



Using a Massive Open Online Course (MOOC) for Earth Science Education: Who Did We Teach and What Did We Learn?

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Over the last decade, Massive Open Online Courses (MOOCs) have rapidly gained traction as a way to provide virtually anyone with an internet connection free access to a broad variety of high-quality college-level courses. That means Earth science instructors can now teach courses that reach tens of thousands of students—an incredible opportunity, but one that also poses many novel challenges.

In April 2015, we used the Coursera platform to run a MOOC entitled “Water in the Western United States,” to deliver a survey course of broad interest and partly as a venue to make research efforts accessible to a wide audience. Leveraging a previous online course run on a smaller MOOC platform (Canvas), we created a course largely based on short expert video lectures tied together by various types of assessments. Over a dozen experts provided short lectures offering a survey course that touches on the social, legal, natural, and societal aspects of the topic. This style of MOOC, in which the content is not delivered by one expert but by many, helped us showcase the breadth of available expertise both at the University of Colorado and elsewhere.

In this presentation we will discuss the challenges that arose from planning a MOOC with no information about the characteristics of the student body, teaching thousands of unidentified students, and understanding the nature of online learning in an increasingly mobile-dominated world. We will also discuss the opportunities a MOOC offers for changes in undergraduate education, sharing across campuses or even across levels, and promoting flipped classroom-style learning. Finally, we will describe the general characteristics of our MOOC student body and describe lessons learned from our experience while aiming to place the MOOC experience into a larger conversation about the future of education at multiple levels.