

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% (13%)
- ▶ 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

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- ▶ Slides:
 - contournrc.com/teach/amatyc/mooc_slides.pdf
- ▶ Handouts:
 - contournrc.com/teach/amatyc/mooc_handouts.pdf



Comments/Questions/Discussion

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

