OLI Review:

- Apply learning science research and scientific method to course development, implementation and evaluation.
- Develop interactive learning environments collaboratively (teams of content experts and novices, learning scientists, HCI, software engineers).
- Feedback loops for continuous improvement.
- Communities of use, evaluation and improvement.

What Difference Does it Make?
Accelerated Learning Results

- OLI students completed course in half the time with half the number of in-person course meetings

- OLI students showed significantly greater learning gains (on the national standard “CAOS” test for statistics knowledge) and similar exam scores

- No significant difference between OLI and traditional students in the amount of time spent studying statistics outside of class

- No significant difference between OLI and traditional students in follow-up measures given 1+ semesters later

Results

INDEPENDANT TRIAL OF THE OLI STATISTICS COURSE

The results of this study are remarkable; they show comparable learning outcomes for this basic course, with a promise of cost savings and productivity gains over time.
Deanna Marcum
Managing Director, Ithaka S+R

OLI STUDY ON ACCELERATING STUDENT LEARNING WITH OLI STATISTICS

This study, conducted at Carnegie Mellon University, shows that students using the OLI statistics course at Carnegie Mellon achieved the same or better learning outcomes as students in the traditional course in half the time.
Other Class Results

- Large Public University: OLI Online vs. traditional. OLI 99% completion rate vs 41% completion rate traditional.

- Community College accelerated learning study in Logic: An instructor with minimal experience in logic. Students obtained high levels of performance on more advanced content (~33%) not covered in traditional instruction.

- OLI stoichiometry course: The number of interactions with the virtual lab outweighed ALL other factors including gender and SAT score as the predictor of positive learning outcome.

- Community College studies effectiveness in gateway courses depending on faculty use. Hybrid use as/more effective.

- OLI use in Psychology MOOC: OLI-use group shows improved retention and outcomes. OLI activities 6x more effective.
What student choices associate with the most learning?

Learning by doing > 6x better than learning by watching!!

Koedinger, Kim, Jia, McLaughlin, & Bier (2015). Learning is not a spectator sport: Doing is better than watching for learning from a MOOC. In *Proceedings of the Second ACM Conference on Learning at Scale*. oli.cmu.edu
Themes:

• Open
• Data
• Learning Science
Open Educational Resources (OER): The 5 Rs

- **Reuse**: Content can be reused in its unaltered form
- **Retain**: Users have the right to make, archive, and "own" copies of the content
- **Revise**: Content can be adapted, adjusted, modified or altered
- **Remix**: The original or revised content can be combined with other content to create something new
- **Redistribute**: Copies of the content can be shared with others in its original, revised or remixed form

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What does open content get you?

- Ongoing rights
- Building on the work of others
  - Content
  - Models and mappings
  - Accessibility
- Options and flexibility
- Equity and inclusion opportunities
- Contributions to a larger evidence base