



STAAR

Supporting the Transition from Arithmetic
to Algebraic Reasoning

Using Video to Analyze Learning from the Problem-Solving Cycle

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<http://www.colorado.edu/education/staar>

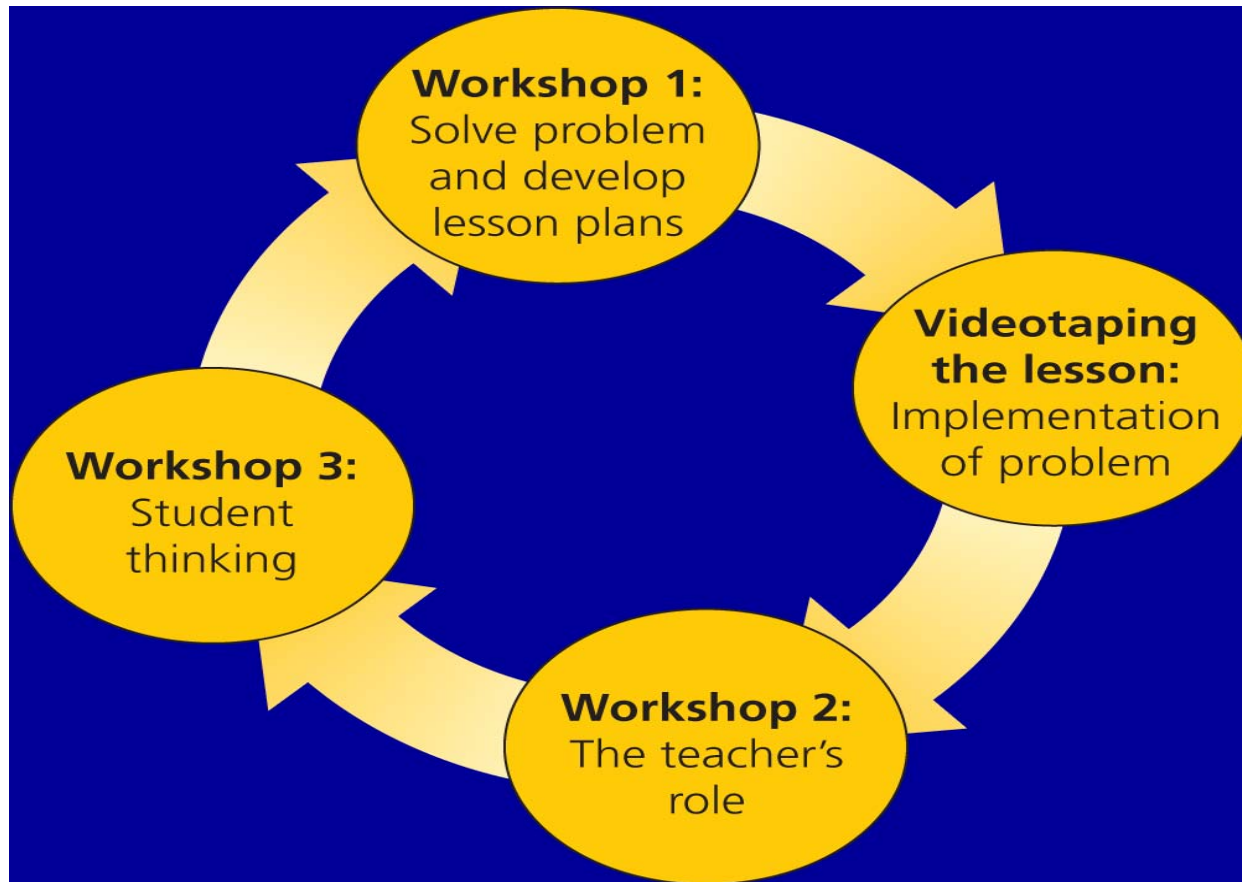


Situative Perspective on Teacher Learning

- Teacher learning
 - A social process
 - Situated in social and cultural contexts
- Tools for teacher learning
 - Professional learning communities
 - Artifacts of practice
- Community around video



The Problem-Solving Cycle





Method

PD

- Summer course
- 2 years of workshops
- 3 iterations of PSC

Sample

- Year 1: 8 middle school math teachers
- Year 2: 10 teachers (7 old, 3 new)

Data

- Videotaped PD & lessons
- Interviewed teachers & facilitators
- Written reflections



Video as a Tool for Teacher Learning: Research Questions

- What was the nature of the discussions around video in the PD workshops?
- How did these discussions change over time?
- What was the facilitator's role in guiding the video-based discussions?



Analysis of Video-Based Discussions

- Whole Group Discussions Around Video
 - PSC 1 & PSC 3
- Code 2 Minute Segments
 - When
 - Who
 - What
 - Content
- Patterns and Changes Over Time
- Features of Discussions of Teacher Role and Student Thinking



Video as a Tool for Teacher Learning: PSC 1 to PSC 3

- Overall Changes
 - Longer conversations
 - Less set-up
- Teacher Role
 - Less describing, more suggestions
 - Focused questions guided critiques
- Student Reasoning
 - More focused on mathematics
 - Rich, sophisticated explorations



Implications of Using Video as a Tool for Teacher Learning

- Role of the Facilitator in Guiding Discussions
- Importance of a Supportive Community



Teachers' Perspectives on the Impact of Watching Video

- Watching Video of Themselves

Watching the video clips was great to see me in action and actually get to see what the students see. It allowed me to see the parts of my lessons that need improvement and what is good. (Laura, written reflection)

- Watching Video of Other Teachers

We never get to see our colleagues doing what we're doing. We just assume they're doing the same things that we are, and that's not necessarily so. It's a great window into how other kids look and it's comforting when you see things that are the same. (Penny, final interview)

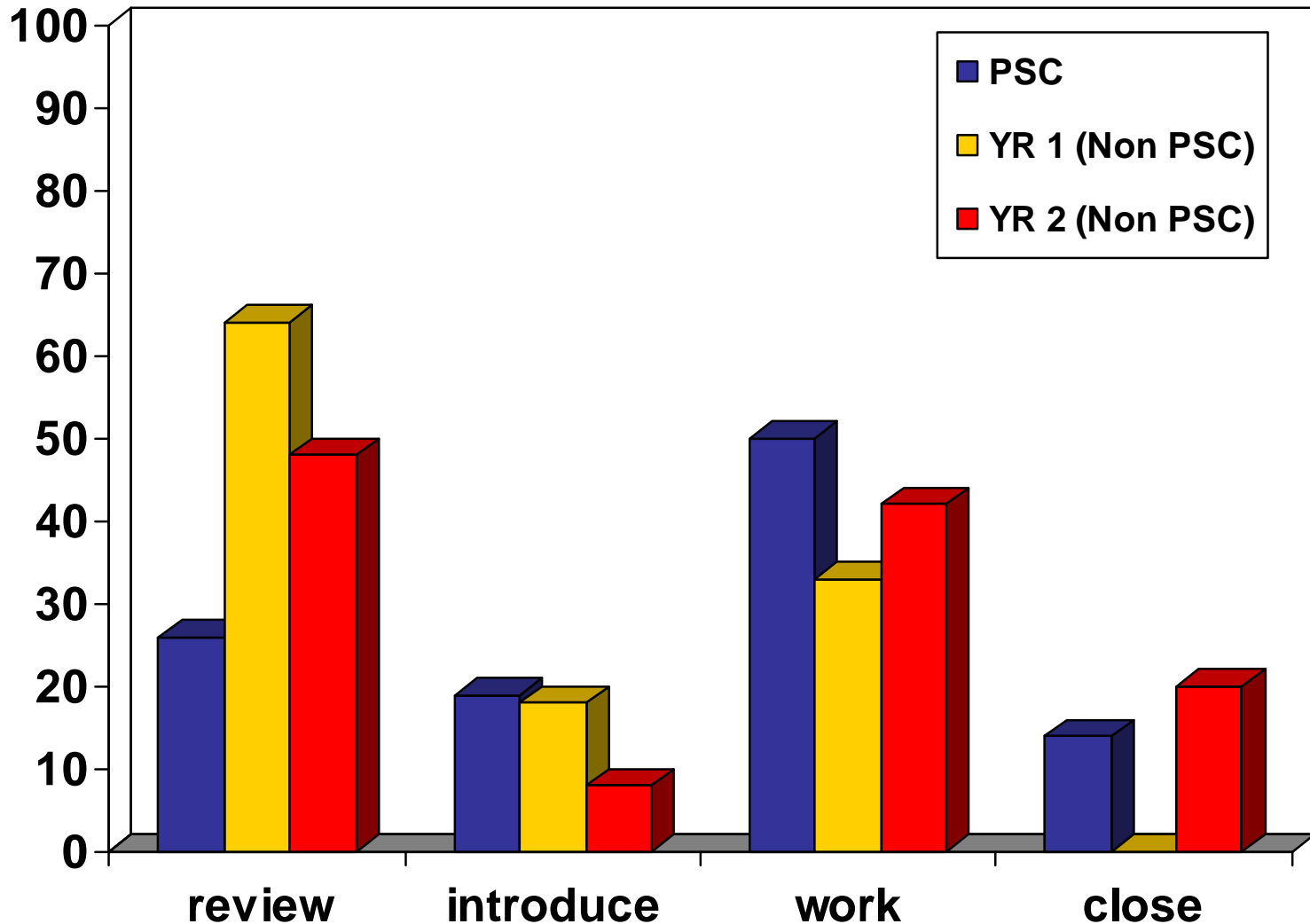


Analysis of Videotaped Classroom Lessons

- Using QMI (developed by Learning Mathematics for Teaching project)
- Modified coding system & glossary to fit PSC goals and design
- Established reliability
- Conducting first case study

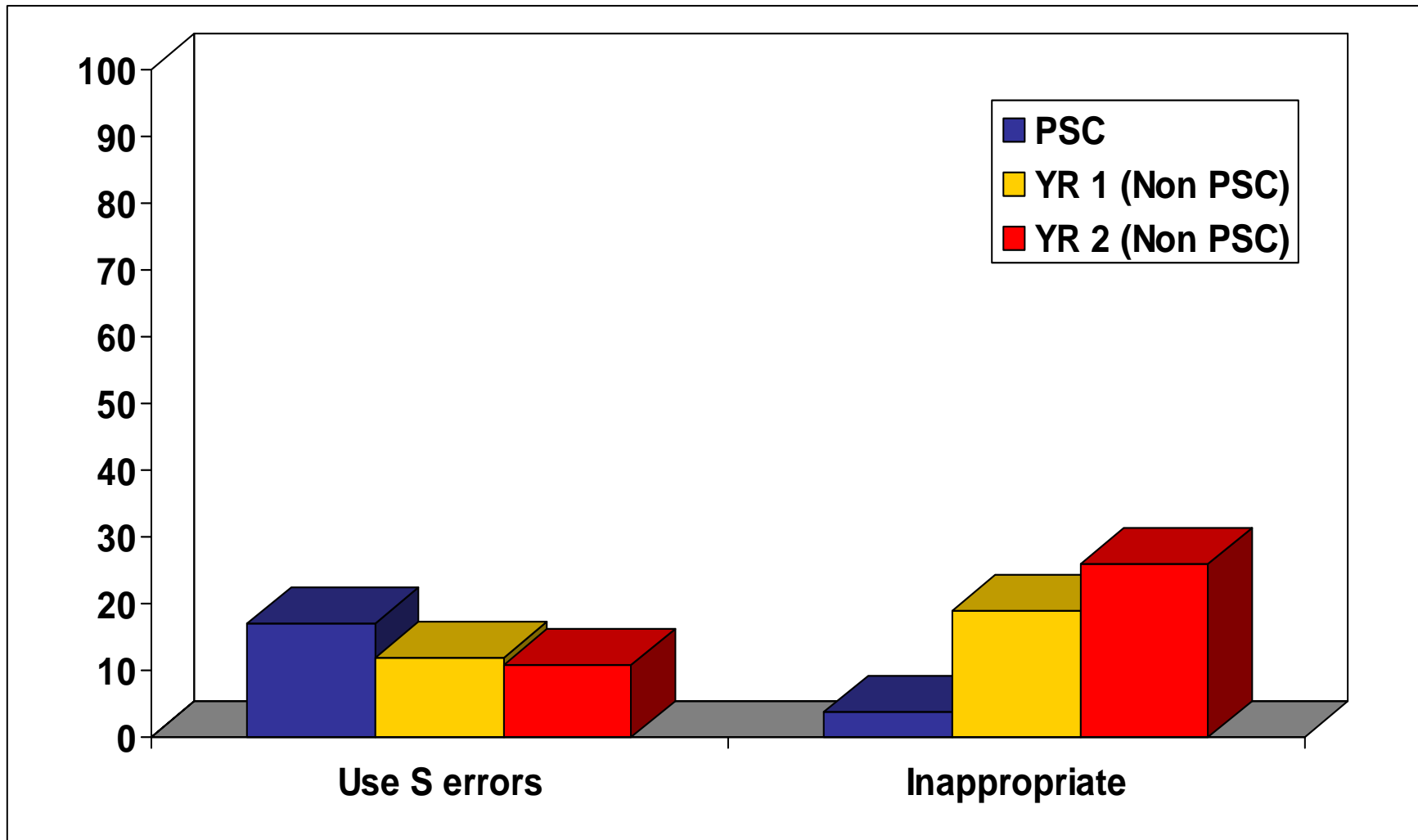


Ken's Instructional Changes: Time Allocation





Ken's Instructional Changes: Pedagogical Moves





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