Transforming Instruction and Assessment Using Student-created Video

Virginia (Ginny) Keen
University of Dayton, Dayton, OH USA, keenvirl@notes.udayton.edu

Abstract of Workshop: The major aim of this workshop is to provide an opportunity for participants to assess the potential for the use of student-created videos in their instruction and assessment activities. This will be accomplished through direct experience with sample student videos. Information about the development of the student-video project will also be shared. **It is recommended that attendees bring a computer with video capability to the session, if at all possible.**

Introduction

The transformation of students, with narrow views of what mathematics is and how to learn it, into thoughtful mathematics learners is a major focus of mathematics for prospective elementary teachers courses. Mathematics teacher educators have used a variety of teaching strategies and provided many traditional and alternative learning and assessment opportunities for students with the goal of enhancing the learning of meaningful mathematics by prospective teachers of young children. Video technology has been used in a supportive role, with videos created by knowledgeable-others shown for this purpose.

Building on the work presented in my Dresden paper (Keen 2009), this session serves as an opportunity for others to observe how I use *student*-created video for both instructional and assessment purposes. The dream of creating knowledgeable teachers becomes a reality as the students begin to think like teachers, developing teaching video vignettes that provide opportunities for peers to learn about the mathematics that is the subject of each video. The videos serve as evidence of the student-creator's learning and understanding in very rich, personal and candid ways.

The video project is designed as a way to invite students into the study of mathematics while experimenting with the role of teacher. So, rather than using videos commercially produced, students experience first-hand the preparation and understanding required to present their thinking about a mathematical concept. The concepts to be "taught" are part of the regular course content and can then serve as tools for later study and revisiting of content by all class members.

Workshop Activities

In this workshop, participants view student-created videos. By viewing examples of videos showing a variety of evidence of content knowledge for teaching of mathematics, attendees will determine first-hand whether this type of activity appears to have value as a vehicle for student learning and assessment. Collegial discussion of the knowledge, skills, and mathematical dispositions in evidence on videos will serve as the basis for a professional analysis of the potential for the tool as a transformational vehicle for the student *and* the mathematics teacher educator.

Using the scoring rubric used for the student videos, participants will both scrutinize the video evidence for student understanding of the mathematics presented as well as critique the rubric designed to assess the students' videos. Of interest is whether this form of student learning and assessment appears to serve as a useful and transformational tool.

Extensions

Participants will be asked to use their on-board video capability to create a short video vignette about a topic that students often find confusing or in some way problematic. They will gain a clearer sense of the potential this assignment has for enhancing both student understanding of mathematics as well as assessment alternatives for the instructor.

Reference

Keen, V. (2009). "Using Digital Video to Strengthen Student Learning of Mathematics." Included in *Proceedings of the Tenth International Conference Mathematics Education in the 21st Century*, Dresden, Germany. Available online at http://math.unipa.it/~grim/21_project/21Project_dresden_sept_2009.htm