On the Road Toward Fostering Greater Self-Directed Learning in MOOCs: Research Toward Better Design Practices

Curtis J. Bonk| cjbonk@Indiana.edu
Indiana University Bloomington

Meina Zhu| meinazhu@wayne.edu
Wayne State University

September 18, 2020

1

June 3, 2017

How PLATO changed the World…in 1960
Cait Etherington, ElearningInside News
https://news.elearninginside.com/how-plato-changed-the-world-in-1960/

PLATO was the first generalized computer-assisted instruction system. Starting in 1960, it ran on the University of Illinois' ILLIAC I computer. By the late 1970s, it supported several thousand graphics terminals distributed worldwide, running on nearly a dozen different networked mainframe computers. Many modern concepts in multi-user computing were originally developed on PLATO, including forums, message boards, online testing, e-mail, chat rooms, picture languages, instant messaging, remote screen sharing, and multiplayer games.

2

Talk Outline

1. MOOC News and Trends.
2. Study #1: MOOC ID Considerations and Challenges.
3. Study #2: MOOC ID for Self-Directed Learning.
4. 20 SDL guidelines for MOOCs.

3

3

Polls

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

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

4

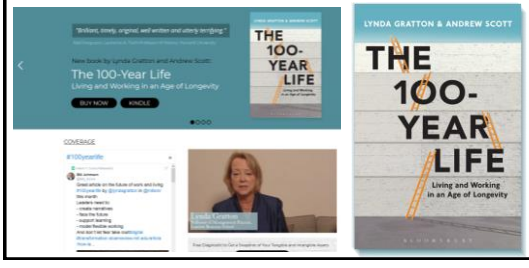
4

MOOC Trends and Recent Data

5

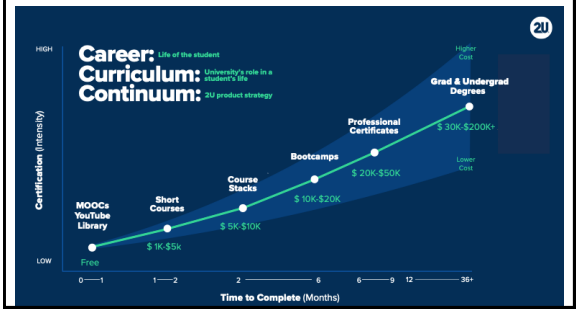
July 24, 2018

The 100-Year Life: Living and Working in an Age of Longevity
Lynda Gratton and Andrew Scott
http://www.100yearlife.com/
https://www.amazon.com/100-Year-Life-Living-Working-Longevity/dp/1543624634



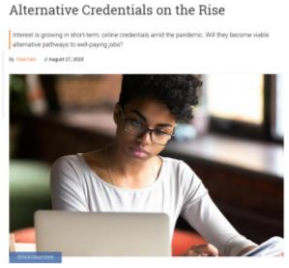
6

March 13, 2019
The Career Curriculum Continuum
Andrew Hermalyn, Inside Higher Ed
https://www.insidehighered.com/digital-learning/views/2019/03/13/how-universities-can-stay-center-learners-lives-opinion



7

August 27, 2020
Alternative Credentials on the Rise
Paul Fain, Inside Higher Ed
https://www.insidehighered.com/news/2020/08/27/interest-spikes-short-term-online-credentials-will-it-be-sustained



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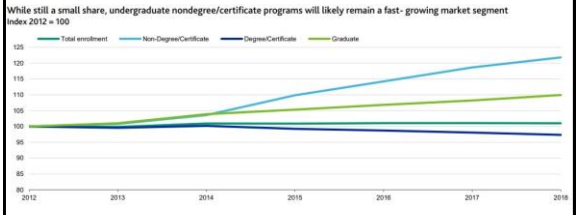
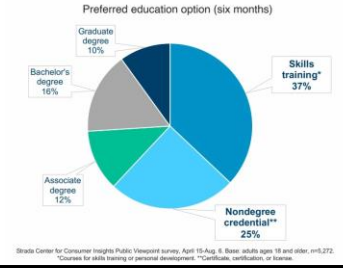
August 27, 2020
Alternative Credentials on the Rise
Paul Fain, Inside Higher Ed
https://www.insidehighered.com/news/2020/08/27/interest-spikes-short-term-online-credentials-will-it-be-sustained



Sources: Moody's, U.S. Department of Education

9

August 27, 2020
Alternative Credentials on the Rise
Paul Fain, Inside Higher Ed
https://www.insidehighered.com/news/2020/08/27/interest-spikes-short-term-online-credentials-will-it-be-sustained



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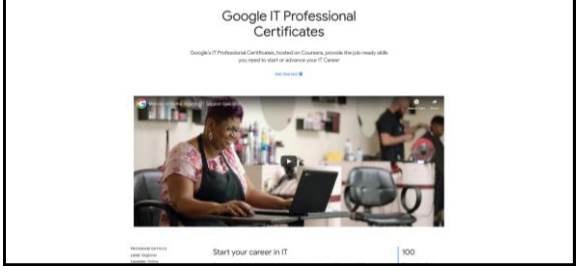
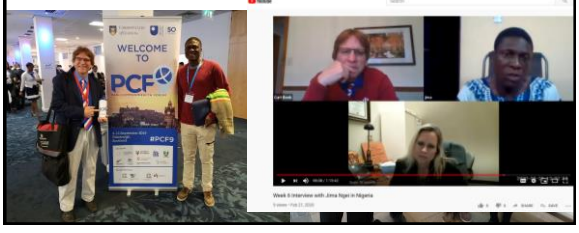
Professional Certificates
October 3, 2019
Google IT Professional Certificates
Coursera Blog
https://grow.google/programs/it-support/?cid=wc&source=ams&sourceId=61203
Video: Melinda Williams: Aspiring IT Support Specialist (2:57)
https://www.youtube.com/watch?time_continue=107&v=fvhPKZWbfms&feature=emb_logo



11

Hundred+ MOOC Clubs
September 11, 2019
250 MOOCs and Counting: One Man's Educational Journey, Chronicle of Higher Education
http://chronicle.com/article/250-MOOCsCounting-One/229397/?cid=at
If the MOOC movement has faded, nobody told Jima Ngei. Mr. Ngei, who lives in Port Harcourt, Nigeria, has completed and passed 250.



12

July 11, 2017

The Rise of the Phigital Learner

Going 'phigital?' 4 things schools need to know about Generation Z, Todd Kominiak, TrustEd

http://trustedk12.com/phigital-digital-learning/

May 15, 2017

3 must know's about the rising "phigital" student-and why their impact is enormous, Meris Stansbury, eCamous News

https://www.ecampusnews.com/campus-administration/education-gap-a-phigital-student/

13

April 13, 2016

The Fourth Industrial Revolution:

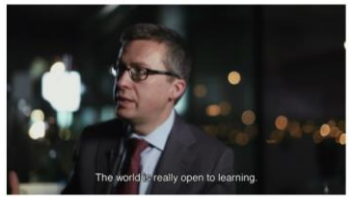
What it means, how to respond

Klaus Schwab, Founder and Executive Chairman, World Economic Forum

https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/

http://trainingshare.com/fourth-industrial-evolution-video-clip.php

http://www.tubechop.com/watch/8280981



14

April 29, 2020

Zoom Boom

Synchronous instruction is trending, but experts say a more intentional mix of live and asynchronous classwork is necessary for future remote terms.

Colleen Flaherty, Inside Higher Ed

https://www.insidehighered.com/news/2020/04/29/synchronous-instruction-hot-right-now-it-sustainable

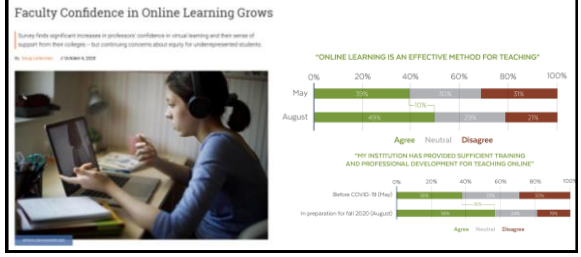
15

October 6, 2020

Faculty Confidence in Online Learning Grows

Doug Lederman, Inside Higher Ed

https://www.insidehighered.com/digital-learning/article/2020/10/06/covid-era-experience-strengthens-faculty-belief-value-online



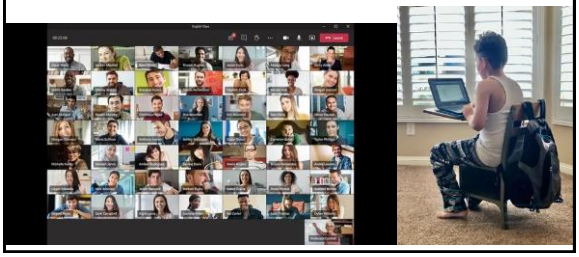
16

August 26, 2020

Zoom, Microsoft and Apple take on remote learning challenges as kids head back to school

Dalvin Brown, USA Today

https://www.usatoday.com/story/tech/2020/08/26/zoom-google-apple-tech-firms-meet-remote-learning-needs-school-starts/5598975002/



17

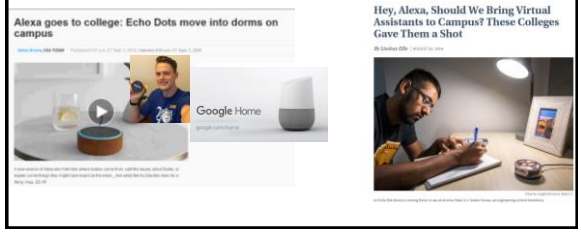
August 2, 2018

Learning is More On Demand

Hey, Alexa, Should We Bring Virtual Assistants to Campus? These Colleges Gave Them a Shot

Lindsey Ellis, The Chronicle of Higher Education

https://www.chronicle.com/article/Hey-Alexa-Should-We-Bring/244129



18

May/June 2020

Learning is More On Demand

Chatting with Chatbots and Text Buddies

Lindsey McKenzie, Inside Higher Ed

https://www.insidehighered.com/news/2019/09/06/expansion-chatbots-higher-ed

https://www.usatoday.com/story/tech/2019/11/08/alexa-google-assistant-ai-robots-become-substitute-friends/4057885002/

19

July 7, 2020

Elephant in the room: How augmented reality takes online classes to exciting highs,

Abdul Latheef Naha, The Hindu

https://www.thehindu.com/news/national/kerala/augmented-reality-takes-online-classes-to-exciting-highs/article32014276.ece

When the whole world was in a lockdown in April, Mr. Shyam Vengalloor was racking his brains on finding a way to make virtual classrooms more exciting for children. Using green screen, Gif (graphics interchange format) images and several apps, Mr. Shyam succeeded in creating an augmented reality for the virtual class by superimposing graphics, audio and sensory enhancements.

A social science teacher of AEM AUP School, Moorkanad, introducing the globe through augmented reality technology during an online class.

20

July 31, 2020

Learning is More Personal

Khan Academy aims to give 'strategic supplement'

Brett Molina, USA Today

https://www.usatoday.com/story/tech/2020/07/30/khan-academy-ceo-sal-khan-prepping-fall-virtual-learning/5525480002/

21

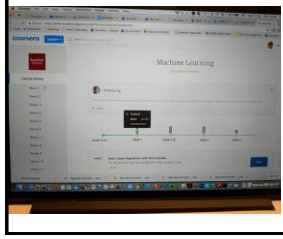
Student Independent Studies Via MOOCs

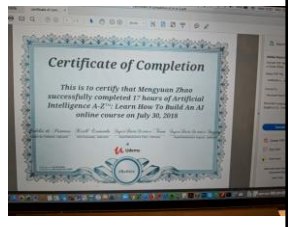
MOOC: AI A-Z: Learning How to Build an AI Online Course and Machine Learning

Mengyuan Zhao

https://www.udemy.com/artificial-intelligence-az/

https://www.coursera.org/learn/machine-learning





22

October 12, 2018 (Customization)

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/2017/01/31/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-nine-low-cost-online-degrees

23

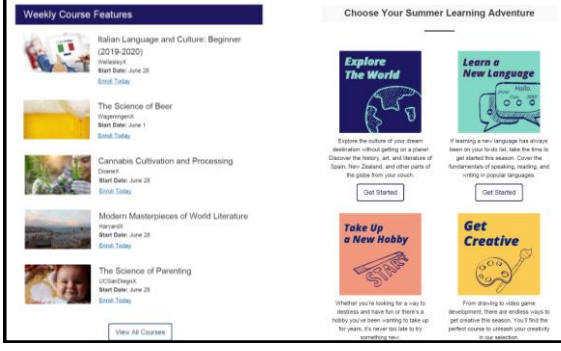
June 28, 2020

From: edX <news@edx.org>

Sent: Sunday, June 28, 2020 10:04 AM

To: Bonk, Curtis Jay <cjbonk@indiana.edu>

Subject: There's a summer learning adventure for everyone



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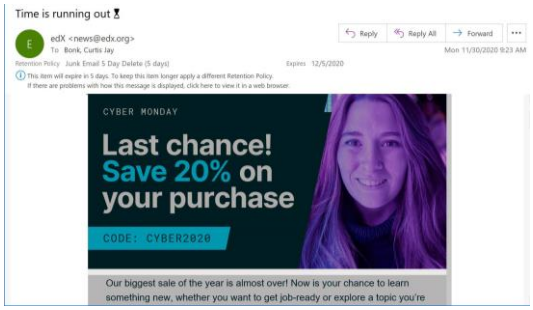
November 30, 2020
Cyber Monday



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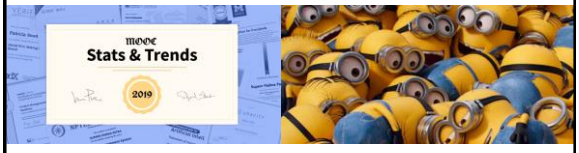
26

December 16, 2019
2020 Impact Report, edX
https://www.edx.org/sites/default/files/2020-impact-report.pdf

27

MOOCs Stats
December 17, 2019
Online Degrees Slowdown: A Review of MOOC Stats and Trends in 2019, Dhawal Shah, Class Central
https://www.classcentral.com/report/moocs-stats-and-trends-2019/



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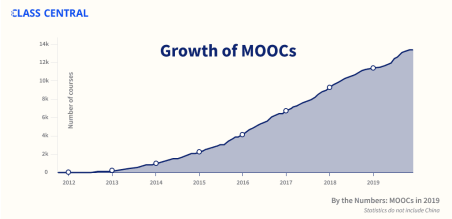
MOOCs Stats
December 17, 2019
A Review of MOOC Stats and Trends in 2019
Dhawal Shah, Class Central
https://www.classcentral.com/report/moocs-stats-and-trends-2019/



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MOOCs Stats
December 17, 2019
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Dhawal Shah, Class Central
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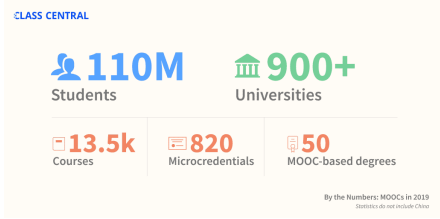

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MOOCs Stats

December 17, 2019

A Review of MOOC Stats and Trends in 2019
Dhawal Shah, Class Central
https://www.classcentral.com/report/moocs-stats-and-trends-2019/

Here's how the top-5 MOOC providers currently look in terms of users and offerings:

	Learners	Courses	Microcredentials	Degrees
Coursera	45 million	3,800	420	16
edX	24 million	2,640	292	10
Udacity	11.5 million	200	40	1
FutureLearn [2,4]	10 million	880	49	23
Swayam [2,3]	10 million	1,000	0	0

That is why I called the rise of online degrees the second wave of MOOC hype and 2018, the year of MOOC-based degrees.

	2017	2018	2019
Coursera	4	11	16
edX	1	9	10
FutureLearn	4	18	23
Udacity	1	1	1
Total	10	39 (+29)	50 (+11)

But in 2019, the hype seems to have subsided: only 11 online degrees were announced this year. The total number of MOOC-based degrees has now grown to 50.

31

31

April 30, 2020

New Udemy Report Shows Surge in Global Online Education in Response to COVID-19
Businesswire
https://www.businesswire.com/news/home/20200430005243/en/

Categories with the highest surge in new courses include Office Productivity (159% increase), Health and Fitness (84%), IT & Software (77%), and Personal Development (61%).

32

April 30, 2020

New Udemy Report Shows Surge in Global Online Education in Response to COVID-19
There has been an immense surge in enrollments in courses related to Telecommuting (21,598% increase) and Virtual Teams (1,523%), as well as Decision Making (277%), Self Discipline (237%), and Stress Management (235%).

Highest Enrollment Surges by Country Since Shelter in Place

Udemy

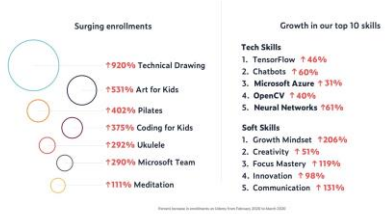
33

33

April 30, 2020

New Udemy Report Shows Surge in Global Online Education in Response to COVID-19
People around the world are learning how to work from home and stay productive as the Future of Work arrives
Businesswire
https://www.businesswire.com/news/home/20200430005243/en/

Udemy Topic Enrollment Trends



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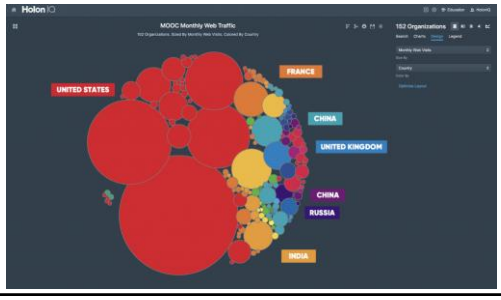
June 26, 2020

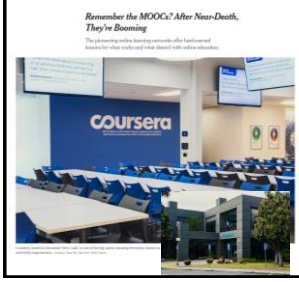
HolonIQ
2.5x Global MOOC Web Traffic
MOOC's digital reach just grew 2.5x, up 300 million monthly visits globally, as isolated learners seek immediate solutions to their knowledge and skills needs amid a rapidly-evolving work landscape.
https://www.holoniq.com/notes/global-mooc-web-traffic-benchmarks/
Is there another form of learning where so many people have deliberately chosen to come to learn in one month in the history of the world?



35

May 26, 2020

Remember the MOOCs? After Near-Death, They're Booming
Steven Lohr, The New York Times
https://www.nytimes.com/2020/05/26/technology/moocs-online-learning.html

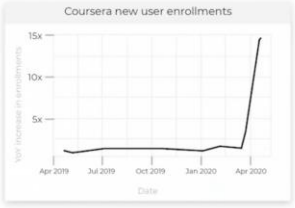


Coursera added 10 million new users from mid-March to mid-May. Credit...Jessica Chou for The New York Times

36

MOOCs Stats

Increased demand to learn on Coursera



Since mid-March...

35 million total enrollments

16 million new registered learners

coursera

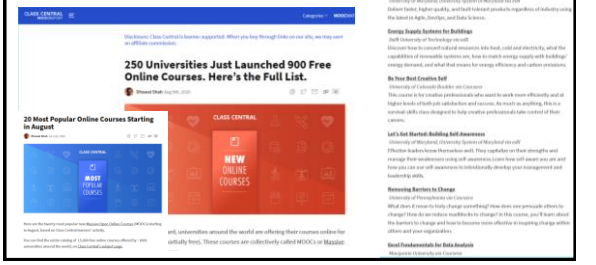
37

37

August 9, 2020

250 Universities Just Launched 900 Free Online Courses. Here's the Full List.
Dhawal Shah, Class Central
https://www.classcentral.com/report/most-cited-mooc-research/

In the past nine years or so, over 900 universities have created around 15,000 MOOCs. I've been keeping track of these online courses the entire time here at Class Central, a search engine and reviews site for online education which has been used by 40 million learners around the world.



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MOOCs Stats

August 16, 2020

New Registered Learners
Dhawal Shah, Class Central
https://www.classcentral.com/report/mooc-stats-pandemic/

New Registered Users	2019	2020	Total
coursera	8M	20M	65M
edX	5M	8M	32M
Future Learn	1.3M	4M	13.5M
CLASS CENTRAL	350k	700k	2.2M

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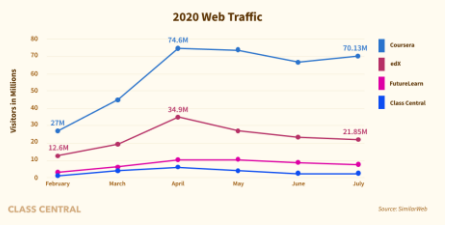
MOOCs Stats

August 16, 2020

By the Numbers: MOOCs During the Pandemic
Dhawal Shah, Class Central
https://www.classcentral.com/report/mooc-stats-pandemic/



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MOOCs Stats

August 16, 2020

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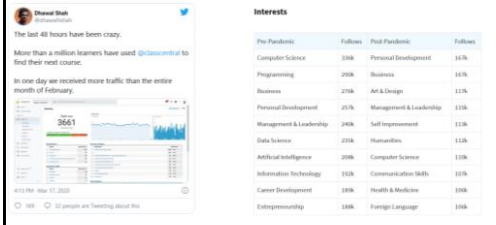

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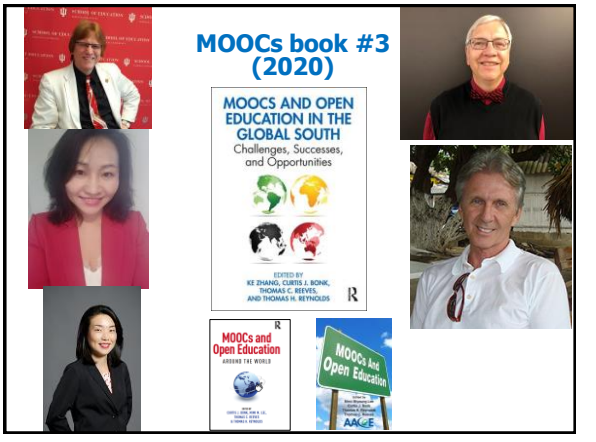

42

November 9, 2019

Chapter 9: Nepali High School Students in MOOCs

Baman Kumar Ghimire

Teacher, Motherland Secondary School, Pokhara

43

November 26, 2019

Chapter 14. Capacity Building of Teachers: A Case Study of the Technology-Enabled Learning (TEL) Massive Open Online Courses

Sanjaya Mishra, Martha Cleveland-Innes, and Nathaniel Ostashewski

Week 1: Models of Technology-Enabled Learning
1.1: Community of Inquiry
1.2: Two Models: TPACK and TIM
1.3: On Teaching Presence

Week 2: Technology in Education
2.1: Integrating Technology in Education
2.2: Benefits of Technology in Education

Week 3: Open Educational Resources
3.1: Understanding OER
3.2: Types of Open Licenses
3.3: Finding Open Educational Resources

Week 4: Application of Technology
4.1: Practical Application of Technology
4.2: Getting Help with Technology

Week 5: Creating Technology-Enabled Learning
5.1: Creating Technology-Enabled Learning

FIGURE 14.2 Weekly course content of TEL MOOC.

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August 10 to September 13, 2020

Learning to Learn Online

Contact North/Nord and Athabasca University

Video Intro: 3:02

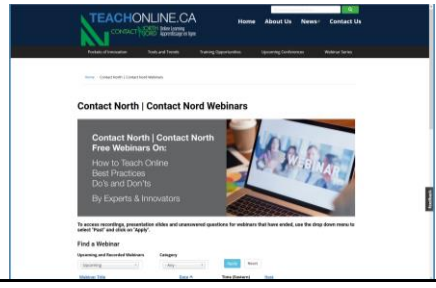
http://contactnorth.ltlo.ca/

45

June 3, 2020

Contact North | Contact Nord Webinars

https://teachonline.ca/webinars



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November 26, 2019

Chapter 16: Courses for a Cause:
MOOC Contributions to a "Better Place for All"

(Marianne Krasny et al., 2020)

47

July 25, 2020

Silver Lining for Learning

https://silverliningforlearning.org/

https://www.youtube.com/channel/UC9XEsh89qrIlpmVVpQt-_aA/live

48

November 26, 2019

Chapter 25. Responsive Innovations in MOOCs for Development: A Case Study of AgMOOCs in India 300

Balaji Venkataraman and Tadinada V. Prabhakar

(agMOOCs in India)

http://www.agmoocs.in/

49

June 8, 2019

The second half of humanity is joining the internet: They will change it, and it will change them

The Economist

https://www.economist.com/leaders/2019/06/08/the-second-half-of-humanity-is-joining-the-internet

50

July 30, 2020

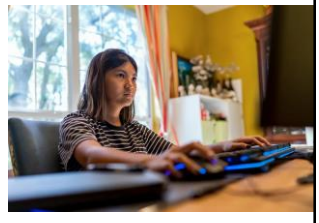
Disruptive Ecology:
The New Normal of Education in Post COVID-19

51

November 20, 2020

Many Texas families say remote learning isn't working and they want it fixed

https://www.texastribune.org/2020/11/20/texas-schools-remote-learning/



52

Study #1 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.

53

Research Background

- **MOOCs can be beneficial to both learners and instructors** (Hew & Cheung, 2014).
- **Instructional design is critical for online learning** (Johnson & Aragon, 2003; Phipps & Merisotis, 1999).
- **Instructors are one of the five main components of MOOCs** (Kop, 2011).
- **Few studies have examined instructional design from MOOC instructors' perspectives** (Margaryan et al., 2015; Watson et al., 2016).

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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.

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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?

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Research Design

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

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Data Collection

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

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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

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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

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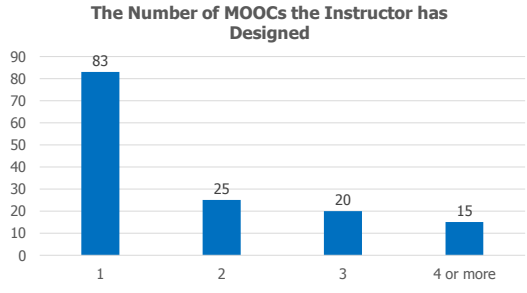
Research Context



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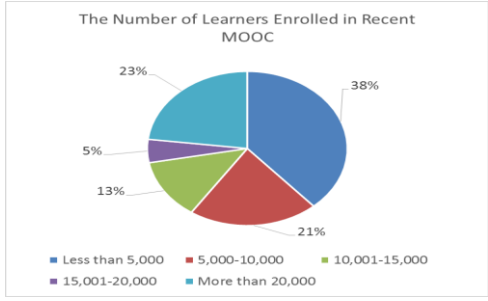
Research Context



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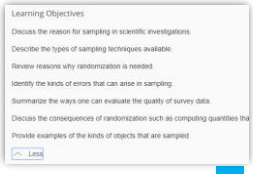
Findings RQ1

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:



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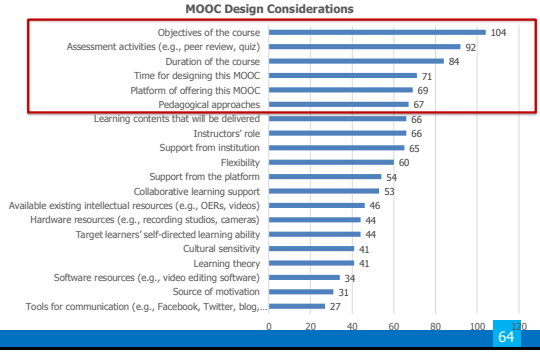
RQ1 Survey Results



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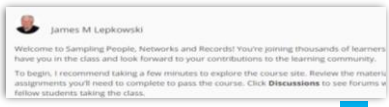
RQ1 Interview Results

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."



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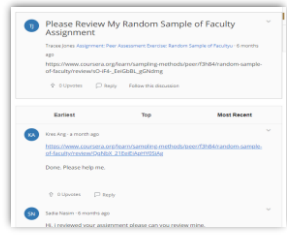
Findings RQ2

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.)

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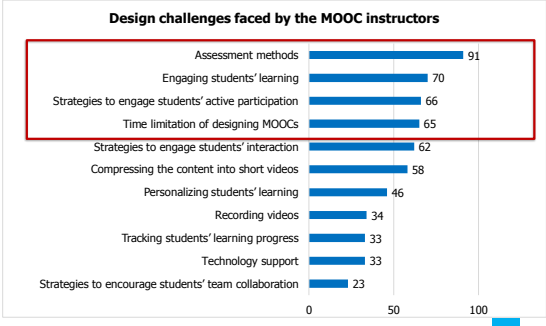
RQ2 Survey Results



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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.**"

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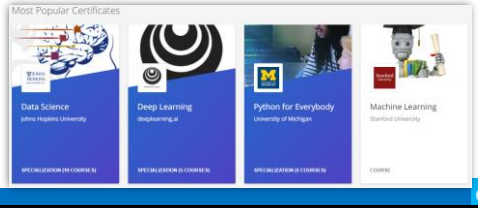
Findings RQ3

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



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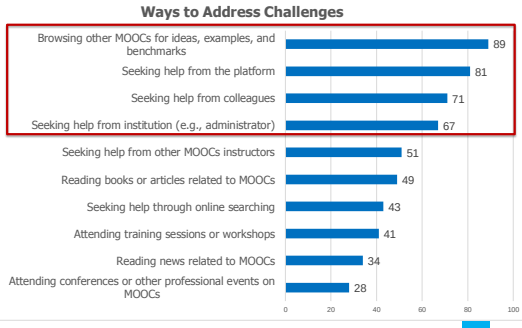
RQ3 Survey Results



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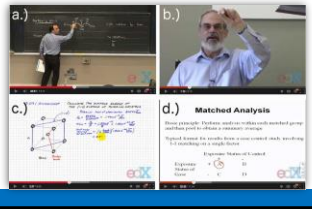
RQ3 Interview Results

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."



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Discussion

- The **time limitation** of creating MOOCs was the primary logistical consideration (Hew & Chung, 2014; Watson et al., 2016) and challenges.
- The **pedagogical factors** were the primary design considerations (Watson et al., 2016) and challenges in MOOC design.
- The **assessment and engagement strategies** are the main considerations as well as challenges.

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Study #2
MOOCs Instructional Design to Facilitate Participants' Self-directed Learning

Zhu, M., & Bonk, C. J. (2019). Designing MOOCs to facilitate participant self-monitoring for self-directed learning. *Online Learning*, *23*(4), 106-134

Zhu, M., & Bonk, C. J. (2019). Designing MOOCs to facilitate participant self-directed learning: An analysis of instructor perspectives and practices. *International Journal of Self-Directed Learning*, *16*(2), 39-60.

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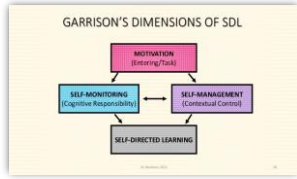
Key Terms

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

(1) self-management

(2) self-monitoring

(3) motivation



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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).

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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.**

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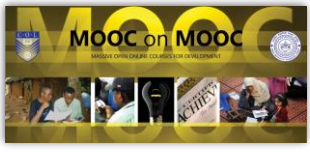
Research Purpose

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



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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?

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Research Design

Explanatory sequential mixed methods design

(Creswell & Clark, 2017)

Pilot interview with 4 instructors → Pilot survey with 48 instructors → Survey 198 instructors → Review 22 MOOCs of interviewees → Interview 22 instructors → Review 22 MOOCs of interviewees

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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

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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

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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

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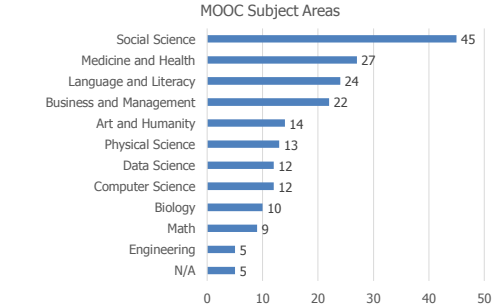
Research Context



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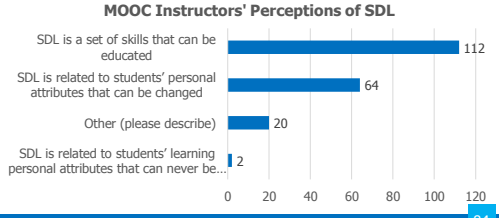
RQ1 Perceptions of SDL

- 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.



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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."

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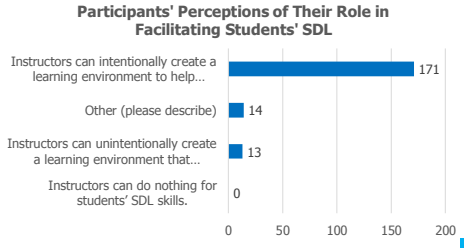
RQ2 Perceptions of Facilitation of SDL

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



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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."

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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.

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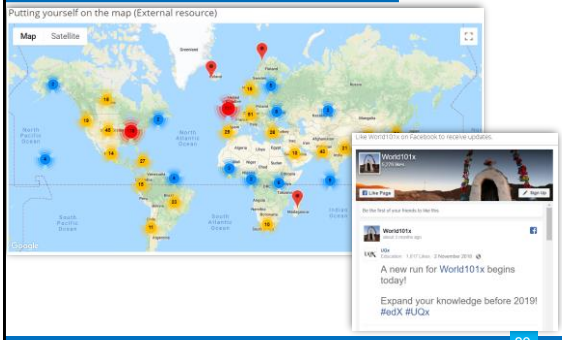
RQ3 Learning Community



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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.

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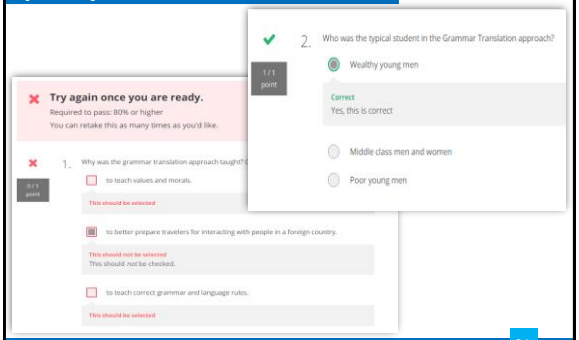
RQ3 Self-assessment (i.e., embedded quizzes)



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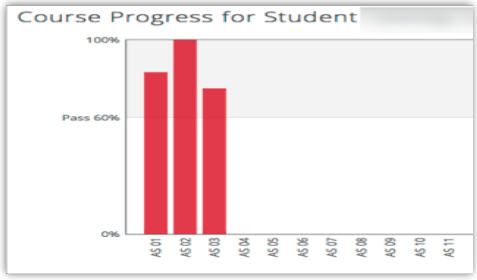
RQ3 Progress Indicators



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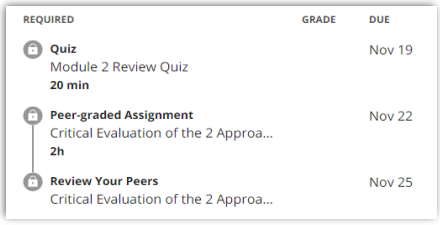
RQ3 External Feedback: Peer-assessment (e.g., 3 peers assigned to review each assignment)



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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.

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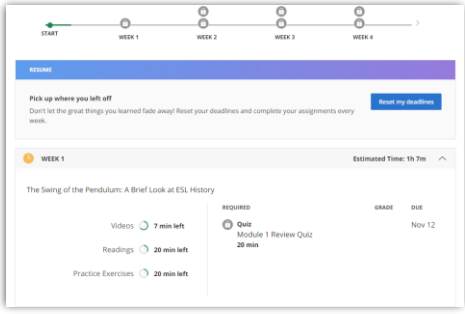
RQ3 Time Management (e.g., time advisories and estimates)



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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**

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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 a vital role in facilitating SDL skills.
- **Tech expectations:** Adaptive learning systems, artificial intelligent systems, and learning analytics were expected to have to support SDL.

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Implications

- **For MOOC instructors and Instructional Designers**
  - Build learning community
  - Inspire intrinsic motivation
  - Personalize learning
- **For MOOC providers**
  - Create a personalized learning environment
  - Provide learning analytics to support learning and teaching

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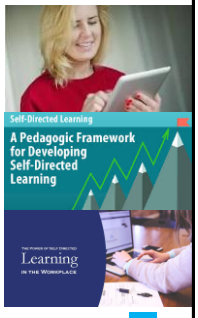
Top 10 Strategies to Facilitate SDL in MOOCs

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.**



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Top 10 Strategies to Facilitate SDL in MOOCs

1. **Helping students set their own learning goals.**

Example:

"I have asked, at the first page of course, why they're taking the course. So that is the goal. A lot of people say, 'I'm a teacher. And I want to do the stuff with my kids. Or I want to update my knowledge. Or I'm retired and I want to learn this.'"

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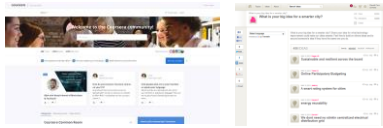
Top 10 Strategies to Facilitate SDL in MOOCs

2. **Building learning community.**

Joshua from the UK mentioned: We use a lot of resources that already exist. And then we use the MOOC discussion board as a place to where they, kind of, point out and say, "I've seen this. And this is useful. Well, I use this, and this is good. I created this."



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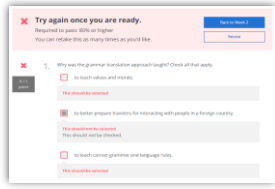
Top 10 Strategies to Facilitate SDL in MOOCs

3. **Offering immediate feedback.**

4. **Embedding quizzes for self-assessment.**



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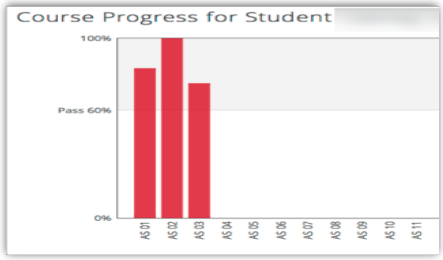
Top 10 Strategies to Facilitate SDL in MOOCs

5. Providing progress indicators



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Top 10 Strategies to Facilitate SDL in MOOCs

6. Providing reflection questions.

We introduced kind of moments that video was stopped and there was a question. The student had to think of it a bit. Sometimes it was kind of a rhetorical question. There wasn't even no answer required. But it was just a pause for a while to let the student reflect. (Jacob)

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Top 10 Strategies to Facilitate SDL in MOOCs

7. Designing short learning units.

- **Video:** Introduction to Regression 6 min
- **Video:** Introduction: Basic Least Squares 6 min

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Top 10 Strategies to Facilitate SDL in MOOCs

8. Providing flexible timelines.

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Top 10 Strategies to Facilitate SDL in MOOCs

9. Highlighting estimated time frames.

- **Video:** 1.2 - Popular Music and Classical Music Compared 6 min
- **Quiz:** Popular Music and Classical Music Compared 2 questions Overdue Jun 27, 2:59 AM EDT
- **Video:** 1.3 - Music and Emotions 4 min
- **Video:** 1.4 - How Do We Hear Music? Sound Waves and the Ear 6 min
- **Quiz:** How Do We Hear Music? Sound Waves and the Ear 5 questions Overdue Jun 27, 2:59 AM EDT

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Top 10 Strategies to Facilitate SDL in MOOCs

10. Making available optional learning materials.

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10 More Strategies to Facilitate SDL in MOOCs

MOOC: Infection Prevention and Control (IPC) for Novel Corona virus (COVID-19) from OpenWHO (English Version)

11. Structured learning environment:

- Clearly stated the learning objectives.
- Course details stated the expected time to complete the course.
- The syllabus, number of course modules, and title of each module.

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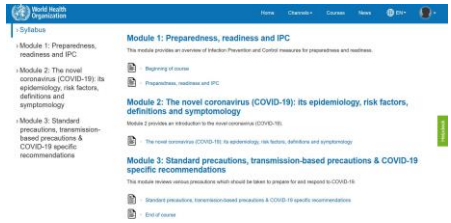
10 More Strategies to Facilitate SDL in MOOCs

11. Structure continued…

Graphic or visual organizations for essential material. The text on screen matched the narration enforcing the redundancy principle.



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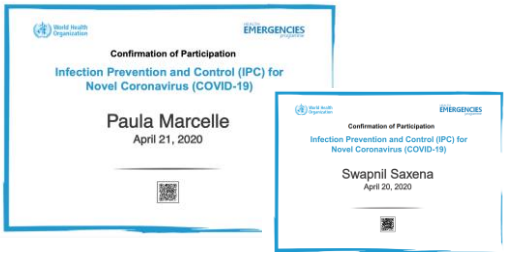
10 More Strategies to Facilitate SDL in MOOCs

12. On completion of modules participants get a certificate.



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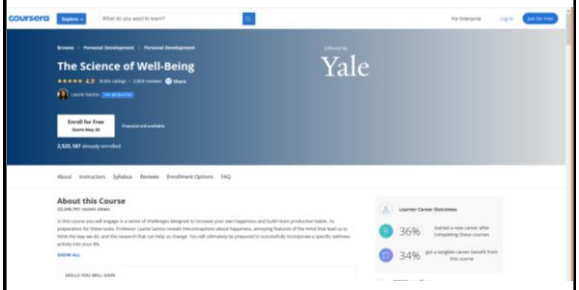
One Example: Laurie Santos
The Science of Well-Being, Yale Univ.



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10 More Strategies to Facilitate SDL in MOOCs

13. Week overview. The course is divided into week-long segments, and each week is chunked into manageable parts. Very importantly for the participant to be able to anticipate what can get done in one sitting, the length of each video is included.

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10 More Strategies to Facilitate SDL in MOOCs

14. Lecture recorded and captions added.

Caption added to video

Video of student audience

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14. Continued…Lecture video transcripts.

The full transcript of each video recording is shown below the video player, with the current point in video highlighted as it plays:

taking in these reference points that are kind of crazy? What's my reference point for what my salary should be as a Yale professor? I could look to Paul Bloom, who's my colleague, who also teaches Coursera courses. He's in the psychology department. He might be a good reference point. That might be okay for me to compare myself to, but it would be bad if I was comparing my salary against Beyoncé's because that's just crazy. I'm not going to be Beyoncé. I'm not going to make her money. I'm not going to be as beautiful as her. So we would assume that our minds, if they're going to use reference points, use reasonable ones. But it turns out that our minds don't do that. They seem to soak in anything around us as a reference point. And given that I'm watching Beyoncé videos, this could be messing me up. And so this is what O'Guinn and Schrum looked at. They wanted to see whether people who were exposed to crazier and crazier reference points, more unrealistic standards of salaries and incomes, actually got messed up. And here was their hypothesis. People who watched lots of TV are faced with people with crazy salaries, crazy incomes, crazy beauty levels, crazy stuff. Is that messing people up? In other words, just watching a lot of TV where you see things like the Real Housewives and Empire and all this stuff, does that

Figure 7: Video Transcript Example

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15. Quick check tasks.

The video lectures contain one or two "quick check" pop-up questions to assess understanding (and attention):

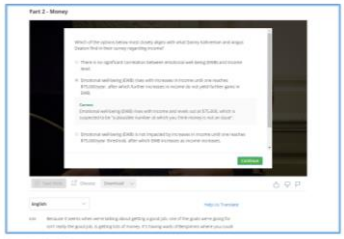

Figure 8: Quick Check Example

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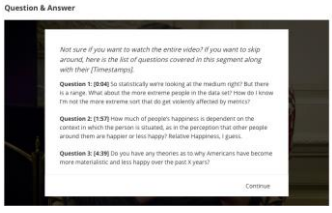
16. Providing students with self-selection options.

There is the choice to watch all of the videos, read all of the materials, and submit all of the assignments, or there are choices all along the way to "cut corners" and take in only what the participant wants to.



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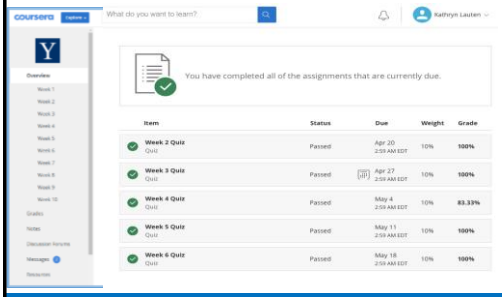
17. Visuals showing tasks completed.



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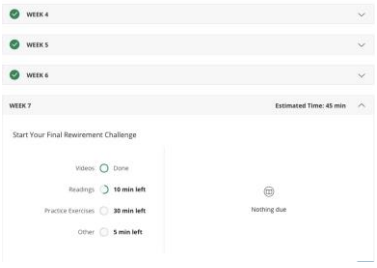
18. Visuals showing work progress.



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19. Rewirements (assignments) for putting the material to practice (e.g, Random Acts of Kindness, Make A Social Connection, Let's Get Physical, Meditate!, Sleep!, Gratitude Letter/Visit, Savoring, etc.)

Daily Gratitude Journal

Gratitude is a positive emotional state in which one recognizes and appreciates what one has received in life. Research shows that taking time to experience gratitude can make you happier and even healthier. **For the next seven days, you will take 5-10 minutes each night to write down five things for which you are grateful.** They can be little things or big things. But you really have to focus on them and actually write them down (Again, try to develop a tracking method works for you and utilize a note on your phone, a daily calendar, a special notebook, etc). You can just write a word or short phrase, but as you write these things down, take a moment to be mindful of the things you're writing about (e.g., imagine the person or thing you're writing about, etc.). This exercise should take at least five minutes. Do this each night for the whole week.

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10 More Strategies to Facilitate SDL in MOOCs

20. Offer community support and help.

Help Articles

Community Mentors

Mentors are learners who generously give their time to help others work through courses they have already completed. Not all courses have mentors.

Mentors don't work for Coursera or for the institution offering the course. They can't edit course materials, and they can't change your grades.

Community Mentor responsibilities:

- Answer learner questions in the discussion forums
- Post new threads to spark discussion
- Provide feedback to Coursera staff

Become a Community Mentor

When a course needs Mentors, Coursera will send email invitations to learners who we think would be good candidates.

To qualify as a good candidate you need to:

- Pass the course with a good grade
- Be active in the course by helping other learners in the forums

If you get an invitation to become a Mentor, you will be invited to take a short training course. Once you pass the training course, you will be enrolled as a Mentor in the course we invited you for.

Support for Mentors

If you're selected to be a Mentor, you'll get training materials and direct support from Coursera to help you.

If you're already a Mentor and you're having a problem or you have questions, please check our Mentor training materials.

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10 More Strategies to Facilitate SDL in MOOCs

Bonus Item: Peer-graded assignments.

Opportunities for student-student interaction and social learning are provided in discussion forums and in the final assignment, a peer-graded reflection:

Peer-graded Assignment: Reflect on the Rewirement Challenge

Instructions My submission Discussions

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Do we have time for another study? No!

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MOOC Study #3

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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], Naja 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

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Additional Research

1. An, Y.-J., Zhu, M., Bonk, C. J., & Lin, L. (2020, June 6-published online first). Exploring instructors' perspectives, practices, and perceived support needs and barriers related to the gamification of MOOCs. *Journal of Computing in Higher Education*. Available (view only: https://rdcu.be/b4G6r); https://doi.org/10.1007/s12528-020-09256-w
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3. Zhu, M., & Bonk, C. J. (2020). Technology tools and instructional strategies for designing and delivering MOOCs to facilitate self-monitoring of learners. *Journal of Learning for Development, 7*(1), 31-45. Available: https://jl4d.org/index.php/ejl4d/article/view/380/447
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6. Zhu, M., Bonk, C. J., & Sari, A. (2019). MOOC instructor motivations, innovations, and designs: Surveys, interviews, and course reviews. *Canadian Journal of Learning and Technology, 45*(1), 1-22. Available: https://www.cjlt.ca/index.php/cjlt/article/view/27795

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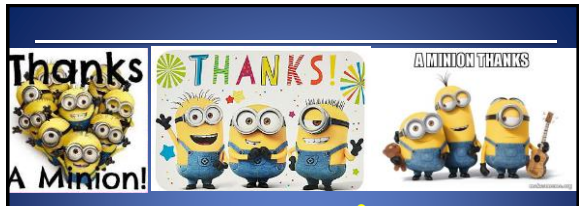

Any Questions?

Curtis Bonk: cjbonk@Indiana.edu

Meina Zhu: meinazhu@wayne.edu

Slides and Proceedings Paper at TrainingShare.com:
http://www.trainingshare.com (go to "Archived Talks")

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