

# Self-regulation and mathematics learning in the college classroom

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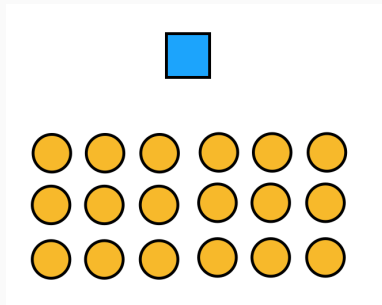
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## Recap & Overview



- Context of fairness in mathematics
- Self regulation in action
- Case study

# Mathematics is not fair.

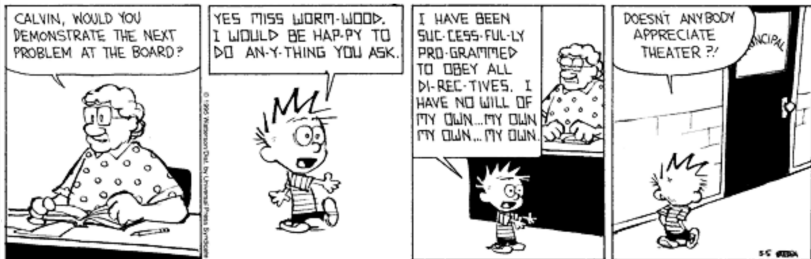
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# Mathematics is not fair.

- Centralized locus of power
- Generalized instruction, individualized assessment
- A system built to benefit a specific subset of the population.
  - Biases (instructional, structural)
  - Cultural obstructions



## Cultural obstructions



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- Rehumanizing and decolonizing mathematics (Rochelle Gutierrez)



## Definition:

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PART I. GENERAL THEORIES AND MODELS OF SELF-REGULATION

self-managing environmental contingencies, but also the knowledge and the sense of personal agency to enact this skill in relevant contexts. Self-regulation refers to self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals. This definition, in terms of actions and covert processes whose presence

*Zeidner, M., Pintrich, P. R., & Boekaerts, M. (2005). Handbook of Self-Regulation. Burlington, MA: Academic Press.*

# Self-regulation

- Changing the perception of mathematics (imposed by self, not society)
- Effecting self-perception as a mathematician (self-efficacy)
- **How can we use self-regulation to shift the locus of power?**

# Self-regulation in the wild

- Self-instruction
  - Moore method
  - ex. Flipped classrooms, inquiry-based learning
- Self-monitoring
  - Scheduling and planning ahead
  - Immediate and private feedback via checklists
  - Concrete and continuous understanding of own performance

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- Qualitative or quantitative evaluation, independently completed
- Practicing metacognitive skills as a part of the assessment (implicitly)

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- Practicing metacognitive skills as a part of the assessment (implicitly)
- Goal: build independent thought, shift locus of power, move away from standardization

# Case study: Math 40



- Relatively ideal (school, size, subject)
- Implementation
  - Students in section A - regular midterm/exam
  - Students in section B - multiple take-home quizzes with multiple retries without penalty

# Results from the case study

- “No negatives” = equally effective academic achievement
- Positive student experience
  - Less stress
  - “Quizzes help break things up”, “I can take my time”, “Incentive to study”
- Signs of self-regulation in action
  - Using first quiz as learning tool
  - Scheduling and/or asking for deadlines
  - Setting a limit to retakes

## What this means

- Speculative remarks
- A question to consider