

ENACTED MULTIPLE REPRESENTATIONS OF CALCULUS CONCEPTS, STUDENT UNDERSTANDING AND GENDER

Ileana Vasu

Holyoke Community College and University of Massachusetts, Amherst, U.S.

Short Description: aims and underlying ideas

*Despite interest in multiple representations as a trademark of mathematical success, Calculus instruction is mostly symbolic in nature and lacks consideration of gender specific issues in learning. Well-chosen representations are powerful at conveying mathematical concepts. They can be effective at the novice level or for students who perceive themselves as weak in math. They may also provide access to mathematical concepts for those students who lack operational expertise. Participants will exchange ideas about the role of mathematical representations in the curriculum as they explore connections between representations in the curriculum and student understanding, with an emphasis to gender. We will explore curricular materials, then in small groups we will design our own Calculus mini-lesson using multiple representations. We will convene in the whole group format to share ideas, and discuss key questions. In a final wrap-up session, the facilitator and participants will flesh out common themes, patterns, and notable emergent ideas. **NOTE:** If possible please bring several copies of Calculus exams and a few sample pages from a Calculus text we may use them in our workshop. You may also email the materials to the presenter at ivasu@hcc.edu*

Planned Timeline	Topic	Material/Working Format/Presenter
16:30-16:40 (10 min)	Introduction to Multiple Representations and the Calculus Landscape	<ul style="list-style-type: none"> • Powerpoint Presentation • Whole Group • Ileana Vasu
16:40-17:00 (20 min)	Explore materials (texts or exams) for presence and depth of multiple representations and gender issues. SEE NOTE in description.	<ul style="list-style-type: none"> • Pdf copies from textbooks • Small Group Working Format
17:00-17:30 (30 min)	Design Calculus Mini Lesson using multiple representations	<ul style="list-style-type: none"> • Poster paper and markers • Computers if available • Small Group Working Format
17:30-17:50 (20 min)	From Mini-Lesson to Share ideas on Mini-Lesson to Workshop Ideas	<ul style="list-style-type: none"> • Participants share ideas • Ileana Vasu facilitates