Research in Learning Technology
Vol. 30, 2022

ASSOCIATION FOR LEARNING TECHNOLOGY

ALT

ORIGINAL RESEARCH ARTICLE

Integrating MOOCs into traditional higher education modules: a MOOC-based blend framework

Karla K. de Lima Guedes[a]*, Hugh C. Davis[b] and John Schulz[a]

[a]*School of Education, University of Southampton, Southampton, UK;* [b]*Department of Electronics and Computer Science, University of Southampton, Southampton, UK*

(Received: 3 December 2021; Revised: 10 March 2022; Accepted: 10 March 2022; Published:30 May 2022)

Online learning platforms, such as MOOCs (Massive Open Online Courses), continue to expand, and some academics are taking advantage of these resources by integrating them into their teaching. The literature shows that there are many different ways that MOOCS are being blended into on-campus university teaching, and it would be helpful to have a framework that demonstrates the relationship between the in-person and MOOC curricula content, and the Blended Learning models used in practice. This study investigated how some UK academics are blending MOOCs into their in-person teaching and whether the blends used had any impact on course design. Semi-structured interviews were conducted with six participants with MOOC blending experience, and data were analysed using an inductive approach to Thematic Analysis. Results from this study generated an understanding of (1) what parts of MOOCs lecturers are using and how these resources are being blended into their in-person courses, (2) what kind of impact a MOOC-based blend can have on a course design and (3) the MOOC-based blend framework – a framework to assess the extent to which readily available MOOCs are integrated into lecture-based university modules in terms of curricular alignment and types of blend.

Keywords: MOOCs; blended learning; higher education; open education; online learning

Introduction

The very nature of Higher Education (HE) is changing, with students (and employers) expecting institutions to expose students to technologies that can facilitate learning, research, business and communication. The fast changes due to the COVID-19 pandemic have been an example of the importance of students developing the skills they need to effectively learn and communicate online (Barber 2021). There is also uncertainty about the future and sustainability of the business models currently being used in HE (Yuan, Powell, and Olivier 2014); thus, universities need to be able to adapt, develop new models and strategies surrounding HE in the digital age and prepare

*Corresponding author. Email: K.De-Lima-Guedes@soton.ac.uk

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702

students for major developments that are already taking place (Barber, Donnelly, and Rizvi 2013; Castañeda and Selwyn 2018). They also need to cater to the needs of an increasingly wide spectrum of students who are culturally diverse and have different educational backgrounds, personality types, digital abilities, learning preferences and needs. And this is where the use of online learning technologies can help with some of these challenges.

The introduction and wide use of web technologies have altered the way not only in which we share information and communicate but also how students learn and tutors teach. Some of the so-called disruptive learning technologies (Conole 2015; Flavin 2012) are being used across campuses in and outside classrooms, and in today's education scene, it is rare to find HE instructors who have not integrated some kind of online technology or resource into their teaching.

One of these learning technologies that have become prevalent in HE is Massive Open Online Courses (MOOCs). It has been nearly a decade since MOOCs were introduced and they have become a popular mode of online learning. MOOCs now have over 220 million learners and 19.4 thousand courses throughout the world (Shah 2021). They have not only been used independently by students but also incorporated into traditional university classroom settings, and some have argued that they have the potential to change traditional lecture-based HE approaches and assumptions around teaching and learning (Wintrup, Wakefield, and Davis 2015).

MOOCs have generated interest from many in academia, in particular concerning how to repurpose them due to the high quality of their teaching resources (and the high costs involved in their creation). There is no literature showing the extent to which MOOCs are being used by lecturers, but there is significant interest in repurposing them, including MOOC-blend practices (see Albó and Hernández-Leo 2016; Borthwick 2018, 2021; Orsini-Jones 2015; Pérez-Sanagustín *et al*. 2017).

Blended learning

In order to discuss the integration of MOOCs into traditional HE, it is important to understand Blended Learning, which is both simple and complex to define. Blended Learning includes part of a course being delivered online with some element of student control over time, pace and learning paths. Blended Learning should not be described as a programme that had an online tool added to it; instead, it should be the result of the integration of online and in-person activities that resulted from the fundamental rethinking and reconceptualisation of the teaching and learning dynamic, with a design that is congruent with the learning outcomes, contextual needs and contingencies, and that increases students' interaction with tutors (Garrison 2011; Garrison and Kanuka 2004) and peers.

At a simpler level, it refers to the integration of a wide range of online learning elements to in-person learning experiences. At a more complex level, however, there are limitless combinations, possibilities and applications to a great variety of contexts, which means that no two designs are usually the same, and each design contains a different balance of online and in-person components. In reality, educators use a variety of blending models for all sorts of reasons and embed a range of online resources at different levels of integration. Blended Learning has no generally accepted definition nor taxonomy. Nonetheless, for the purposes of this study, it will be defined as any form of integration of online activities with in-person teaching or its curriculum.

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702

Blended learning models

Many lecturers blend online with in-person activities because they see it as beneficial to students or their teaching practice. However, lack of widely accepted definitions, models and taxonomies, institution unawareness of module blends and limited research in the area result in difficulty when attempting to understand and carry out research in Blended Learning designs.

Different models have been presented in the literature (see Powell *et al*. 2015; Staker and Hown 2012), but these categorisations are usually limited to a small number of institutions, often in the US, and not always applicable to UK Higher Education (UKHE). One example of a Blended Learning model that could be used in HE is the *Blended with Purpose Multimodal Model*. It suggests that the use of a variety of pedagogical techniques, deliveries and media might be the most effective way to help the wide range of students in HE (Picciano 2009). The model defends the notion that the development of certain skills might be more effectively done in-person, whilst others can achieve better results online. For instance, social and emotional supports are usually best provided in-person, whilst reflection can be more beneficial online, for example, if done in a blog type of environment (Figure 1).

Another approach focuses on how technology is used to improve the course instruction, instead of where skills are better developed. In the *Brigham Young University (BYU) model*, Blended Learning has been categorised into three types of blends as per pedagogical enhancements the technology enabled (Graham and Robinson 2007):

(1) **Transforming Blend**: Technology used facilitates an improvement in pedagogy by moving from a passive information transmission to a more active learning pedagogy.
(2) **Enhancing Blend**: Technology used increases instructor or student productivity.
(3) **Enabling Blend**: Technology used enhances access and convenience for the students.

BYU model blending categories focus on the affordances technology has to offer in a course to instructor and students, but disregard areas such as what, how and how often technology is being used.

MOOCs as a tool for blended learning

A recent development in the use of MOOCs has been the integration of these into traditional teaching in HE institutions (see Albó and Hernández-Leo 2016; De Lima Guedes 2020; Orsini-Jones 2015; Orsini-Jones, Gafarom, and Altamimi 2017; Orsini-Jones *et al*. 2018; Yuan, Powell, and Olivier 2014). MOOCs can be used to supplement HE teaching methods and create wider and more international exchange opportunities when integrated to traditional modules. However, it is still difficult to know exactly how widespread the adoption of blended initiatives is, what models are being used and how impactful they have been, as this information is not often known at the university level. There has also been limited research that offers any kind of taxonomy, model or framework to analyse MOOC-based Blended Learning (see Israel 2015; Kloos *et al*. 2015).

One suggested framework for MOOC-blends is the *H-MOOC framework* from Pérez-Sanagustín *et al.* (2017) (Figure 2). This framework assumes that the MOOCs

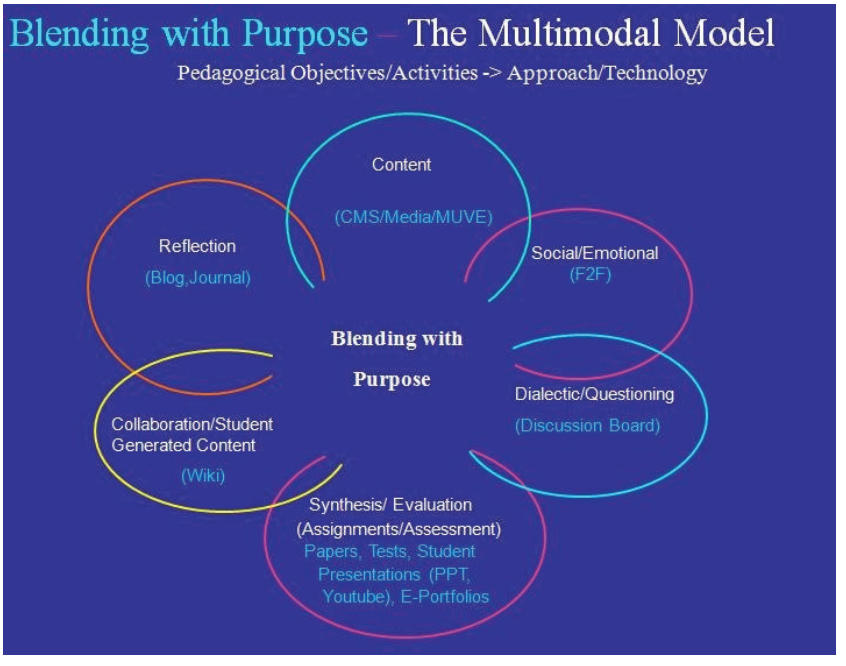

Figure 1. Blended with purpose – The multimodal model from Picciano (2009).

being used in the blending are already available, and organises the implementation of MOOC-based hybrid initiatives as a continuum of two factors: (i) the institutional support needed (x-axis), which refers to the infrastructure, services and human resources needed to support the use of the MOOC or its content, and (ii) the alignment of the hybrid initiative with the course content (y-axis), which refers to how close an existing syllabus is to the curricular content of the MOOC(s) used in the blend.

The H-MOOC framework enables the characterisation of courses through the continuum of the different levels of content alignment and institutional support and can support HE decision makers in the process of evaluating which initiatives for reusing MOOCs are more suited for their context. These decisions, however, are taken at a higher institutional level. This framework does not look at the MOOC versus in-person content alignment and the types of blends used in practice as a result of tutors' evaluation of their teaching needs and learning dynamics.

This study is then interested in investigating one possible way of repurposing MOOCs – integrating them into traditional in-person university teaching, but looking at it from the lecturers' perspective in order to understand what models are being used and whether the blends have affected course design. In order to explore these, the following research questions (RQs) are proposed:

- RQ1: How have MOOCs been integrated into in-person HE modules? And do these practices reflect any of the Blended Learning models from the literature?
- RQ2: Has the MOOC-based blend practice had an impact on the course design?

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702

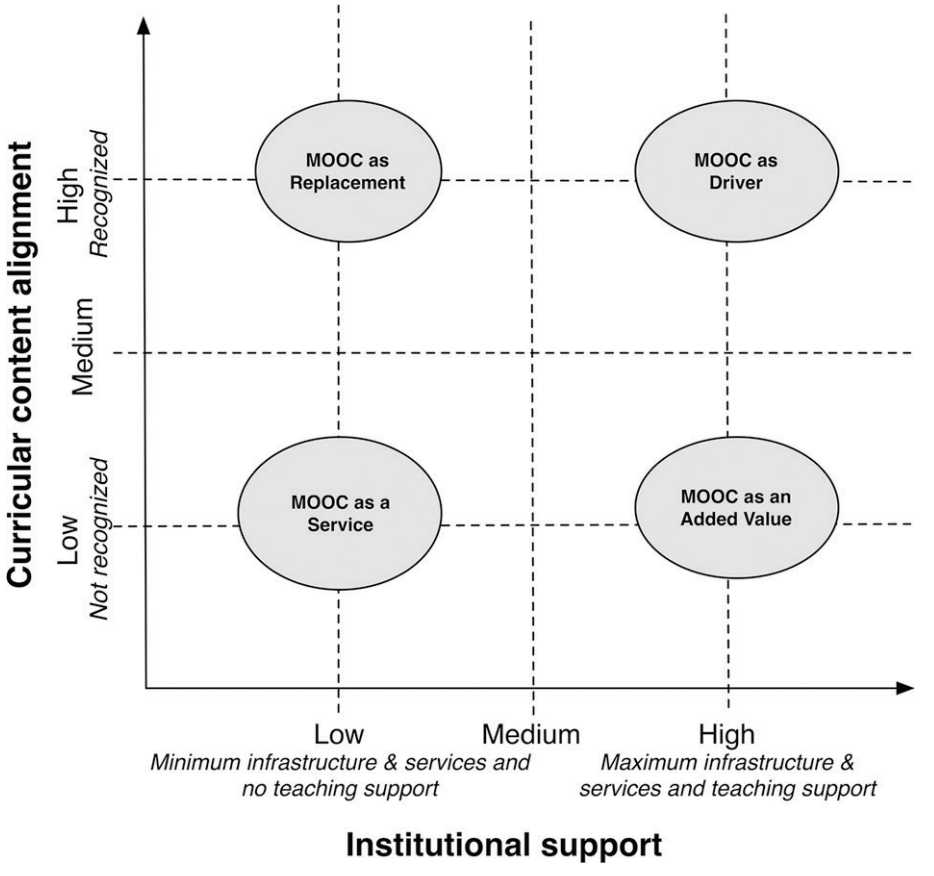

Figure 2. H-MOOC framework from Pérez-Sanagustín *et al.* (2017).

From the findings, this paper has set out to design a framework for describing the practice surrounding in-person and MOOC syllabus alignment and the types of MOOC-based blends being used by these lecturers.

Method

Research design and participants

Participants in this study were six lecturers from five departments across three UK universities found via snowball sampling. They were chosen to participate in this research due to their experience with integrating MOOCs into their in-person teaching. All lecturers gave consent to participate, and this study received ethics approval from institution's research committee. A qualitative methodology was used to allow the description and a comprehensive understanding of the participants' experiences and practices of embedding MOOCs into their courses. Two of the participants were female and four male, they taught at undegraduate and postgraduate levels, and all participants were module leaders or joint decision makers in the module they were teaching. These lectureres used a range of MOOCs (run

by their own or other institution), but all from the platform FutureLearn.[1] They had a variety of experiences with MOOCs, from integrating a MOOC for the first time to having a 5-year experience with MOOC-blends. Some also had experience with taking part in, being part of and designing MOOCs or similar online courses (Table 1).

Data collection and analysis

Participants responded a questionnaire about what modules they taught, which MOOCs they have used as part of their teaching practice and their views on using MOOCs in HE. They were then individually interviewed following a semi-structured interview structure. Interviews were conducted either in-person or via Skype, lasted between 20 and 50 min and were audio recorded and transcribed. Participants were anonymised in the dataset by being given a label, for example, IntervieweeL (Table 1).

Thematic analysis as proposed by Braun and Clarke (2006, 2013) and Braun, Clarke and Rance (2014) was used as the data analysis method. Thematic analysis is a qualitative analytic method used for identifying, analysing and reporting patterns (themes) within a dataset, such as an individual or set of interviews, in correspondence to the proposed RQs (Braun and Clarke 2006). In this study, themes were identified in an inductive fashion and at a semantic level, that is, the analysis focused on the participants' standpoint and not beyond what they said (Figure 3).

Results and discussion

MOOC-blend models

This section presents what and how the participants integrated the MOOCs into their modules. The topics have been organised by what was used from the MOOC, for example, content or engagement; how it was used, for example, for feedback or assessment purposes; and whether it was used as an additional tool or included content contributions from students.

MOOC-blend for engagement

Use of students' engagement with the MOOC discussion boards was the most popular blend. All lecturers claimed to use students' contributions to the discussion boards in one way or another, with the majority using it for assessment purposes. Some students were asked to use their or others' contributions as the starting point for an assignment, reflect on their engagement and produce an essay 'on how using the MOOC affected their beliefs' (IntervieweeM), or show their engagement through the submission of 'a portfolio of evidence of what they've done in [them]' (IntervieweeL).

Students' engagement with the MOOCs was also used in class as a starting point to or preparation for debates, or as a consolidation task where students were asked to take part in a debate in class and then to continue it in the MOOC discussion board. Half the lecturers followed students' discussion board interactions or asked them to do a task in the MOOC and then gave students feedback on those. This type of blend

[1]https://www.futurelearn.com

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702

Table 1. Research participants, their teaching, MOOC choices and experiences.

Participant/ department	Module level	Students	Experience with MOOCs	Choice of MOOCs
IntervieweeM Modern languages	Postgraduate	Mostly international students	Over 3 years of experience in taking and blending MOOCs	Other institution MOOC(s)
IntervieweeD Computer science	Undergraduate	Mostly home students	Over 3 years of experience in designing, being in, teaching on and blending MOOCs and other types of online courses	Own and other institution MOOC(s)
IntervieweeT Archeology	Undergraduate	Mostly home students	One year of experience in blending MOOCs	Own institution MOOC(s)
IntervieweeL Business	Undergraduate/ postgraduate	Mostly home students	Over 3 years of experience in designing, being in and blending MOOCs	Own and other institution MOOC(s)
IntervieweeK English	Postgraduate	Mostly home students	Experience in designing and teaching on MOOCs and currently planning a MOOC blend	Own institution MOOC(s)
IntervieweeS Modern languages	Postgraduate	Mostly international students	Two years of experience in being in and blending MOOCs	Own institution MOOC(s)

MOOC, Massive Open Online Course.

increases the richness of the learning experience, which fits the enhancing type of blend proposed by Graham and Robinson (2007) as technology is used to enhance students' productivity. It also fits their enabling blend as students can continue to develop their discussion skills and topic-based knowledge beyond the classroom.

MOOC-blend for content delivery

Research has demonstrated that lecturers and students can benefit from using MOOC content as learning material (Albó, Hernández-Leo, and Oliver 2015; Bruff *et al*. 2013; Caulfield, Collier, and Halawa 2013). Data demonstrated that MOOC content was used by most lecturers to introduce concepts or tasks in the in-person course. One of the lecturers, for instance, pre-assigned MOOC videos to students as a way of preparing them for the lectures or in-class discussions. This same lecturer also asked students to analyse the MOOC video responses and interact with them, as explained below.

> I was able to identify videos and get them to comment on the videos in real time in class. And then we'd look at […] some of the responses that were emerging. […] and sometimes we crafted our responses together […] I'd also use it to ask them to, for preparation basically, after this class, go and watch step 10.13, or 4.13, or whatever it was called, and I'd give them questions. So watch this video and think about these questions, about the content of the video, and then we'd come back to

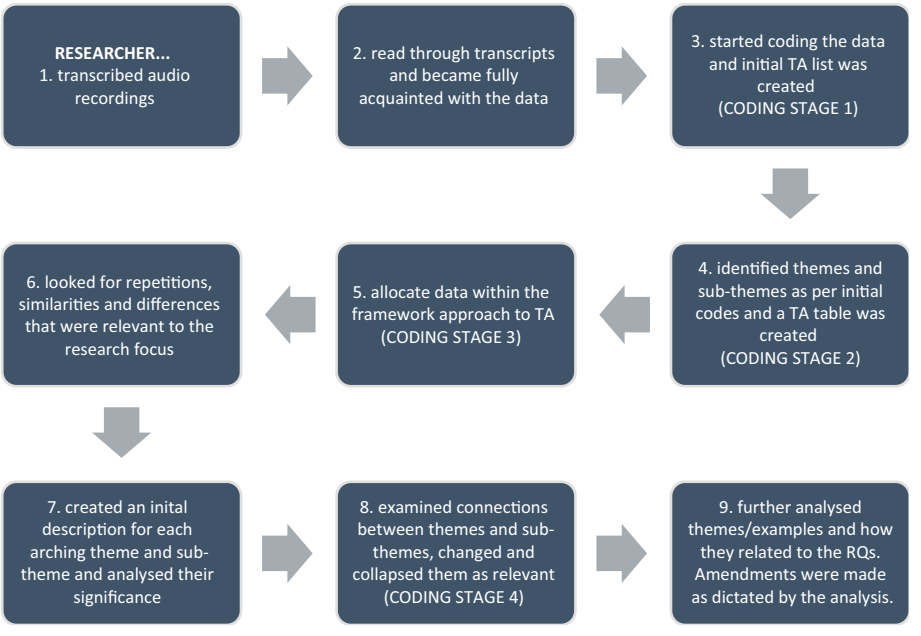

Figure 3. Thematic analysis process used in the research data analysis.

> class and there would be a warm-up activity so we'd look at what how they analysed the video and what their reactions [were]. (InterviweeS)

This MOOC-blend fits the transforming type of blend described in Graham and Robinson (2007) and the flipped classroom approach (Bergmann and Sams 2012; Staker and Horn 2012) as the technology used allows the use of a more active learning pedagogy and the in-person time to be used more interactively. Findings suggest that MOOC content is being used in and outside the classroom to introduce concepts, get students to engage with the topic prior to in-person class and support engagement.

MOOC-blend as an add-on

Two lecturers recommended students to take the MOOC alongside the in-person course as an additional material. This was done either because they had only partially integrated specific parts of the MOOC, its dates did not exactly match their weekly in-person syllabus, or they saw the MOOC as an add-on and, therefore, not essential to the module and its learning outcomes. This blending approach does not fit any of the blending models proposed in the literature. This might be because the MOOC was used as just an additional resource and, therefore, is not seen as a blending model or at the lower end of integration.

MOOC-blend for co-creation

In one of the modules, the in-person students contributed to the MOOC content. Students were asked to record a video essay about one of the topics related to the in-person course and the MOOC, and through this task, they got to carry out research for

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702

the assignment, reflect on the language they needed to use to ensure it was accessible to the MOOC takers, develop the digital skills needed to complete the assignment and receive feedback from the MOOC community on their work and ideas, as described below.

> So we, we gave them a kind of a set of sort of provocative statements. So one of them, for example, was 'Is Facebook evil?', and things like, you know, 'Is social media power, real power?', these kind of things. And we asked them to create, essentially, sort of five-minute documentary film about that topic. And it was really a vehicle to get them to research the topic, think about how to present it to a sort of lay audience, and also to work in groups. (IntervieweeD)

This approach fits with a transforming type of blend (Graham and Robinson 2007) as technology is used to facilitate an improvement in active learning pedagogy. Students contributing to an MOOC content have not been reported in the Blended Learning literature; however, the idea of students as co-creators of learning experiences has had much discussion in academia (Bovill and Bulley 2011; Bovill, Cook-Sather, and Felten 2011; Dunne and Zandstra 2011). This blend puts students in the centre of the learning process and has the potential to create student–staff partnerships.

Impact on course design

Course specifications

HE Course Specifications[2] (CSs) tend not to be too specific as changes in them take time; therefore, lecturers usually keep the course content and assessment information as general as possible, so modifications can be more easily made within the internal course design. Most lecturers claimed that no modifications were made in the CSs because of the blend, and there was no mention of the MOOC in them, except in one case that 'the blended MOOCs [had] become an integral part of the [course] content' (IntervieweeM).

Most lecturers do not have control over the dates when an MOOC runs; therefore, if this information is in the CSs, it cannot be changed once the module is available to students. One of the lecturers explained that the 'module specs [are] a bit set in stone once they're designed', so she decided to add 'that the assessment will be online, [and that] it will involve reflection on online discussions […] because of the fact that [they] can't always guarantee that the MOOC will be there' (IntervieweeL).

Some of the lecturers, however, mentioned that they intend to make changes to the CSs as the MOOC had added a new dimension to the course and learning outcomes related to digital literacy and employability. Two of the lecturers also mentioned not adapting the CSs because it already had a digital and communicative synergy with the MOOC blend, such as the development of digital literacies as a learning outcome.

[2]Course specifications are the description of the intended learning outcomes from UKHE courses, and how these outcomes are achieved and demonstrated (QAA, 2011). They are usually submitted months or even over a year prior to the beginning of a course as they need to go through a quality assurance approval process within the institution.

Syllabus and assessment design

Participants were also asked about internal changes to the course, such as changes to course structure, syllabus and assessment. Different from CSs, almost all lecturers claimed to have made internal changes to their courses due to the MOOC-based blend. Half of the informants said they had to be flexible with the structure of the course as they sometimes had to move the weekly topics 'to match some of the content in the MOOC' (InterviewеeS).

Some lecturers aligned the content of their course with the MOOC by adding a topic that was not originally part of the syllabus, moving the weekly topics or changing how much time was spent on each topic. Thus, most of the interviewees had to change the description of their course assignments or add an MOOC-related question to the end of the term exam, as exemplified below.

> I did change in the face-to-face outline of the course. […] I did change the description of the assignments because there was this third option to do the MOOC data analysis. And then, in the classes themselves, basically, making space for the MOOC activity. (InterviewеeS)

Two of the participants claimed that the MOOC integration did not have an impact on their course assessment design. However, one of them had just started the integration, and the other did report to have MOOC elements as part of the assessment, such as students using the discussion boards as a starting point for one of their assignments and contributing to the MOOC with their video assignment.

MOOC-based blend framework

Some authors have investigated MOOC-based hybridity and its impact on different aspects of education, but very few have proposed a framework for applying MOOC-based blend initiatives in HE. And no one, from the researchers' knowledge, has proposed one that shows the relationship between content alignment and the type of blend used. This section proposes such a framework as a result of the findings discussed in the previous sections.

The *MOOC-based Blend Framework* organises the implementation of Blended Learning initiatives as a continuum of two factors: (1) the content alignment level (y-axis) and (2) the MOOC blending type (x-axis) used (Figure 4), and lecturers can map their own teaching blend onto these two axes. In Figure 4, letters refer to each research participant, for example, M represents InterviewеeM. The framework assumes that the MOOC has not been created with the intention of being blended for a specific course, which was the case for all participants. Through the continuum of these two factors, MOOC-based integration initiatives can be classified as per axes descriptions below.

The 'y-axis' represents the extent to which a in-person course curriculum has been adapted in order to align with an MOOC (or MOOCs), and this has been divided into three levels:

(1) **High**: MOOC and in-person curricular content are aligned. MOOC is central to the course delivery and learning outcomes. MOOC-blend has had impact on the in-person course syllabus, assessment and learning outcomes;

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702

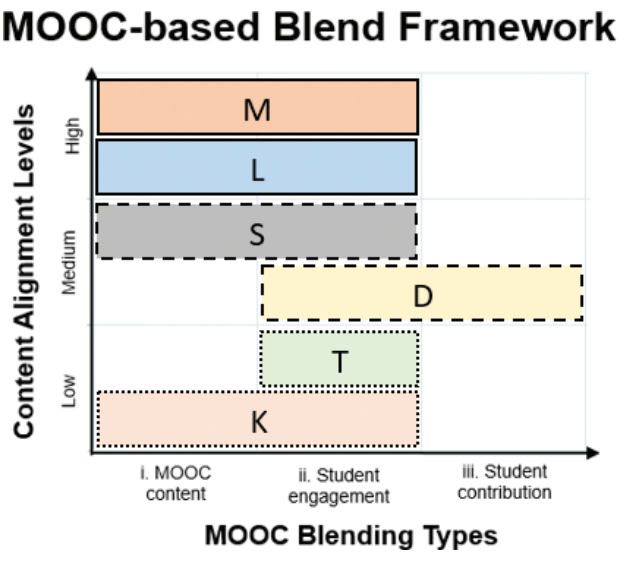

Figure 4. MOOC-based blend framework.

(2) **Medium**: MOOC and in-person curricular content are somewhat aligned. MOOC-blend has had some impact on the in-person course syllabus or assessment;

(3) **Low**: MOOC and in-person curricular content are not aligned. MOOC is used as an add-on and is recommended to students in the same way a book or an article would be. MOOC-blend has little or no impact on the in-person course syllabus or assessment.

Similar to Pérez-Sanagustín *et al.* (2017), at one end, the low-level alignment implies that the MOOC is not aligned with the in-person curricular content, and it is only, or mostly, used as an additional resource. For instance, IntervieweeT has been placed at the low-level alignment end because the MOOC was used as just an add-on, and there were no changes to the in-person syllabus as a result of the blend.

At the other end of the y-axis, however, a high-level alignment means that the MOOC is essential to the in-person syllabus, and this has been modified to mirror all or most of the curricular MOOC content. An example of this is IntervieweeL. This lecturer used a 2-week MOOC as an introduction to her module, and instead of attending in-person classes for the first 2 weeks, students were asked to take the MOOC and actively participate in the discussion boards. Alongside the MOOC, students had to participate in discussions online with the tutor and produce a portfolio of evidence of what they had done in and learnt from these interactions. As a result, her course module is categorised as highly aligned with the MOOC content.

The 'x-axis' represents the type of integration used by the lecturers and uses the three main blends that emerged from the data:

(1) **MOOC-blend for content delivery**: students use MOOC content as learning material in and outside the classroom;

(2) **MOOC-blend for engagement**: students are asked to engage in MOOC discussions;
(3) **MOOC-blend for co-creation**: students contribute to the MOOC content.

Most lecturers used a combination of blends, as can be seen in Figure 4. An illustration of a module with High Content Alignment Level that uses two blending types is IntervieweeM. This lecturer had students using the MOOC resources in and outside the classroom and actively engaging in the discussion boards. She also changed the course design and specifications to align its syllabus with the MOOC curricular content. Therefore, her course was categorised as highly integrated with the MOOC, having a double blending type usage.

Data indicated that lecturers who were more experienced with Blended Learning used the MOOCS more integratively and were, therefore, placed at the high end of the Content Alignment Levels axis. These lecturers reported to have used the MOOC as an add-on in their first blend trial, but that it had not worked. They reported that the blending evolved with their experience, and that in order for students to engage with the online tasks, the MOOC needs to be fully integrated into the in-person course and assessment.

Results showed that the institutional support (x-axis) – infrastructure, services and human resources – as proposed by Pérez-Sanagustín *et al.* (2017) to be irrelevant since lecturers had no institutional support. The academics who were integrating the MOOCs or involved in their design were 'usually part of a special project' (IntervieweeL) or felt they were doing the MOOC-blend on their own. If MOOC-based blends become more common practice in HE, this lack of institutional support could become problematic.

Conclusion

This study examined how six UK academics are integrating MOOCs into their in-person teaching practice and whether the blends used had any impact on course design. It also discussed the need for a framework that describes the relationship between content alignment and MOOC-based blend models used by HE instructors.

Results showed that MOOCs were integrated in a variety of ways, such as having students:

(1) use the MOOC teaching materials in and outside classroom time;
(2) engage in the discussion boards, analyse their arguments and the ones that were put forward by the community;
(3) create resources to be shared with other MOOC takers.

Most participants claimed they had made internal changes to their courses due to the MOOC-based blend, such as alignment of the in-person content with the MOOC or change in the description of course assignments. However, information about the blend was not available in the CSs even though the blend had affected course design elements, such as course structure, syllabus and assessment. As a result, this type of information is unlikely to be accessible to 'course outsiders', which makes investigations into blended initiatives more challenging.

The MOOC-based Blend Framework was proposed to represent the implementation of blending initiatives as a continuum of content alignment and blending

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702

types, which showed that the lecturers mostly used two blending types but content alignment varied greatly. The framework was designed based on the lecturers' responses and comments on their teaching practice, but could be used by researchers, practitioners and universities to inform institutions, academics or students of the Blended Learning level of a course and allow it to be compared with other MOOC-blended courses.

Potential limitations found in this study involve its sample size, the possibility of generalisations and the interviewees' disciplines as their discipline might have had an impact on the way they integrate MOOCs into their in-person teaching. Consequently, results may only be applicable to the specific contexts the participants were in, and if one tries to generalise these findings to other contexts, it must be done with caution. Further research in this area could use a bigger sample size and assess lecturers' MOOC-based blended models against the MOOC-based blend framework proposed here. The framework could be used to assess the extent to which readily available MOOCs are integrated into in-person modules in more universities. Applying the framework in other contexts would allow it to be scrutinised and validated in terms of its usefulness and reliability.

Since their creation, MOOCs have been much discussed as the future of tertiary and adult education, but there has also been much criticism for its high drop-out rates, potential democratised education failure and expensive investment for universities with no direct financial return (Davies 2017; Hone and El Said 2016; Jordan 2014; Moura *et al*. 2017; Rambe and Moeti 2017). But we should not assume that MOOCs only work as a replacement for in-person teaching, as they can successfully play different roles in educational contexts. They can not only continue to increase the prospective audience for HE but also work as platforms for international academic engagement, global discussions and a rich teaching resource. And if integrated well, they can be a useful tool to support academics and the wide spectrum of students we currently have in HE.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

Data availability statement

Data and method instruments available on request from the corresponding author.

References

Albó, L. & Hernández-Leo, D. (2016) 'Blended learning with MOOCs: towards supporting the learning design process', *The Online, Open and Flexible Higher Education Conference*, Rome, Italy, 19–21 October, pp. 578–588. Available at: http://hdl.handle.net/10230/27478

Albó, L., Hernández-Leo, D. & Oliver, M. (2015) 'Blended MOOCs: university teachers' perspective', *Trends in Digital Education: Selected papers from EC-TEL 2015 Workshops CHANGEE, WAPLA, and HybridEd*, Toledo, Spain, 18 September, pp. 11–15. Available at: http://hdl.handle.net/10230/36387

Barber, M. (2021) 'Gravity assist: propelling higher education towards a brighter future – digital teaching and learning review', *Office for Students,* [online] Available at: https://ofslivefs.blob.core.windows.net/files/Gravity%20assist/Gravity-assist-DTL-finalforweb.pdf

Barber, M., Donnelly, K. & Rizvi, S. (2013) *An Avalanche is Coming: Higher Education and the Revolution Ahead*, Institute for Policy Research, [online] Available at: https://www.ippr.org/files/images/media/files/publication/2013/04/avalanche-is-coming_Mar2013_10432.pdf

Bergmann, J. & Sams, A. (2012) *Flip Your Classroom: Reach Every Student in Every Class Every Day*, International Society for Technology in Education, Washington, DC.

Borthwick, K. (2018) 'What our MOOC did next: embedding, exploiting, and extending an existing MOOC to fit strategic purposes and priorities', in *Flipping the Blend Through MOOCs, MALL and OIL – New Directions in CALL,* eds M. Orsini-Jones & S. Smith, Research-publishing.net, pp. 17–23. doi: 10.14705/rpnet.2018.23.786

Borthwick, K. (2021) 'Making MOOCs go further: utilising MOOCs in teaching and learning', *AdvanceHE*, [online] Available at: https://www.advance-he.ac.uk/news-and-views/making-moocs-go-further-utilising-moocs-teaching-and-learning

Bovill, C. & Bulley, C. (2011) 'A model of active student participation in curriculum design: exploring desirability and possibility', in *Improving Student Learning, Proceedings of the ISSOTL/ISL Conference*, eds C. Rust, Oxford Centre for Staff and Learning Development, Oxford, pp. 176–188. Available at: http://eprints.gla.ac.uk/57709/

Bovill, C., Cook-Sather, A. & Felten, P. (2011) 'Students as co-creators of teaching approaches, course design, and curricula: implications for academic developers', *International Journal for Academic Development*, vol. 16, no. 2, pp. 133–145. doi: 10.1080/1360144X.2011.568690

Braun, V. & Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77–101. doi: 10.1191/1478088706qp063oa

Braun, V. & Clarke, V. (2013) *Successful Qualitative Research: A Practical Guide for Beginners*, SAGE Publications Ltd, London.

Braun, V., Clarke, V. & Rance, N. (2014) 'How to use thematic analysis with interview data', in *The Counselling & Psychotherapy Research Handbook,* eds A. Vossler & N. Moller, London, Sage, pp. 183–197.

Bruff, D. O., *et al*., (2013) 'Wrapping a MOOC: student perceptions of an experiment in blended learning', *MERLOT Journal of Online Learning and Teaching*, vol. 9, no. 2, pp. 187–199. Available at: https://jolt.merlot.org/vol9no2/bruff_0613.pdf

Castañeda, L. & Selwyn, N. (2018) 'More than tools? Making sense of the ongoing digitizations of higher education', *International Journal of Educational Technology in Higher Education,* vol. 15, no. 22, pp. 1–10. doi: 10.1186/s41239-018-0109-y

Caulfield, M., Collier, A. & Halawa, S. (2013) 'Rethinking online community in MOOCs used for blended learning', *EDUCAUSE Review Online*, [online] Available at: http://er.educause.edu/articles/2013/10/rethinking-online-community-inmoocs-used-for-blended-learning

Conole, G. G. (2015) 'MOOCs as disruptive technologies: strategies for enhancing the learner experience and quality of MOOCs', *Revista De Educación a Distancia,* vol. 39, pp. 1–17. doi: 10.6018/red/50/2

Davies, A. (2017) 'Do Moocs generate return on investment?', *THE*, [online] Available at: https://www.timeshighereducation.com/blog/do-moocs-generate-return-investment

De Lima Guedes, K. K. (2020) 'Integrating MOOCs into traditional UK higher education: lessons learnt from MOOC-blend practitioners', in *Education 4.0 revolution: transformative approaches to language teaching and learning, assessment and campus design,* eds K. Borthwick & A. Plutino, Research-publishing.net, pp. 29–36. doi: 10.14705/rpnet.2020.42.1084

Dunne, E. & Zandstra, R. (2011) 'Students as change agents: new ways of engaging with learning and teaching in Higher Education', *ESCalate*, [online] Available at: https://dera.ioe.ac.uk//14767/7/8242_Redacted.pdf

Flavin, M. (2012) 'Disruptive technologies in higher education', *Research in Learning Technology*, vol. 20, pp. 102–111. doi: 10.3402/rlt.v20i0.19184

Garrison, D. R. (2011) *E-Learning in the 21st Century: A Framework for Research and Practice*, 2nd edn, Routledge, New York, NY.

Garrison, D. R. & Kanuka, H. (2004) 'Blended learning: uncovering its transformative potential in higher education', *Internet and Higher Education*, vol. 7, pp. 95–105. doi: 10.1016/j.iheduc.2004.02.001

Graham, C. & Robison, R. (2007) 'Realizing the transformational potential of blended learning: comparing cases of transforming blends and enhancing blends in higher education', in *Blended Learning: Research Perspectives,* eds A. G. Picciano & C. Dzuiban, The Sloan Consortium, Needham, MA, pp. 83–110.

Hone, K. S. & El Said, G. R. (2016) 'Exploring the factors affecting MOOC retention: a survey study', *Computers & Education*, vol. 98, pp. 157–168. doi: 10.1016/j.compedu.2016.03.016

Israel, M. J. (2015) 'Effectiveness of integrating MOOCs in traditional classrooms for undergraduate students', *International Review of Research in Open and Distributed Learning*, vol. 16, no. 5, pp. 102–118. doi: 10.19173/irrodl.v16i5.2222

Jordan, K. (2014) 'Initial trends in enrolment and completion of massive open online courses', *The International Review of Research in Open and Distributed Learning,* vol. 15, no. 1, pp. 133–160. doi: 10.19173/irrodl.v15i1.1651

Kloos, C. D., *et al*., (2015) 'Mixing and blending MOOC Technologies with face-to-face pedagogies', *IEEE Global Engineering Education Conference (EDUCON)*, Tallinn, Estonia, 18–20 March, pp. 967–971. doi: 10.1109/EDUCON.2015.7096090

Moura, V. F., *et al*., (2017) 'MOOCs' potential for democratizing education: an analysis from the perspective of access to technology', in *Information Systems,* eds M. Themistocleous & V. Morabito, EMCIS 2017. Lecture Notes in Business Information Processing, Springer, Cham, vol. 299, pp. 139–153. doi: 10.1007/978-3-319-65930-5_12

Orsini-Jones, M. (2015) 'Innovative pedagogies series: integrating a MOOC into the MA in English Language Teaching at Coventry University', *Higher Education Academy.* Available at: https://www.heacademy.ac.uk/knowledge-hub/integrating-mooc-ma-english-language-teaching-coventry-university-innovation-blended

Orsini-Jones, M., *et al*., (2018) 'B-MELTT: blending MOOCs for English language teacher training', in *British Council ELT Research Papers*, pp. 1–41. Available at: https://englishagenda.britishcouncil.org/sites/default/files/attachments/pub_j121_blending_moocs_for_english_language_teacher_training_final_web.pdf

Orsini-Jones, M., Conde Gafaro, B. & Altamimi, S. (2017) 'Integrating a MOOC into the postgraduate ELT curriculum: reflecting on students' beliefs with a MOOC blend', in *Beyond the language classroom: researching MOOCs and other innovations*, eds Q. Kan & S. Bax, Research-publishing.net, pp. 71–83. doi: 10.14705/rpnet.2017.mooc2016.672

Pérez-Sanagustín, M., *et al*., (2017) 'H-MOOC framework: reusing MOOCs for hybrid education', *Journal of Computing in Higher Education*, vol. 29, pp. 47–64. doi: 10.1007/s12528-017-9133-5

Picciano, A. (2009) 'Blending with purpose: the multimodal model', *Journal of Asynchronous Learning Networks*, vol. 13, no. 1, pp. 7–18. doi: 10.24059/olj.v13i1.1673

Powell, A., *et al*., (2015) 'Blending learning: the evolution of online and face-to-face education from 2008–2015', in *Promising Practices in Blended and Online Learning Series. International Association for K-12 Online Learning*, pp. 1–19. Available at: https://files.eric.ed.gov/fulltext/ED560788.pdf

Rambe, P. & Moeti, M. (2017) 'Disrupting and democratising higher education provision or entrenching academic elitism: towards a model of MOOCs adoption at African universities', *Educational Technology Research and Development*, vol. 65, no. 3, pp. 631–651. doi: 10.1007/s11423-016-9500-3

QAA. (2011) *UK Quality Code for Higher Education, The Quality Assurance Agency for Higher Education*, [online] Available at: https://dera.ioe.ac.uk/13488/3/Quality-Code-Chapter-A3.pdf

Shah, D. (2021, December 14) 'A decade of MOOCs: a review of MOOC stats and trends in 2021', *Class Central*, [online] Available at: https://www.classcentral.com/report/moocs-stats-and-trends-2021

Staker, H. & Horn, M. B. (2012) 'Classifying K-12 blended learning', *Innosight Institute*, pp. 1–20. Available at: https://files.eric.ed.gov/fulltext/ED535180.pdf

Wintrup, J., Wakefield, K. & Davis, H. (2015) 'Engaged learning in MOOCs: a study using the UK Engagement Survey', *The Higher Education Academy*, [online] Available at: https://eprints.soton.ac.uk/373640/1/HEA_engaged-learning-in-MOOCs.pdf

Yuan, L., Powell, S. & Olivier, B. (2014, January 21) 'Beyond MOOCs: sustainable online learning in institutions', *CETIS*, [online] Available at: http://publications.cetis.org.uk/wp-content/uploads/2014/01/Beyond-MOOCs-Sustainable-Online-Learning-in-Institutions.pdf

Citation: Research in Learning Technology 2022, **30**: 2702 - http://dx.doi.org/10.25304/rlt.v30.2702