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MOOC Learner Motivation and Course Completion Rate

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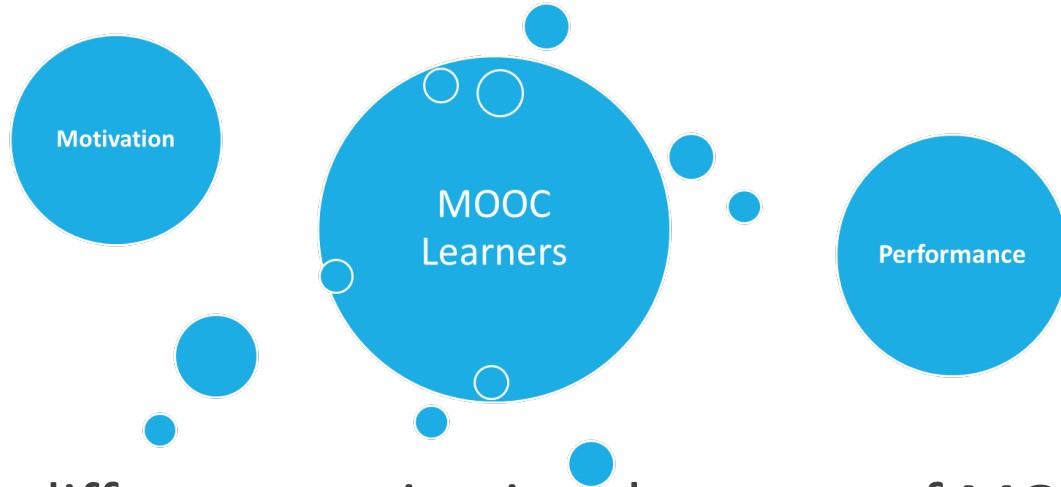
Overview

- ❖ Background
- ❖ Research Methods
- ❖ Initial Results
- ❖ Discussion
- ❖ Planned Analysis
- ❖ Q & A

Background

- ❑ Varied Motivation from MOOC Learners
- ❑ Low Course Completion Rate
- ❑ Learning Goals vs. Performance Goals

Research Question



How do different motivational aspects of MOOC participants correlate with course participation completion and eventual participation in community of practice?

Research Methods

- ❖ A pre-course Survey
 - MOOC-Specific Motivational Items
 - PALS Sub-Scales
- ❖ Learning Analytics/Educational Data Mining
 - Student Participation in Forums and Quizzes
 - Correlation Mining
 - Sequential Pattern Mining

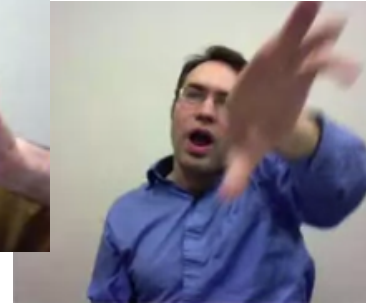
Context of the Research

□ Big Data in Education – A Coursera MOOC

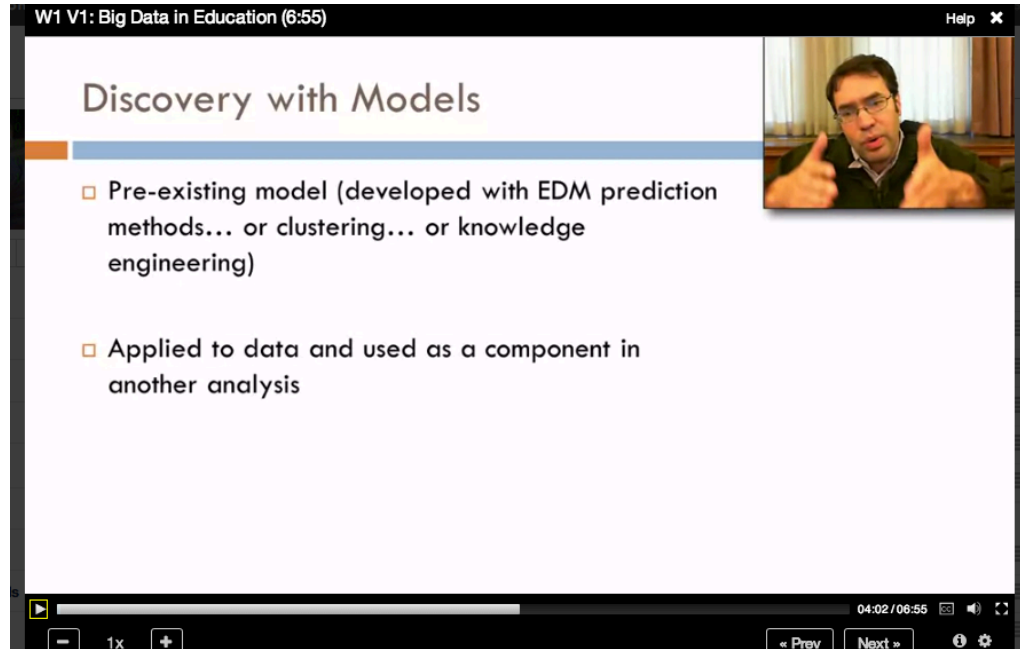


□ <https://www.coursera.org/course/bigdata-ec>

□ Participants: Total number of enrollment: 43,000 (8-week: Oct. 28 ~ Dec. 26th)



Course Interface



W1 V1: Big Data in Education (6:55) Help

Discovery with Models

- Pre-existing model (developed with EDM prediction methods... or clustering... or knowledge engineering)
- Applied to data and used as a component in another analysis

04:02 / 06:55

« Prev Next »

1x

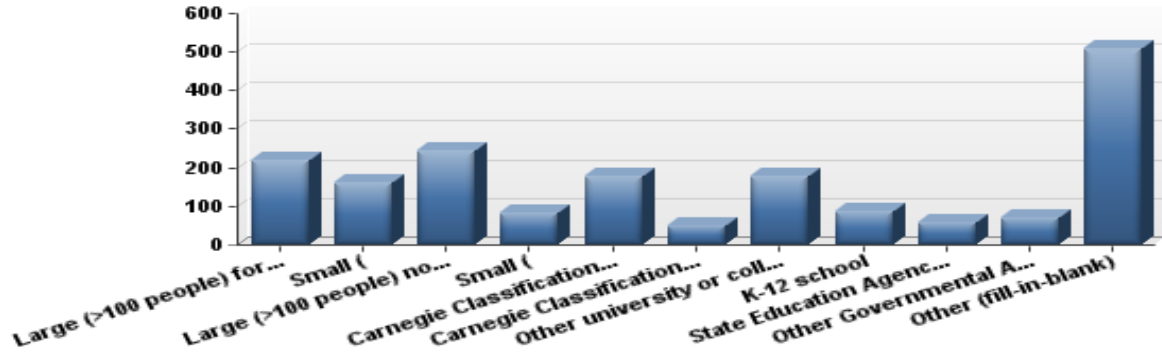
The screenshot shows a video player interface. The main content area displays a slide with the title 'Discovery with Models' and two bullet points. A small video inset in the top right corner shows a man with glasses giving a thumbs up. The video player controls at the bottom include a play button, a progress bar, a volume icon, a full screen icon, and navigation buttons for 'Prev' and 'Next'. The current time is 04:02 and the total duration is 06:55.

Initial Survey Results

- ❖ A pre-course Survey
 - MOOC-Specific Motivational Items (Group I)
 - PALS Sub-Scales (Group II)
 - Academic efficacy
 - Mastery-goal orientation

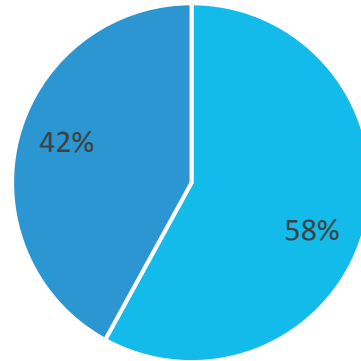
Survey Results – Participants Job Sector

- Education and Government: 62%
- Others: 28%



Survey Results – Participants Language

☐ Languages Spoken: 106 Languages



■ English Native Speakers ■ Non Native Speakers

Survey Results – Motivational Items I

Top Two Items:

- Extending current knowledge of the topic (Mean: 4.35 ; SD: 0.81)
- Class teachers Skill that will help my job/career (Mean:4.03 ; SD:1.04)

Bottom Two Items:

- Geographically isolated from educational institutions (Mean: 2.02 ; SD: 1.33)
- Cannot afford to pursue a formal education (Mean: 2.18 ; SD: 1.37)

Results – Motivational Items II

Top Two Items: (PALS: Mastery-Goal)

- One of my goals in class is to learn as much as I can(M: 4.35 ; SD: 0.88)
- Even if the work is hard, I can learn it (M:4.13 ; SD:0.86)

Bottom Two Items: (PALS: Academic Efficacy)

- I'm certain I can figure out how to do the most difficult class work (M: 3.70 ; SD: 1.03)
- I'm certain I can master the skills taught in class this year. (M: 3.79 ; SD: 1.00)

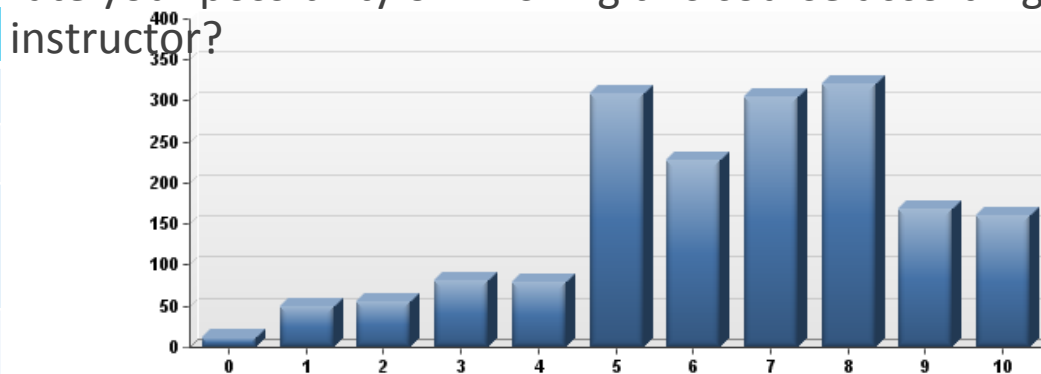
Results – Participants Self-Rating

About this MOOC (Cont.)

□ Self-rated prediction of completing this course:

- Question: On a scale of 1 to 10, with 1 being least likely and 10 being most likely, how would you rate your possibility of finishing this course according

Statistic	Value
Mean	6.47
Variance	5.21
Standard Deviation	2.28
Total Responses	1,769



What about the discussion forum?



Flaming on the Forums

One noteworthy behavior that has impact on both the instructor and other students:

Flaming the instructor

- ❑ 9 were identified as “flamers”. 4 of the 9 responded to the survey
- ❑ A small percentage of 43,000, but disproportionate impact

Forum Flaming - Examples 1

RYAN: "I appreciate the feedback on pauses between slides. I don't actually edit my own videos (very few Coursera instructors do, if any), but I'll pass the feedback on to the video editors when I talk to them. More than half the class videos have already been created, though (also a standard practice on Coursera -- it takes hours to make each video)."

RESPONSE BY OTHER STUDENT: "You might want to advise Coursera to improve on that. Coursera should do a better job in quality control when accepting courses, some of which are prepared not very well and are not flexible enough to make improvements suggested by learner feedback."

Forum Flaming - Examples 2

RYAN: "Sorry for the confusion. It's hard to be precise about things like this. I wish there was an easy way in Coursera to set up quizzes that aren't finicky about this."

SAME STUDENT AS EXAMPLE 1: "According to the Honor Code for Instructors, you are supposed to either make yourself knowledgeable about Coursera's technical possibilities to define format options of answers, or to urge Coursera to provide such format options deemed necessary to be able to offer user-friendly courses."

[tied for lowest-rated post in the course]

Forum Flaming - Example 3

STUDENT Q: "You need to go through the entire import data wizard in order for the data to be imported and then the variables will appear in the drop down and you can select DesigningControlledExperiments variable."

RYAN: "[Name] -- good call. That's exactly correct."

STUDENT X: "Why don't you repair the glitch in your video, @Ryan Baker? It matters more to us than just praising the good student."

[tied for lowest-rated post in the course]

Who Flames the Instructor?

- Four out of nine flammers took the survey
- All Males
- Thought the course will be useful to their academic course of study (more than other students)
- Have higher self-efficacy than other students in course
- Are less likely to be mastery oriented than other students in course

How to deal with flammers?

- Not really responsive to other students' criticism
- Can't throw them out of a free course
- If you do, they can just create a sock puppet and come right back



Planned Analyses

- ❑ Correlation between course completion, (types of) forum participation
- ❑ Patterns of changes in participation across the course
- ❑ Dropout/course completion rates prediction
- ❑ (Eventually) Prediction of participation in field from participation in course

Thank you for your time!

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