

Research in Undergraduate Mathematics Education, Course 1

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Course Overview

Objective: Develop a broad perspective on areas of past and current mathematics education research. In particular, you will learn about select constructs that have been developed, and the work that constructs do for us in research, theory, and practice.

Perspective: Undergraduate mathematics students are not born as undergraduates.

Discussions: You must participate in discussions using CF. The nature of CF discussions is that you reply not only to the discussion question, you also contribute to the ongoing conversation as it has evolved to the point of your contribution.

Special activity: You will analyze the raw data upon which a published article is based **before** reading the article. You will then compare your analysis with the published analysis.

Précis: Starting in Week 6 you will write a précis (fancy word for summary) of each article you read.

Simulated conference panel: You will participate in a “conference panel” to discuss a topic. You will represent the perspective of an author who has written on that topic.

Special Journal Issue: Design a Special Issue on Research in Mathematics Education containing 7 articles on a specific issue in mathematics education.

What is “Theory”

- **Colloquial:** Same as a hypothesis. A “guess”.
- **In scientific work:** A **system** of **theoretical constructs** that explains **observable facts** (e.g., theory of gravity)

What is a “Theoretical Construct”

- An idea, **defined precisely**, central to a system of ideas used to explain observations.

“Sufficient unto the day is the precision thereof.” (Moore, 1903, p. 406)

Observations

Click [here](#) for paper that explains theoretical grounding for this project. Click image to see movie of lesson on finding graph's vertex.

