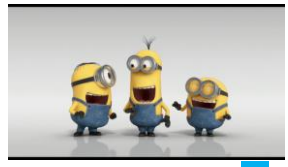
State of MOOCs, State of MOOC Research

Curtis J. Bonk | cjbonk@Indiana.edu
Meina Zhu | meinzhu@iu.edu

Instructional Systems Technology Dept.
Indiana University Bloomington
March 8, 2019

Talk Outline

1. MOOC Weird Stuff
2. MOOC Systematic Literature Review
3. MOOC ID Considerations and Challenges
4. MOOC ID for Self-directed Learning
5. Others



2

30+ Ways Learning is Changing: The Three Mega Trends: Engagement, Access, and Customization

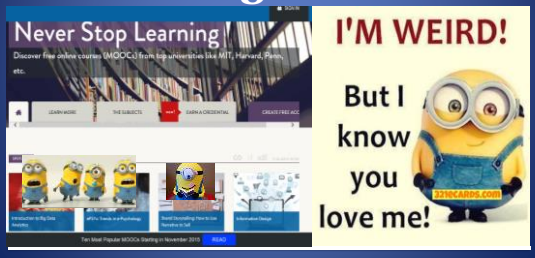
Polls

Poll #1: Who in here has taken a MOOC?

Poll #2: Are you happy or frustrated when you take a MOOC?

4

Some Weird Things Going On…



Weirdness #1…We're Teaching the World October, 2018

Sarah Fister Gale, CLO

https://magazine.clomedia.com/issue/october-2018/teaching-the-world/
https://magazine.clomedia.com/issue/october-2018/

6

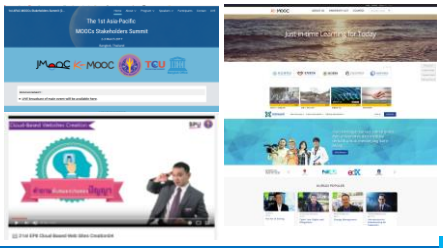
Weirdness #2: Your Friends are doing MOOCs

June 15, 2017

Massive List of MOOC Providers Around The World, Class Central

JMOOC, K-MOOC, and T-MOOC?

https://www.class-central.com/report/mooc-providers-list/

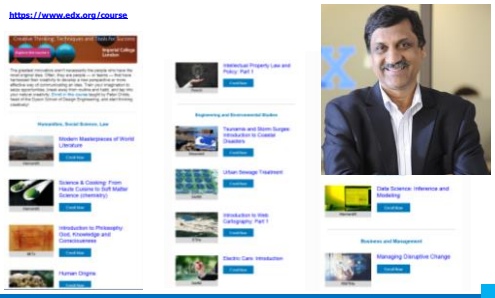


7

Weirdness #3: Summer MOOC Discounts

Email inbox: June 10, 2018

https://www.edx.org/course



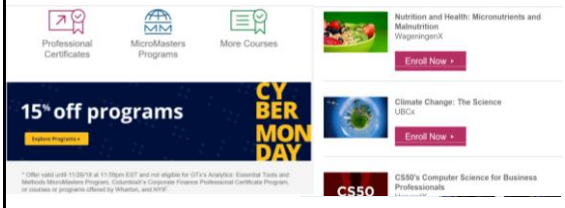
8

Weirdness #4: Cyber Monday Discounts

Email inbox: November 26, 2018

edX (Summer discounts)

https://www.edx.org/course



9

Weirdness #5…The MOOC Wave

May 21, 2018

The Second ave of MOOC Hype Is Here, and It's Online Degrees

Dhawal Shah, Class Central

https://www.edsurge.com/news/2018-05-21-the-second-wave-of-mooc-hype-is-here-and-it-s-online-degrees

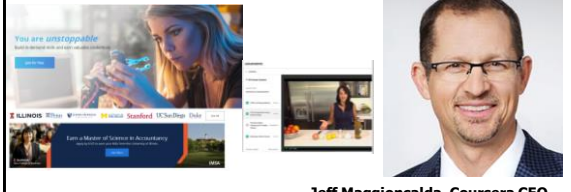
10

September 12, 2018

Coursera's CEO on the Evolving Meaning of 'MOOC'

Dian Schaffhauser, Campus Technology

https://campustechnology.com/articles/2018/09/12/courseras-ceo-on-the-evolving-meaning-of-mooc.aspx



Jeff Maggioncalda, Coursera CEO

11

October 12, 2018

Weirdness #6…Degrees Via the MOOC

EdX: From MicroMasters to Online Master's Degrees

Lindsey McKenzie, Inside Higher Ed

https://www.insidehighered.com/news/2018/10/12/edx-launches-nine-low-cost-online-degrees

Institution	edX Master's Degree	Online Cost (USD)	Duration
Curtin University, Australia	Marketing	$22,366	1.5-3 years
Georgia Institute of Technology	Cybersecurity	$9,920	2-3 years
Georgia Institute of Technology	Analytics	$9,900	1-3 years
Indiana University	IT management	$21,000	1.25-3 years
Indiana University	Accounting	$21,000	1.25-3 years
University of California, San Diego	Data science	$15,000	1-3 years
University of Queensland, Australia	Leadership: service innovation	$18,156	2 years
University of Texas at Austin	Computer science	$10,000	1.5-3 years

12

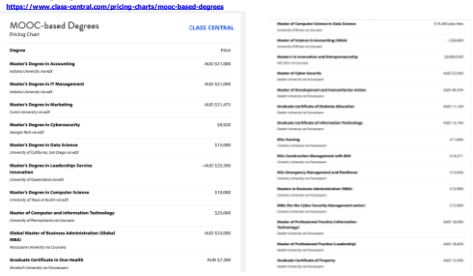
Weirdness #7…MOOC-based Pricing Charts

December 30, 2018

MOOC-Based Degrees, Pricing Chart

IBL News

https://www.class-central.com/pricing-charts/mooc-based-degrees



13

Weirdness #8…MOOCs in Wedding Announcements

September 26, 2018

The Future of Professional Credentialing … in an Engagement Announcement

Joshua Kim, Inside Higher Ed

https://www.insidehighered.com/digital-learning/blogs/technology-and-learning/future-professional-credentialing-engagement

INSIDE HIGHER ED

The future bride graduated from the University of Vermont with a bachelor's degree in anthropology and is currently pursuing a master's degree in public health. She is employed as a care navigator with Apple.

*The future groom graduated from Worcester Polytechnic Institute with a bachelor's degree in mechanical engineering and is currently pursuing a master's degree in mechanical engineering. He has been accepted in the **Harvard Business HBX CORe program** and plans to start in November. He is currently working as a technical program manager at Apple.*

They are planning on a summer wedding in 2020.

14

Weirdness #9…Discounted MOOC-based MBAs

August 7, 2017

FutureLearn and Coventry University to Roll Out 50 Online Degrees (Last year Deakin University announced a similar partnership with FutureLearn)

Class Central, Dhawal Shah

https://www.class-central.com/report/futurelearn-coventry-university-roll-50-online-degrees/

Degree	Provider	University	Cost
MS Computer Science	Udacity	Georgia Tech	$6,600
MS Analytics	edX	Georgia Tech	$10k
MBA	Coursera	University of Illinois	$22k
MS CS Data Science	Coursera	University of Illinois	$19.2k
MS Accounting	Coursera	University of Illinois	$27.2k
Masters in Innovation and Entrepreneurship	Coursera	HEC Paris	€20k
Cyber Security (Masters)	FutureLearn	Deakin University	£24k
Development and Humanitarian Action (Masters)	FutureLearn	Deakin University	£24k
Professional Practice: Information Technology (Masters)	FutureLearn	Deakin University	£24k

15

March 4, 2019

Weirdness #10…35+ Legit Master's Degrees You Can Now Earn Completely Online

Laurie Pickard, Class Central

https://www.class-central.com/report/mooc-based-masters-degree/

February 27, 2019

MOOCs and the Master's Degree

Dian Schaffhauser, Campus Technology

https://campustechnology.com/articles/2019/02/27/moocs-and-the-masters-degree.aspx

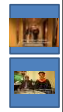
June 14, 2016 (Customization)

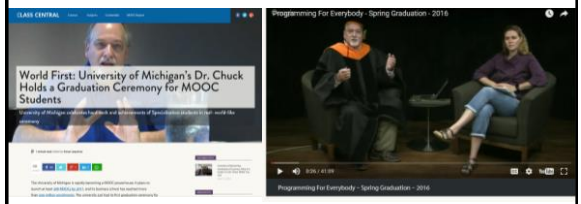
Chapter 15: Learning About MOOCs by Talking to Students

Charles Severance, Univ. of Michigan

Anuar Lequerica, Class Central

https://www.class-central.com/report/dr-chuck-graduate-ceremony-python-specialization/





MOOC Trends and Recent Data

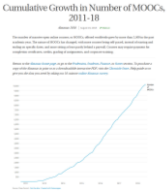
MOOCs are not dead

August 19, 2018

Cumulative Growth in Number of MOOCs, 2011-18

Almanac 2018, Chronicle of Higher Education

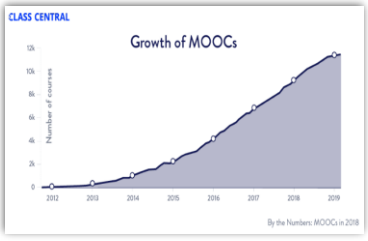
https://www.chronicle.com/article/Top-5-MOOC-Providers-by-Number/244090?cid=cp216



20

MOOCs Trends

Year of MOOC-based Degrees: A Review of MOOC Stats and Trends in 2018, Dhawal Shah, Class Central--January 6, 2019



- Coursera – 37 million
- edX – 18 million
- XuetangX – 14 million
- Udacity – 10 million
- FutureLearn – 8.7 million

Top five MOOC providers

21

MOOCs Stats

Year of MOOC-based Degrees: A Review of MOOC Stats and Trends in 2018, Dhawal Shah, Class Central--January 6, 2019

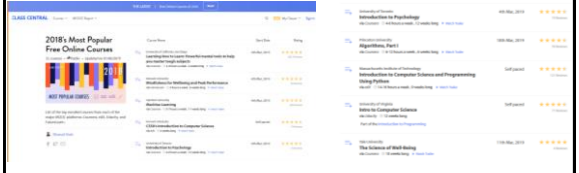
22

MOOCs Stats

2018's Most Popular Free Online Courses, : Coursera, edX, Udacity, and FutureLearn.

Dhawal Shah, Class Central--January 6, 2019

https://www.class-central.com/list/2018-s-most-popular-free-online-courses-wdtww



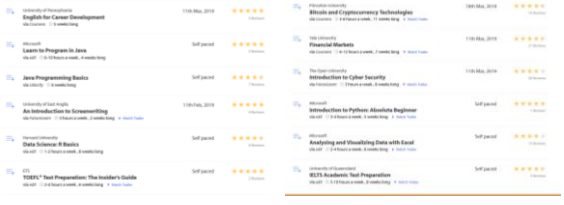
23

MOOCs Stats

2018's Most Popular Free Online Courses, : Coursera, edX, Udacity, and FutureLearn.

Dhawal Shah, Class Central--January 6, 2019

https://www.class-central.com/list/2018-s-most-popular-free-online-courses-wdtww



24

June 19, 2018
How Blockbuster MOOCs Could Shape the Future of Teaching
Jeffrey R. Young, EdSurge
https://www.edsurge.com/news/2018-06-19-how-blockbuster-moocs-could-shape-the-future-of-teaching

Coursera Top 10 Most Popular Courses (over past 12 months)

Rank	Course Title	Partner College or Organization
1	Machine Learning	Stanford U.
2	The Science of Well-Being	Yale U.
3	Learning How to Learn	UC San Diego
4	Neural Networks and Deep Learning	Deeplearning.ai
5	Programming for Everybody (Getting Started With Python)	U. of Michigan
6	Algorithms, Part I	Princeton U.
7	Bitcoin and Cryptocurrency Technologies	Princeton U.
8	Convolutional Neural Networks	Deeplearning.ai
9	Sequence Models	Deeplearning.ai
10	Improving Deep Neural Networks	Deeplearning.ai

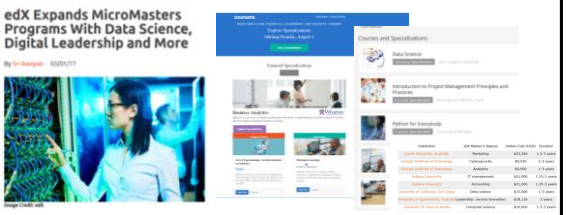
edX Top 10 Most Popular Courses (all time)

Rank	Course Title	Partner College or Organization
1	Introduction to Computer Science and Programming Using Python	MIT
2	Introduction to Linux	Linux Foundation
3	CS50's Introduction to Computer Science	Harvard U.
4	Analyzing and Visualizing Data with Excel	Microsoft
5	IELTS Academic Test Preparation	U. of Queensland
6	English Grammar and Style	U. of Queensland
7	The Science of Happiness	UC Berkeley
8	TOEFL® Test Preparation: The Insider's Guide	Educational Testing Service
9	The Science of Everyday Thinking	U. of Queensland
10	Introduction to Python for Data Science	Microsoft

Source: edX

June 19, 2018
How Blockbuster MOOCs Could Shape the Future of Teaching
Jeffrey R. Young, EdSurge
https://www.edsurge.com/news/2018-06-19-how-blockbuster-moocs-could-shape-the-future-of-teaching

October 12, 2018
Microcredentials and Nanodegrees
Learning is More on Modular
edX Expands MicroMasters Programs With Data Science ("nanodegrees")
Digital Leadership and More, Sri Ravipati, Campus Technology
https://campustechnology.com/articles/2017/03/02/edx-expands-micromasters-programs-with-data-science-digital-leadership-and-more.aspx
Lindsey McKenzie, Inside Higher Ed
https://www.insidehighered.com/news/2018/10/12/edx-launches-sine-low-cost-online-degrees



January 9, 2018
MicroMaster's Degrees
Learning is More on Modular
MIT launches MITx MicroMasters in Principles of Manufacturing, MIT Open Learning
http://news.mit.edu/2018/mit-launches-new-mitx-micromasters-program-principles-manufacturing-0109

December 7, 2018
Reinventing the College Degree: A Future with Modular Credentials
IBL News
https://iblnews.org/2018/12/07/reinventing-the-college-degree-a-future-with-modular-credentials/

January 20, 2016
Coursera Specializations
https://www.coursera.org/browse?utm_medium=email&utm_source=marketing&utm_campaign=aUAR4L-fEeWSI-NodUB9Qw&languages=en

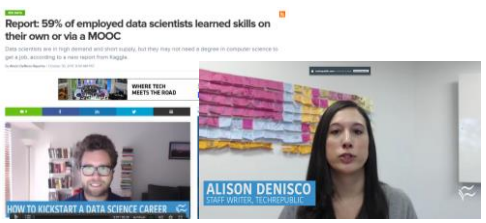
October 30, 2017

MOOCs ramp up new fields

Report: 59% of employed data scientists learned skills on their own or via a MOOC

Alison DeNisco Rayome

https://www.techrepublic.com/article/report-59-of-employed-data-scientists-learned-skills-on-their-own-or-via-a-mooc/

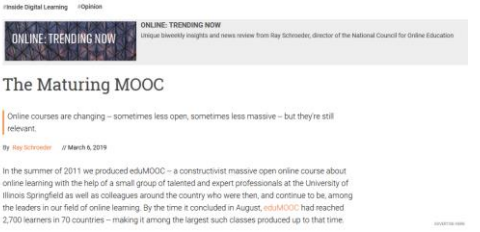


March 6, 2019

The Maturing MOOC

Ray Schroeder, Inside Higher Ed

https://www.insidehighered.com/digital-learning/blogs/online-trending-now/maturing-mooc



Khe Foon (Timothy) Hew (2018)

Hew, K. F. (2018). Unpacking the Strategies of Ten Highly Rated MOOCs: Implications for Engaging Students in Large Online Courses. *Teachers College Record, 120*(1).

https://www.coursetalk.com/

Hew's (2018, p. 1) analyzed 4,565 coursetalk review comments of 10 highly rated MOOCs. He found "six key factors that can engage online [MOOC] participants and nine reasons for participant disaffection."

1. **Problem-centric learning supported by clear explanations.**
2. **Active learning supported by timely feedback (e.g., assignments, projects, discussion).**
3. **Course resources that cater to participants' learning needs or preferences.**
4. **Instructor attributes (e.g., passion, enthusiasm, hu of examples).**
5. **Peer interaction.**
6. **Instructor availability.**

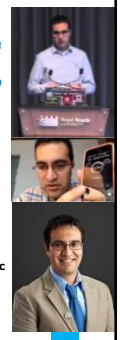
Quotes: Veletsianos et al. (2015-2016)

"To gain a deeper and more diverse understanding of the MOOC phenomenon, researchers need to use multiple research approaches (e.g., ethnography, phenomenology, discourse analysis) add content to them." (p. 583)

Veletsianos, Collier, & Schneider (2015, May), Digging deeper into learners' experiences in MOOCs: Participation in social networks outside of MOOCs, notetaking and contexts surrounding content consumption. *BJET, 46*(3), 570-587.

"Dependence on Particular Research Methods May Restrict our Understanding of MOOCs."

George Veletsianos & Peter Shepherdson's Study (2016). Systematic Analysis and Synthesis of the Empirical MOOC Literature Published in 2013-2015. *IRRODL.* http://www.irrodl.org/index.php/irrodl/article/view/2448/3655



Three Studies

- **Study #1**
  - MOOC Literature Review
- **Study #2**
  - MOOC Design Considerations and Challenges
- **Study #3**
  - MOOC Design for SDL

Study #1 MOOCs Literature Review (2014-2016)

Zhu, M., Sari, A., & Lee, M. M. (2018). A Systematic Review of Research Methods and Topics of the Empirical MOOC Literature (2014-2016). *The Internet and Higher Education, 37*, 31-39.

Research Purposes & Questions

The purpose was to gain a deeper and more diverse understanding of the current MOOC phenomenon and identify the gap in MOOC empirical studies.

1. What are the research methods researchers employed in empirical MOOC studies?
2. What are the research topics or focuses in MOOC studies?
3. How are researchers of empirical MOOC studies geographically distributed?
4. In terms of the delivery of the MOOC, what are the countries which are attracting the most research?

37

Journals of the Articles

No.	Journal	Total
1	International Review of Research in Open and Distance Learning (IRRODL)	31
2	Computers & Education	12
3	British Journal of Educational Technology	9
4	Online Learning	7
5	Distance Education	5
6	Educational Media International	5
7	Internet and Higher Education	5
8	Journal of Computer Assisted Learning	5
9	Computers in Human Behavior	4
10	Open Learning	4
11	Journal of Online Learning and Teaching	3
12	Journal of Asynchronous Learning Network	3

38

RQ1 & RQ2

MOOC research focuses and methods

	Quantitative	Qualitative	Mixed methods
Student-focused	39	9	26
Design-focused	19	12	17
Context and impact	9	6	5
Instructor-focused	0	3	2

39

RQ2

Specific Focus of MOOC Research (2014-2016)

40

RQ3 Locations

Location of MOOC Research Team Members (2014-2016)

41

The study expanded!

Total Number of Empirical MOOC Studies Published in Different Journals from 2013-2018

Table 1
(Note: the table only includes the top nine journals in terms of the number of empirical MOOC studies)

Journals	Number of empirical studies
International Review of Research in Open and Distributed Learning	51
Computers & Education	22
British Journal of Educational Technology	15
Online Learning	12
Distance Education	11
Journal of Online Learning and Teaching	11
The Internet and Higher Education	10
Computers in Human Behavior	10
Open Learning	8

Research Methods

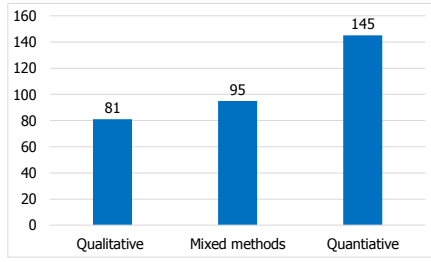


Figure 2. Research methods used in empirical MOOCs studies from 2013-2018 (N=321 studies)

Data Collection Methods

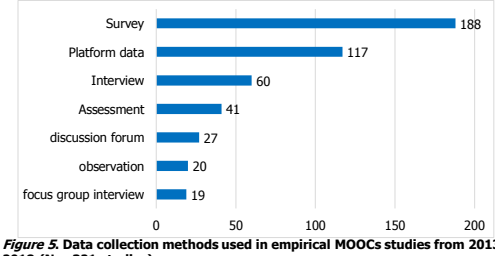


Figure 5. Data collection methods used in empirical MOOCs studies from 2013-2018 (N = 321 studies)
(Note: some studies contain more than one data collection method and this figure only includes the main data collection methods)

Study #2 MOOCs Design Considerations and Challenges

Zhu, M., Bonk, C. J., & Sari, A. (2018). Instructor experiences designing MOOCs in higher education: Pedagogical, resource, and logistical considerations and challenges. *Online Learning*, *22*(4), 203-241.

Research Purpose

The purpose of this study is to provide suggestions for future MOOC instructors and instructional designers in higher education through exploring MOOC design considerations and challenges from the instructor's perspective.

Research Questions

1. What are the design considerations of instructors when designing MOOCs?
2. What challenges do instructors perceive when designing MOOCs?
3. How do instructors address the challenges that they perceive related to MOOCs?

Research Design

- **Sequential mixed methods design (Creswell & Clark, 2017)**

49

Data Collection

- **Data Collection:**
  - **Survey, interview, and course review**
- **Participants:**
  - **143 survey participants (10% response rate)**
  - **12 interviewees**

50

12 Interviewees

No.	Countries	Subject areas	Platforms
1.	The U.S.	Language and Literacy	Coursera
2.	The U.S.	Education	Coursera
3.	The U.S.	Education	Canvas
4.	The U.S.	Chemistry	Coursera
5.	UK	Medicine and Health	FutureLearn
6.	UK	Language and Literacy	FutureLearn
7.	Hong Kong (China)	Math	Coursera
8.	Mainland China	Math	Coursera
9.	Canada	Psychology	Coursera
10.	Australia	Medicine and Health	Open2Study
11.	Sweden	Computer Science	edX
12.	India	Management	edX

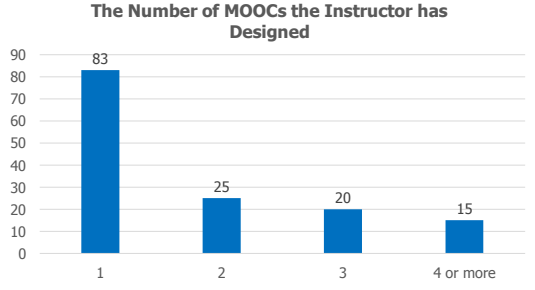
51

Data Analysis

RQs	Data Sources	Data analysis
RQ1	Survey-multiple-choice questions	Descriptive statistics
	Survey-open-ended questions	Content analysis (Elo & Kyngäs, 2008)
	Interview	Content analysis
	MOOC review	Content analysis
RQ2	Survey-multiple-choice questions	Descriptive statistics
	Survey-open-ended questions	Content analysis
	Interview	Content analysis
RQ3	Survey-multiple-choice questions	Descriptive statistics
	Interview	Content analysis

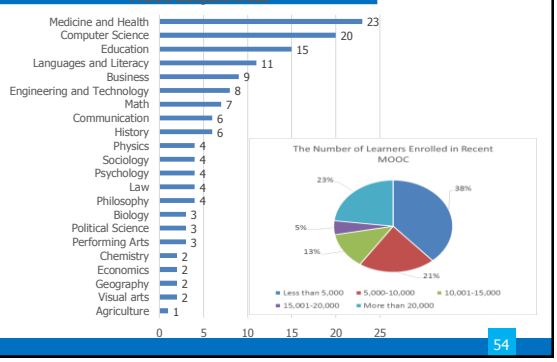
52

Research Context



53

Research Context



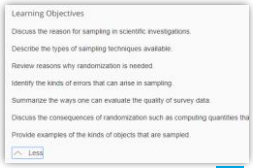
54

Findings RQ1

RQ #1. What are the design considerations of instructors when designing MOOCs?

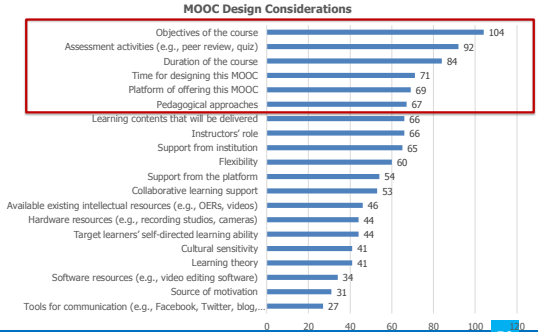
- Learning objectives
- Assessment
- Time for designing MOOC
- Engaging learners

An example of learning objectives:



55

RQ1 Survey Results



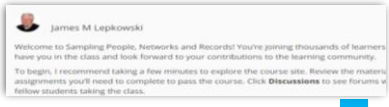
56

RQ1 Interview Results

Engage learners

One instructor from US mentioned:

"I engaged people in the forum. So **each week I would write a message that would be the new welcome page for the week** that would say, 'hey come to the forum and ask questions about this or come to the forum introduce yourself'... Of course, I tried to get students to feel like **I was engaged with them during the videos by asking them questions** and telling them to do things during the video."

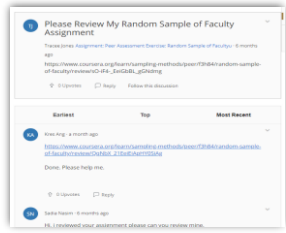


57

Findings RQ2

RQ #2. What challenges do instructors perceive when designing MOOCs?

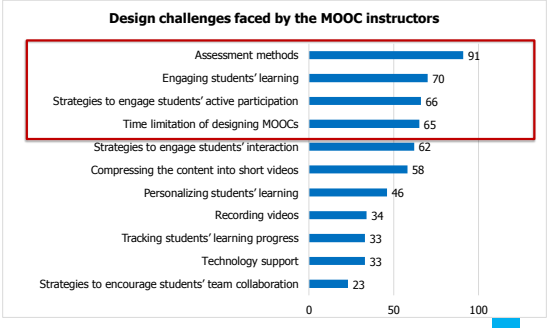
- Assessment methods
- Engaging students' learning
- Time limitation



(Note: Above is an example of peer-assessment.)

58

RQ2 Survey Results



59

RQ2 Interview Results

Time limitation

One instructor from education subject mentioned:

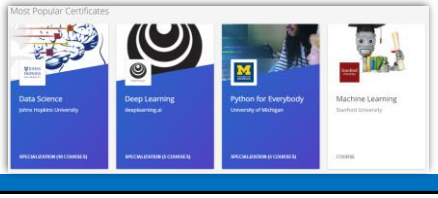
"I think one of the challenges is time. It does take a lot of time to get the videos done. **I did not get a course release when I was doing, and it was a side project at the same time as my regular load.**"

60

Findings RQ3

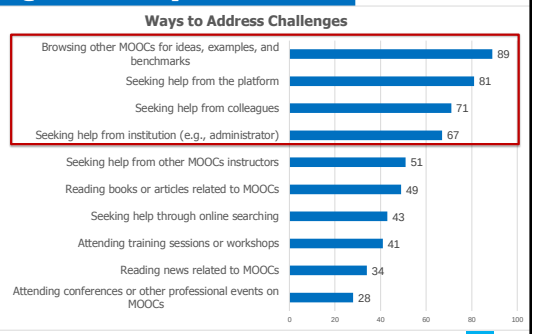
RQ #3. How do instructors address the challenges that they perceive related to MOOCs?

- Explore other MOOC examples
- Seek help from the platform/colleagues/institutions



61

RQ3 Survey Results



62

RQ3 Interview Results

Explore other MOOC examples

One MOOC instructor from the US mentioned:

> "**When I started making the MOOC, I could see MOOCs that other people had made.** So I could see what other people did in terms of having videos with questions embedded in the videos, which I really liked."

63

Implications

- **For MOOC instructors**
  - May inform them about what other instructors are most concerned with and tend to target in MOOC design as well as their efforts in addressing the possible design challenges.
- **For instructional designers**
  - Guide attention to ID in the areas that MOOC instructors might need them to help in consultation.

64

Study #3
MOOCs Instructional Design to Facilitate Participants' Self-directed Learning

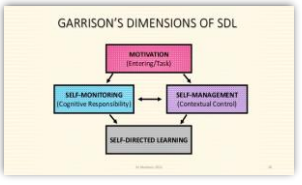
Key Terms

Self-directed learning (SDL) (Garrison, 1997)

(1) self-management

(2) self-monitoring

(3) motivation



66

Research Background

- **Learners need self-directed learning skills and strategies to be successful in MOOCs** (Halawa, Greene, & Mitchell, 2014; Littlejohn & Milligan, 2016), as there is a lack of personalized interaction with teachers.
- **Self-directness of a learner might vary in different learning environments which means that the learners could be more self-directed in one learning environment than another** (Hiemstra, 1994).

67

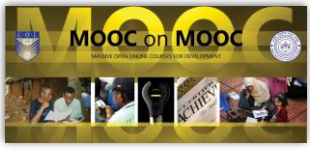
Research Background

- **Instructional design can greatly influence students' interaction and engagement** (Garrison & Cleveland-Innes, 2005) **and success in online learning** (Song, Singleton, Hill, & Koh, 2004; Swan, 2001).
- However, few studies have examined instructional design and the delivery of instruction using MOOCs from instructor perspectives (Margaryan et al., 2015; Watson et al., 2016); **especially lacking is research on instructors' perception of SDL and how they design MOOCs to facilitate students' SDL.**

68

Research Purpose

- **The purpose is to inform instructors or instructional designers and MOOC providers of the current practices of designing MOOCs to facilitate learners' SDL.**



69

Research Questions

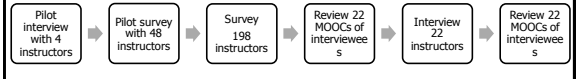
1. **How do MOOC instructors perceive participant SDL skills?**
2. **How do MOOC instructors perceive their facilitation of participant SDL skills?**
3. **How do instructors design and deliver MOOCs to facilitate participant SDL skills?**
   a. How is technology being used by MOOC instructors to support the development of participant SDL skills?
   b. What technology features or functions do MOOC instructors want to have to improve their facilitation of MOOC participant SDL skills?

70

Research Design

Explanatory sequential mixed methods design

(Creswell & Clark, 2017)



71

Data Collections

Survey:

- Volunteer sampling (Creswell & Clark, 2017)
- 198 instructors responded to the survey (10% response rate)

Interview:

- Homogeneous purposeful sampling (Creswell & Clark, 2017; Patton, 2002)
- Maximal variation sampling (Creswell & Clark, 2017)
- 22 interviewees

MOOC review:

- Reviewed 22 interviewees' MOOCs

72

Pseudonym	Country	Subject area	Platform	Gender	No. of O/B	No. of M	Mode of the M
Lucas	US	Social science	edX	M	0	1	I without T
Branden	US	Education	Udacity	M	0	5 or more	Self-paced
Logan	US	Literacy and Language	Coursera	M	5 or more	5 or more	I with T
Emma	US	Literacy and Language	Coursera	F	2	1	Self-paced
Jason	US	Science	edX	M	1	1	I with T
Jackson	US	Medicine and health	Coursera	M	5 or more	1	Self-paced
Samuel	US	Education	FutureLearn	M	4	3	Self-paced
Hannah	US	Education	Blackboard	F	5 or more	1	I with T
Ashley	US	Education	EdX	F	0	5 or more	I with T
Andrew	UK	Art	FutureLearn	M	0	3	I with T
Emily	UK	Medicine and health	FutureLearn	F	2	2	I with T
Aiden	UK	Social science	FutureLearn	M	0	1	Self-paced
Henry	UK	Social science	FutureLearn	M	0	1	Self-paced
Joseph	UK	Medicine and health	FutureLearn	M	1	1	Self-paced
Joshua	UK	Literacy and language	FutureLearn	M	2	2	I with T
Mason	Australia	Education	Coursera	M	5 or more	1	I with T
Ethan	Australia	Business	Coursera	M	3	1	I without T
Ben	Australia	Social science	edX	M	1	1	I with T
Paul	France	Computer Science	Coursera	M	1	1	I with T
Fernando	Belgium	Research methods	Blackboard	M	5 or more	3	I with T
Jacob	Netherland	Science	Coursera	M	0	1	I with T
Dylan	Israel	Science	Coursera	M	5 or more	3	I without T

Data Analysis

RQs	Data Sources	Data analysis	Tools
RQ1	Survey	Descriptive statistics	SPSS
	Interview	Content analysis (Elo & Kyngäs, 2008)	NVivo
RQ2	Survey	Descriptive statistics	SPSS
	Interview	Content analysis	NVivo
RQ3	Interview	Content analysis	NVivo
	Course review	Content analysis	NVivo

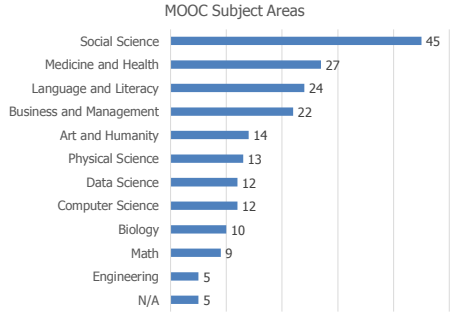
74

Trustworthiness

1. **Validity survey:** Experts review, think-aloud interview, and pilot test (EFA)
2. **Reliability survey:** Pilot test and internal consistency reliability (Cronbach alpha)
3. **Triangulation:** Data sources, researchers, and methods
4. **Member checks:** Interview transcriptions
5. **Peer debriefing:** Committee and colleagues
6. **Researcher reflexivity:** Constant reflection and be forthright with our positions
7. **Thick description:** Report the context, data sources, and analyses in detail
8. **Prolonged engagement**: Immerse in instructors' MOOCs before the interview and continue reviewing the MOOCs after the interview

75

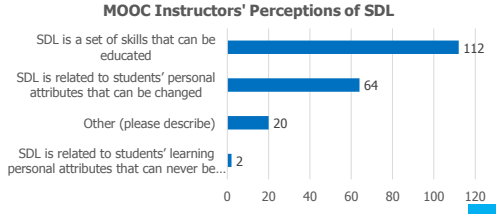
Research Context



76

RQ1 Perceptions of SDL

- A majority of the MOOC instructors thought that these skills or attributes are not static, and that SDL as a set of skills can be educated or students' personal attributes that can be changed.



77

RQ1 Interview Results

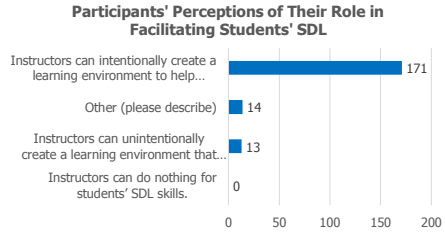
- Emma's understanding of SDL is more related to self-management and motivation. She said:

  When I think about self-directed learning, I think about students **managing their time and managing the coursework on their own, and how it fits into their schedules and their lives, how they interact with materials**, what's going to keep them engaged.

78

RQ2 Perceptions of Facilitation of SDL

- Most of MOOC instructors thought that they can intentionally or unintentionally facilitate students' SDL.



79

RQ2 Interview Results

- **Ashely emphasized the importance of both instructors' facilitation and students' SDL skills. She said:**

  The participant has a lot of flexibility on how they approach the content. I mean, obviously, we have things like assignments. We have things like online forums. And there're ways that we scaffold the learning experience. But there still is a lot of choice for the learner.

80

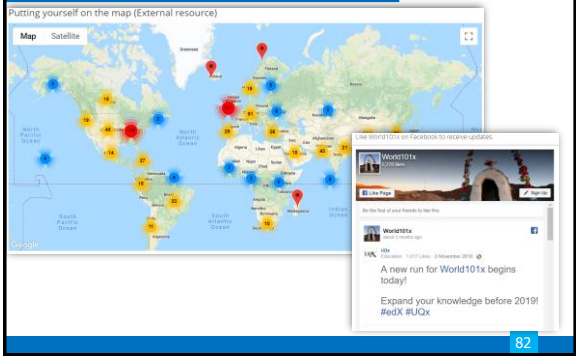
RQ3 Strategies to Facilitate SDL

- **Students' intrinsic motivation plays an important role. However, extrinsic motivation provided by the MOOCs might help transfer extrinsic motivation to intrinsic motivation.**

Motivations	Strategies
Entering motivation	MOOC instructors helped students **identify the needs and goals of learning** and sense of achievement.
Task motivation	MOOC instructors motivated students through instruction, learning materials, feedback, and learning community.

81

RQ3 Learning Community



82

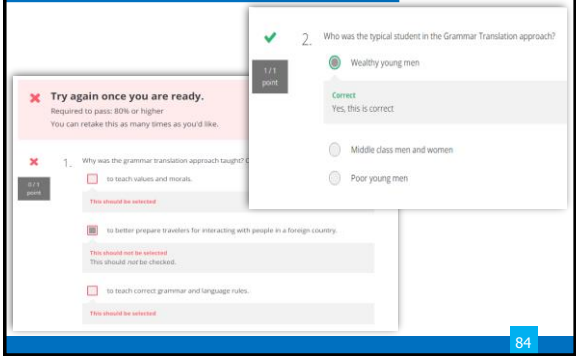
RQ3 Strategies to Facilitate SDL

- **Both internal feedback and external feedback were provided to help students' self-monitoring.**

Self-monitor		Strategies
Internal feedback	Cognition	MOOC instructors provided quizzes for self-assessment, tutorial on technology use, learning advice, navigation of the course, progress indicators, resources, and instructional modeling, etc.
	Meta-cog	MOOC instructors encouraged students to reflect and think critically by providing reflection questions and building learning community.
External feedback		MOOC instructors, teaching assistants, and peers were involved in providing external feedback.

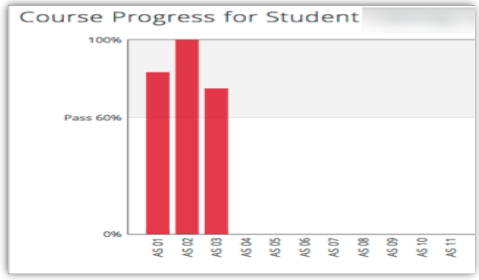
83

RQ3 Self-assessment (i.e., embedded quizzes)



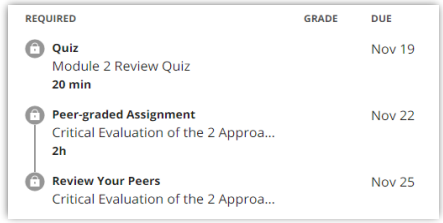
84

RQ3 Progress Indicators



85

RQ3 External Feedback: Peer-assessment (e.g., 3 peers assigned to review each assignment)



86

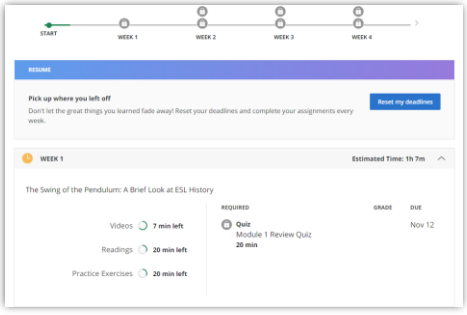
RQ3 Strategies to Facilitate SDL

- **They helped students' self-management concerning setting learning goals, time management, resources and support management although among the three elements of SDL, MOOC instructors had less control over students' management.**

Self-management	Strategies
Enactment of learning goals	Providing discussion questions, reflections, survey, and appreciation students' learning goals.
Time management	Providing time frame, progress indicator, short learning units, and flexible timeline.
Management of resources and support	Providing flexible learning resources, peer-assessment, accessibilities, clear expectations, and short learning units.

87

RQ3 Time Management (e.g., time advisories and estimates)



88

RQ3-a. Tech Used for SDL

- Synchronous communication technologies
  - Google Hangouts
  - YouTube Live
- Asynchronous communication technologies
  - Discussion forum
  - Blog
  - Slackbot
  - Flickr
- Multimedia (e.g., video and graphics)
- Feedback technologies

89

RQ3-b. Tech Expectations for SDL

- **Adaptive learning systems**
- **Artificial intelligent systems**
- **Learning analytics**
- Interactive technologies
  - Interaction between learners and content
  - Interaction among learners and other participants
- Tools embedded in platforms

90

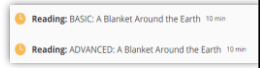
Discussion

- **SDL can be Changed**
- **MOOC Instructors can Facilitate SDL**
- **Strategies to Facilitate SDL**: A variety of strategies can be used to facilitate student SDL skills in terms of motivation, self-monitor, and self-management.
- **Tech for SDL:** Tech plays an important role in facilitating SDL skills.
- **Tech expectations:** Adaptive learning systems, artificial intelligent systems, and learning analytics were expected to have to support SDL.

91

Top 10 Strategies to Facilitate SDL in MOOCs

1. **Helping students set their own learning goals;**
2. **Building learning community;**
3. **Offering immediate feedback;**
4. **Embedding quizzes for self-assessment;**
5. **Providing progress indicators;**
6. **Providing reflection questions;**
7. **Designing short learning units;**
8. **Providing flexible timelines;**
9. **Highlighting estimated time frames;**
10. **Making available optional learning materials.**



92

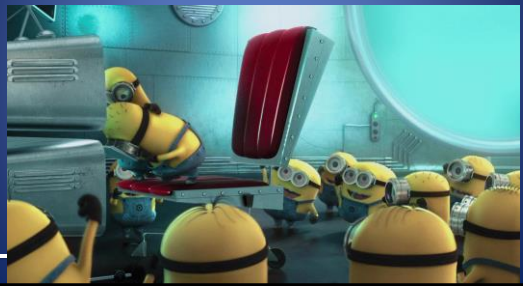
Other Related MOOC Studies

4. Sari, A. R., Bonk, C. J., & **Zhu, M**. (in revision). MOOC Instructor Designs and Challenges: What can be Learned from Existing MOOCs in Indonesia and Malaysia? *Asia Pacific Education Review.*
5. **Zhu, M.**, Bonk, C. J., & Sari, A. (in press). MOOC Instructor Motivations, Innovations, and Designs: Surveys, Interviews, and Course Reviews. *Canadian Journal of Learning & Tech.*
6. Doo, M., Tang, Y., Bonk, C. J., & **Zhu, M**. (in review). A Mixed Methods Look at Motivation and Career Development of MOOC Instructors. *Australasian Journal of Educ. Technology.*
7. Bonk, C. J., Sabir, N., Sari, A., **Zhu, M**., Xu., S., & Kim, M. (in preparation). MOOC instructors' efforts to address learner diversity in design and implementation.
8. **Zhu, M.**, Sari, A. R., & Bonk, C. J. (in preparation). Systematic review of MOOC research from 2012-2019. (Intended for special issue of ETR&D)
9. Doo, M., **Zhu, M**., Bonk, C. J., & Tang, Y. (data collect). MOOC instructor engagement.
10. **Zhu, M.**, & Bonk, C. J. (data collect). MOOC Student Perceptions of Effective SDL Strats.

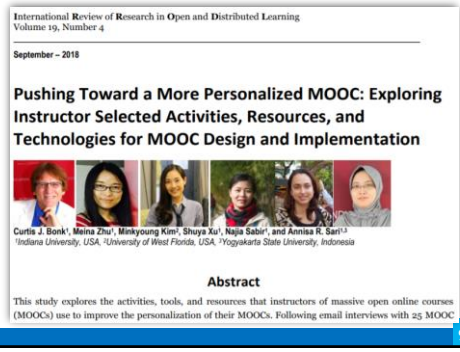
93

Tired of MOOCs…?

Do we have time for another study?



Other Related MOOC Studies



International Review of Research in Open and Distributed Learning
Volume 19, Number 4

September – 2018

Pushing Toward a More Personalized MOOC: Exploring Instructor Selected Activities, Resources, and Technologies for MOOC Design and Implementation

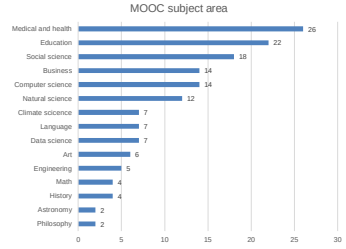
Curtis J. Bonk[1], Meina Zhu[1], Minkyoung Kim[2], Shuya Xu[1], Najia Sabir[1], and Annisa R. Sari[1,3]
[1]Indiana University, USA, [2]University of West Florida, USA, [3]Yogyakarta State University, Indonesia

Abstract

This study explores the activities, tools, and resources that instructors of massive open online courses (MOOCs) use to improve the personalization of their MOOCs. Following email interviews with 25 MOOC

96

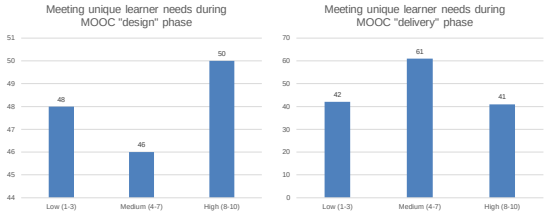
Figure 1. MOOC instructor departmental or primary discipline affiliations (n=150)



97

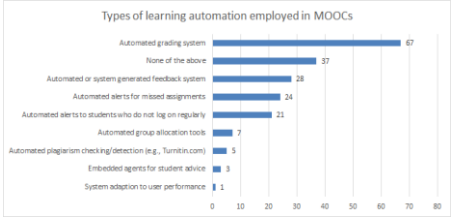
Figure 3 and 4. Effort placed on meeting unique learner needs when designing and delivering most recent MOOC

(Note: on a scale of 1 (low) to 10 (high) (n=144)



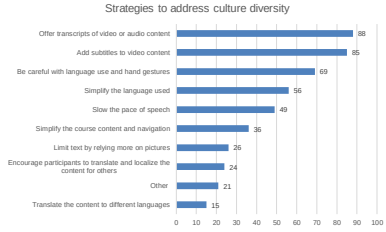
98

Figure 6. Number of MOOCs that offer different types of learning system automation and adaptation (n=127)



99

Figure 9: MOOC instructors (n=133) instructional practices to address cultural diversity



100

Table 1. Instructional Practices of MOOC Instructors to Address the Variety of Student Competencies and Needs (n=142)

Table 1

Instructional practices of MOOC instructors to address the variety of student competencies and needs (N=142)

Items	Response percent	Response count
Establish learner-based discussion forums	81.0%	115
Embed supplementary course materials	78.2%	111
Post timely course announcements and emails	63.4%	90
Record video tutorials or walkthroughs	40.8%	58
Emphasize project-based learning over exams	34.5%	49
Using preexisting online videos (e.g., Lynda.com, TED talks, YouTube, etc.)	32.4%	46
Other	26.1%	37
Hold synchronous lectures, meetings, and events (e.g., Skype, Google Hangouts, Zoom, etc.)	23.9%	34
Establish study groups	19.0%	27
Establish learner reflection journals or blogs	16.2%	23
Schedule virtual office hours and meetings	14.1%	20
Offer face-to-face meet-up opportunities	7.0%	10

101

What's the Future?

Possibile Future Trends…?

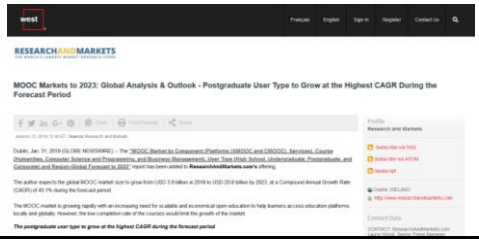
1. Stackable Degrees (i.e., microcredentials lead to degree programs)
2. Unique Partnerships for MOOC programs
3. AI Grading and Feedback Mechanisms
4. Adaptive Technologies…Adaptive Learning

103

30+ Ways Learning is Changing:
Recapping the Three Mega Trends: Engagement, Access, and Customization

January 31, 2019
MOOC Markets to 2023: Global Analysis & Outlook - Postgraduate User Type to Grow at the Highest CAGR During the Forecast Period
Research and Markets, GlobalNewsWire

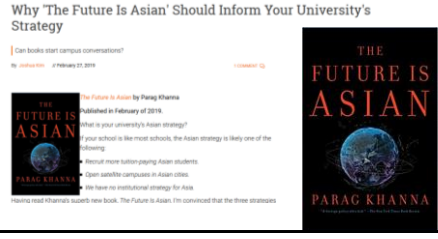
https://globenewswire.com/news-release/2019/01/31/1708670/0/en/MOOC-Markets-to-2023-Global-Analysis-Outlook-Postgraduate-User-Type-to-Grow-at-the-Highest-CAGR-During-the-Forecast-Period.html



February 27, 2019
Why 'The Future Is Asian' Should Inform Your University's Strategy
Joshua Kim, Inside Higher Ed

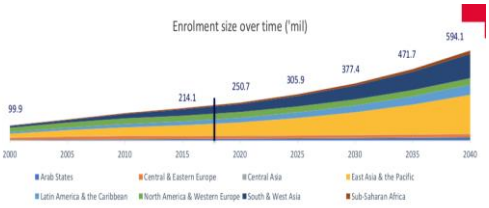
https://www.insidehighered.com/blogs/technology-and-learning/why-future-asian-should-inform-your-universitys-strategy

Today, there are about 70 million East Asian and Pacific students enrolled in postsecondary education. By 2040, that number is projected to rise to 257 million.



February 27, 2019
Thinking About 'Massification of Higher Education Revisited'
Joshua Kim, Inside Higher Ed

https://www.insidehighered.com/blogs/technology-and-learning/thinking-about-massification-higher-education-revisited%E2%80%99

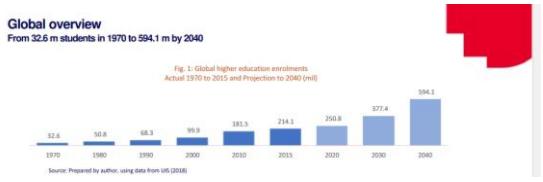


February 27, 2019
Thinking About 'Massification of Higher Education Revisited'
Joshua Kim, Inside Higher Ed

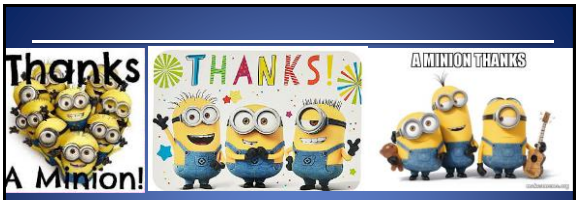
https://www.insidehighered.com/blogs/technology-and-learning/thinking-about-massification-higher-education-revisited%E2%80%99

- I've been looking at a 2018 report prepared by Angel Calderon of Australia's RMIT University. The report is called *Massification of Higher Education Revisited.*
- *Some key findings:*
- Global postsecondary enrollments are projected to increase from 214.1 million in 2015 to 594.1 million in 2040.
- The number of students enrolled in higher education institutions in East Asia & the Pacific is projected to increase from 69.4 million in 2015 to 257.6 million in 2040.
- In South & West Asia, similar projections are an increase of 42.4 million students in 2015 to 160.4 million in 2040.
- Latin America & the Caribbean will see higher education enrollment going from 25.3 million in 2015 to an expected 65.6 million in 2040.
- The Arab States are projected to see an increase of postsecondary enrollments from 10.7 million in 2015 to 22.3 million in 2040.
- Sub-Saharan Africa will see university enrollments grow from 7.4 million in 2015 to 21.7 million in 2040.
- During this same period, the number of students studying in the U.S. and Western Europe will grow only from 37.5 million (2015) to a projected 43.7 million in 2040.

June 2018
Massification of Higher Education Revisited
Angel J. Calderon, Analytics & Insights, Melbourne, Australia
https://www.academia.edu/36975860/Massification_of_higher_education_revisited



June 2018
Massification of Higher Education Revisited
Angel J. Calderon, Analytics & Insights, Melbourne, Australia
https://www.academia.edu/36975860/Massification_of_higher_education_revisited



Any Questions?

Curtis Bonk: cjbonk@Indiana.edu

Meina Zhu: meinzhu@iu.edu

Slides and Proceedings Paper at TrainingShare.com:

http://www.trainingshare.com (go to "Archived Talks")