Our Proven Results

**EVIDENCE-BASED DESIGN**

The Open Learning Initiative (OLI) creates courses based on the findings of learning science and then evaluates those courses based on actual student performance in real classrooms.

**Highlighted Studies**

The following two studies compare the OLI statistics course used in combination with in-class instruction to traditional in-class instruction without OLI. Both studies confirm that the OLI statistics course results in comparable learning outcomes for students with fewer hours of study.

*Independent 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

Background: In 2007, Carnegie Mellon conducted a series of “do no harm” studies with the OLI statistics course. The studies show that students using the OLI course, as an online course with minimal instructor contact, performed as well or better than students in traditional instructor-lead classes.

This 2011 study conducted by ITHAKA, a nonprofit research organization, demonstrates the same results using the OLI statistics course outside of Carnegie Mellon—in several large public institutions.

This study contributes to answering the question “Is online better or worse than traditional instruction?” In the follow-on study, on which ITHAKA is currently working, they are looking at the degree to which the variability in outcome is explainable by the way the instructors and students use the OLI course to support teaching and learning. That work will contribute to answering the (more interesting) question “How can the online environment be used most effectively by teachers and students to improve outcomes and reduce cost?”


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**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.


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**Learning is Not a Spectator Sport: Doing is Better**

Free — or very inexpensive — online courses have become quite a trend in education. Massive Open Online Course (MOOC) providers currently offer thousands of courses and have enticed millions of students to enroll. The emphasis in MOOCs is often on lecture videos that students watch and learn from.

A study published in the *Proceedings of the Second (2015) ACM Conference on Learning @ Scale* shows that this central approach of MOOCs — having students watch to learn — is ineffective. Instead, the emphasis on interactive activities as advocated by Carnegie Mellon University’s *Simon Initiative* helps students learn about six times more (1 SD increase). Students who do more activities learn more than students watching more videos or reading more pages.

"Learning by doing gives students deliberative practice opportunities to address a course's objectives," said Ken Koedinger, professor of human-computer interaction and psychology and co-coordinator of the Simon Initiative. "With OLI, students get immediate feedback. If they do not master a concept, they have to go back to re-watch or re-read and then demonstrate they have learned before they are able to move on."


**The Doer Effect**

The “doer effect” is an association between the number of online interactive practice activities students’ do and their learning outcomes. It is not only statistically reliable but has much higher positive effects than other learning resources, such as watching videos or reading text. Such an association suggests a causal interpretation—more doing yields better learning. We also provide generalizability evidence across four different courses involving over 12,500 students that the learning effect of doing is about six times greater than that of reading.


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