Evaluation of Active Learning with “Clickers”

iTeach

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Center for Integrative Research on Cognition, Learning, and Education (CIRCLE)
Presentation Overview

- Clicker Overview
- Background/ clickers at WU
- Current Evaluation
- Future Directions and Discussion
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Why use clickers?

• Active learning has positive effects on students and their learning

• Caldwell (2007): clickers can be used to...
  – Increase interaction/participation/discussion
  – Understand student attitudes/opinions
  – Guide thinking
  – Practice problem solving
  – Formative assessment
  – Summative assessment
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AAU STEM Education Initiative

• President's Council of Advisors on Science and Technology (PCAST) report (2012)
  – Need more scientists and engineers

• Active learning as a way to retain more STEM majors
  – Benefits all students (Freeman et al., 2014)

• Many courses at WU are implementing more active learning via clickers
Clicker Use in Introductory Science Courses at Washington University

- Chemistry I
- Chemistry II
- Biology I
- Physics I
- Physics II
Clicker Use predicts performance
Limitations of Literature

• Literature consistently shows positive clicker effects/associations with performance

• However the majority of these studies are open to alternative explanations

• We aimed to analyze association between clicker use and performance, controlling for student characteristics in order to isolate the relationship between clicker use and performance
BUT...

Clicker Use

Active Learning  Student Characteristics  Performance
The Crucial Relationship

Clicker Use

Active Learning

Student Characteristics

Performance
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The remainder of the presentation featured unpublished data that has been removed from the online version of the slides.

Questions? Contact Erin Solomon (erin.solomon@wustl.edu) or Mike Cahill (cahillmj@wustl.edu)
# Acknowledgments

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