Educators Symposium – MOOC Panel

- NSF and CSP4HS Context
  - Scaled from a local need to a national offering
  - Google CS4HS (Computer Science for High School)
    • http://csp-cs4hs.appspot.com
  - Computer Science Principles focus (NSF/College Board AP in US)
- Participant Summary
  - 1,048 participants from 45 US states and 6 countries
  - Primarily high school teachers (grades 9-12) in the US
  - Approximately 50% contributed some discussion
  - Only 5% completed full assignments (knowledge acquisition); most seem to just want access to curriculum and teaching resources (hunters/gatherers)
- Course Platform to Support Asynchronous and Synchronous Engagement
  - Asynchronous: Course Builder (using App Engine)
  - Asynchronous: Piazza for group large discussion
  - Synchronous: Hangouts on Air for broad messages (weekly “keynote” speakers)
  - Synchronous: Hangouts for “office hours”
- Production Details
  - Low budget: $25,000
  - Staff: 1 Graduate student, 4 undergraduates (film school), 4 content expert peer teachers
  - 87 videos on dedicated YouTube channel
    • 7 to 15 minute chunks + HoA and face-to-face training videos => ~35 hours of video (100 hours to record)
  - Effort: Estimate how long you think it will take, and then triple it
  - Videos, course pages, online assessments, 862 emails one day
Suggested Discussion Points

• Two Important Criteria for Evaluating MOOC Success
  – Purpose of the MOOC
    • Democratization vs geographical necessity
  – Intention for Participating
    • Skill/knowledge acquisition, hunter/gatherers, lurkers

• MOOCs and Modeling Courses
  – Richard’s keynote – need for engaged interaction
    • Modeling feedback to students (Richard’s keynote)
    • Modeling through experience not imitation (f2f better)
  – Some disciplines may have more success (e.g., Physics\(^1\)) – why?
    • Deep refinement to develop understanding may work better face-to-face
    • Modeling tool support even more frustrating when learning online
  – Could a flipped classroom be a better option for a modeling course?
    • Content delivered through online videos, but project mentoring is face-to-face
  – San Jose State experience suggests challenges for remediation
    • Students in a modeling MOOC course need to be prepared and engaged

• Suggested Reference
  – Learning@Scale Conference (Vancouver, March 2015) – 2\(^{nd}\) Year
    • Where Learning Scientists meet Computer Scientists

\(^1\)http://newsoffice.mit.edu/2014/study-shows-online-courses-effective-0924