"Becoming a Better Teacher: Insights from Studying Videos from Students’ Active Learning”

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Harrington Tower 301

Abstract
The National Science Foundation grant, Cyber-Enabled Design Research to Enhance Teachers’ Critical Thinking Using a Major Video Collection on Children’s Mathematical Reasoning, makes publicly accessible videos and other related metadata from over 25 years of NSF-funded research on mathematical learning. Related research examines the effect of video viewing and analysis on pre- and in-service teachers’ understanding of student learning. With this background, the talk will: (1) describe the mathematics education video collection; (2) introduce the Rutgers University open-source Repository, the Video Mosaic Collaborative, and associated tools (see VMC); (3) describe results from design research studies using the collection for pre and in service teacher education, and (4) address alternatives to the prevalent teacher-centered mode of instruction and method of evaluating student learning. Options will be offered for making instructional shifts that hold promise for engaging students in meaningful learning under various conditions, using new tools, that offer visual ways of exploring content, as well as encouraging student collaboration and the building of communities of STEM learners.

Biographical Note
Carolyn A. Maher is Distinguished Professor of Mathematics Education and the Director of the Robert B. Davis Institute for Learning at the Graduate School of Education at Rutgers, The State University of New Jersey. She is Editor of the Journal of Mathematical Behavior, Elsevier. Her research focuses on cross-sectional and longitudinal studies of students’ mathematical learning, with special attention to the development of mathematical reasoning. She is PI on a collaborative research grant from the NSF, Cyber-Enabled Design Research to Enhance Teachers’ Critical Thinking Using a Major Video Collection, focusing on design research studies in teacher education. She is Co-PI on two other NSF funded projects. Her work has been supported by over $16 million in grant funding. Professor Maher has edited 6 books/monographs and published over 200 papers. Professor Maher has received honors and awards for excellence in research, teaching and service.