and language outcomes at the word, sentence and discourse levels (Wolbers, 2008a, 2008b, 2010, Wolbers, Dostal and Bowers, 2012). Associated with the current grant project, a group of six teachers were involved in the development phase during the first two years, these teachers collaborated with members of the research team on a regular basis, reviewing and

revising the curriculum and associated materials, and contributing to the design of an instrument to assess the fidelity of implementation for SIWI. During the third year of the grant work, eight teachers new to SIWI were involved in the experimental group. The purpose of this chapter is to illustrate how literacy coaching and professional development with the latter group was facilitated through the use of classroom video footage in tandem with an instructional fidelity instrument. We additionally provide background information on how the curriculum and instructional fidelity instrument was designed collaboratively with the teachers of the development phase through video review and reflection, as well as ongoing conferencing.

In the sections that follow, we provide a brief review of SIWI and the use of video in teacher professional development. Then, we describe the development and outcomes generated by the tools and process for professional growth we co-constructed with teachers in the study. We conclude by describing the implications of our findings from using the fidelity instrument to guide PD over time.

Review of Literature

Strategic and Interactive Writing Instruction (SIWI)

SIWI is an approach to writing instruction that incorporates evidence-based practices for teaching writing in elementary grades. It is designed around three overarching principles of instruction drawn from research in the fields of general education, special education, and bilingual education. The first overarching principle of SIWI is that instruction is *strategic*--students are explicitly taught strategies for writing processes, rather than asked to engage in them without discussion of or support for strategic approaches for each writing task. Guided by this overarching principle, teachers may use *visual scaffolds* or procedural facilitators to support students' appropriation of writing strategies and skills.

The second overarching principle is that instruction is *interactive*, meaning teachers and students collaboratively discuss and co-construct pieces of writing together. SIWI instruction includes guided and/or partner writing, in which all participants are actively engaged in the thinking, problem solving and decision making associated with composition. Within these shared writing activities, teachers use language to model and engage students in the cognitive tasks of composition (Mariage, 2001), which creates an apprenticeship for the student writers (Englert & Dunsmore, 2002; Englert, Mariage, & Dunsmore, 2006). Instruction moves between *guided* and *independent* practice. With guidance from the teacher, the text is constructed at a level just beyond what students can write independently. The co-constructed text serves as comprehensible and slightly advanced input, since it stems from students' expressions and is meaningful to them (Krashen, 1994). Students are then invited to incorporate similar strategies into their own independent writing.

Compositions are based on student-generated ideas, and are written to a specific audience for a real purpose. This focus on *authentic* writing encourages students to attend to the needs of their readers, which maintains that learning objectives are *balanced* and inclusive of word- and sentence-level objectives (e.g., vocabulary and grammar) and discourse-level objectives (e.g., structure, voice, and genre-specific text features).

The third and final overarching principle of SIWI is derived from second language research (Ellis, et al., 2009; Krashen, 1994), and is aimed at developing metalinguistic awareness through explicit instruction and comparison of English and American Sign Language (when appropriate). Such instruction and comparison is meant to explicitly build metalinguistic knowledge which implicitly builds language competence (Dostal & Wolbers, 2014). To accomplish this, the teacher may compare grammars, expand vocabulary, or explicitly teach

linguistic aspects of ASL or English. A *language zone* (another type of visual scaffold or area for visual representation of ideas) is used to clarify intended meanings or support communication through the use of drawing, gesture, pictures, etc. Once a shared understanding is negotiated, the teacher can model concepts in English or ASL. See Wolbers, Dostal, and Bowers (2014) for a more comprehensive description of SIWI guiding principles.

Using Video to Support Professional Development

Research on effective professional development (PD) for teachers (e.g., Darling-Hammond & Richardson, 2009; Garet et al., 2001; Wei, et al., 2009) has been be summarized by this list of six key features (see Darling-Hammond & Richardson, 2009 for a discussion):

1. A focus on both content and pedagogy

2. Intensive, sustained engagement

3. Opportunities for hands-on, active learning

4. Includes application practice with time for reflection

5. Allows collaborative planning and reflection

6. Includes the collection and analysis of relevant data

Researchers and educators have often used video as a way to accomplish these six key features by recording, analyzing, and reflecting on classroom instruction. Specifically, video can be used to extend PD experiences over time by supporting educators' reflection on practice during instructional integration and refinement. Adding video collection, discussion, and reflection to conventional PD programs follows the recommendation that PD last for more than 30 total hours and be spread over 6-12 months (Wei, et al., 2009). Video applications also ensure that PD can happen in and around the context of classroom-based experiences over time (Doppelt et al., 2009; Garet, Porter, Desimone, Birman, & Yoon, 2001; Gersten & Dimino,

2001). When video is used to capture classroom practice related to PD initiatives, teachers have opportunities for active, hands-on learning. This represents a shift from merely learning about instructional approaches, to learning by implementing such approaches, which teachers report as the most valuable type of PD (Wei et al., 2009).

In addition to facilitating coaching, reflecting, and learning from practice, viewing videos of oneself or a model implementing the new techniques and experiencing successes can lead to a higher likelihood of adoption and maintenance (Gersten & Dimino, 2001; Fine, Tinzmann, Anderson, Anderson, & Pitlik, 1998), by demonstrating success and maintaining teachers' focus on the instructional goal (Baker & Smith, 1999). The incorporation of video models promotes a sense of possibility and achievement by creating a record of the differences that exist between previous and current practices (Gersten & Dimino, 2001).

Video recording creates artifacts of instruction that can be used to focus collaborative collegial discussions of practice. Teachers may meet regularly with others who are both knowledgeable about the intervention and able to provide context-specific feedback (Garet et al., 2001; Gersten & Dimino, 2001; Pella, 2011). It also facilitates partnerships between colleagues and/or teachers and researchers that are not otherwise able to observe one another in real time (AFT, 2008; Baker & Smith, 1999; Gersten & Dimino, 2001; Short, Echevarria, & Richards-Tutor, 2011). This sort of collaborative approach to PD promotes collegial networks at schools, providing teachers with the support structures they need to tackle new instructional approaches and sustain implementation over time. Teachers who collaborate regularly exhibit confidence in the classroom, realize gains in student achievement, and are synergized along a pathway toward long-term capacity development (Pella, 2011).

Finally, videos can be used as data from which educators can judge the utility of a new

practice and document personal development. This sort of progress monitoring not only supports

buy-in and motivation, but provides evidence that can support changes in teachers' habits and

beliefs (Doppelt, et al., 2009; Gersten & Dimino, 2001; Short et al., 2011).

In this chapter, we discuss the procedures taken to develop an instructional fidelity

instrument that paralleled development of an instructional intervention, namely SIWI, through

collaboration with teachers, and encompassing the review and reflection of videotaped

instruction. We then share subsequent work whereby a new group of teachers across six states

was introduced to the fully developed elementary SIWI curriculum, and engaged in year-long

professional development that involved collaborative review and discussion of videotaped

instruction in tandem with select fidelity instrument principles. While outcomes are specific to

the use of video in support of literacy coaching which occurred later in the project, the

development phase is detailed to provide background on how we arrived at our current approach.

Method

Development of the Instructional Fidelity Instrument

During the development phase of the grant, six elementary teachers of the deaf, grades 3-

5, across varied settings (i.e., public school, residential school and day school for the deaf) were

involved. These teachers worked within programs that had different philosophies of education,

whereby some allowed the use of ASL with d/hh students following a bilingual approach to

education and others followed an oral/aural or a combined approach. Teachers of these classes

ranged in experience from 3 to 25 years teaching d/hh students, and most had 2-3 years of

experience with SIWI.

Prior to the start of the first school year, the six teachers attended a week-long

professional development on SIWI. They were exposed to the major instructional principles of

the SIWI curriculum as implemented at the middle grades level, and were encouraged to adapt and apply the curriculum to their elementary settings. Teachers and research team members collaboratively participated in two years of SIWI instruction and development. By semester, each of the three major driving principles of SIWI were targeted one at a time for more in-depth reflection, idea generation, and development. During the first semester of work, attention was specifically placed on the use of strategy instruction to explicitly teach writing processes to students, followed by a semester of focusing on interactive instruction and then the incorporation of linguistic and metalinguistic approaches. This process resulted in innovation and development of the curriculum and instructional fidelity instrument piece by piece.

For the most part, teachers implemented SIWI on a daily basis and for a minimum of 2 hours per week. They videotaped every SIWI lesson using video systems that captured both teacher-focused and student-focused views of the classroom, combined the videos into a single split-screen, and uploaded it to a secured online server. Both teachers and researchers could access the videotaped instruction online. Videos were needed for research, development, and professional development. Specific purposes for capturing classroom video footage were: 1) to collect bouts of model instruction that could illustrate instructional principles and be used to train new teachers; 2) to continually monitor student progress and examine targeted areas of the curriculum that may or may not be working; and 3) to collaboratively review and reflect on one's instruction. Teachers met online with members of the research team on a weekly basis for 20-40 minutes to collaboratively review and reflect on instruction and/or student progress, or to brainstorm ways of enriching or adapting the SIWI curriculum to better meet the needs of each teacher's particular students.

Additionally three in-person professional development sessions occurred during the development phase, bringing teachers together at the conclusion of each semester. During these sessions, select segments of videotaped lessons were used to illustrate instructional approaches and promote discussion of the SIWI principles as articulated on the fidelity instrument. Teachers were also given time to review their own lessons across a unit of instruction, mark evidence of SIWI principles on the fidelity instrument, and then return to the group where they shared what they noticed or realized. These approaches to professional development led to cyclical bouts of development of SIWI and the fidelity instrument.

Application of Video and the Fidelity Instrument to Ongoing Professional Development

By the start of the third year of the grant project, the SIWI curriculum for elementary d/hh students as well as the partnering fidelity instrument had been fully developed. The third year of the grant was a randomized control trial to examine the efficacy of the SIWI intervention at the elementary level. An experimental group of teachers, all new to SIWI, received a week-long professional development session the summer prior to the start of the school year. There were eight participating teachers spread across six states who ranged in teaching experience with d/hh students from 3 to 33 years. These teachers, once again, varied by educational setting and philosophy. During the academic year, a member of the research team made a site visit during the fall and spring semesters to each teacher's program to support instruction.

Teachers videotaped their instruction at least once a week using the same video systems as the previous group of teachers. There were two main purposes for collecting the video footage of classroom instruction among this group of teachers—to supplement research associated with the efficacy of SIWI and to support ongoing professional development. First, while watching a teacher's lesson, a member of the research team would complete an instructional fidelity form,

rating the teacher's adherence to SIWI instructional principles. These fidelity scores would then be included in the research reporting student outcomes. The video data would also assist in interpreting the nature and impact of study findings. Secondly, the videos were used as a vehicle for collaborative and ongoing teacher professional development. During the school year, teachers met for biweekly, online meetings either with a member of the research team or in small groups of teachers whereby a research team member facilitated (see meeting protocol in Appendix B). Jointly, the teacher/s and researcher would review the past two weeks of instruction by conversing about *what is going well* with instruction, using the fidelity instrument and associated video evidence to substantiate one's remarks. Then, members of the meeting would continue on to discuss *what isn't working well* and *how we know*. Specific instances of classroom instruction might be shared in selected video clips to support a deeper understanding of the problem; however, the primary goal was to engage in collaborative problem solving, assisting teachers with approaches to the challenges they face. In doing this, we asked *what principles on the fidelity instrument help us address (the issue)*? The meeting then concluded by collaboratively targeting specific instructional principles the teacher would attend to during the next two weeks of instruction, and a commitment to *try it out*. Biweekly cycles of review, reflection, and goal setting, using classroom video footage paired with the instructional fidelity form, were primary elements of the continuous, year-long professional development provided to teachers.

Discussion of Outcomes

In this chapter we have described how a rubric-style observation instrument for observing classroom writing instruction was designed to focus and optimize collaborative video analysis sessions among teachers and researchers. In the section that follows, we examine outcomes associated with our experience using the fidelity instrument in conjunction with video reflection,

and in doing so, discuss the constraints and affordances of using video for research and professional development. This discussion is meant to support the work of researchers and instructional leaders who wish to carry out literacy investigations using video, despite the logistical and methodological challenges it involves.

We have constructed our understandings of the challenges and affordances by engaging in a collaborative, thematic analysis of teacher interviews before, during and at the close of the study. Brief, semi-structured interviews were conducted by a member of the research team during bi-weekly meetings in order to generate feedback for improvement throughout the study.

We generated and compared memos from each interview, focusing specifically on the aspects SIWI teachers discussed, feedback about professional development and support structures, and lingering or ongoing questions related to the study. We compared memos generated by members of the research team, looking within interviews from a single participant as well as across participants in order to identify trends and patterns associated with the professional development approach. After summarizing feedback, we generated a list of five main findings which were shared and checked with teacher participants in order to ensure validity. This section provides an overview of these findings with a discussion of their implications for other projects.

Challenges of Using Video and Overcoming Constraints

Though instrumental in our work in terms of instructional design and teacher development, there are two main challenges associated with using videos for research and development purposes. First, the richness of video data can often be overwhelming for viewers and for the systems that support video upload, storage, sharing, and viewing. Substantial technical and logistical coordination is required for capturing, storing, and sharing high-quality

video. Since our project spanned six geographically distant states, and teachers were frequently videotaping instruction without in-person support of a researcher or assistant, we needed a user-friendly system that minimized time spent on setup, recording, sharing, and maintenance. We also needed a system that provided a clear visual of the subjects of interest in classroom videos— both teachers and students.

When a teacher and a student are working one-on-one, or when the teacher is driving instruction, a simple recording device like an iPad, iPhone, or flip camera is often sufficient. However, SIWI's focus on interactive group instruction, coupled with the need for clear visual images of students in order to clearly view their signing, required a different approach. After experimenting with several options for video capture and streaming, we identified a tool for video capture that met our needs and provided a secure, online space for video viewing and collaboration. We used one ThereNow® InSight Duo camera in each classroom. These compact camera systems use two lenses to capture a picture-in-picture view of two distinct angles of the classroom. In our case, this included one view of students and one view of the teacher/whiteboard area. Once connected to the internet via an Ethernet cord, the camera automatically uploads both video views and synchronizes them for online playback in a secure online view player. Teachers were only responsible for turning the system on and off at the beginning and end of their instruction, as the upload, charging, syncing, and sharing were automatic as soon as recording stopped.

Within the online video sharing system were tools for clipping videos, commenting, coding, annotating, and inserting timestamps to mark particular moments. This allowed researchers to select portions of video to share with teachers and/or use for analysis. As video is

increasingly used in the context of teacher preparation and professional development, we anticipate that options for systems like these will proliferate.

ThereNow®'s suite of online options also assisted us in addressing the second constraint of video work—the problem of information overload. Videos make many layers and aspects of instruction, environment, behavior, language, and interactions available for analysis that it is difficult to know where to begin, how to stay focused, and what to attend to. In addition, video viewing can be enormously time consuming, making it inefficient for frequent teacher reflection. The ability to edit videos by selecting key clips, and to add time-stamped codes to videos for future sorting and sharing, dramatically increased the efficiency of bi-weekly meetings and researcher analysis. Only one researcher is required to view each video from start to finish in order to identify clips and code other features of interest. Other analysts and teacher participants can focus on viewing and reviewing specific short segments that have been selected from the large stretches of raw data.

Overcoming another constraint, the development of our fidelity instrument was instrumental in allowing focused, strategic selection of video segments for reflection and analysis. Using the fidelity instrument as a resource during reflection allowed teachers to strategically engage in data reduction - i.e. not be overwhelmed by the amount of video data, or the sheer number of possible things to attend to when observing instruction. The fidelity instrument focused attention on instructional principles. This does not mean that non-instructional elements of the video were ignored, but rather they were discussed using the fidelity instrument as a lens. For example, changes to the physical classroom setup were discussed as ways to support teachers' application of specific SIWI principles.

When there existed behavioral interruptions or other classroom challenges, teachers were able to use SIWI principles described in the fidelity instrument to brainstorm ways to address such patterns. In other words, it provided a problem solving approach. As Grossman et al., (2013) reported, it is difficult for raters of classroom videos to rate instructional features when there are challenging behaviors present in the video clip. For this reason the Protocol for Language Arts Teaching Observation (PLATO) has a rated category for classroom management in an otherwise instruction-focused tool. Similarly, when teachers view or experience classroom interactions as behavior management problems, it is difficult to sustain a focus on instruction and to see how instruction itself might be modified to invite more positive behavior. The fidelity instrument allowed us to discuss concerns about behavior in the context of instructional principles and therefore use instruction itself to support more positive behavior. For example, when students were consistently disengaged during guided writing lessons, teachers were able to identify strategies to support engagement by discussing principles related to interaction on the fidelity instrument.

Besides supporting instructional, environmental and behavioral troubleshooting, the fidelity instrument allowed teachers and researchers to use the videos as catalysts for conversations about what worked well for individual students. The videos provided evidence of patterns teachers were not always aware of in the moment, and also could be used to document growth over time that teachers may not sense in their day-to-day efforts. This allowed the researchers to ensure collaborative video analysis sessions were focused, efficient, and growth-oriented. Both Baker and Smith (1999) as well as Gersten and Dimino (2001) have argued, evidence of success can lead to a higher likelihood of adoption and maintenance because they promote a sense of possibility and achievement among participants.

Affordances of Using Video for Research and Professional Development

Our project used video capture in teachers' classrooms across six states to support SIWI related research as well as teachers' opportunities to reflect on their practice and learn from each other's practice. Videos were uniquely supportive of teacher growth in three important ways. First, they allowed teachers to learn from one another's practice despite geographical separation. Facilitating peer observations within a school building is often a significant staffing and scheduling challenge. Facilitating peer observations across schools is nearly impossible without video support (AFT, 2008; Baker & Smith, 1999; Gersten & Dimino, 2001; Short, Echevarria, & Richards-Tutor, 2011), which is essential for long-term capacity development (Pella, 2001).

Second, video records of a teacher's own classroom provide opportunities to see aspects of their own classrooms and interactions that they do not attend to in the moment. Just as it can be overwhelming to consider all the possible layers of analysis video affords, it is impossible to be aware of every aspect of classroom interactions while you are in the process of interacting. Still, as exemplary teachers have reported (e.g., Gabriel, Allington, & Day 2010), professional development that provides teachers with a new way of looking at their practice and/or student work is consistently mentioned as instrumental in teacher development and motivation.

Third, videos provided both teachers and researchers with evidence of growth over time. As we noted in the review of literature, this aspect of video is important for engaging teachers' motivation and self-efficacy with regard to SIWI. It also provided support for sustaining work with SIWI in settings where instructional leaders were inclined or pressured to make decisions about instructional approaches based on data about their effectiveness.

Video evidence of growth over time was important for researchers because it provided data for understanding trends in challenges and trajectories of growth for teachers implementing

a new approach of instruction. For example, we found that implementing interactive or dialogic instruction well, especially for teachers who viewed this as a departure from their prior practice, required ongoing reflection and discussion that was grounded in the teachers' classroom contexts and tied to instructional principles. Merely discussing instruction without relating it to principles, or discussing instruction in general without reference to a specific context, was not viewed as helpful or productive by teachers. These data allowed us to develop a more specific protocol for bi-weekly meetings that included sensitivity to the typical trends of implementation we observed. Knowledge of typical trends in implementation over time now guides what we attend to during video review, what we extract to share with teachers during meetings, and how we coach teachers during bi-weekly meetings. For example, we were able to develop guiding questions to support implementation, and to refine the fidelity instrument by sharpening our focus on the aspects of instruction that differentiated levels of fidelity and performance across settings. Without classroom videos that could be efficiently collected, organized, clipped, and shared, this would not have been possible.

Conclusion

In this chapter we discuss our approach to developing and implementing collaborative video review sessions with inservice teachers for the purposes of ongoing professional development, as well as simultaneous research and development. The collaborative video analysis sessions were focused, efficient, and growth-oriented. In particular, by pairing the viewing of video alongside associated principles on the fidelity instrument, we involved teachers in a targeted and guided process of analyzing and reflecting that moved beyond what is typically achievable through the use of rubric ratings or engagement in self-reflection alone. Even though data collection and analysis from the third year of the project is far from complete, there has been

a noticeably higher level of instructional fidelity among third year teachers compared to those in the development phase who had more experience with SIWI. We hypothesize that the enhanced protocol and process for video review and reflection has resulted in more rapid and more substantial changes to teacher practice.

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Appendix A

Fidelity Instrument

Appendix B

Meeting Protocol

Protocol Questions

1. What is working well?
    a. How do you know (evidence)?
    b. What principles on the instructional fidelity instrument can help us explain the success?
2. What is not working well?
    a. How do you know?
    b. What principles on the instructional fidelity instrument can help us address that?
3. Try it out!