Building Terracotta:

A Platform for Conducting Randomized Controlled Experiments in the LMS

Educause Webinar October 12, 2021

UNICON

POLL - VALUE OF LEARNING DATA

Rate your agreement with the following statement: Learning data are valuable for improving student outcomes and student success.

- 1 Strongly disagree
- 2 Disagree
- 3 Neither agree nor disagree
- 4 Agree
- 5 Strongly agree



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DATA, DATA, EVERYWHERE

understanding and optimizing student success

- What classroom practices result in better outcomes?
- What instructional designs increase engagement?
- What materials improve performance?
- What interventions boost grades?
- What X causes Y?

→ Correlational analysis isn't well suited to answer these questions

- → To understand what works, the most compelling method is to conduct an experiment
 - How can digital learning platforms support experimental research?

the solution is: terracotta

INTRODUCTIONS



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LEARNING ENGINEERING

an interdisciplinary field that employs an iterative design process for improving learning, driven by data, where **experimentation is front and center**

- Everyone's experimenting
 - Teachers, learning platform designers, etc.
- Let's actually collect data on these experiments
 - \circ Grounding theory
 - Improved understanding of context
 - Better recommendations for teaching











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We need experimentation to be easier: So that it can Be more common, having bigger impacts and so that it can... Be more diverse Be large-scale.

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🕨 terracotta

- Tool for Educational Research with RAndomized COnTrolled TriAls
- An experiment-builder in the learning management system (LMS)
 - Create different variations of a single LMS assignment
 - Randomly assign students to different versions of assignments
 - Enable within-subject crossovers
 - Incorporate grades in the LMS as experiment outcomes
 - Collect informed consent in the LMS without exposure to instructor
 - Export de-identified data for participants

Who on your campus has the most access to students' learning data? IT Units Executive Leadership Institutional Research Department Chairs Instructors









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