



## Massive Open Online Courses (MOOCs) in Medical Education

Authored by: The Group on Information Resources Education Technology Work Group

Massive Open Online Courses, or MOOCs, are online education courses with start and end dates, traditionally open to anyone around the world with an internet connection and computing device. MOOCs are delivered through online platforms designed to scale and support up to hundreds of thousands of individuals. MOOCs generally use video-based series of 'lectures', supplemented with readings, quizzes and/or short assignments, which are graded using automated machine scoring or peer assessment. Online discussion boards, usually mediated by an instructor or teaching assistant, enable social interaction among course participants. Some MOOCs also include self-organized regional in-person meet-ups.

### Advantages

- Increase access to course content
- Increase convenience for the learner
- Break down of classroom walls
- Allow for experimentation in content delivery and assessment
- Provide "big data"-style learning analytics
- Leverage experts irrespective of physical location
- Engage global audience and support intercultural exchange
- Increase institutional brand awareness
- Potential to reduce cost both per student and through reuse of material over time
- Automated assessment scoring
- Peer assessment promotes critical thinking
- Allow for reimagining of face-to-face learning
- Possibility of diversity in team learning

### Challenges

- Resource intensive to build and run quality courses
- Integration into local, in-person curriculum
- Faculty recruitment, development and retention
- Access to learner analytics
- Repurposing and updating video-based content
- Defining and providing academic credit
- How to define and measure success
- High attrition rate of students
- Prioritizing course and content development
- Variable student experience
- Finding the appropriate business model
- Securing sensitive course content
- Ensuring appropriate learner pre-requisite knowledge
- Ensuring academic honesty

### Planning & Budgeting

- Costs of development and maintenance
- Prepare for time involved, how to deal with administrative issues and support
- Revenue and profit considerations
- Need for teaching assistants
- Different needs for potentially diverse participants
- Constraints (technology, timing, policies) of current MOOC delivery platforms and providers
- Matching external MOOC provider's and institution's processes, cultures and goals
- Setting expectations for all parties
- What is your business plan?
- Impact on existing physical learning infrastructure and workforce

### Development, Delivery & Adoption

- Where and how else to reuse learning content?
- Standalone or blended with live interactions at institution?
- Connection to in-person learning (e.g. some MOOCs leverage local "Learning hubs" to promote social learning)
- Selecting a grading/assessment solution
- Developing ways to simulate hands-on learning in the MOOC environment (e.g. lab simulations)
- Communication requirements for the large and diverse group of participants
- Faculty development in optimal delivery, content creation and course management
- Developing best practices and guidelines
- When and how to use MOOCs vs. online courses vs. hybrid/blended courses
- Will students get credit (e.g. academic credit, certificate)?

### Examples

- [Coursera](#) ● [EdX](#) ● [Udacity](#) ● [Khan Academy](#)
- [Instructure Canvas Network](#)

### Policy Implications

- Copyright
- Intellectual property
- Impact on promotion & tenure
- Measuring faculty teaching effort
- Course approval and requirements

### Future Considerations

- Uncertain futures and business models for external MOOC providers
- Role of MOOCs in helping create more shared curriculum across medical schools
- Education workforce implications
- Pace of change for MOOC providers vs. Academic Medical Centers

### Additional Resources

- [EDUCAUSE MOOC Resources](#)
- MOOC [Infographic](#)
- [AAMC 2013 Plenary Daphne Kohler](#)
- [Report on the Workshop for Multidisciplinary Research in Online Education](#)

