Empowering Faculty to Design Technology-Enriched Student Learning

Chapter · June 2023

DOI: 10.4324/9781003448334-5

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EMPOWERING FACULTY TO DESIGN TECHNOLOGY-ENRICHED STUDENT LEARNING

A Constructivist And Connectivist Hybrid Mooc

Roberta (Robin) Sullivan, Cherie van Putten, Emily Cole, Katrina Fulcher-Rood, Jessica Kruger, Gina Sipley, Rachel Rigolino, and Jennifer H. Herman

Learning technologies play a transformative role in teaching and learning in higher education. For almost every need, interest, or challenge that teachers and learners face, an educational technology tool seems to exist that is aimed at satisfying them, or at minimum, providing a way to bridge the distance. While many teaching faculty understand the potential of technology to enhance teaching and learning on a conceptual level, in practice, instructors are often hesitant to utilize these resources in substantive ways. For a variety of reasons (e.g., limited time, resources, accessibility), learning new or staying current with existing as well as emerging technology tools presents a significant challenge to instructors.

This chapter focuses on one powerful way that teaching faculty can overcome this challenge: Learning and exploring educational technologies through freely accessible massive open online courses (MOOCs), specifically hybrid MOOCs. This type of MOOC is dedicated to supporting those interested in learning about both popular and lesser-known educational tools and to provide a space to explore how to use them. This chapter highlights one such hybrid MOOC: Exploring Emerging Technologies for Lifelong Learning and Success (#EmTechMOOC), an open-access resource developed

by the State University of New York (SUNY). #EmTechMOOC, available at http://suny.edu/emtech, provides technology tools, information, and strategies to help users navigate an ever-changing and often volatile digital world. It is useful for people interested in enhancing teaching and learning in any setting or venue, but especially for those in higher education settings.

The goal of this chapter is for readers to become familiar with MOOCs as a viable and perhaps even more suitable alternative to traditional forms of professional learning about learning technologies. An additional goal is for readers to feel motivated to explore #EmTechMOOC in particular. It is one of the few hybrid MOOCs dedicated to exploring and learning about educational technologies.

This chapter is divided into three parts. Part One provides a brief review of the literature that informed our thinking about why learning technologies remain underutilized in higher education courses. This section also discusses online professional development as a means of addressing this problem, with specific emphasis on MOOCs. Part Two homes in on #EmTechMOOC as an example of a hybrid MOOC that well-serves this task. Included in this section is the purpose of #EmTechMOOC and an overview of its components and design that are geared to enhancing teaching and learning as well as helping users learn how to integrate technology tools into their personal and professional lives. Part Three offers six scenarios drawn from our experiences of putting into practice what we learned from #EmTechMOOC in higher education courses. The focus on how particular technology tools were effectively used in higher education settings is intended to spark or further develop readers' ideas about how they might use technology tools in ways that can transform content and pedagogy in their own settings.

Part One: Understanding Faculty Reluctance to Learning Technologies and the Importance of Faculty Development

The transformative role that learning technologies can play in higher education is well-established (Galanek et al., 2018; Garrison & Kanuka, 2004; Selwyn, 2007), as the previous chapters of this book make clear. Despite these conceptual understandings, the use of transformative technologies in everyday teaching practice remains far from ubiquitous (King & South, 2017; Selwyn, 2007). While this disconnect is caused by many factors (Selwyn, 2007), this chapter focuses on addressing one that is frequently cited in the literature: faculty reluctance to use educational technologies in substantive ways (Johnson, 2013; King & South, 2017; Lillejord et al., 2018; Ludgate, 2013; Sibley & Whitaker, 2015).

It is important to note that our focus is understanding the factors that drive faculty reluctance as it pertains to using technology to transform pedagogy and student learning. We are not examining the issue of faculty resistance to using technology in any fashion, a dwindling problem (Lederman, 2018). Our more honed interest is guided by the notion that the relevant consideration is no longer *if* faculty are using technology but rather *how* they are using it (Lambert et al., 2014; Lillejord et al., 2018).

In the two sections that follow, we first discuss the scholarship that has informed our thinking about this obstacle and, second, one way to address it drawn from our experience -online learning in the form of hybrid MOOCs.

Faculty Reluctance to Use Educational Technologies to Achieve Their Transformative Potential

Some faculty have been hesitant to utilize educational technologies in their courses in substantive ways for many reasons, some rooted in individually held ways of thinking about teaching and learning and some more institutionally driven. Both sets of rationales are discussed here. For example, some faculty believe that technology will diminish the quality of instruction (Johnson, 2013; Marzilli et al., 2014; Sibley & Whitaker, 2015). In a study of faculty perceptions of technology (Johnson, 2013), several participants interviewed felt that the use of technology was distracting—so-called bells and whistles—and thereby took away from student learning. Additionally, some faculty hold nostalgic feelings for the more traditional models of teaching and learning they experienced themselves as students (Lillejord et al., 2018). Goodson et al. (2006) describe nostalgia as "idealized memories of the past" (p. 44), which can act as blinders in the face of different ideas, innovations, and/or changing situations. A further example of an individually held way of thinking that can be inhibiting is a lack of confidence in one's own technological abilities (Orlando, 2014). This is sometimes the case for teachers who, unlike most of their students, might not be digital natives and may feel too intimidated to use technology tools in anything more than superficial ways.

Faculty who choose to integrate educational technologies into their courses often use a narrow range of tools to digitally replicate tasks that could be done in a traditional classroom setting. A Gallup poll of community college presidents (Jaschik & Lederman, 2016) found that the most frequently used educational technology tools were linked to the campus's learning management system (LMS). Eighty-nine percent of professors polled were most likely to use an LMS such as Canvas, Blackboard, or Moodle to share syllabus information and 71% used an LMS to share grades. Further, the survey

revealed that more sophisticated tools embedded in an LMS for supporting students who need extra help or capturing lessons were less likely to be used.

Institutional obstacles are a second set of reasons some faculty have not taken up technology advances for teaching and learning. One main roadblock is the limited opportunity for substantive professional development focused on technology in many higher education settings (Johnson, 2013; King & South, 2017; Marzilli et al., 2014). Another significant impediment is the lack of professional incentives for faculty to invest time in learning and experimenting with learning technologies (Johnson, 2013). At many research-focused institutions, faculty tenure and promotion continue to be largely based on research productivity. In these settings, faculty face a difficult choice in spending precious and limited time to learn about and explore emerging learning technologies with the depth necessary to then use the tools in substantive ways in their courses(Johnson, 2013; King & South, 2017; Ludgate, 2013).

In conclusion, for personal and/or institutional reasons, many teaching faculty have been reluctant to use educational technologies in ways that could substantially impact teaching and learning. These factors do not operate in isolation and often interact to further entrench one's preference for more traditional instructional methods. In the next section, we highlight literature that focuses on online learning and more specifically, hybrid MOOCs, as a way of addressing the problem of faculty reluctance to engage with learning technologies in substantive ways.

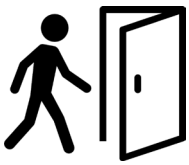
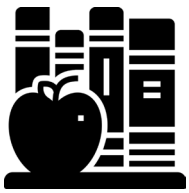
An Online Professional Learning Platform for Faculty: Hybrid MOOCs

A promising solution to the problem of faculty reluctance in embracing learning technologies for teaching and learning is the growing popularity of online, on-demand, asynchronous learning opportunities, where learning resources can be accessed anytime and anywhere. Online, on-demand professional development alleviates many obstacles (e.g., time, accessibility, learning pace) that faculty face when pursuing learning opportunities. This form of learning is also ideal for exploration and experimentation—the kind of engagement necessary for increasing confidence in making substantive changes to one's pedagogical practices (Sullivan et al., 2018).

Online learning opportunities can be accessed in many ways, such as videos, stand-alone websites, professional learning communities, and MOOCs. Of these resources, MOOCs are less well-known but growing in popularity. Here we briefly explain what MOOCs are, how they can be useful, and a type of MOOC well-suited for faculty interested in learning about educational technologies in explorative ways: hybrid MOOCs.

MOOCs are courses offered on the internet at no charge to large groups of people. MOOCs, a type of online learning platform launched in 2008, reflect "a continuation of the trend in innovation, experimentation, and the use of technology initiated by distance and online teaching, to offer learning opportunities in a massive way" (Siemens, 2013, p. 5). Figure 3.1 identifies a

Figure 3.1. Definition of a MOOC.

	Massive: the educational opportunity to extend to a wide audience regardless of their status or geographic location
	Open: the ability for anyone to have access to the learning opportunity, thus democratizing knowledge
	Online: offered over the internet which provides access anytime and from anywhere
	Course: structured content and learning activities

Note. MOOC is an acronym for massive open online course. Massive refers to the potential of extremely large enrollments; thousands of students register from all over the globe. Open can mean a few things, such as open enrollment to anyone who has Internet access regardless of their prior learning. It can also mean that, at least initially, courses were free to anyone interested in registering. Some hold that open should refer to the concept of open access, meaning that the content is not only free and available to all, but holds at most a Creative Commons licensing status so that the content can be downloaded, saved, and even adapted for one's own purposes (with credit to the developer). Online is the means of content delivery, and Course implies that there is some traditional convention of how a course operates, such as requiring enrollment, a start and end date, instructor-developed content delivered to the learner, and some means of assessment.

MOOC's defining characteristics which are loosely based on Decker's (2014) breakdown of the MOOC acronym.

MOOCs have evolved over their brief history into three main types; each carries important distinctions. The first iteration of MOOCs followed a format now referred to as *cMOOCs*. cMOOCs are based on a constructivist and connectivist model in which learners develop understanding through hands-on engagement and participation (Siemens, 2005). Constructionism is built on the educational theories of Piaget, Vygotsky, Dewey, and Montessori, among others, who affirmed that knowledge is cocreated among students and instructors. According to Siemens (2005), cocreator of cMOOCs, "Learning now occurs in a variety of ways—through communities of practice, personal networks, and through completion of work-related tasks" (para. 4). Early MOOC pioneers (Cormier & Siemens, 2010) wanted to tear down the walls of traditional classrooms and invite the community beyond the college campus into the pedagogical discoveries of courses. The idea motivating such a move was to enable knowledge to be coconstructed among not only university elite but also anyone seeking to learn (Haber, 2014).. In describing the importance of connectivism in learning, Siemens (2005) noted, "Connections that enable us to learn more are more important than our current state of knowing" (para. 23). To date, these unlimited networks have created many opportunities to learn and share information.

The second iteration of MOOCs became known as extended MOOCs or xMOOCs. This type follows a more traditional classroom structure that relies on a teacher-centered approach with learners as knowledge consumers (Zawacki-Richter et al., 2018). Under this model, course delivery often includes video-recorded lecture and learning indicators are based on quizzes and tests. With the rise of platforms like Coursera, EdX, and Udacity in 2012, *New York Times* contributor Pappano (2012) dubbed this period as "The Year of the MOOC." This marked the beginning of a trend that shifted the emphasis of MOOCs from openness to massiveness of scale (Haber, 2014). Smithers (2012) well-captures the stark contrast between cMOOCs and xMOOCs: "In an xMOOC you watch videos, in a cMOOC you make videos."

We are now living in the time of third-generation hybrid MOOCs, with a dual emphasis on constructivism and connections to large groups of learners (Zawacki-Richter et al., 2018). This type of MOOC is based in a constructivist framework and an emphasis on active engagement. It stands in sharp contrast to the more lecture-based, passive learning format that characterizes xMOOCs. The emphasis of hybrid MOOCs on learning by doing is central to the connectivist roots of early cMOOCs (Zawacki-Richter et al., 2018), enabling rich learning opportunities for faculty. The massive

enrollment numbers for MOOCs offer great potential to understand how a diverse range of students learn (Krause & Lowe, 2014).

In attempts to quantify the success of any type of MOOC, completion rates are not often the best indicators, as Wang and Baker (2015) explained. They noted that MOOCs draw a diverse mix of participants who have a variety of motivations that go beyond or do not even include course completion. For example, some individuals are seeking information available in part of a course and thereby need not complete the whole course to achieve their goals (Anderson, 2013; Shaw, 2019; Sullivan et al., 2019). In this way, MOOCs enable participants to customize their learning experience and to focus on areas most suitable to their needs and interests.

Some faculty view MOOCs with a degree of skepticism, a "fad" that will not become a central part of their pedagogical practice (Young, 2013). Nonetheless, to date, MOOCs continue to be the new frontier of online learning opportunities for faculty and others. Rather than resisting MOOCS, Fischer (2014) recommended that "the research community in the learning sciences should get seriously involved with MOOCs and influence their evolution" (p.157).

Some literature has focused on how MOOCs specifically can benefit faculty learning and use of educational technology (Blackmon, 2018; Krause & Lowe, 2014; Marzilli et al., 2014). However, more study is needed on several fronts: to better understand how MOOCs can be useful to faculty; which types are most effective and worthwhile; and, perhaps most importantly, to what extent (if any) faculty put their learning from this online learning platform into practice. Are faculty able to use what they learn to transform pedagogical practices and enhance student learning? This is the key question to be answered. This chapter, with its focus on one example of a hybrid MOOC, is a contribution to that end.

Part Two: #EmTechMOOC's Purpose and Overview

#EmTechMOOC has two main goals, one broad and the other focused. The wider goal is to help learners across the world explore technology tools through hands-on activities and reflective learning. Some of the tools available for experimentation include audio, blogs, wikis, collaborative spaces, ePortfolios, gamification, mobile apps, open educational resources (OERs), photos and images, presentations, productivity tools, resource libraries, simulations, social media platforms, and videos. #EmTechMOOC is open to anyone and is designed to foster a deeper comfort level with ever-changing technology. It accomplishes this by focusing on not only technology but also

the concept of lifelong learning. A unique aspect of #EmTechMOOC is that it emphasizes active, hands-on exploration, discussion, and sharing among participants from around the world, many of whom are students and faculty. The connective nature of the learning community allows participants the opportunity to learn together and reflects a key part of #EmTechMOOC's innovative design.

The more focused aim of #EmTechMOOC is to help participants gain 21st-century technology skills. This goal rests on the premise that everyone needs 21st-century technology competencies to reach individual and collaborative goals (National Education Association, 2012). These competencies are wide-ranging and include abilities such as: effectively using technology (including mobile devices) to communicate across time zones and geographic locations; finding and sharing accurate information; and using information technologies as comfortably and seamlessly as most people are able to read and write. According to Jacobson and Mackey (2010), meta-literacy builds on information literacy competencies and emphasizes reflective practice as key to communicating, creating, and sharing information in today's participatory environments. As SUNY Chancellor Kristina M. Johnson (2018) noted in her inaugural address, "No matter what field a student goes into, you can bet that social networking, communications skills, and critical thinking will be required. So, we will emphasize these adaptive skills in all we do" (para. 48). This statement underscores the importance and relevance of integrating current and emerging technology tools into higher education teaching and learning, and by extension, makes clear the value of #EmTechMOOC for faculty and students.

The Origins of #EmTechMOOC

#EmTechMOOC grew out of SUNY's Tools for Engagement Project (TOEP), an on-demand self-directed professional development opportunity funded by a SUNY Innovative Instructional Technology Grant. In 2012, TOEP was collaboratively developed by a cross-campus interdisciplinary team of faculty and professional staff. The central aim of the project was to encourage SUNY faculty to apply tech-infused pedagogy to their teaching and research. #EmTechMOOC, which launched in 2018 as an OER, sought to expand the audience from primarily teaching faculty in the SUNY system to learners from around the world interested in personal and professional growth relative to learning technologies. OERs are teaching and learning materials that are freely available online for everyone to use (Downes, 2007). #EmTechMOOC is openly available on the internet and is delivered through the Coursera platform.

The Nuts and Bolts of #EmTechMOOC

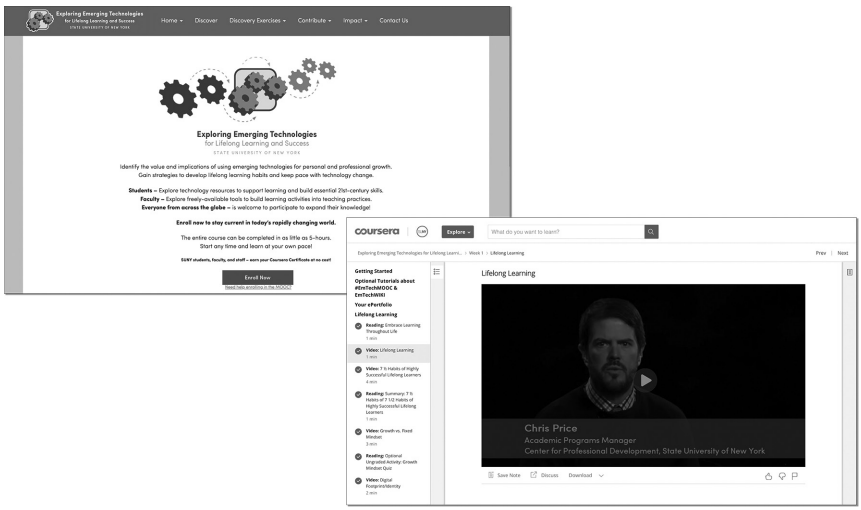
The EmTech project consists of two associated parts: #EmTechMOOC and #EmTechWIKI, as illustrated in Figure 3.2. These parts, while offering stand-alone benefits, operate in complementary fashion, as we explain in the following sections.

MOOC

The learning activities in the MOOC provide accessible, curated information and application exercises pertaining to current and emerging technologies. The MOOC learning environment is structured around two main themes: lifelong learning and four essential competencies - communication, collaboration, creativity, and critical thinking. Known as "the Four Cs of 21st-century skills" (National Education Association, 2012, p. 3), these overarching competencies have been identified as reflecting the skills, knowledge, and expertise students should master to succeed in work and life in the 21st century.

The themes of lifelong learning and the "Four Cs" are interwoven throughout the five course modules of #EmTechMOOC that participants are encouraged to explore, dabble in, or complete. The first module explicitly focuses on lifelong learning. The next three modules focus on the "Four Cs": communication, collaboration, creativity, and critical thinking. Modules includes brief videos and discovery exercises that are designed to encourage participants to explore and interact with a selection of technology resources.

Figure 3.2. #EmTechMOOC and EmTechWIKI.



The discovery exercises direct participants to select objectives based on their needs and interests from #EmTechWIKI We will describe the discovery exercises and the wiki search process in more detail in the following section.

The final module of the course is reserved for participants to finalize their ePortfolios, the content having been built through activities from earlier modules. In this final module, participants engage in a peer-review process to constructively evaluate ePortfolios of two fellow participants based on a rubric of criteria that should be included in a well-crafted ePortfolio. The peer-review evaluation process helps deepen participants' learning.

Wiki

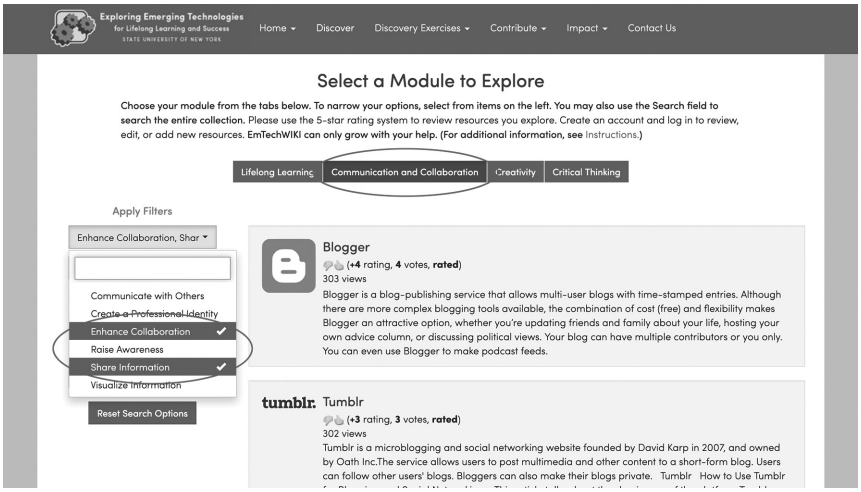
The other main component of the course is the EmTechWIKI website. The wiki was built to complement #EmTechMOOC. It is a searchable collection of freely available tools, tutorials, and resources. Participants independently explore the wiki resources to complete the MOOC discovery exercises. Next, we briefly explain the learning process.

Participants first select learning objectives targeted to the module they choose to work in that meets their needs and interests. The wiki then enables them to home in on emerging technology tools and resources that are well-suited to the desired learning objectives. For example, if a faculty member is interested in how to facilitate effective student collaboration, they might select the objective "Enhance Collaboration" under the Communication and Collaboration module as illustrated in Figure 3.3. A selection of the EmTechWIKI technologies that encourage collaboration will be shown, with links provided for further exploration and experimentation. This process helps faculty evaluate and select from a wide variety of freely available emerging technologies and also match appropriate technology tools to their particular needs.

Participants interested in building an ePortfolio will work directly with the resources that result from their #EmTechWIKI search to create an artifact as evidence of their learning through the hands-on discovery exercises within the #EmTechMOOC modules. The resulting artifact is then embedded within their personal ePortfolios. Participants also write a short reflection on their learning experience and how the tools experimented with might be useful in the future; this is added to their ePortfolios. Throughout their learning processes involving the wiki and the MOOC, participants are encouraged to engage in conversation on the MOOC discussion forums to share and receive support from peers and colleagues.

This hands-on, discovery-based learning process is central to #EmTechMOOC. The MOOC provides faculty with the tools and the space needed to explore instructional technologies and build their confidence

Figure 3.3. A close-up of the wiki search process.



before introducing or using a specific app or piece of software with students. The MOOC discussion forums offer a supportive learning community, another contrast to lecture-style xMOOCs.

EmTechWIKI is socially curated, which means that participants have the ability to add new tools and resources. They can also improve existing records by adding tutorials or other supporting information, or simply rate existing tools. This process helps future participants recognize items that are judged to be more helpful by the collective group of participants.

EmTechMOOC's Focus on Teaching and Learning

While #EmTechMOOC is open to anyone interested in learning about and exploring technology tools, it is especially well-suited to instructors at all levels. This hybrid MOOC provides the structure and resources that faculty need to identify useful instructional tools and learn how to integrate them into their courses in ways that optimize student learning and engagement. It is designed to encourage a deliberate, gradual integration of new technologies, focused on addressing a specific pedagogical problem or learning objective. This incremental approach that involves time and space for exploration and experimentation is an effective process that can yield positive results.

In several ways, #EmTechMOOC has much to offer instructors in thinking through and taking actionable steps to integrate technology into their pedagogical practices. For example, to ensure that a technology tool adds substantive meaning to a particular course, the #EmTechMOOC purposefully

builds in spaces for instructors to reflect on how a new app, software, or "cool tool" fits into the course aims and objectives. The clarity and intentionality that this reflective process affords also enables instructors to be transparent with students about why they are using a specific technology.

Additionally, #EmTechMOOC also encourages instructors to survey students to gain an understanding of their perceptions about any newly adopted technology and their experiences with it. Surveying students is especially recommended at mid-semester, as it allows for any modifications or tweaks to be made in real-time to enhance students' experiences. Student feedback is essential for assessing the effectiveness of new educational technology tools and can help inform planning for future iterations of the course.

For instructors, perhaps the most important aspect of hybrid MOOCs such as #EmTechMOOC is that they provide supportive spaces for experimentation. Because #EmTechMOOC has the added feature of being self-paced, faculty are often able to incorporate what they learn into live courses. Additionally, MOOC participants can share their successes and challenges with others and together build a community that uses technology creatively and effectively to enhance student learning.

Early Outcomes of #EmTechMOOC

To date, in assessing #EmTechMOOC using ongoing, postparticipation surveys, we have found that this learning opportunity positively impacts participants' perception of technology and of themselves. Our internal survey results collected in the first 2 years after the project launch showed that more than 75% of survey responders reported that engagement enhanced their ability to use emerging technologies either very much or quite a bit. In addition, faculty reported feeling more confident when selecting and adopting learning technologies as well as more knowledgeable about how to use technology to improve student learning. In addition, participants also responded positively to the importance of developing lifelong learning habits, a central tenet of the course.

Part Three: Examples of Faculty Using Technology Tools to Solve Teaching and Learning Challenges

This section focuses on six examples drawn from our experiences as instructors in using the tools and resources found in #EmTechMOOC to enhance teaching and learning. These examples highlight a number of educational technologies available for exploration, experimentation, and application within the MOOC. Each example consists of three central features:

1. A teaching and learning challenge addressed with a technology tool
2. The action steps taken by the author/instructor in learning and experimenting with a tool on #EmTechMOOC or WIKI
3. The results of applying the technology tool, including the instructor's and students' perceptions of its usefulness and effectiveness

These examples are meant to illustrate how constructivist and connectivist learning opportunities such as #EmTechMOOC can be useful for faculty interested in integrating educational technologies into their pedagogical practices in ways that substantively elevate teaching and learning.

Example 1: Making Connections Through Reflection and Critical Thinking

This first example is drawn from Katrina Fulcher-Rood's experience teaching a course in communication disorders.

Challenge

In a class focused on understanding societal constructs and the impacts of disability, Fulcher-Rood wanted to create an activity in which students could curate and discuss information related to the personal narratives of individuals living with disabilities. Fulcher-Rood also wanted the students to share the information with the class and respond to others' contributions.

MOOC Experience

While enrolled in #EmTechMOOC, Fulcher-Rood learned that blogs lend themselves well to connectivist and constructivist learning paradigms. A blog is typically an individual website on which the owner posts information and ideas, usually focused on a particular topic or theme. Other invited group members can then comment on blog posts, pose questions, or add related materials. Particularly helpful for Fulcher-Rood was discovering that blogs can be framed to allow students to work with and learn from one another while curating and making new materials that relate to classroom knowledge.

After reviewing the purposes of blogs in the Communication and Collaboration module in #EmTechMOOC, Fulcher-Rood decided to create a learning activity in which blogs could be used to enhance student learning and engagement. Students would create blogs to curate and synthesize the information they gathered in class and from outside sources. To set up this activity, Fulcher-Rood reviewed different blogging platforms including the blogging feature on the LMS used on her campus that was easily available to students. In reviewing the various platforms, Fulcher-Rood rated them

according to four features: ease of use, free student access, the ability to easily connect to other internet resources and people, and the capability to export and save student contributions. Based on these criteria, Fulcher-Rood was able to find a blogging platform that best fit the students' needs and learning outcomes.

Results

Fulcher-Rood discovered that the students' contributions to their own blog enabled them to construct new information related to what they were learning in the classroom. Each student was expected to contribute five new blog posts during the semester. In each post, students were expected to summarize a concept addressed in class, present a new artifact (e.g., website, blog, video, artwork, poem) related to the concept, and analyze the importance of the artifact. In addition to these blog posts, students were expected to post comments to the blogs of fellow classmates.

Overall, Fulcher-Rood was pleased with what the blogs had accomplished. End-of-semester course evaluations revealed that students enjoyed blogging, and all surpassed the minimum requirement of five blog posts. Many students even decided to create their own websites and blogs as a final project for the course. By providing spaces where students could learn from and encourage one another, the blogs fit with Fulcher-Rood's connectivist approach to learning. One area that needed improvement was in the length and quality of comments made in response to other classmates' posts. Students tended to post short and simple messages. As a remedy, the instructor now shares specific criteria for what to include in well-developed reflective comments.

Example 2: A Collaborative Process to Create New Knowledge

Next, we review an example drawn from Fulcher-Rood's experience in teaching speech pathology.

Challenge

Graduate students in Fulcher-Rood's speech pathology course studying augmentative and alternative communication were involved in a semester-long project to create a clinically relevant deliverable for professionals or community members. During the semester, students were expected to provide ongoing feedback to group members and the instructor regarding their progress and next steps. The instructor did not want to use valuable class time to complete the updates and wanted students to have a permanent place to review past updates and project notes.

MOOC Experience

Learning about blogs and wikis through #EmTechMOOC enabled Fulcher-Rood to envision using these tools as a space for students to document experiences and progress with their community project. Fulcher-Rood chose a wiki tool for the project, because her students would need to collaborate with one another as well as modify and add to information that was posted. In comparison to a blog, a wiki is a website that most often belongs to and serves the purpose of a group rather than an individual. It is more collaborative in nature than a blog because all contributors can add to, modify, and delete any content, even the original material. Fulcher-Rood decided to use the wiki feature available via the campus LMS, largely because her students were familiar with the platform. Additionally, the wiki did not need to be viewable by anyone outside the class.

Results

Each group created and maintained a wiki that demonstrated their progress with the project. Group members were expected to submit meeting notes, timelines, to-do lists, and final products. As students progressed and completed specific parts of the project, they updated the wiki to reflect their learning. Students knew that Fulcher-Rood was reading their wiki once a week to check on their progress and to ensure all group members were contributing. These wikis became collaborative spaces for students to plan activities and discuss their accomplishments and challenges outside of class.

As this example demonstrates, wikis offer collaborative spaces for students to share, learn, and reflect on classroom knowledge and apply that knowledge in new and novel ways. Wikis can foster student discussion and creativity while also allowing students to take ownership of their learning.

Example 3: Communicating Using Media

The example here is drawn from Jessica Kruger's experience teaching a course in public health.

Challenge

When confronted with converting a typical 15-week semester face-to-face course into an accelerated 6-week fully online summer course, Kruger struggled with how to ensure that students enrolled in the summer session would be able to achieve the same learning outcomes as those in the traditional semester course. She needed to make thoughtful adjustments to the design of the course overall, and in particular, the structure of class assignments.

Kruger also wanted to provide clear and concise information about the course content in ways that would foster student engagement and interest.

MOOC Experience

After searching EmTechWIKI under the objectives of "sharing information" and "increase engagement and interest," Kruger discovered several options for adding relevant visuals into the course along with information about how to create audio, video, and other media. Already familiar with the benefits of using open educational resources (OERs), she explored the OER category in EmTechWIKI, which led her to OER catalogs and other resources. Here, Kruger identified relevant, preexisting videos through the video-hosting platforms listed in #EmTechMOOC.

While the preexisting videos Kruger found would be useful in providing general information students needed, she still needed tools to help convey more detailed content. After continuing to explore additional tools and resources generated from her search of EmTechWIKI, Kruger discovered some promising options. For example, she found an article discussing tips for creating screencasts, which are videos that show what appears on a computer's screen. She also found several kinds of screencast creation software.

This information inspired her to try her hand at screencasting to provide her students with the detailed content that the OERs lacked. She created several 3-minute video lectures using narrated slide presentations that highlighted key points and summaries of complex course information. She interspersed video snippets of herself within the mini-lectures. To enhance the presentation, she explored the "photos and images" category on the EmTechWIKI and located several relevant images licensed under Creative Commons. Finally, to refine the video lectures and make them suitable to engage the interest of her students, Kruger turned to EmTechWIKI's video category and found a variety of freely available audio and video editing tools that were capable of completing simple and complex tasks.

The video category is one of the more actively searched areas in EmTechWIKI. Instructors who have participated in #EmTechMOOC often use video to create mini-video lectures, demonstrations, simulations, and to replicate course content that is inaccessible due to geographic location or dangerous conditions.

Results

Through the discovery exercises in the MOOC, Kruger realized that videos are capable of conveying a lot of information, and the best solution for her purposes was to locate existing video as well as create videos for her condensed

summer course. She used audio and video in a variety of ways to supplement traditional course content. Many students were new to the online format, and the videos proved helpful in providing instructions about expectations throughout the course. In a post-course survey, students were asked how they felt about the short videos. One student wrote:

> I really appreciate the method of providing several, short videos that focus on one central idea rather than posting an hour-long video with many important ideas addressed. This method of listening to lectures allows for pausing and processing the idea of one video before proceeding to the next.

Including videos that also featured Kruger in this online learning environment brought a human element into the course and enabled the students to get a sense of her personality. Using this range of media formats helped convey information and allowed students to comprehend, appreciate, and remember the course materials.

With her growing confidence using technology tools, Kruger also encouraged her students to use media as an alternative to traditional text-based submission for some assignments. When alternatives of this type are provided, it is important to require the same level of rigor for all options. Kruger made clear to students that their work would be graded based on the same criteria that guided her assessment of traditional submissions. She stressed that students should concentrate fully on the desired objectives instead of inadvertently putting too much effort into the mechanics of creating the video.

The added option of allowing students to submit their assignments through the use of video allowed them to engage in constructivist pedagogy and to create videos to build new knowledge and personal meaning. Students could be creative in this venue, which fostered increased engagement and enjoyment. Additionally, Kruger found grading the video submissions to be very enjoyable. A further positive outcome was that one student reported using her project in a job interview that led to a job offer. The student's project enabled her to demonstrate her proficient use of new technologies to effectively communicate her message. Allowing students choice in the type of assessment proved to be a great opportunity for students to express creativity and master the content.

Example 4: Developing Online Communication Skills

The fourth example is drawn from Cherie van Putten's experience teaching a professional internship course.

Challenge

Van Putten's face-to-face internship course is designed to prepare students for the workplace environment by helping them develop professional work skills and acclimate them to current business practices. Students spend several hours working at an internship site each week but only one hour in class. With every class session pivotal, van Putten faced a dilemma upon discovering she would miss a class due to a conference she was scheduled to attend. It would be critical for students to work through the topics identified in the syllabus for that week's class, despite van Putten's absence.

MOOC Experience

Van Putten searched EmTechWIKI for tools that would help her achieve two goals: Create meaningful content to cover the topics for that week's class and communicate the content from a distance. She reviewed resources within the Communication and Collaboration module and filtered the results to show items aligned with the objectives "communicate with others" and "share information."

Van Putten initially considered recreating the lecture portion of her course and providing students with a prerecorded video. She reviewed a number of resources about creating video and how to share videos with her students. However, as she explored the EmTechWIKI resources further, she concluded that a passive, one-way video was not the best solution. After evaluating the options, she decided on using web conferencing software.

Despite some trepidation, van Putten chose to structure that week's class as a web meeting. She referred to resources located in EmTechWiki related to how to run a successful web meeting, and then experimented with various web meeting functions in the application. After developing a plan for her class, van Putten practiced through a test meeting she arranged with a few colleagues.

Results

In the class session prior to the web meeting, van Putten logged on to the web meeting application and briefly showed her students what to expect and how to operate the necessary features. On the day of the class using web meeting, van Putten was pleasantly surprised to find that her preparation had helped the meeting run smoothly. She had no problems logging in, using her camera and microphone, and sharing her slides.

As this was a career services internship course with a goal of acclimating students to real-world business processes, van Putten felt the time spent learning about web meeting applications was time well-spent. This included working through problems some students experienced with navigating the web meeting software. The web meeting provided the opportunity

for students to experiment with many web conferencing functions, such as sending chats, annotating the screen, and sharing their screen content. An additional benefit was finding that the web meeting experience prompted students to work collaboratively to help each other troubleshoot video and audio difficulties.

Conducting a web conference allowed the students and van Putten to communicate, share information, and collaborate in a fashion that more closely resembled their regular face-to-face class meetings. The web conference fit well into the constructivist focus of the course, which centered on student-generated discussion and the instructor in a facilitator role. Additionally, students had an opportunity to practice a new and important skill, communicating via web conferencing. Virtual communication skills are becoming increasingly necessary during the job search process; many initial interviews are often conducted virtually.

Van Putten received positive feedback from students about the activity. Several commented that they were now less intimidated about participating in web conferences as part of their future careers. With the success of the activity, van Putten has continued to hold at least one web meeting for the course each semester. In facing her initial fears about how to select and implement web conferencing software, van Putten discovered that this technique added significant value to the course. Her students continue to benefit from the opportunity to build a skill that can be used both in the classroom and in the workplace.

Example 5: Cross-Cultural Interactions and Collaborations

The fifth example is drawn from Jessica Kruger's experience teaching a course in public health.

Challenge

Higher education institutions often seek out ways to create cross-cultural interactions among students. The SUNY Collaborative Online International Learning (COIL) initiative, for example, helps connect SUNY faculty with international partners. Faculty members, located in different parts of the world, work together to design and coteach course modules and even entire courses. Instead of only reading about another culture, students are interacting with their international peers to complete projects and construct meaning.

When designing a course in which students are expected to collaborate with individuals and groups around the world, faculty must be aware of potential obstacles. Some examples include: working collaboratively when participants communicate using different languages; multiple time zones are

a factor; and/or tools to facilitate communication have directions written only in one language (usually English). In this scenario, we present a solution that Kruger, as a member of the COIL faculty, found to the challenge of cross-cultural communication among students through her engagement in #EmTechMOOC.

MOOC Experience

One way to solve the time zone problem is to find applications and software that facilitate asynchronous communication. Kruger discovered a web-based virtual bulletin board on EmTechWIKI that would fulfill this function. The bulletin board enabled students to post photographs and pose questions at times that were convenient to their schedules, which led to meaningful discussion. Students had the time to reflect on the artifacts pinned to the board and then compose thoughtful responses.

Another option Kruger discovered was editing software that students used to create videos, which were then shared across classes. After creating introductory videos, the students produced follow-up videos in which they posed questions to their classmates. By using this technology, students could hear and see one another, with the added bonus that videos could be replayed to help those from different cultural backgrounds review and better understand the video stories.

Results

Learning how to collaborate effectively is an essential 21st-century skill. In the context of this COIL course, students were given technology tools that helped them work out effective ways to communicate with their global peers. Kruger used educational technology to help students build relationships with other students from around the world and provided spaces where students could establish global connections and refine their technology skills. These are two learning outcomes that students can readily apply in future courses as well as the workplace.

Example 6: A Creative Method to Provide Student Feedback

This final example is drawn from Jessica Kruger's teaching of another course in public health.

Challenge

One of Kruger's public courses consisted of a large undergraduate section with approximately 75 students. She wanted to think anew about providing feedback to her students on their writing submissions. In most courses of

this size, instructors rely on multiple-choice assessment activities that can be automatically scored. Although automated grading relieves the burden of grading separate essays, this method of assessment is usually less effective in determining whether a student has learned the course material. In addition, such tests do not give students the opportunity to improve their writing skills.

MOOC Experience

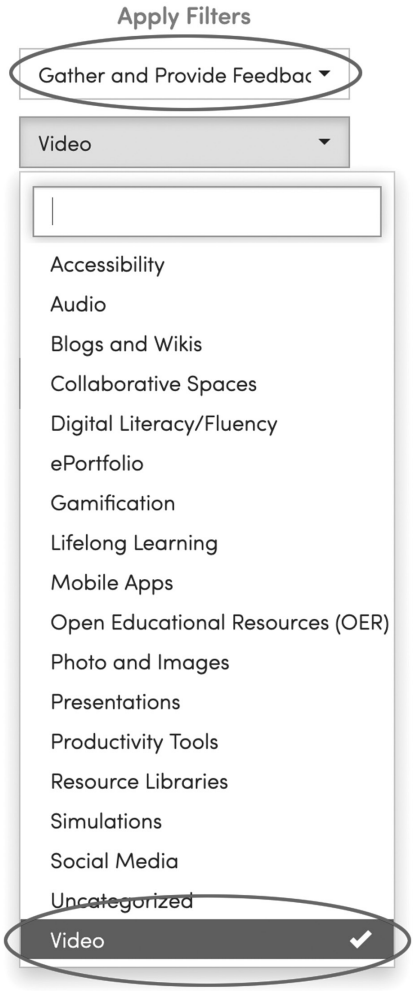
To provide students the opportunity to do more writing and receive meaningful feedback, Kruger explored the #EmTechMOOC for tools that offered an alternative to handwriting her comments. Under the section on Critical Thinking, Kruger focused her attention on the resources classified under the "gather and provide feedback" objective. Based on her exploration, she further narrowed her search, as shown in Figure 3.4, and focused on using video to provide students with feedback and to grade her students' work. Video would serve to replace the traditional method of providing feedback through written comments.

Results

Kruger found that giving video feedback took less time than traditional written feedback. By using video grading, she was able to give her students individualized feedback and help them achieve higher levels of learning. The process enhanced her efficiency and decreased the amount of time needed to grade large numbers of student submissions. Providing video feedback enabled students to see the instructor's facial expressions and hear Kruger's caring tone of voice. This more personal style of feedback seemed to help motivate students and to better understand the intention of Jessica's comments. Students' perceptions regarding receiving constructive feedback in this format were very positive and appreciative.

The interactive nature of video feedback has been widely reported by students as a more meaningful and engaging method of feedback (Denton, 2014; Kruger & Sage, 2020). Students reported that the video feedback increased the clarity of the comments and fostered a connection with the instructor (Kruger & Sage, 2020).). Feedback is described in the literature as being most meaningful as a two-way communication process (Jones et al., 2012). Traditional class discussion between students and faculty is more challenging when feedback on papers, projects, or online/distance courses involves no synchronous interaction. Video feedback aligns with the constructivist nature by demonstrating what needs to be modified or added to students' papers or projects and connecting faculty and students.

Figure 3.4. Application of filters to narrow down a search.



Final Thoughts

There is no shortage of learning technologies—many that are freely available—that can help faculty transform their pedagogy and practices in efforts to improve student learning and engagement. Yet, these technologies are often underutilized in higher education settings. One reason frequently cited for the discrepancy between the promise of technology and its minimal presence in higher education courses is faculty reluctance to integrate learning technologies into their practices. This chapter has focused on the potential that

resides in hybrid MOOCs, an online learning opportunity available for faculty, as a way to overcome this reluctance. We have emphasized one hybrid MOOC that is well-suited for higher education teaching faculty interested in learning about, exploring, and experimenting with current and emerging technology tools: #EmTech MOOC. It is our hope that online spaces such as #EmTechMOOC encourage instructors to discover and experiment with technology tools they need and desire to support 21st-century teaching and learning.

References

Anderson, T. (2013). Promise and/or peril: MOOCs and open and distance education. *Commonwealth of Learning*, *3*, 1–9. http://hdl.voced.edu.au/10707/327825

Blackmon, S. (2018). MOOC makers: Professors' experiences with developing and delivering MOOCs. *International Review of Research in Open and Distributed Learning*, *19*(4). http://dx.doi.org/10.19173/irrodl.v19i4.3718

Cormier, D., & Siemens, G. (2010). Through the open door: Open courses as research, learning, and engagement. *EDUCAUSE Review*, *45*(4), 30–39.

Decker, G. L. (2014). MOOCology 1.0. In S. Krause & C. Lowe (Eds), *Invasion of the MOOCs: The promise and perils of massive open online courses* (pp. XX-XX). Parlor Press.

Denton, D. W. (2014). Using screen capture feedback to improve academic performance. *TechTrends,* 58(6), 51–56.

Downes, S. (2007). Models for sustainable open educational resources. *Interdisciplinary Journal of E-Learning and Learning Objects*, *3*(1), 29–44. http://dx.doi.org/10.28945/384

Fischer, G. (2014). Beyond hype and underestimation: Identifying research challenges for the future of MOOCs. *Distance Education, 35*(2), 149–158. http://dx.doi.org/10.1080/01587919.2014.920752

Galanek, J. D., Gierdowski, D. C., & Brooks, D. C. (2018). *ECAR Study of Undergraduate Students and Information Technology* (Vol. 12, p. 12).

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, *7*, 95–105. http://dx.doi.org/10.1016/j.iheduc.2004.02.001

Goodson, I., Moore, S. & Hargreaves, A. (2006). Teacher nostalgia and the sustainability of reform: The generation and degeneration of teachers' missions, memory, and meaning. *Educational Administration Quarterly*, *42*(1), 42–61. http://dx.doi.org/10.1177/0013161X05278180

Haber, J. (2014). *MOOCs*. The MIT Press. http://dx.doi.org/10.7551/mitpress/10120.001.0001

Jacobson, T. E., & Mackey, T. P. (2013). Proposing a metaliteracy model to redefine information literacy. *Communications in Information Literacy, 7*(2), 84–91. https://doi.org/10.15760/comminfolit.2013.7.2.138

Jaschik, S., & Lederman, D. (2017). *Survey of faculty attitudes on technology: A study by Inside Higher Ed and Gallup*. Inside Higher and Gallup.

Johnson, K. (2018). *Chancellor Johnson's State University of New York (SUNY) state of the university system address.* State University of New York. https://www.suny.edu/about/leadership/chancellor/speeches/sotus-2018

Johnson, D. R. (2013). Technological change and professional control in the professoriate. *Science, Technology, & Human Values*, *38*(1), 126–149. http://dx.doi.org/10.1177/0162243911430236

Jones, N., Georghiades, P., & Gunson, J. (2012). Student feedback via screen capture digital video: Stimulating student's modified action. *Higher Education, 64*(5), 593–607. http://dx.doi.org/10.1007/s10734-012-9514-7

King, J., & South, J. (2017). *Reimagining the role of technology in higher education: A supplement to the national education technology plan*. Office of Educational Technology EEUU. https://tech.ed.gov/files/2017/01/Higher-Ed-NETP.pdf

Krause, S. D., & Lowe, C. (2014). *Invasion of the MOOCs: The promise and perils of massive open online courses*. Parlor Press.

Kruger, J. S., & Sage, T. (2020). Video grading: Enhancing clarity and connection. *Journal of Educational Technology Systems*, 48(3), 407–415. https://doi.org/10.1177/00472395198673

Lambert, C., Erickson, L., Alhramelah, A., Rhoton, D., Lindbeck, R., & Sammons, D. (2014). Technology and adult students in higher education: A review of the literature. *Issues and Trends in Educational Technology*, *2*(1). http://dx.doi.org/10.2458/azu_itet_v2i1_lambert

Lederman, D. (2018). Conflicted views of technology: A survey of faculty attitudes. *Inside Higher Ed*. https://www.insidehighered.com/news/survey/conflicted-views-technology-survey-faculty-attitudes

Lillejord, S., Børte, K., Nesje, K., & Ruud, E. (2018). *Learning and teaching with technology in higher education–a systematic review*. Knowledge Center for Education. https://www.researchgate.net/publication/327057633_Learning_and_Teaching_With_Technology_in_Higher_Education_-_a_systematic_review

Ludgate, H. (2013). *NMC Horizon Report: 2013 higher education edition*. The New Media Consortium.

Marzilli, C., Delello, J., Marmion, S., McWhorter, R., Roberts, P., & Marzilli, T. S. (2014). Faculty attitudes towards integrating technology and innovation. *International Journal on Integrating Technology in Innovation*, *3*(1), *ArXiv Preprint ArXiv:1404.4334*. http://dx.doi.org/10.5121/ijite.2014.3101

National Education Association. (2012). *Preparing 21st-century students for a global society: An educator's guide to "the four Cs."* http://www.nea.org/assets/docs/A-Guide-to-Four-Cs.pdf

Orlando, J. (2014). Veteran teachers and technology: Change fatigue and knowledge insecurity influence practice. *Teachers and Teaching*, *20*(4), 427–439. http://dx.doi.org/10.1080/13540602.2014.881644

Pappano, L. (2012, November 2). The year of the MOOC. *New York Times*. https://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html

Selwyn, N. (2007). The use of computer technology in university teaching and learning: A critical perspective. *Journal of Computer Assisted Learning*, *23*(2), 83–94. http://dx.doi.org/10.1111/j.1365-2729.2006.00204.x

Shaw, J. (2019, January 10). Can MOOCs predict the future of online education? *Harvard Magazine*. https://harvardmagazine.com/2019/01/mooc

Sibley, K., & Whitaker, R. (2015, March 16). Engaging faculty in online education. *EDUCAUSE Review*. https://er.educause.edu/articles/2015/3/engaging-faculty-in-online-education

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning (ITDL)*, *2*(1), 3–10. http://www.itdl.org/Journal/Jan_05/article01.htm

Siemens, G. (2013). Massive open online courses: Innovation in education? In R. McGreal, W. Kinuthua, & S. Marshall (Eds.), *Open educational resources: Innovation, research and practice* (pp. 5–16). Commonwealth of Learning and Athabasca University. https://oerknowledgecloud.org/sites/oerknowledgecloud.org/files/pub_PS_OER-IRP_web.pdf#page=31

Smithers, M. (2012, October 9). OH: In an xMOOC you watch videos, in a cMOOC you make videos [Twitter]. https://twitter.com/marksmithers/status/255562376659730434

Sullivan, R. R., Fulcher, K., Kruger, J., Sipley, G., & van Putten, C. (2019). Emerging technologies for lifelong learning and success: A MOOC for Everyone. *Journal of Educational Technology Systems*, *47*(3), 318–336. http://dx.doi.org/10.1177/0047239518821065

Sullivan, R. R., Neu, V., & Yang, F. (2018). Faculty development to promote effective instructional technology integration: A qualitative examination of reflections in an online community. *Online Learning Journal (OLJ), 22*(4), 341–359. http://dx.doi.org/10.24059/olj.v22i4.1373

Wang, Y., & Baker, R. (2015). Content or platform: Why do students complete MOOCs? *Journal of Online Learning and Teaching*, *11*(1), 17–30.

Young, J. R. (2013). *Beyond the MOOC hype: A guide to higher education's high-tech disruption*. The Chronicle of Higher Education.

Zawacki-Richter, O., Bozkurt, A., Alturki, U., & Aldraiweesh, A. (2018). What research says about MOOCs–An explorative content analysis. *International Review of Research in Open and Distributed Learning*, *19*(1). http://dx.doi.org/10.19173/irrodl.v19i1.3356