

Models and Resources for the Use of
Video in Mathematics Teacher
Professional Development:
A Report of the NCTM Video Task Force

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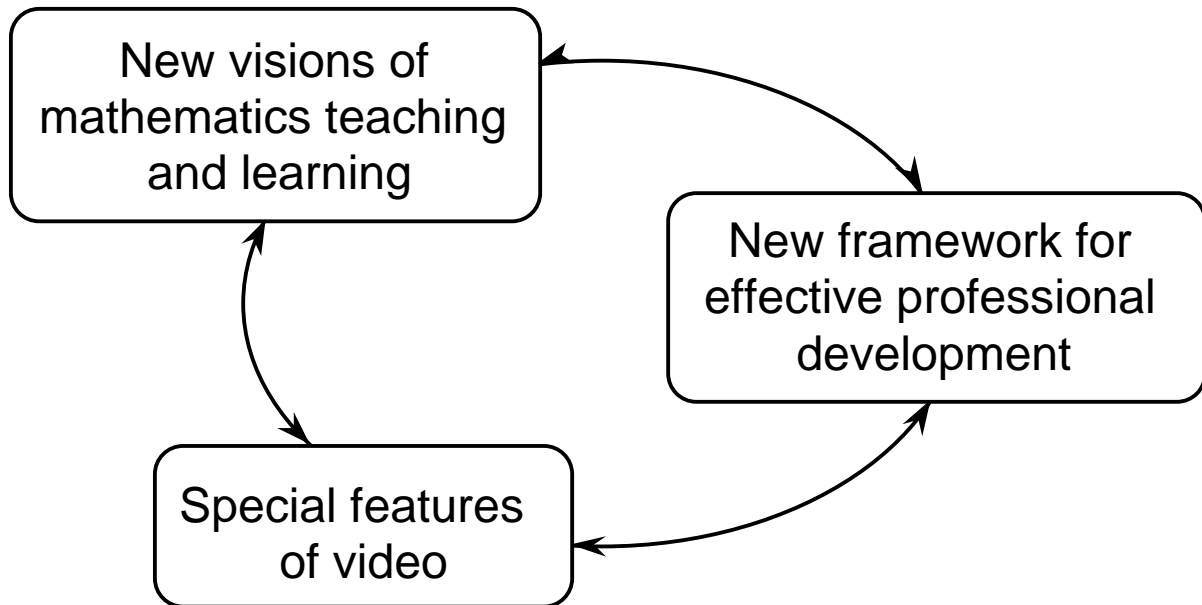
Chuck Thompson, Louisville, KY

Margaret Wilsman, Madison, WI

Orlando, FL, April 2001

<http://clem.mscd.edu/~romagnal>

The Larger Context:



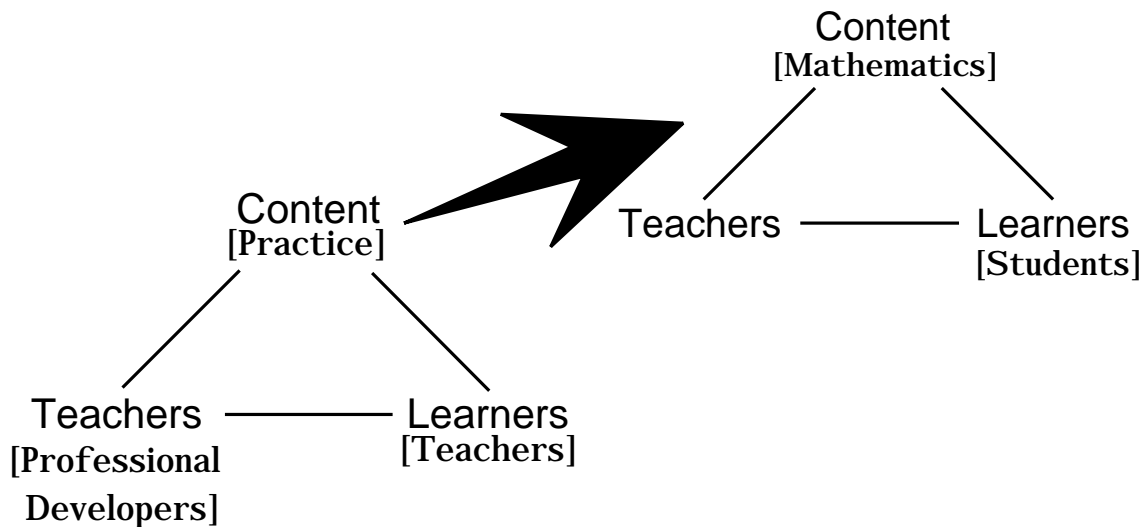
PD should:

- Have students' learning as the ultimate goal;
- Support the ongoing work of teaching
- Be grounded in mathematics content;
- Model and reflect the pedagogy of good instruction;
- Create some disequilibrium for teachers;
- Encourage teacher collaboration;
- Take into account teachers' contexts;
- Make use of the knowledge and expertise of teachers;
- Be sustained and cohesive;
- Continue over the course of teachers' careers.

(Smith, 2001)

“Transformative” PD:

- Is inquiry-based PD that arises from, and is an integral component of, teachers’ professional work;
- Is on-going, content-centered, focuses on daily practice and the issues that arise from that practice;
- Uses records of daily practice to create “professional learning tasks (PLTs)” (Smith 2001, p. 8)



What Video Affords:

- captures more of the complexity of classroom practice;
- provides a common experience, albeit one with many potential foci for viewers, that—in contrast to live observations—can be reviewed repeatedly;
- provides an authentic, common learning experience for viewers;
- allows for the creation of a common language for discourse about teaching;
- provides a “safe” distance (especially valuable when observing one’s own teaching) that allows for an analytic stance in discussions with other viewers.

In summary, videos provide shared access to the complexity of classrooms, as focus for discourse and reflection among a community of professionals

Videos that capture *thoughtful, considered classroom teaching practice*:

- are generative; that is, viewers (i.e. teachers) generate issues for discussion, inquiry and analysis;
- spur inquiry into: mathematics; pedagogy; resources; perspectives, views and beliefs of the viewer and others;
- create disequilibrium (one of our favorite features of professional development)
- require facilitation, mediation, guidance, focus, and clear purpose to accomplish all of the above.

Facilitation of Video-Centered PD

The complexity captured by video makes it crucial that the viewer's attention be focused.

This depends on:

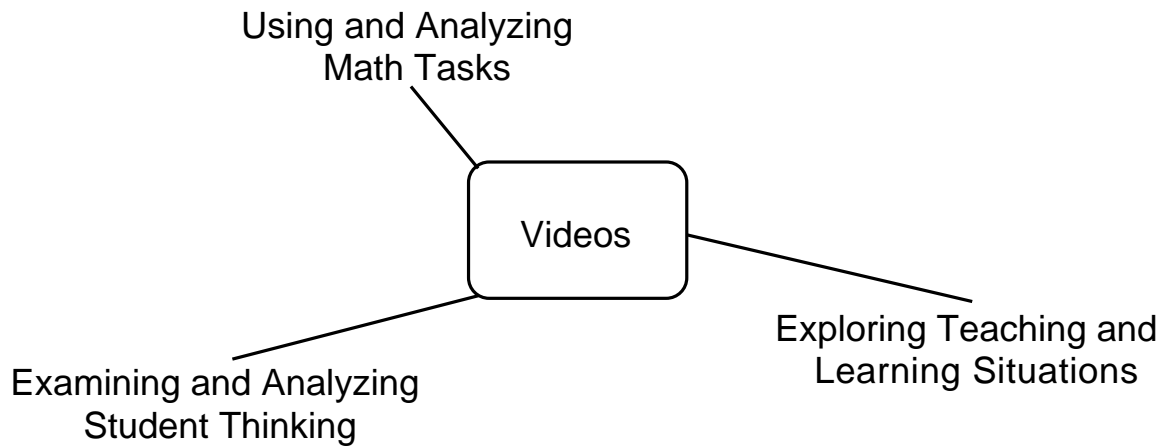
- the learning goals of the professional development program;
- the specific goals of the activity of which viewing this video is a part;
- the characteristics, capacities, and needs of the viewers.

In a “pedagogy of video-centered professional development”:

- facilitators provide carefully-designed pre- and post-viewing activities that foster discourse among viewers.
- This discourse would be descriptive and analytical rather than judgmental, and would allow for “informed dissent” (Little, 1993).

How does the specific viewing activity fit into the overall PD program of which it is a part?

Role of Video in the larger PD Picture: the center of at least 3 different types of inquiry:



Some Resources:

- Commercially-produced videos of teaching such as those produced by Annenberg;
- PBS Mathline, a collection of videos and a program for discussion and analysis by on-line communities;
- *Developing Mathematical Ideas*, a curriculum of written and video cases of elementary teaching, including, significantly, cases of professional developers using cases;
- Videocases for Mathematics Teacher Development, an NSF-funded project developing video cases and a curriculum for their use;
- The TIMSS Video Study, containing excerpts from 8th grade algebra and geometry classrooms from Japan, Germany, and U.S.A.;
- Project M.A.T.H., a complete video record of Deborah Ball's 2nd grade mathematics classes for a full academic year, along with transcripts, lesson plans, student work, and other classroom artifacts;
- STREAM, a project developed by COMAP to provide professional development support for adopters of NSF-funded secondary curriculum projects;
- Web sites like NCTM Illuminations and the Math Forum's Bridging Research and Practice (BRAP) project;
- Teachers videotaping and analyzing their own practice (see the National Board for Professional Teaching Standards certification process)