

### MOOCs at Duke

“We see the online environment as a sphere for experimentation where faculty can develop and pilot new teaching methodologies. If the pedagogical innovations prove successful, faculty members can devise ways to import these ideas back into their Duke classrooms.”

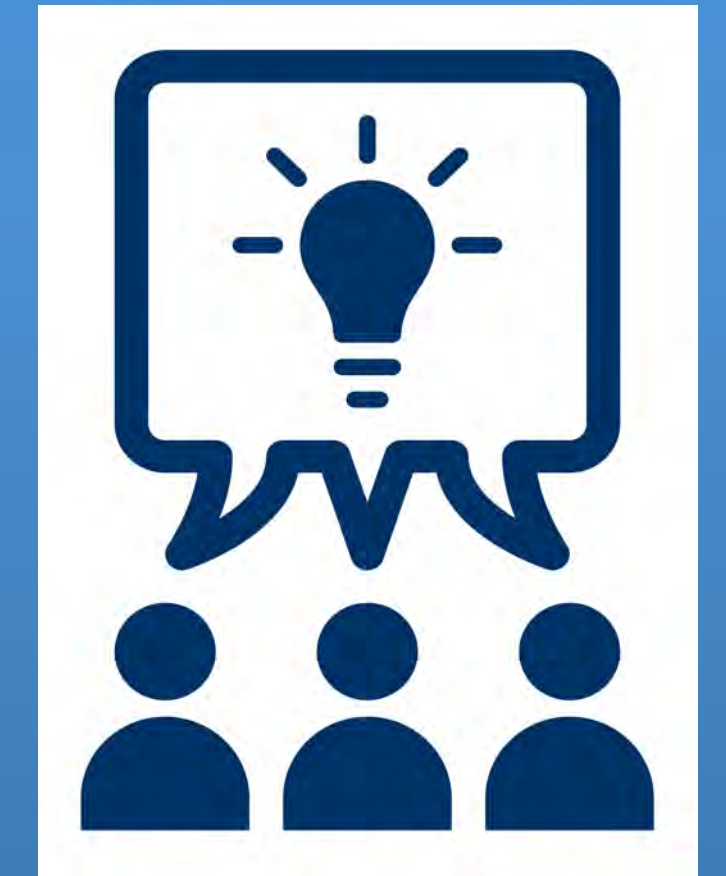
--Duke President Richard Brodhead, 2012



Duke has created over **30 courses** and taught over **65 course sessions**



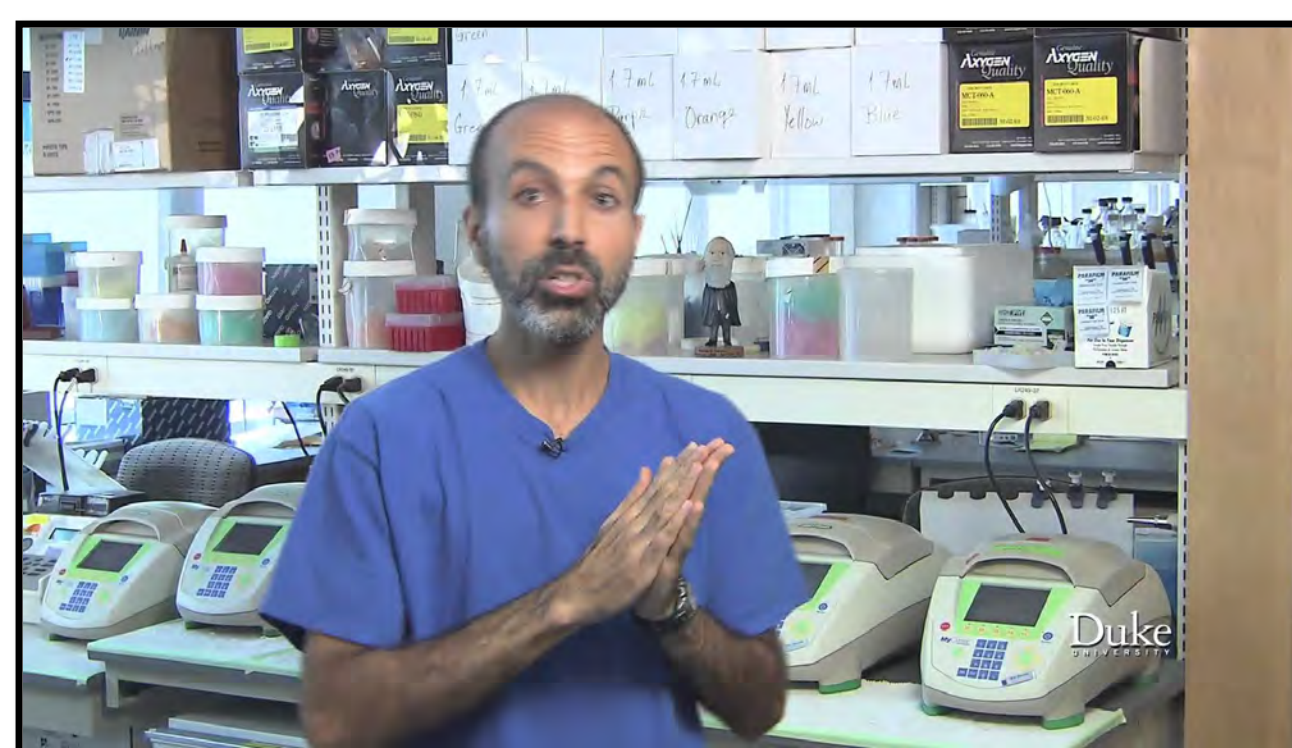
Over **2.8 million** registrations and **1.7 million unique learners** visited a Duke course



**75,000** certificates issued

### Flipped Classes

Duke faculty members use MOOC videos and other materials to flip their campus classes in a variety of ways — and not always as expected. For example, people often associate flipped courses with seminar-style classes of 25 to 30 students. However, Duke Biology Professor Mohamed Noor successfully flipped Introduction to Genetics and Evolution, a lecture-style class of 450 undergraduates, by having students watch MOOC videos before class and respond to short quizzes. Based on the quiz results, Noor selected subjects that students needed to review and divided students into small groups to work on related problems in class. With help from 19 in-class teaching assistants, Noor spent class time checking in with the small groups of students and further explaining concepts as needed.



**“In a regular lecture, there's no way you could identify misinterpretation, because [students] write it down, and they write it down in their misinterpreted way, and they just keep moving on. Whereas, this way, I catch it before any significant grading is ever done for them.”**

-Professor Mohamed Noor

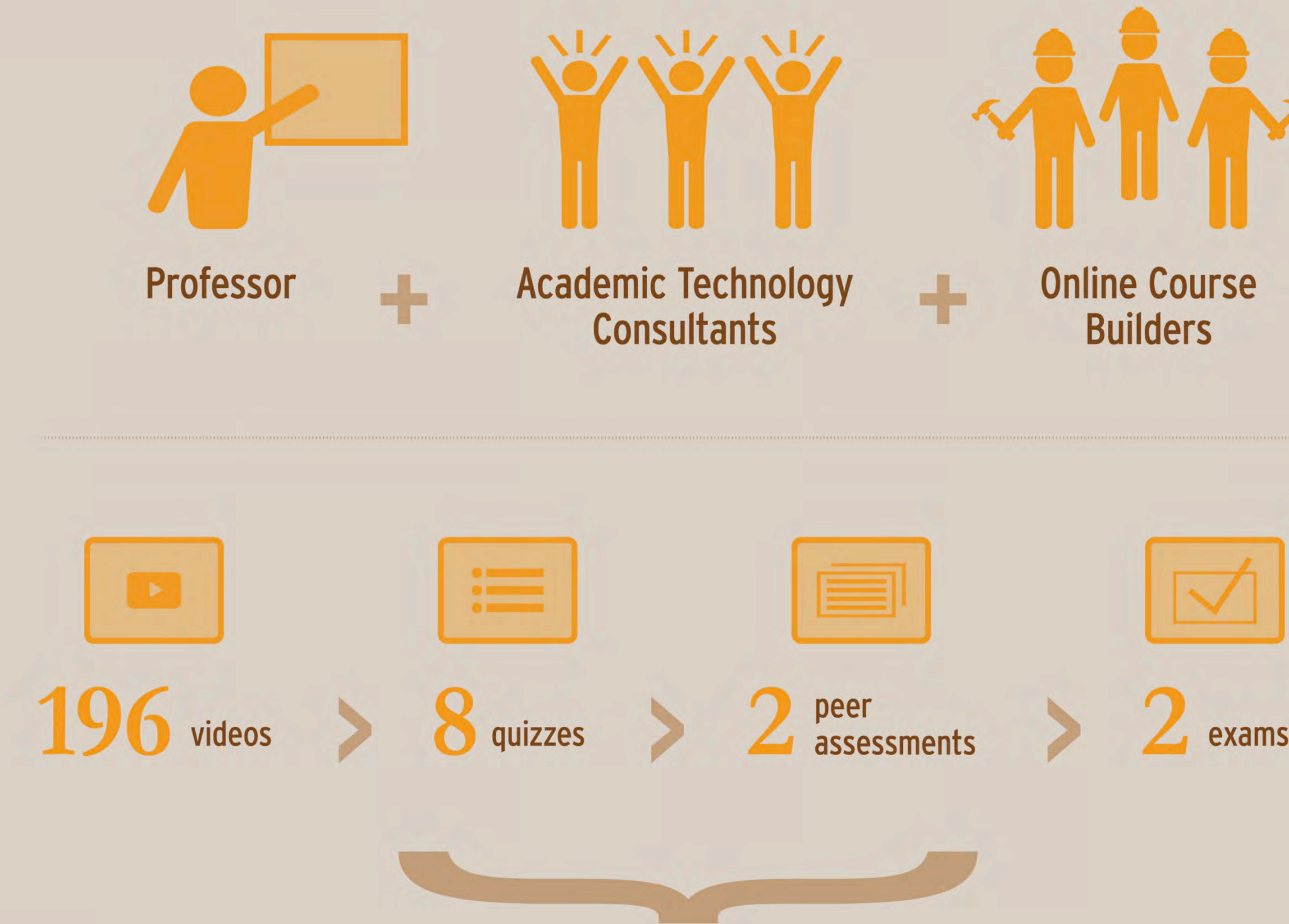
### Shortcut: Key Take-Aways

- MOOCs have provided opportunities for faculty members to bring new teaching and learning to their campus classes
- Almost all MOOCs at Duke have led to flipped classes and active learning
- Duke MOOC professors have improved the materials they use in class, provided new materials for students, and improved their assignments and assessments
- One of the most valuable benefits to come out of Duke's involvement in MOOCs is the freedom and opportunity for faculty members to try new things

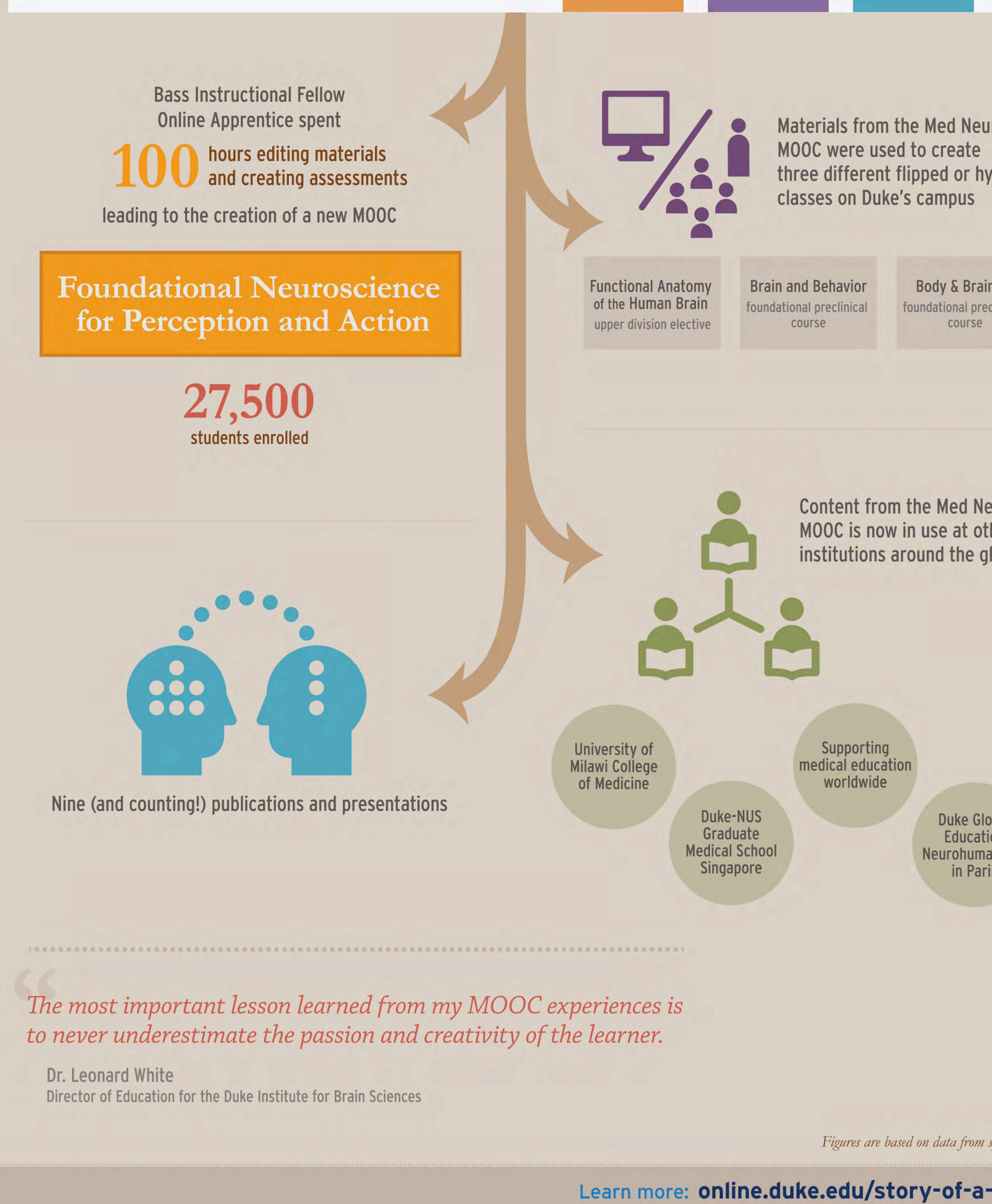
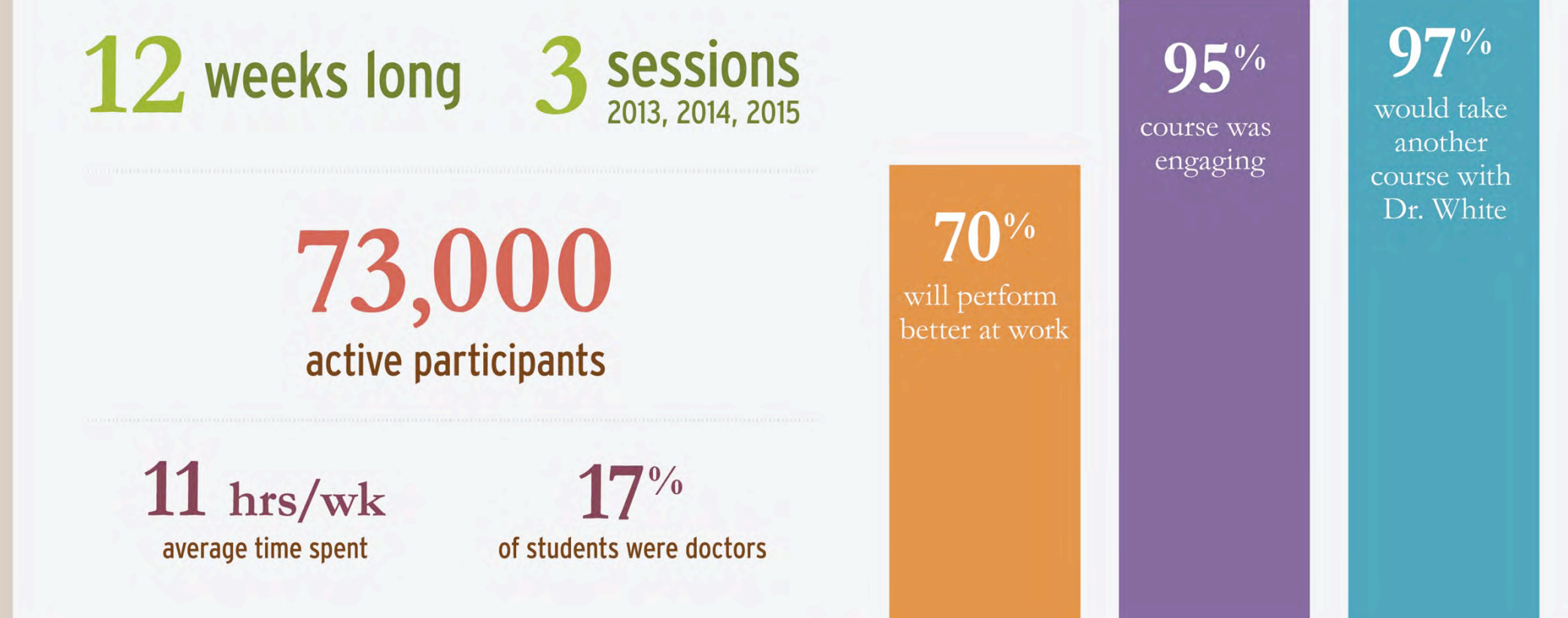
Want to be a part of Duke's next MOOC experiment? Join “The Art of the MOOC: Merging Public Art and Experimental Education”, a class that is itself a work of public art. (<https://www.coursera.org/course/artofthemooc>)

### AROUND THE WORLD AND BACK AGAIN

## The Story of a MOOC



### Medical Neuroscience



### Additional Learning Opportunities

MOOCs have led faculty members to increase on-campus student access to online learning materials. Many instructors have made their MOOC videos and other materials available to campus students and have suggested that students use them to help review course content. These materials help reinforce what students learn in class and let them review difficult material. For example, Duke students use Professor Len White's neuroscience videos to prepare for medical board exams and clinical rotations. Although many of these students have never even met White, they consider him one of their favorite teachers.

In another example, Physics Professor Ronen Plesser created a series of demonstration videos for his Introduction to Astronomy MOOC. He uploaded the videos and makes them available to his on-campus students as well, so they can review complex principles and theories on their own. Plesser has found that students appreciate being able to actually see demonstrations of the theories they are studying while outside of class. The videos also let him present content to students through various mediums, which helps students who better understand content from watching videos while letting those who prefer to read use the text.

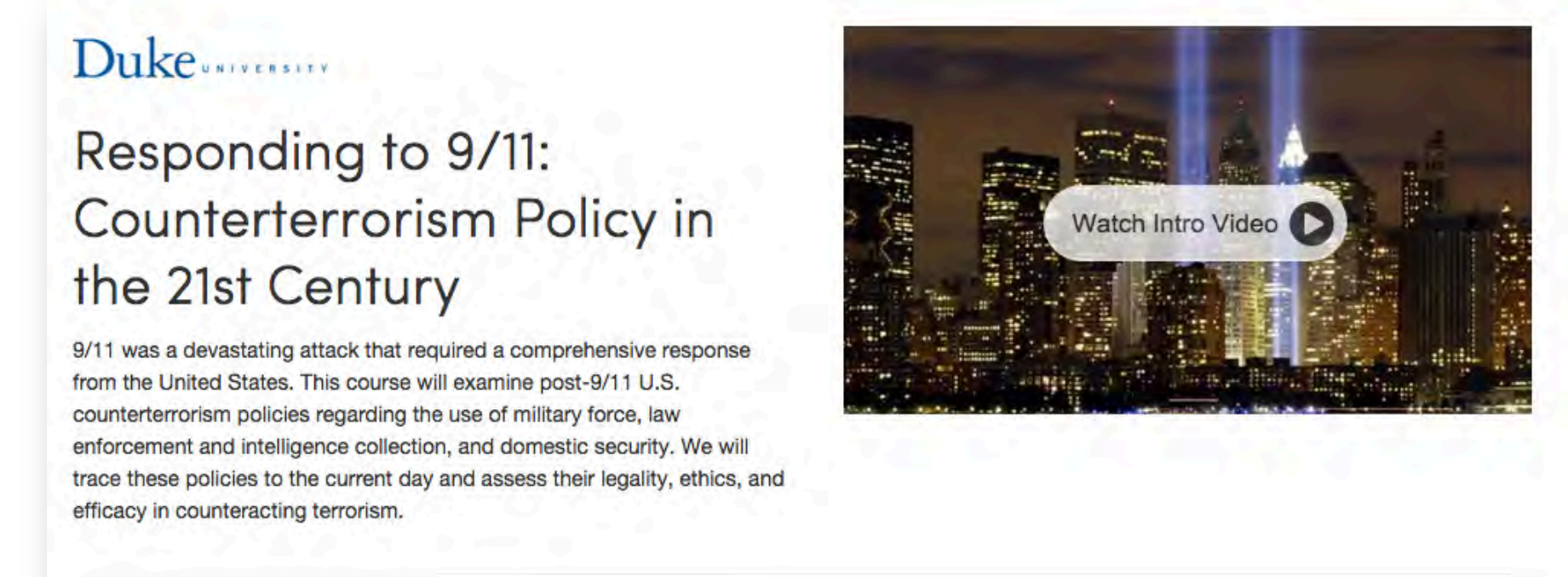


Dr. White filming a video lecture

### Better Assessments

MOOCs have led some professors to rethink their approach to assessment as well. In Public Policy Professor David Schanzer's two MOOCs about the history and policy impacts of the 9/11 terrorist attacks, Schanzer asks students to write a policy brief, which is a structured and highly specialized writing format.

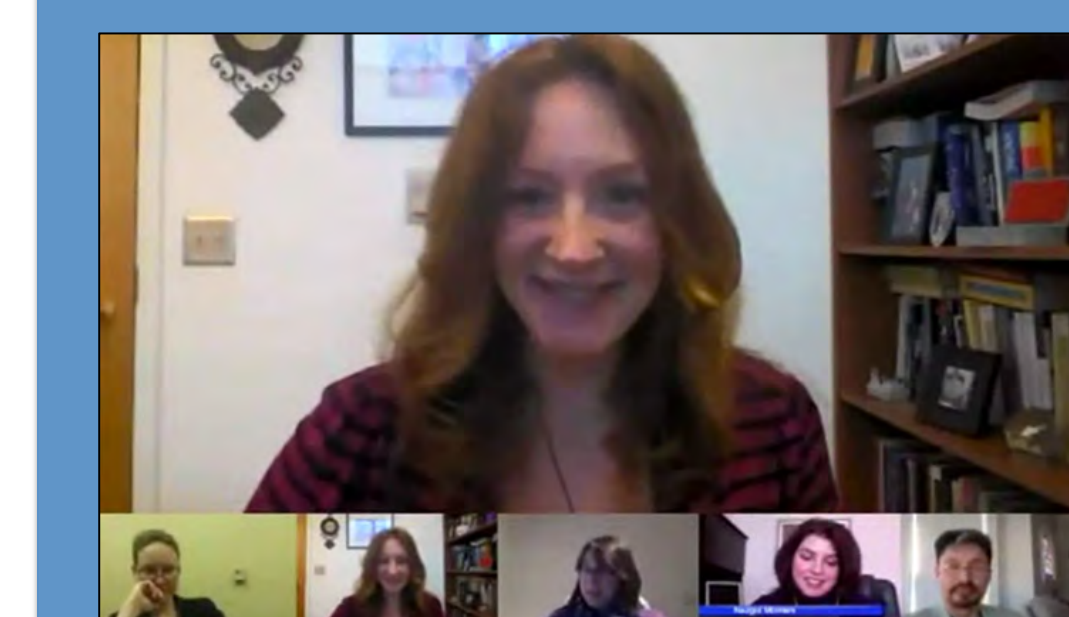
To facilitate peer assessment — in which MOOC learners review and rate each other's work — Schanzer created a detailed rubric for evaluating a policy brief. This rubric worked well, and the peer assessment was a success.



Schanzer then brought the approach back to campus and made detailed grading rubrics for his students there. The undergraduates said the new rubrics help them do a better job on assignments, because they clearly describe each assignment's content and format requirements. Since he introduced the rubrics in his on-campus classes, Schanzer has seen an overall improvement in the quality of student assignments.

### New Teaching Approaches

**“I think it was a great idea to give this kind of course! I think it's a course that can help many people in different ways. I love writing but lost the habit of it and, thanks to your class, I'm back on track and feel inspired!”** - Student in English Composition MOOC



Dr. Comer answering student questions during a Google Hangout for English Composition

One of the most exciting impacts of MOOCs on teaching at Duke has been faculty members rethinking their assumptions about how students learn. Writing Studies Professor Denise Comer was initially skeptical that a skill like writing could be successfully taught online; not only had she personally never tried it, but she also didn't know any other professors who had. As an experiment, she developed a writing-intensive introductory English composition MOOC. What she found surprised her: not only was it possible to teach writing online, but the students in her MOOC also gave her high praise for the course.