A Mixed Method Study of Instructor Design and Delivery of MOOCs for Participant Self-directed Learning

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Rethinking the MOOC Phenomenon...

MOOC

September 12, 2018
Coursera's CEO on the Evolving Meaning of 'MOOC'

Dian Schaffhauser, Campus Technology

September 2016
MOOCs, Graduate Skills Gaps, and Employability: A Qualitative Systematic Review of the Literature


"MOOCs have had a significant role in helping the traditional and the "new traditional" graduates to quickly up-skill before employment or to quickly "come on board" in their new job. MOOCs have provided flexible, on-demand, collaborative, and just-in-time learning opportunities through which to obtain relevant and applicable skills." (p. 78)
May 21, 2018
The Second Wave of MOOC Hype Is Here, and It’s Online Degrees
Dhawal Shah, Class Central

Email inbox: June 10, 2018
edX
https://www.edx.org/course

Email inbox: June 10, 2018
edX
https://www.edx.org/course

Email inbox: June 11, 2018
Coursera
https://www.coursera.org/

Email inbox: June 11, 2018
Coursera
https://www.coursera.org/
June 14, 2018
Free MOOCs Face the Music
Lindsay McKenzie, Inside Higher Ed
https://www.insidehighered.com/news/2018/06/14/edx-introduces-support-fee-free-online-courses

September 26, 2018
The Future of Professional Credentialing ... in an Engagement Announcement
Joshua Kim, Inside Higher Ed

October 3, 2018
The EV1 and the MOOC
Joshua Kim, Inside Higher Ed

October 3, 2018
Teaching the World
Sarah Fister Gale, CLO

"MOOCs and Open Education Around the World"
Edited by Curt Bonk, Mimi Lee, Tom Reeves, and Tom Reynolds
(Published 2015 in English, 2016 in Korean, and 2018 in Chinese)

Book Endorsement:
"I am truly astonished by the creative energy that the MOOC has unleashed in recent years. This book is a wonderful collection of some of the very best thinking in this very young field."
Sebastian Thrun, CEO and co-founder of Udacity, Stanford Professor, and developer of Google Glass and self-driving cars, and instructor to 160,000+ students in a MOOC on AI


MOOC Trends and Recent Data
**December 25, 2016**
A Review of MOOCs Stats and Trends in 2016, Dhawal Shah, Class Central

**January 22, 2018**
A Review of MOOCs Stats and Trends in 2017, Dhawal Shah, Class Central

**January 22, 2018**
A Review of MOOCs Stats and Trends in 2017, Dhawal Shah, Class Central

**August 19, 2018**
Top 5 MOOC Providers by Number of Registered Users, 2018
Almanac 2018, Chronicle of Higher Education
https://www.chronicle.com/article/Top-5-MOOC-Providers-by-Number/244090?cid=cp216

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**Subject areas (January 22, 2018)**

![Course Distribution by Subject](http://www.class-central.com/report/mooc-stats-and-trends-2017/)

**Rank** | **Provider** | **Registered users**
--- | --- | ---
1. | Coursera (U.S.) | 30.0 million
2. | edX (U.S.) | 14.0 million
3. | Xuelang (China) | 9.1 million
4. | Udacity (U.S.) | 9.0 million
5. | FutureLearn (United Kingdom) | 7.3 million

Showing 1 to 5 of 5 entries.
August 19, 2018
Top 5 MOOC Providers by Number of Registered Users, 2018
Almanac 2018, Chronicle of Higher Education
https://www.chronicle.com/article/Top-5-MOOC-Providers-by-Number/244090?cid=cp216

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/

MOOC Research Gaps and Summaries

2015
Instructional quality of Massive Open Online Courses (MOOCs).
Margaryan, Bianco, & Littlejohn, Computers & Education, 80, 77-83.

“As MOOCs proliferate, drawing in increasing numbers of faculty and learners worldwide, the issue of their instructional quality becomes increasingly pressing.” (p. 82)

August 2017
A Contemporary Review of Research Methods Adopted to Understand Students’ and Instructors’ Use of Massive Open Online Courses (MOOCs)
Ruqi Deng and Pierre Benckendorff,
International Journal of Information and Education Technology, 7(8), 601-607.

“There are a number of research avenues which could be explored based upon the findings of this study. First, additional research strategies should be considered to understand students’ and instructors’ experience in using MOOCs.” (p. 605)
"Second, triangulation of a wider range of research methods and data source should be undertaken. Beyond triangulation of surveys and interviews or log files, MOOC scholars are encouraged to combine other research methods to triangulate findings, such as diary studies and focus groups." (p. 605)
Implications and Final Comments

"Given the number of participants that MOOCs attract, this study has the potential to provide marked insight into an emerging phenomenon that has immense global, local, and societal ramifications. With such wide impact potential, our research team continues to expand the database of MOOC instructors and courses that we have collected. The goal as we move forward is to determine more about the psychological, instructional, and technological issues, challenges, and opportunities of MOOCs and other emerging types of open online courses and educational experiences."

Self-Directed Learning Framework...

Research Background

- Self-directed learning (SDL) is considered essential to adult education (Garrison, 1997; Merriam, 2001).
- In addition, researchers consider SDL as an essential element in MOOC environments (Bonk et al., 2015; Kop & Fournier, 2010; Terras & Ramsay, 2015).
- Learners expect the instructor to act as a facilitator to provide support for the development of the appropriate SDL skills (Kell & Deursen, 2002; Lunyk-Child et al., 2001).
Theory Framework

Garrison’s (1997) three dimensions model is one of the popular models, which categorized SDL into three overlapping dimensions:

1. self-management (task control);
2. self-monitoring (cognitive responsibility);
3. motivating (entering and task).

Research Focus and Purpose

Research Background

However, there is a lack of studies that examine instructional design challenges in creating a MOOC or the issues that emerge during the actual delivery of that MOOC from the perspective of MOOC instructors (Margaryan, Bianco, & Littlejohn, 2015; Ross, Sinclair, Knox, Bayne, & Macleod, 2014; Watson et al., 2016); especially lacking is research on instructor perceptions related to the facilitation of SDL and how they design and deliver MOOCs to facilitate students’ SDL.

Research Purpose

This study examined instructors’ perceptions of SDL and the design and deliver of MOOCs to facilitate learners’ SDL. The purpose is to find out MOOC instructors’ perceptions of SDL and how MOOC instructors put considerations related to facilitating SDL skills into MOOC designs and delivery.

Research Questions

1. How do MOOC instructors perceive participants’ SDL skills?
2. How do MOOC instructors perceive their facilitation of participants’ SDL skills?
3. How do instructors design and deliver MOOCs to facilitate participant SDL skills?
Sequential mixed methods design (Creswell & Clark, 2007)

Data Collection:
(1) surveys, (2) interviews, and (3) course reviews.

Participants:
- 48 survey participants (10% response rate)
- 4 interviewees

<table>
<thead>
<tr>
<th>No.</th>
<th>Countries</th>
<th>Subject areas</th>
<th>Platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The UK</td>
<td>Computer Science</td>
<td>Kadenze</td>
</tr>
<tr>
<td>2.</td>
<td>The UK</td>
<td>Literacy</td>
<td>FutureLearn</td>
</tr>
<tr>
<td>3.</td>
<td>The U.S.</td>
<td>Finance</td>
<td>Coursera</td>
</tr>
<tr>
<td>4.</td>
<td>Canada</td>
<td>Geography</td>
<td>Coursera</td>
</tr>
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RQs | Data Sources | Data analysis
--- | ------------ | ---------------
RQ1 | Survey, Interview, MOOC review | Descriptive statistics, Content analysis (Elo & Kyngäs, 2008)
RQ2 | Survey, Interview, MOOC review | Descriptive statistics, Content analysis
RQ3 | Interview, MOOC review | Content analysis

Study Results

Final Result
One instructor from the UK shared one example of students who have high SDL.

I guess to me it gets really exciting to look at how a number of those students have done projects that really go beyond the simple examples that I showed in lecture, and beyond the simple things up they were asked to do in the assignments. You know they’ve taken them into the real world… One student who, during the presidential election made a presidential debates voiced motion classifier, that you could run. And it would tell you whether candidates were being angry or not. It was just like really fun stuff that people did.

Another instructor from the UK mentioned the his students with high SDL skills:

We had several students who said this is the 10th or 15th MOOC I have taken. Within a body of students who a very much learning junkies, who are enjoy doing all kinds of different MOOCs. One of them told us I just like all kinds of different things. But you have to be quite disciplined.
RQ1: MOOC instructors’ perceptions of self-directed learning

One instructor from Canada mentioned that he has elder students with high SDL skills:

We have a very number of sort of sixty plus, retired people taking the course. They’re pretty motivated.

RQ2: MOOC instructors’ perceptions of their role in facilitating SDL skills

One instructor from the UK stated:

I mean instructors can absolutely help, and, furthermore, I think the architecture of the MOOC itself that really helped. I think is common practice now, for instance, is to chop up video isn’t a ten-minute chunk so that it’s really easy for students to watch a little bit at a time, to watch it on the go, also you know [you will] be able to return to a subject that they maybe didn’t understand or the first time... Similarly, having things like suggested deadlines where it’s something that’s used as a piece of a way to motivate students to do the next thing, even though there’s not any real consequences if they’re not doing it.

RQ2: MOOC instructors’ perceptions of their role in facilitating SDL skills

Another instructor from the UK stated that his responsibility with SDL is limited, but he can help in certain ways:

I think my responsibility with SDL was quite limited. My main responsibility is to provide good material... We also fell a mission of showcase that we are in the cutting-edge. We were very modern. We wanted students to realize that and engage with that. Those are the kind of general experiences of responsibility.

RQ2: MOOC instructors’ perceptions of their role in facilitating SDL skills

On the other side, the instructor from the Canada rely more on students motivation in SDL:

I tried. But I also think it’s probably their [students] responsibility to be motivated. So I just make myself available and encourage you know people to complete the course if they get stuck on something to ask questions or to move on. Yeah, it’s meant to be interesting and fun and you know. There’s no life or death decision that hinges on whether you complete this or not. It’s there you know up to you. If you’re not interested in it anymore, you might stop right.

RQ3: How do instructors design and deliver MOOCs to facilitate participant SDL skills?

The top five SDL skills that their MOOCs facilitated included:

1. motivates students to learn new information (M=4.38);
2. helps the student critically evaluate new ideas (M=4.06);
3. helps the student be in control of his/her learning (M=4.06);
4. helps the student to be able to find out information related to learning content for him/herself (M=3.94); and
5. helps the student embrace a learning challenge (M=3.92).

However, it seems that their MOOC designs have limited influence on students’ management skills (e.g., managing time and learning resources) (M=3.38) and setting strict time frames for learning (M=3.25).
**MOOC Instructor Perceptions of the Importance of Different SDL Skills for MOOC Participants**

<table>
<thead>
<tr>
<th>SDL skills</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q17. motivates students to learn new information</td>
<td>4.38</td>
</tr>
<tr>
<td>Q20. helps the student critically evaluate new ideas</td>
<td>4.06</td>
</tr>
<tr>
<td>Q24. helps the student be in control of his/her learning</td>
<td>4.06</td>
</tr>
<tr>
<td>Q29. helps the student be able to find out information related to learning content for himself</td>
<td>3.94</td>
</tr>
<tr>
<td>Q16. helps the student embrace a learning challenge</td>
<td>3.90</td>
</tr>
<tr>
<td>Q18. helps the student develop a need to learn</td>
<td>3.90</td>
</tr>
<tr>
<td>Q27. helps the student seek to enhance own performance</td>
<td>3.88</td>
</tr>
<tr>
<td>Q25. helps the student be able to find out information related to learning content for himself</td>
<td>3.88</td>
</tr>
<tr>
<td>Q26. helps the student prioritize his/her study</td>
<td>3.88</td>
</tr>
<tr>
<td>Q22. helps the student be willing to seek different ways to solve difficult problems</td>
<td>3.69</td>
</tr>
<tr>
<td>Q11. helps the student to be self-directed</td>
<td>3.69</td>
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<tr>
<td>Q12. helps the student to be organized</td>
<td>3.48</td>
</tr>
<tr>
<td>Q15. helps the student to seek out information related to learning content for himself</td>
<td>3.48</td>
</tr>
<tr>
<td>Q13. helps the student to be self-disciplined</td>
<td>3.48</td>
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<tr>
<td>Q14. helps the student to be organized to search out information</td>
<td>3.48</td>
</tr>
<tr>
<td>Q19. helps the student to have good management skills</td>
<td>3.48</td>
</tr>
<tr>
<td>Q21. helps the student to be able to focus on a problem</td>
<td>3.48</td>
</tr>
<tr>
<td>Q28. helps the student to seek out information related to learning content for himself</td>
<td>3.48</td>
</tr>
<tr>
<td>Q23. helps the student to seek out information related to learning content for himself</td>
<td>3.48</td>
</tr>
<tr>
<td>Q30. helps the student have high beliefs in his/her abilities</td>
<td>3.48</td>
</tr>
<tr>
<td>Q17. helps the student be confident in his/her ability to search out information</td>
<td>3.48</td>
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<td>Q26. helps the student to be self-disciplined</td>
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**RQ3: How do instructors design and deliver MOOCs to facilitate participant SDL skills?**

An interview with one instructor from Canada revealed a more behaviorally-based tactic that some MOOC instructors use to facilitate students' SDL skills.

He argued that "I think our quizzes at the end are helpful. And I think...we have reading lists and I update the reading lists for the course on a regular basis." He added that they "direct people to that" and send reminders through the forum and emails.

**RQ3: How do instructors design and deliver MOOCs to facilitate participant SDL skills?**

One instructor from the UK mentioned she encouraged student reflection:

One of the things that I tried to do was to give people opportunities for different types of engagement with explicit opportunities for reflection built-in. So, for instance. You know for the second or third assignment, part one is you're asked to go through a set of exercises on your own following from examples in lecture. At the end you're asked some questions about which parts of this were hard, what challenges did you encounter, how would you approach solving those challenges, how successful were you.

**RQ3: How do instructors design and deliver MOOCs to facilitate participant SDL skills?**

One instructor from the US mentioned she tried to combine the content with student personal life:

One of the things that we really tried to put in was opportunities for people to take what they were learning and to reflect back how it impacted their own lives. So, we asked people about activities the case studies and things always go back to you...then we say, in your own situation what would you do? So, in that sense I think that helps people to think about not only what's the right answer to a quiz question, perhaps but also how does what I'm learning affect me and how does that what I want to still learn more about. We made this really personal and applicable to them.

**RQ3: How do instructors design and deliver MOOCs to facilitate participant SDL skills?**

One instructor from the US mentioned she used interactive interview to engage students in MOOC:

And then we also have these little one-minute like on the street interviews to also try to help students engage with like what's happening. To me so it wasn't all talking heads because that just we didn't think that was going to be helpful for the self-directed learning at all. So, we did try to really think about how could we get people involved.
Discussion, Significance, and Conclusion

1. Instructors considered SDL as a skill that can be educated.
2. Most of them felt that MOOC instructors can intentionally create learning environments that foster the development of SDL skills as Kell and Deursen (2002) suggested.
3. In terms of their design and delivery practices to facilitate SDL via the MOOC, it seems that the impact is mainly on learner self-monitoring and motivation. However, the impact on students' self-management skills seems limited.

Significance & Conclusion

1. This study offers insights into MOOC design for SDL.
2. The findings might offer implications for instructors or instructional designers concerning the design of MOOCs for self-directed learners.
3. Additionally, the results also provide guidance for MOOC learners on the SDL strategies that they need to be successful.

Limitations and Future Directions

1. No student perspective or voice
2. Small sample (48 surveyed; 4 interviewed)
3. Self-report survey data
4. No direct observations

Future Research Might Explore...

1. Student perceive their SDL in MOOC.
2. Support needed from learners in terms of SDL in MOOCs.
3. MOOC instructional professional development and instructor teaching skill changes from designing MOOCs.
Any Questions?

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Slides and Paper: http://www.trainingshare.com