Using Video to Study Mathematics Teachers’ Professional Vision

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Method 1: Studying Teaching Directly

- Classroom video as a direct source for researcher analysis of instruction
  - For analysis of teacher cognition

Classroom Video Viewed by Researcher

QuickTime™ and a YUV420 codec decompressor are needed to see this picture.
Method 2a: Teacher Analysis of Video

- Classroom video as direct source for teacher analysis of instruction

Classroom Video  Viewed by Teacher
**Method 2a: Teacher Analysis of Video**

- Classroom video analysis of

  **Groups of teachers react to excerpts of own teaching**

  **“Video Clubs”**

  **Teacher reacts to excerpts of others’ teaching**

  **“Video Interview”**
Method 2b: Studying Teaching Indirectly

- Video of teacher analysis of classroom video as a direct source for analysis of teacher cognition while analyzing video
- Video of teacher analysis of classroom video as a second order source of analysis of teacher cognition during instruction

Teacher analysis of video

Viewed by researcher
Why Study Teacher Analysis of Video?

- Teacher analysis of video provides insights into teacher thinking during instruction

- Teacher analysis of video highlights an important component of teaching expertise

- Teacher analysis of video may suggest directions for researcher analysis of video
Why Study Teacher Analysis of Video?

- Teacher analysis of video may provide insights into teacher thinking during instruction.

- Teacher analysis of video may highlight an important component of teaching expertise:
  - Teachers’ professional vision.

- Teacher analysis of video may suggest directions for researcher analysis of video.
Professional Vision

“Ways of seeing and understanding events that are answerable to the distinctive interests of a particular social group.”

– Goodwin, 1994

Teachers’ Professional Vision:

- Ability to perceive meaningful structure in classroom events
What is Professional Vision?

Classroom Interactions

Selective Attention

Knowledge-based Reasoning
Current Research

- Investigate teacher analysis of video through the lens of professional vision
- Conducted two “video interviews” with 48 teachers
- 32 teachers participated in one of several video club designs
  - Meeting monthly vs. weekly
  - Researcher-facilitated vs. teacher-facilitated
  - Varying types of video clips
  - Varying goals for discussion
Examining Teachers’ Professional Vision

Put teachers’ comments in categories

<table>
<thead>
<tr>
<th>Selective Attention</th>
<th>Agent</th>
<th>student, teacher, other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic</td>
<td>math thinking, pedagogy, climate, management</td>
<td></td>
</tr>
<tr>
<td>Stance</td>
<td>describe, evaluate, interpret</td>
<td></td>
</tr>
</tbody>
</table>

Distinguish among comments within a category

- Types of Interpretive Strategies
  - Identify principles
  - Use analogies
  - Storytelling
  - Self projection
  - Focus on what’s missing
  - Reason outside of video
Examining Teachers’ Professional Vision

Distinguish among comments within a category

Types of comments related to “student math thinking”

Level 1: Identify statements made by students
Level 2: Analyze meaning of student ideas
Level 3: Generalization & synthesis of student ideas

Examine interaction between selective attention and knowledge-based reasoning

- Increased focus on student thinking leads to new ways to interpret student ideas
- New ways to interpret student ideas leads to noticing more complex issues of student thinking in video
Reprise: Why Study Teacher Analysis of Video?

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