Is Today's Video-Based Teacher PD Missing the Picture?
By Jean Moon & Sarah Michaels

The use of video as a tool for teacher professional learning or development is by no means a new idea. For several decades now video has helped teachers in important ways. Through video studies, teachers or instructional coaches are able to explore a new practice or instructional technique by "dropping in" on a classroom where an instructor is trying out a new curriculum, assessment strategy, or learning resource. Research evidence from "video clubs" or programs that use well-designed video-observation protocols suggests that strategic use of video can be an effective tool to connect teachers to their own classrooms and to the specifics of their own practice.

With increases in availability of high production-quality video technology, the access to and use of video in schools has taken off. In its current digital format, video is accessible to teachers, instructional coaches, or PD providers, on a routine basis, often 24/7. By using a computer, tablet or smartphone classroom images are readily available from a wide variety of web-based platforms. Listening to teachers from around the world describe what has been a successful lesson or a particular challenging teaching moment is now remarkably easy.

Despite the abundant access to video, however, there is a challenge surrounding its use as a PD tool, a bump in the road—one perhaps acknowledged, but certainly not solved. Most video cases now in existence to help teachers understand the teaching and learning shifts embedded in the Common Core State Standards and the Next Generation Science Standards are based on the "lesson" as the unit of learning. While focusing on a lesson or a series of connected lessons has made good historical sense, it is less useful today. The ambitious changes in practice called for in these standards are complex and in many ways unscriptable, calling for the progressive building of ideas and capacities—over months or years, not days.

Simply put, changes called for in all of the new standards documents are not minor. They reflect fundamental shifts in practice, new ways of thinking about curriculum and unit design, and new ways of thinking about all students as highly capable "reasoners" under the right circumstances. Most current video-based PD activities oversimplify this critical challenge.

Too Much Polish?
In many PD settings, and on most professional-learning websites that provide video resources for teachers, the videos are typically akin to a highly polished, but static text. They tell a story, with a beginning, middle, and end, and deliver a message—frequently providing a highly condensed narrative about a great lesson, high student engagement, and a great teaching technique or strategy. Often included are one or two students describing a product or an outcome. These videos are typically short (5-10 minutes) and stand alone, linked to a subject or topic to help provide teachers with lesson ideas or encouragement for small steps to be taken in making changes in their teaching practice.

To our knowledge, there is currently no research to suggest that these static (text-like) videos are "educative," that is, effective in helping teachers seriously rethink or shift their classroom practice in fundamental ways. Again, accessibility of video is not the question or the challenge. The question we are raising is about quality and design principles: What makes for "educative" videos that can support teachers in taking on the new teaching practices that are an integral part of NGSS and the Common Core? Here is where we may be missing the mark with the design of current video as a PD tool.

We come to the challenge of educative video from our own work in developing the Next Generation Science Exemplar learning system, admitting that we, too, do not have all the answers to this challenge. NGSX is a professional-learning platform and course of study that blends high-tech (digital resources and a web-based platform) with low-tech face-to-face study groups with an expert facilitator to support collaborative discussion, analysis, and participation by adults, as learners, engaging in the complex practices they are then asked to take into their own classrooms. In NGSX, video resources—and in particular, classroom-based video case studies—are at the core of the system. And over the past several years, working in 11 states, we have come to recognize just how challenging it is to work with video—to make it "educative."

What, then, is our understanding of educative video? At their core these videos are "thinking devices" that require significant intellectual engagement by PD participants. They are designed to provoke discussion, analysis, and active knowledge-building in concert with colleagues. In so doing, some videos may be designed to introduce a problem or task, but not one defined by the requirements of a single lesson but learning that unfolds over time, perhaps a number of weeks. They are videos that do a thorough job at capturing what students are doing, discussing, questioning, and thinking, as well as what a teacher does to

support student sense-making in the process. They may include provide commentary by experts, on a text, task, or video clip.

Many are raw, largely unedited clips from a classroom, strategically selected and supported. These require participants to work with transcripts, unpacking characteristics of student reasoning in depth and following how students are using (or not) scientific and engineering practices to build a progressive understanding of a science idea. In using video in NGSX, our goal is to help move teachers away from premature judgments or casual observations by giving them ample opportunities to "slow down and stop time" (in early-childhood education expert Cindy Ballenger's terms), and use evidence-based reasoning to dig deeper, much as we want students to be doing as part of moving classrooms "from recitation to reasoning."

'Problematizing Practice'
In sum, we are at a point in our own work where we view educative videos in science as videos intentionally designed to motivate critical intellectual work among teachers by focusing on coherent, connected sequences of three-dimensional learning and teaching. They are not perfected examples that communicate the one "best practice." Instead, they problematize practice through a combination of images and discourse used to support teachers to critically engage with this current transformation of science education.

Our thoughts about educative video are situated in science education because that is where we do our work. That said, it is our experience that much of what we write is applicable across all grade levels and subject areas, because of the fundamental focus on reasoning and evidence-based argument at the core of the common core and other college-and-career-ready standards.

What challenges remain for the field if we are to get the full power out of video? As PD designers, providers, practitioner-leaders, and researchers, we need to develop a shared understanding of the design principles—the essential elements—of educative video. In addition, we need to develop a shared language about those design principles as well as shared research tools—so that we can build on one another's efforts in a cumulative and focused manner—to support teachers and PD designers. This is community work. As such, it must include partnerships between classroom teachers and teacher researchers as part of the design and development effort to producing useful knowledge for the field.

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