Lessons Learned from a First Mathematical MOOC

Objectives
- Target incoming students
- College success content
- Retention tool
- Research

Outline
- Background
- Objectives
- Setup
- Demographics
- Results
- Research
- Feedback
- Future

Involved Campus Groups
- Developmental Math
- Student Leadership and Success Studies
- Student Success & Retention
- University College Dean’s Office
- Innovation Center
- Distance Education
- Marketing/Prospective Student Services
- Advisor Forum

Background
- Complete College America/Utah
- Fall 2012 Gates Foundation RFP
- NROC
- SB 286

Marketing Approach
- Presented at advisor forum
- Brochures
- Webpage
  - Future Students
  - University College
- Email
  - ~2,500 newly admitted students and ~4,000 prospects
  - ~19,000 current students who haven’t finished math
Course Setup
- One instructor
- Three peer mentors
- Support
  - ~20 hours of online chats/tutoring per week
  - One weekly on-campus help session
  - Discussion boards
- June 17 – July 29

Enrollment
- ~300 students one week before launch
- ~860 students at course start
- ~1430 students (some duplicates) at course end

Course Setup
- Math Content (provided by NROC)
  - Pre-Algebra (39 topics)
  - Algebra (44 topics)
  - Optional (20 topics)
- Week-by-week content
  - College Success content examples
    - Learning styles
    - Testing-taking strategies
  - First-Year Experience examples
    - Freshman convocation
    - College Myths

Participation
- ~107,000 page views total

Course Homepage

Math Topics Completion
- Accessed math content: 502
  - 35% of total enrollment
- Completed at least one topic: 457 (91%)
- Total completed topics: ~9,700
  - Average: 19 per student
- 80% content-area completion
  - Pre-algebra only: 67 (13%)
  - Algebra only: 10 (2%)
  - Both: 11 (2%)
Math Knowledge Test

- 18 questions (optional)
  - Arithmetic – Intermediate Algebra
- Initial Test
  - 495 attempts
  - Average score: 7.4
- Final Test
  - 22 attempts
  - Average score: 11.3

Reasons for Taking Course (UVU)

- Prepare for math placement exam: 64% (73%)
- Refresh my math skills: 74% (74%)
- Learn more about success in college: 23% (20%)
- Prepare for a different exam: 8% (8%)
- Learn more about MOOCs: 8% (5%)
- Other: 4% (4%)

Placement Quiz

- 15 Pre-algebra questions (MAT 0950)
  - 205 attempts
  - Average score: 10.9

UVU Student Demographics

- Gender
  - Female (64%) / Male (36%)
- Class
  - Freshman (24%) / Sophomore (34%) / Junior (18%) / Senior (25%)
- Pell eligible
  - Yes (57%) / No (26%) / Unknown (16%)

Research

- IRB approved
- Initial survey (179 responses)
  - 129 Self-identified UVU students (72%)
- Post survey (22 responses)

Student Breakdown (UVU)

- Not attend college within a year: 5% (0%)
- New college student within a year: 16% (14%)
- Returning after 1+ year layoff: 23% (22%)
- Continuing college student: 52% (64%)
- Attending graduate school: 4% (0%)
**Next Math Course (UVU)**
- Don’t know: 31% (31%)
- Basic arithmetic: 6% (7%)
- Pre-algebra: 8% (10%)
- Beginning algebra: 11% (13%)
- Intermediate algebra: 10% (12%)
- College algebra (or similar): 22% (22%)
- Above college algebra: 7% (5%)
- Not a college student: 5% (1%)

**Post-Survey**
- Effect on attending/staying at UVU as a result of the course
  - More likely: 54%
  - No impact: 46%
  - Less likely: 0%
  - 9 Non-answers

**Confidence/Interest Levels (UVU)**
- How confident are you in your ability to do math (1 to 5 with 1 not confident and 5 very confident)?
  - Pre-survey only average score: 2.8 (2.6)
  - Paired pre and post-survey: 2.7 to 3.5
- What is your interest in math?
  - Average score: 3.2 (2.9)
  - Paired pre and post-survey: 3.6 to 4.0
- How prepared do you feel for college?
  - Average score: 3.4 (3.5)
  - Paired pre and post-survey: 2.5 to 3.8

**Post-Survey**
- How satisfied with the course? (1 to 5 with 5 very satisfied): 4.5
- Feel more prepared to be successful in college: 4.2
- Expect to be more successful in math courses in college: 4.5
- How likely that you’ll be able to skip/test out of a course: 3.3
- Felt like they were part of a community: 2

**Post-Survey**
- Effect on attending/staying in college as a result of the course
  - More likely: 52%
  - No impact: 48%
  - Less likely: 0%
  - 1 Non-answer

**UVU Math Course Data**
- Preliminary results
  - ~25% of students took Accuplacer after MOOC start
    - (~125 – 350 total)
  - ~80% of them had expired/no scores
  - Courses tested into:
    - Basic Arithmetic: 9%
    - Pre-algebra: 9%
    - Beginning Algebra: 13%
    - Intermediate Algebra: 63%
    - General education math or above: 6%
Canvas Survey Student Feedback

- Positive overall—most students were appreciative
- Many students signed up specifically for the Math Refresher component of the course
- The major complaints about the course involved the computer aspect
  - Navigating the website/Finding the material
  - Navigating the material
- Students wished this had been better marketed

Future

- Summer 2014
- Considerations/Options
  - Summer Bridge (GEAR UP)
  - LOOC
  - ACT Prep
  - Fall/Spring

Lessons Learned

- Limited use of discussion boards/live help, etc.
- High interest from current UVU students
- Lower interest from new/incoming students
- Technical difficulties (enrollment/navigation/etc.)
- Overall positive experience for everyone
- Campus very supportive
- Students focused on math

Contact

- Jon Anderson: jonathana@uvu.edu
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- Slides:
  - contournc.com/teach/amatyc/mooc_slides.pdf
- Handouts:
  - contournc.com/teach/amatyc/mooc_handouts.pdf

Comments/Questions/Discussion

- How improve utilization of help resources?
- How improve sense of community?
- How recruit more students?