JOURNAL OF INTERACTIVE MEDIA IN EDUCATION

JIME Virtual Special Collection – 2012 to 2022: The Decade of the MOOC

EDITORIAL

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ABSTRACT

In a New York Times article, Pappano (2012) declared 2012 as 'the year of the MOOC'. It was a year which saw a surge in interest in this new, open form of online higher education. While the initial hype around Massive Open Online Courses (MOOCs) subsided and their form has changed significantly from the first large-scale courses, more learners than ever are registered with the platforms, which have attracted substantial levels of investment. In this special collection, we bring together articles published in the Journal of Interactive Media in Education over the past ten years, which have focused upon MOOCs from a diverse range of research perspectives. First, we provide an overview of major events and trends in relation to MOOCs over the past ten years. We then take a closer look at the 25 papers published in JIME and included in the virtual special collection, arranged in relation to four main themes, including: situating MOOCs; learning design and roles; MOOCs and languages; and accessibility and inclusion.

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INTRODUCTION

This year – 2022 – marks ten years since 'the year of the MOOC', a phrase coined by Laura Pappano, in an article published in the New York Times (Pappano 2012) and subsequently widely cited, as it captured a wave of MOOC-related excitement. In this virtual special collection, we bring together the articles which have been published in the Journal of Interactive Media in Education (JIME) during the past decade. We take the opportunity in this editorial to analyse some of the trends in the articles published on MOOCs in JIME during this period, and present an overview of the papers arranged according to four core themes: situating MOOCs; learning design and roles; MOOCs and languages; and accessibility and inclusion.

In this introductory section, we seek to trace the major events in the field since 'the year of the MOOC'. In 2012, levels of interest in MOOCs were rapidly rising, within education and also mainstream media. Figure 1 charts changes in the level of interest, defined as the number of 'top tier news articles' which mentioned MOOCs. These data were collected by HolonIQ, an organisation which focuses upon analysis of innovations within education, and Figures 1 and 2 are reproduced with their permission. Pappano's article was published in the fourth quarter of 2012 (November), just before levels of interest in MOOCs in news articles reached its peak, which followed in the first quarter of 2013. Over the next two years, interest levels fell at a steady rate, reaching a point in 2015 where 'disruption fatigue' had been reached (HolonIQ 2020). This also coincided with the lowest proportion of positive sentiment in articles (Figure 2). After this point, interest was sustained at a more consistent and lower level. Despite the decrease in levels of media interest in MOOCs over time, the sentiment associated with MOOCs steadily improved after 2015 (Figure 2) and by the end of 2019 had achieved a higher level of positive sentiment than during the early years of MOOC hype (2012/2013).

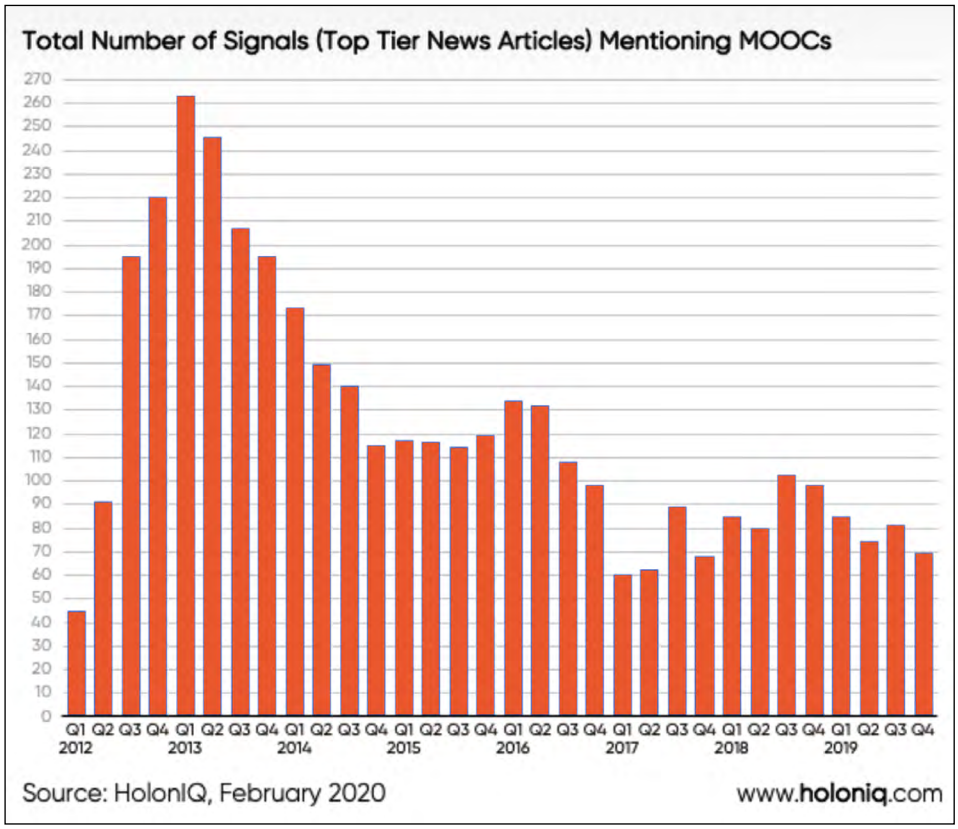

Figure 1 Changes in level of interest – approximate number of articles – on the topic of MOOCs over time. Reproduced with permission from HolonIQ.

While MOOCs faded from being mainstream 'news', over the course of the decade they have been quietly expanding, and evolving. While the early news articles reflected an obsession with metrics and scale – a fascination with the sheer numbers of students signing up – those early figures are completely dwarfed by the numbers of users now associated with the major platforms. The Class Central website has kept track of data and trends in relation to MOOCs, and provides a wealth of information. Four platforms have consistently appeared in its annual list of the top five most popular MOOC platforms; Coursera, edX, FutureLearn and Udacity (EdSurge 2015; Shah 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021a). Other platforms which have featured in the top five most popular platforms include SWAYAM, XuetangX and MiríadaX.

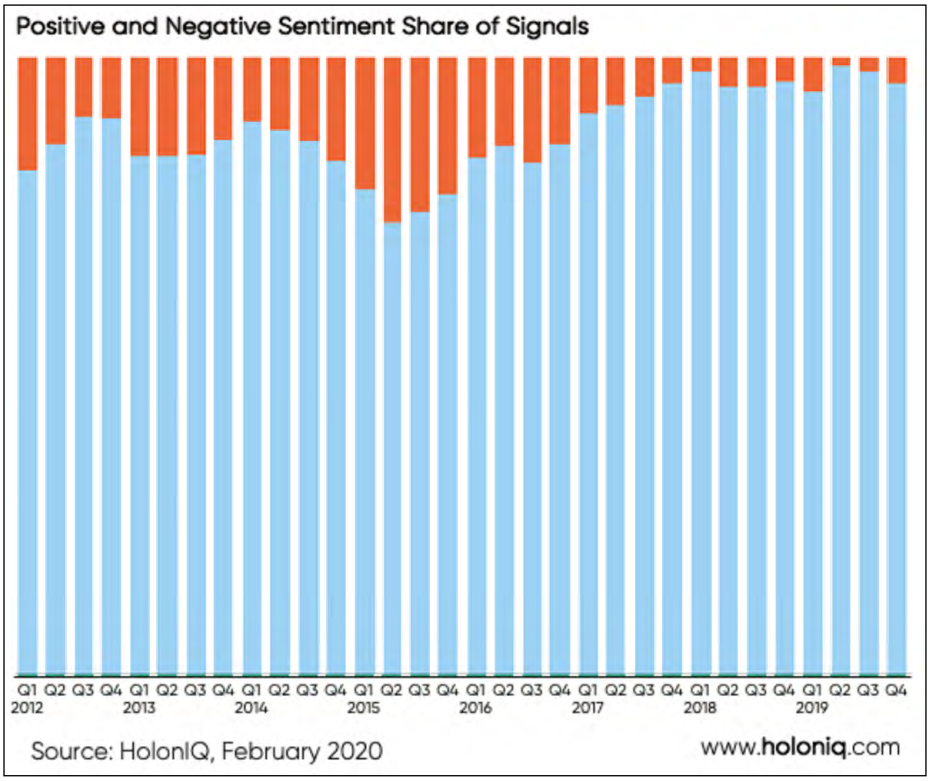

Figure 2 Changes in level of positive and negative sentiment in articles on the topic of MOOCs over time. Proportion of sentiment which is negative is shown in orange; positive sentiment is shown in blue. Reproduced with permission from HolonIQ.

The growth in users between 2014 and 2021 is plotted in Figure 3. Note the boost in growth rates associated with the onset of the Covid-19 pandemic in 2020. The 2021 figures put the combined users based across the four platforms at a total of 170 million users.

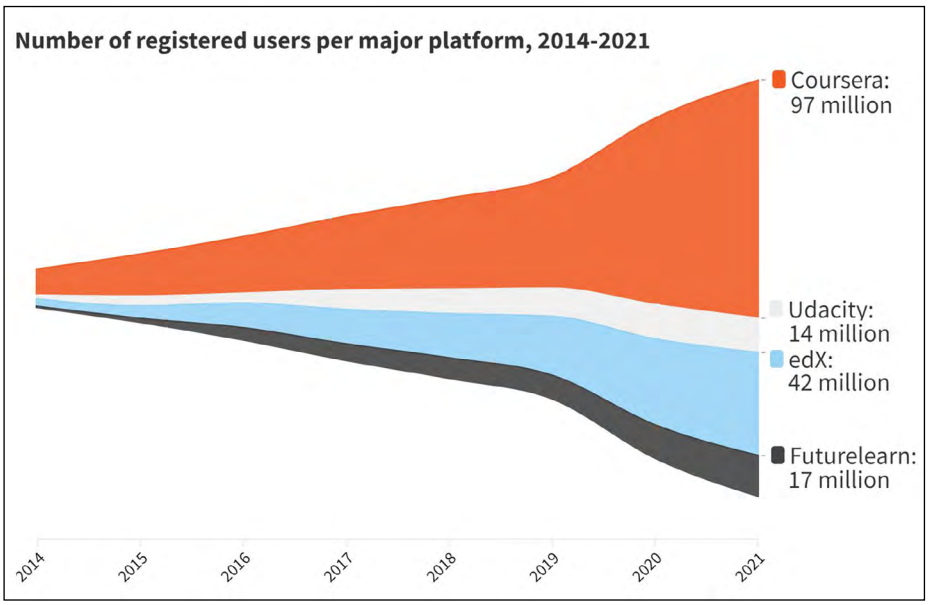

Figure 3 Growth in number of registered users for four of the largest platforms – Coursera, edX, FutureLearn, Udacity (data sources: EdSurge 2015; Shah 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021a). Note increase associated with the Covid-19 pandemic.

Over this period, the pedagogical and business models underpinning MOOCs have continued to evolve. When MOOCs first emerged, questions were quickly raised about their relationship with formal education, and their financial sustainability. In Figure 4, we have charted some of the major events and developments in the field over the past decade. While this is far from exhaustive, some salient features emerged in the process of compiling the timeline.

In 2012, one of the key areas of debate related to the pedagogical model behind MOOCs, with distinctions being made between the early, connectivist 'cMOOCs' (exemplified by truly open, community-focused courses, drawing upon a range of online tools) and the emerging platforms of 'xMOOCs'. The field is now dominated by a handful of platforms; and in the last few years, the massive user bases of the platforms have translated into vast company valuations. In 2012, courses considered to be 'xMOOCs' were still generally free for participants to study and even earn a certificate; this has long since been discontinued, with access often now being restricted to a particular time period without payment of a fee, and no free certification. Now, a

	2001: MIT OpenCourseWare 2006: Openlearn launched 2007: Alison founded 2008: Khan Academy incorporated	2008: Connectivism and Connected Knowledge course (CCK08) 2009: Peer-to-peer University (P2PU) launched 2010: Udemy founded
2011	Digital Storytelling 106 course (DS106) made open February: LAK11 course April: MobiMOOC	★ May: edX launched ★ June: Udacity founded September: Change11 course ★ December: MITx launched
2012	★ April: Coursera launched 📈 August: 1 million Coursera users	★ December: FutureLearn launched
2013	🎓 January: First Udacity courses for university credit 🎓 January: Fees for verified Coursera certificates	★ March: Open2Study launched ★ MiríadaX launched 🎓 September: edX 'Xseries' ★ October: XuetangX launched
2014	🎓 January: Coursera launch Specializations	🎓 June: Udacity announce nanodegrees
2015	📈 February: 1 million FutureLearn users	£ November: Udacity reaches 'unicorn' status ($1 billion valuation) through latest funding round
2016	🎓 May: 'FutureLearn Programs' launched	🎓 September: edX launches first 'MicroMasters'
2017	★ July: SWAYAM launched	
2018	🎓 October: edX launches Masters degrees	
2019	£ £ April: SEEK Ltd invest $103 million in Coursera, achieving unicorn status; also £50 million for 50% stake in FutureLearn	🎓 September: Coursera launch 'Professional certificates' 📈 November: 10 million FutureLearn users
2020	🎓 January: edX launch 'MicroBachelors'	🎓 February: FutureLearn launch 'microcredentials'
2021	🎓 January: FutureLearn launch 'ExpertTracks £ March: Coursera IPO share trading - $4.3 billion value 🎓 Coursera 'University certificates' to start in 2022	£ November: Acquisition of edX by 2U for $800 million completed

Figure 4 Timeline of major trends within the field of MOOCs across the past decade.

range of different 'microcredentials' are available, from individual courses to Masters degrees. While the fees associated with microcredentials are much lower than for 'traditional' higher education courses, they are not insignificant sums and will have compromised the equity effects of MOOCs to some extent.

In this introductory section, we have presented a brief overview of major changes in the field in the ten years which have elapsed since the so-called 'Year of the MOOC' (Pappano 2012). Much has changed during this period, and this introduction is only a brief overview, but one thing is clear; while MOOCs have arguably failed to live up to the initial hype and fundamentally 'disrupt' higher education, they have certainly added some diversity to it. Compromises have been made in relation to the truly 'open' and equitable access of educational provision through MOOCs, but for millions of learners, MOOCs do fill an educational niche. A much wider range of higher education institutions now offer some kind of distance education through MOOCs than did previously. As MOOCs have evolved and matured, now is perhaps the time to examine more deeply the changes to higher education which have taken place. Furthermore, as earlier issues of sustainability are being resolved, looking ahead, there may be scope for platforms to look back upon their roots and the spirit of democratising education, and whether there is more that can be done to widen participation in the future.

MOOC RESEARCH IN THE JOURNAL OF INTERACTIVE MEDIA IN EDUCATION

To mark the milestone of ten years passing since the 'year of the MOOC', the purpose of this virtual special collection is to reflect upon the body of research published in JIME over the years

with a focus on MOOCs. As a starting point, we searched the JIME archives for the terms 'MOOC' and 'massive open online course', and identified 25 articles with a clear focus on MOOCs for inclusion in the collection. The articles span the whole of the past decade (Figure 5), with the earliest paper in the collection being published during the 'year of the MOOC' itself (2012). This includes one special collection focused on MOOCs, 'Developing a Strategic Approach to MOOCs' published in 2016 (Ferguson, Scanlon & Harris 2016).

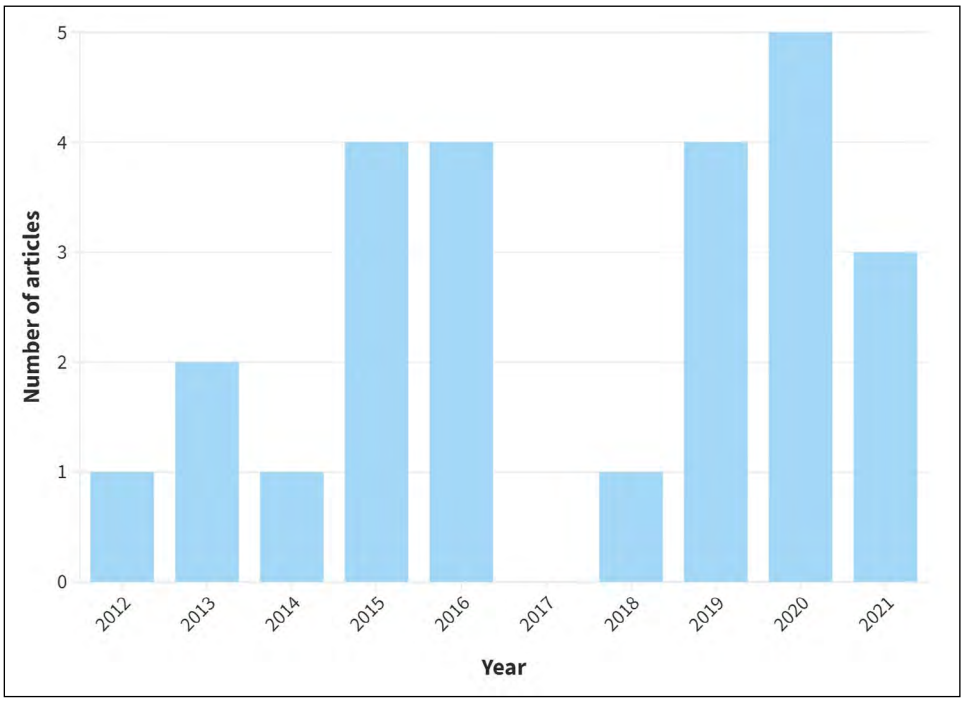

Figure 5 Number of MOOC-focused papers published in JIME by year, since 2012.

The 25 articles included in this virtual special collection were contributed by 56 unique authors, from a range of locations (Figure 6). Two of the articles – Daniel (2012) and Scanlon, McAndrew and O'Shea (2015) – sit within the top ten most popular JIME articles to-date. At the time of writing (Spring 2022), Daniel (2012) has registered over 22,000 views and downloads, and Scanlon, McAndrew and O'Shea (2015) over 5,000.

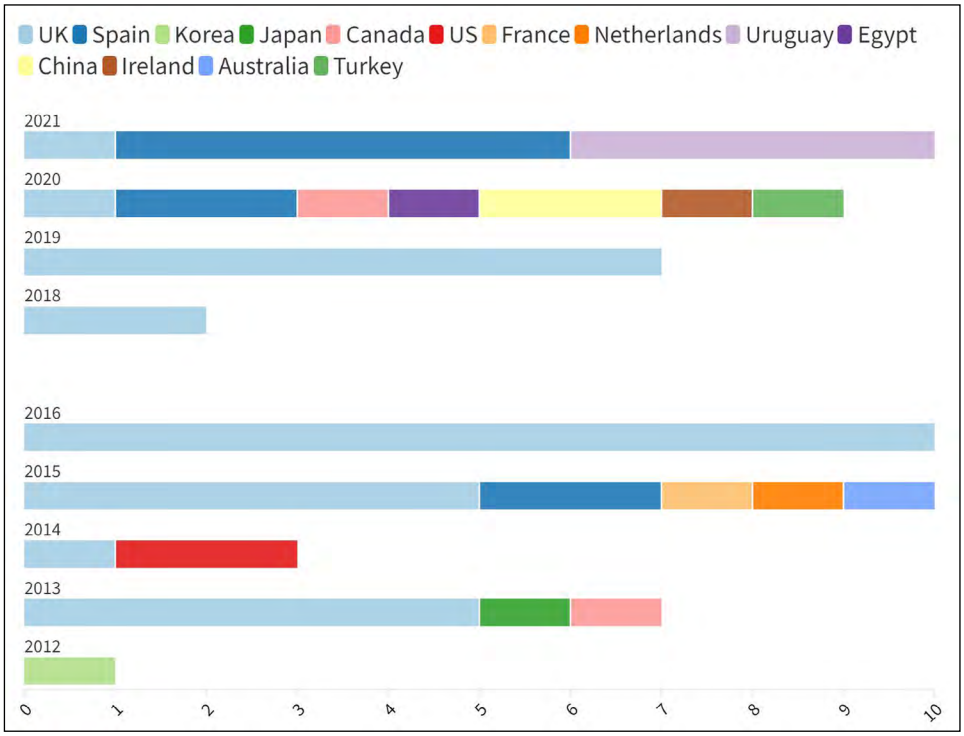

Figure 6 Geographical location of authors of the MOOC-focused papers published in JIME by year, since 2012.

The majority of articles within the special collection present empirical papers (18), with a smaller proportion presenting review or position papers (7). The methods used in the articles are shown in Figure 7. Initially, literature-based and theoretical articles were more prevalent;

over time, this has shifted toward a greater proportion of empirical papers, utilising a range of qualitative, quantitative, and mixed methods.

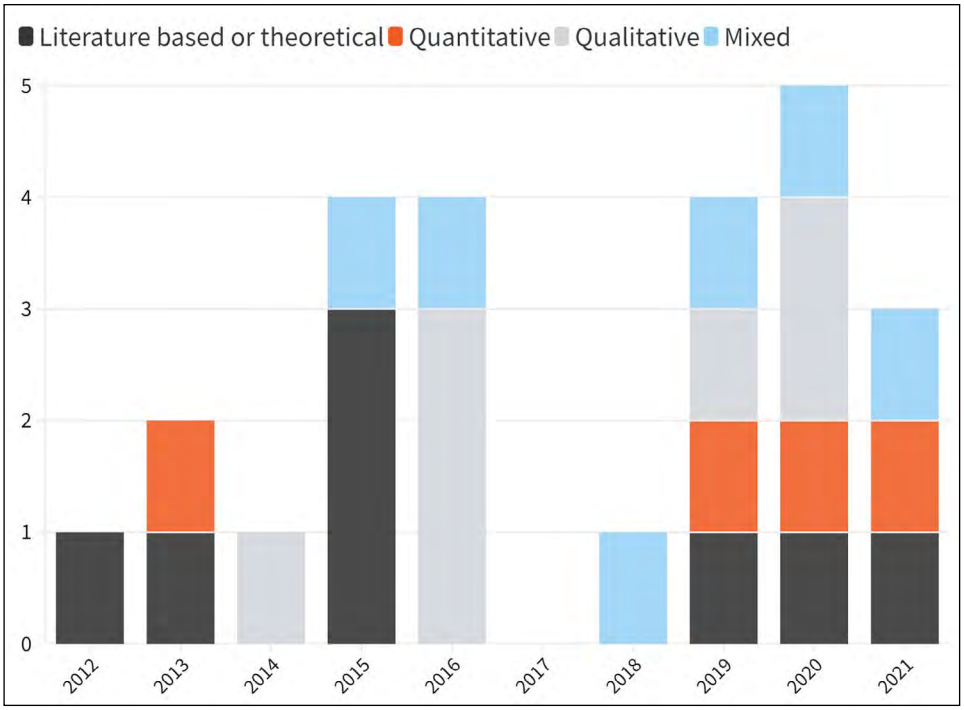

Figure 7 Methods used in the articles, according to year.

We used a combination of approaches to examine the topics addressed by the 25 articles and draw out themes across the past ten years. First, the author-specified keywords associated with each paper were extracted. Keywords which were synonymous or very closely related were merged. The data were rendered as a network to visualise relationships between keywords and articles in the collection (Figure 8).

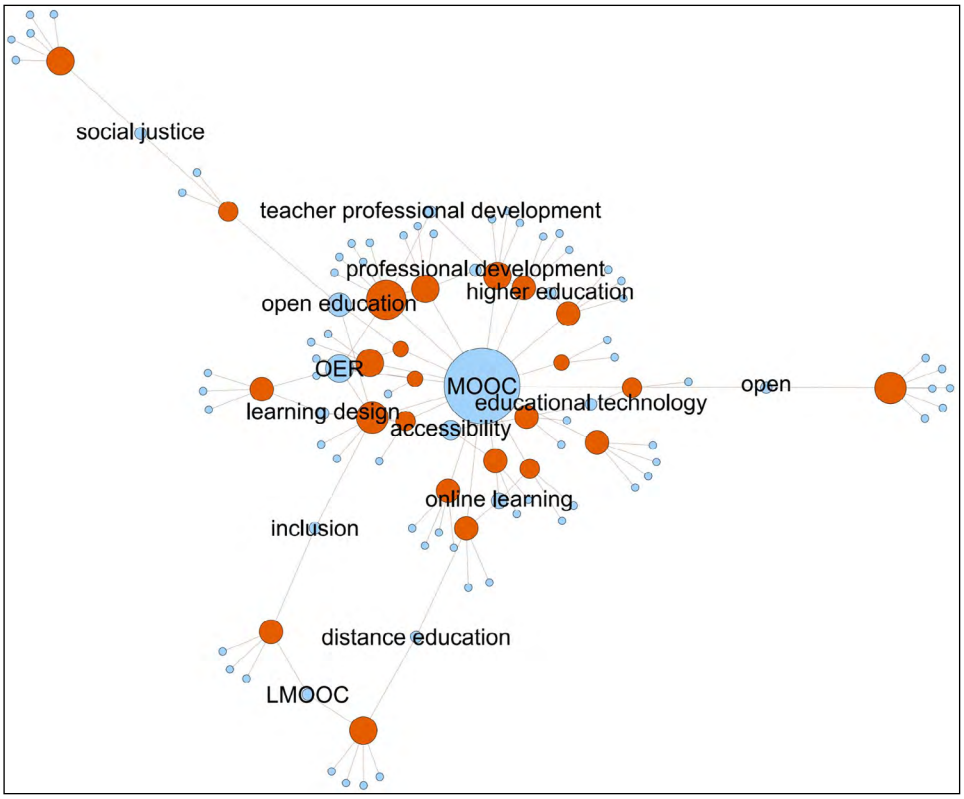

Figure 8 Network of keywords (blue nodes) associated with the 25 articles (orange nodes) in the virtual special collection. Keywords which were used by two or more articles are labelled.

While the keywords in Figure 8 give some sense of the recurring topics within the collection, a large proportion of the keywords were unique, and this rendering does not account for groups of different but semantically similar words. In order to move beyond keywords to clusters of topics, we imported the 25 articles into qualitative analysis software (NVivo) and carried out

open coding. The full range of themes, and their frequency over time, are shown in Figure 9. This analysis shines a light upon the nuanced ways in which MOOCs have been explored in the literature published in JIME, and points to ways in which this has changed over time.

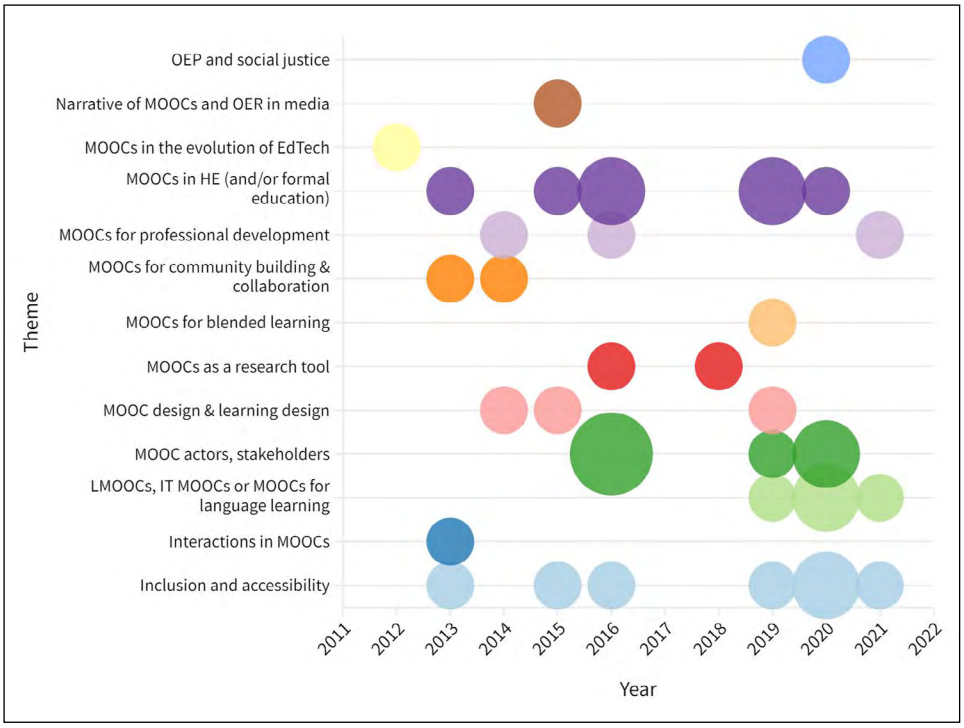

Figure 9 Emergent themes identified through open coding of the 25 articles. Note that at this stage, a single article could be tagged with more than one theme.

We also examined changes in the sentiment within the articles over time, using NVivo. Figure 10 shows the number of instances of positive and negative sentiment per year. Note that as this measure is cumulative, it has been divided by the number of papers published in each year and the chart presents the average. While positive sentiment consistently outweighs negative sentiment over this time period, the gap between negative and positive sentiment varies. The figures suggest that this may have narrowed in the most recent two years, which may indicate a shift toward greater criticality in research papers on this topic.

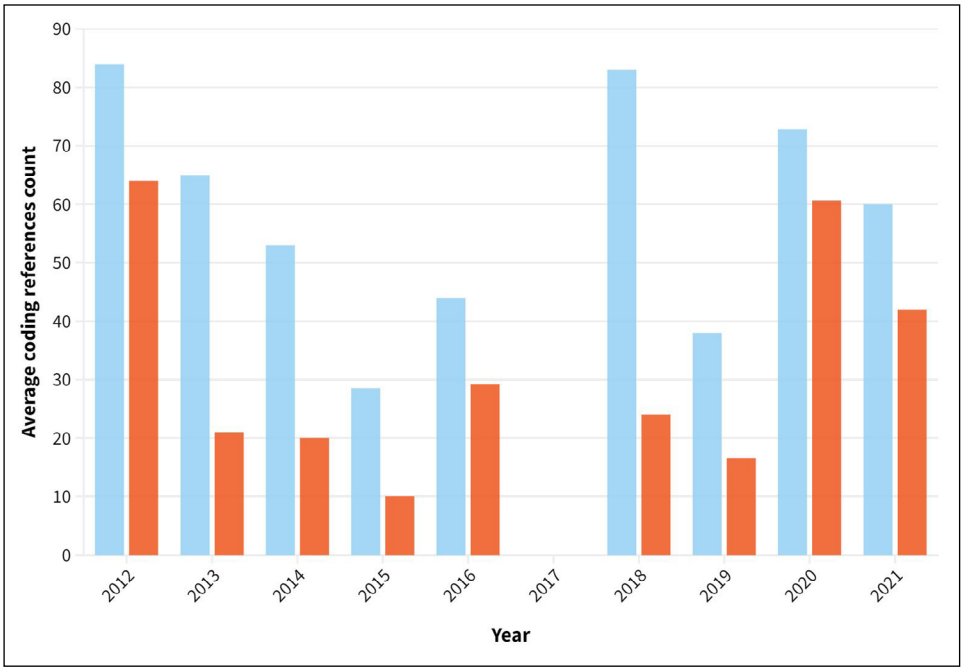

Figure 10 Levels of positive (blue) and negative (orange) sentiment in the articles within the special collection. The average figures per year are shown, as the number of papers published per year varied.

In order to structure the discussion of the articles in this virtual special collection, we have consolidated the themes into four clusters of unique articles, as shown in Figure 11. In the sections which follow, each of the papers will be introduced in relation to one of four core

clusters of themes which emerged from the analysis: situating MOOCs; MOOCs and languages; learning design and roles; and accessibility and inclusion.

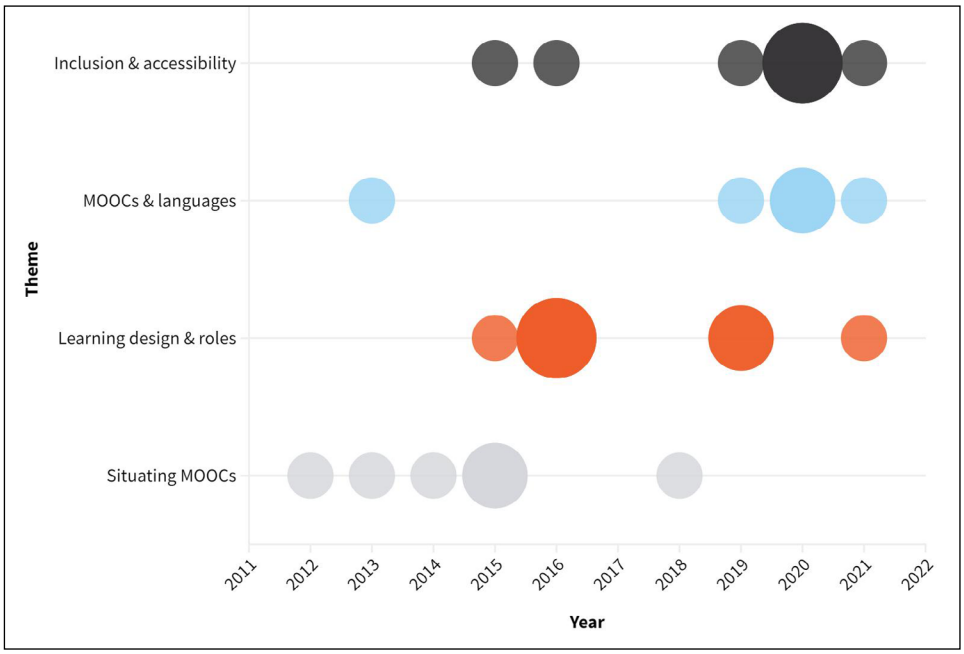

Figure 11 Number of papers published in JIME according to the four main themes, by year.

SITUATING MOOCS

The first of the four themes, 'situating MOOCs', refers to a cluster of articles which explore how this novel mode of distance education sits in relation to the broader higher education ecosystem. As Figure 11 suggests, this was an early, immediate response to the rapidly growing MOOC phenomenon, and articles within this theme often use literature-based methods to make connections to the wider field and precursors.

The earliest paper to be included in this collection – Daniel (2012) – aptly reflects the field at the time through its title 'Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility'. The paper is a direct response to the intense attention MOOCs were attracting at the time, and in this article Daniel first discusses definitions and history of the term, before pinpointing several key issues facing the field at the time. These are presented as both challenges and opportunities, and include issues of quality, completion rates, certification, and the purpose of MOOCs within the wider higher education landscape. Looking back, the discussion is highly prescient and it is interesting to see what has come to pass since then, and what has not.

Scanlon, McAndrew and O'Shea (2015) draw upon key aspects of existing research literature focused on open, online and distance learning, formal and informal, of direct relevance to the emerging agenda around MOOCs. The importance of designing courses to flexibly support a diverse cohort of students is key, and the paper provides practical, evidence-based insights. As noted in the previous section, both Daniel (2012) and Scanlon, McAndrew and O'Shea (2015) sit within the most frequently downloaded JIME papers, which perhaps reflects their importance in bringing together the emerging field of MOOCs and situating it within the broader context of distance education and technology-enhanced learning.

Miyazoe and Anderson (2013) further explore how formal education is being reshaped through the emergence of MOOCs. In this theoretical paper, a framework for categorising interactions between students, teachers and content within courses – the Interaction Equivalency Theorem (EQuiv) – is applied. This illustrates similarities and differences between three MOOC models: xMOOCs (such as the major platforms), cMOOCs (connectivist MOOCs), and sMOOCs (social constructivist MOOCs). In the next paper, an example in contrast with the dominant 'xMOOC' model is presented. Lockridge, Levine and Funes (2014) present a case study of a MOOC which is famously 'not a MOOC' (Levine 2013) – DS106. DS106 is a computer science course in Digital Storytelling from the University of Mary Washington, which was made openly available online from 2011. DS106 aligns more closely with the 'cMOOC' model, foregrounding openness and community. This paper presents an interesting example of convergence between a cMOOC and

corporate training, through a case study of how DS106 had been used at the multinational corporation, 3M.

The 'disruption fatigue' and slump following the initial hype around MOOCs, as outlined in the Introduction, is also reflected in the collection. In 'MOOCs and the Silicon Valley narrative', Weller (2015) argues that the hype surrounding MOOCs circa 2012 can be traced to the interaction of two powerful narratives: the framing that the current educational system is 'broken', and that Silicon Valley solutionism is the answer. At this point, it was becoming increasingly clear that MOOCs would inevitably fail to significantly 'disrupt' the higher education sector. Weller argues that rather than looking to MOOCs, Open Education holds greater potential for truly radical and egalitarian approaches to education. An example of putting the potential for combining MOOCs with other forms of Open Education into practice is described in the most recent paper within this theme. Okada and Sherborne (2018) draw upon a range of qualitative and quantitative data to present a rich case study of the ENGAGE Project. The project uses a model combining elements of OER, MOOCs, Communities of Practice and Open Schooling, and the paper describes how it has had a range of positive impacts across several communities, at considerable scale.

LEARNING DESIGN AND ROLES

The second cluster of articles relate to learning design and roles within higher education and MOOCs. This represents a turn from the conceptualisation of MOOCs, towards the 'how' and 'who' of putting MOOCs into practice. It combines both issues of design, and how roles and relationships within higher education were being reshaped by increasing numbers of institutions opting to offer MOOCs. This theme is a progression from the first, as data began to emerge from experiences of a wider range of institutions providing MOOC courses. Within this theme, two sub-themes can be identified: first, examples reporting case studies of particular courses and their learning design; and second, studies considering how roles and relationships for individuals were being changed as a result of MOOCs.

In the first paper within this theme, Lambert (2015) describes the development and evaluation of the first MOOC at the University of Wollongong, 'The Reluctant Mathematician'. Drawing upon a range of data sources and perspectives, the paper presents a rich case study of learning design and how MOOCs can be used to support a range of learners. Hodge (2016) presents the example of the University of Warwick's 'Literature and Mental Health: Reading for Wellbeing' MOOC, delivered through the FutureLearn platform. This MOOC incorporated survey data collection into the course, on a topic related to the course. While integrating a research tool into the MOOC design offered some benefits – such as large scale data collection, and enriching the experience for learners – there were also limitations to the quality of the data collected. Beer (2019) also presents an example focusing on a FutureLearn MOOC, in this case on the topic of Nursing and delivered by Coventry University. In particular, the article focuses upon an issue at the crux of the relationship between MOOCs and 'traditional' higher education: assessment of learning. A rubric was designed using Mezirow's theory of Transformative Learning, in order to evaluate both student learning and learning design of the course, which could be applied in other contexts.

In terms of exploring the experiences of those whose roles within higher education were affected, a pair of papers within this theme focus on individuals within higher education whose roles had been expanded in new ways as a result of their institutions' diversification into MOOCs. León Urrutia, Fielding and White (2016) present a study undertaken with PhD students who had taken on employed roles as mentors in MOOCs. The role brings both potential benefits and risks for PhD students; opportunities include being able to develop as an academic and foster teaching skills, while there can be risks associated with being relatively exposed in a public-facing role online. White and White (2016) explore the socio-technical network of actors involved in universities' provision of MOOC courses, illustrating how the phenomenon is reshaping roles and relationships within higher education, with learning designers emerging as pivotal among the various actors involved. The student perspective is explored by Dalsgaard and Gislev (2019), with a particular focus on 'invisible learners'; that is, those who do not study MOOCs to completion, or who may be considered to be 'lurkers' rather than participating in a prominent way. This study explores the perspectives of a small sample of invisible learners,

suggesting that they do still benefit from participation, and that more can be done in terms of course design to support them. In one of the most recent papers in the collection, traditional roles are upended. Rodés et al. (2021) present an example of how a MOOC format was rapidly deployed to support educators in the pivot to online education precipitated by the Covid-19 pandemic.

MOOCS AND LANGUAGES

MOOCs and languages soon became prominent in thematic analysis (Figure 9), and a clear cluster of papers were identified as one of the core themes. It is the first of the two themes which are more recent, with a median publication date of 2020. It is unclear whether this reflects a broader trend, or is a reflection of the JIME audience and community in particular.

This cluster focuses on MOOCs and language from two perspectives. First, language as an access barrier particularly if learners are not speakers of English and second, MOOCs for language learning purposes, known as Language or LMOOCs. It also includes studies on Translation and Interpreting (TI) MOOCs, which show the diversity of emerging research into MOOCs around language.

The first article within this theme draws attention to the language of MOOCs as a barrier to accessing and reusing these courses similar to other OER. Beaven et al. (2013) remind us that by offering MOOCs in English, we are removing around 80% of the world population's access to these courses, and suggest translating MOOC content as a preliminary step to minimise this access barrier. However, they also remind us of the high cost of translation, and recommend crowd-sourcing this task. To this end, their paper presents how they facilitated this process by offering a MOOC on Open Translation Tools and Practices (OT12) and encouraging the community of practitioners to harness crowdsourcing to advance the MOOC openness agenda.

A closely related article to Beaven et al.'s (2013) work is the study by Xu, Deng and Zhao (2020) that specifically explores Translation and Interpreting MOOCs (TI) in China, where these courses are limited in number and are adapted quite late. The reason for such a focus is the view that TI MOOCs can help Chinese education to address the shortage of TI educators and resources. The authors sought to create an overall picture of the current status of these courses and their future developments through a mixed-method study. By examining 29 TI MOOCs and interviewing educators and learners, the paper reveals that TI MOOCs are at their primary stage in China and face challenges such as limited numbers, inadequate content and insufficient management despite the attention they have received from the authorities. The authors provide suggestions for national and local authorities, higher education institutions and educators for the development of these MOOCs in future.

The next two papers within this cluster focus on different aspects of integrating LMOOCs into university language programmes to support learning and enhance students' language skills. The first paper (Conde Gafaro 2019) provides an overview of the literature around incorporating MOOCs into face-to-face language courses with a particular focus on self-regulation of learning. It outlines how integrating LMOOCs into university degrees could lead to an innovative blended model and provide students with opportunities to practise and improve their language skills. However, it also highlights the challenges these courses can create for students particularly if they are not good at monitoring their learning. The paper suggests that before integrating LMOOCs into language courses, the self-regulatory processes that students are required to adopt must be identified and students must be guided on how to monitor their learning in and outside the classroom as well as online. Despite these challenges, the next paper by Estebas-Vilaplana and Solans (2020), provides empirical evidence for the positive impact of integrating LMOOCs ('The Acquisition of English Pronunciation through Songs and Literary Texts') into undergraduate distance degrees. While outlining a novel approach to teaching pronunciation and the design process of the LMOOC, the authors report that offering the MOOC as complementary material to 640 undergraduate students resulted in better final oral exam outcomes and improved pronunciation. They also emphasise that the development of this MOOC enabled them to test and investigate a new methodology to teach pronunciation.

The last paper of this cluster (Read & Barcena 2021) considers the potential of LMOOCs to support social inclusion particularly in relation to displaced people such as migrants and

refugees. It introduces the concept of activeness – a psychological and cognitive state of effective language learning – and explores how by strategically enabling such a state through learning design, LMOOCs can support more effective language learning, empower vulnerable learners and encourage them to become engaged community members. The authors argue that this in turn is a key step towards doing the same in the real world. Similar to the first article of this cluster, this paper shows the relationship between language and inclusion in MOOCs which leads us to the last cluster of this collection: accessibility and inclusion.

ACCESSIBILITY AND INCLUSION

The final theme comprises a cluster of articles which address topics related to accessibility and inclusion. It is the second of the two themes which are more recent (with a median publication date of 2020). Through the thematic analysis, a change of focus over time emerged within accessibility and inclusion. In the early years (2013–2015) studies focused on accessibility in terms of accessible language[1] and access to the learning resources. For example, in the first article of this theme, Sharples et al. (2015) present how using mobile and ubiquitous technologies can extend the reach of MOOCs not only in terms of access to the learning content but also by enabling new methods of "context-sensitive, geo-located and crowd-learning"(p. 6). In subsequent years, the focus shifts to the accessibility of MOOCs for disabled learners and assistive technologies. It is clear that attending to first-order access barriers such as language and devices has given its place to studies that examine MOOC accessibility with regard to meeting the needs of learners with a disability.

In the first study of this sub-theme, Iniesto et al. (2016) revealed that there had been limited progress in creating universally accessible MOOCs up until 2016. Their analysis of MOOC stakeholders' views about the usefulness of these courses for learners with disabilities showed a common belief that disabled learners benefit from MOOCs in the same way as non-disabled learners. However, there was also a general agreement that monitoring of disabled learners does not occur, most likely because of inadequate processes in the management of accessibility, a lack of clear responsibility and relation between roles for creating accessible content and global legislation and standardisation.

More recently, Hillaire, Iniesto and Rienties (2019) explored and measured the emotional load of MOOC content and the way it is captured by Text-to-Speech (TTS) technologies that disabled learners might be using. They found that 35% of MOOC texts had an emotional expression. Yet, assistive technology voices that were reading the textual content showed poor emotional alignment and tended to articulate the text more negatively compared to the emotional content of the text. This has implications for the adjustments of synthetic voices in assistive technologies to improve accessibility.

Since 2020, the studies appear to move away from technical and design aspects of accessibility and focus on wider social access in terms of inclusion, equality and equity. This group of studies draw attention to MOOCs for social inclusion and addressing social injustices for a more equitable and sustainable education. Within this sub-theme, Bali, Cronin and Jhangiani (2020) introduce a typology of OEP with three dimensions (content to process-centric; teacher to learner-centric and pedagogical to social justice-focused) while examining social, economic or political justices different OEP can support. For example, the analysis shows that open connected courses such as cMOOCs have economic social justice impact since they provide free content and learning experience to some learners who otherwise would not have access to them. They are unlikely to have cultural or political justice impact unless they have explicit design elements to include marginalised views or include marginalised populations in their design process. Through this unpacking of OEP, the authors encourage practitioners to rethink their OEP if their goal is to promote social justice.

Adam (2020) furthers the discussion around inclusion and social justice by exploring how social injustice is conceptualised and addressed by South African MOOC designers. She creates a multidimensional framework that considers material, cultural-epistemic and political/geopolitical injustices. Her interviews with MOOC designers showed that (in)justice is

1 See Beaven et al.'s, (2013) study in the previous cluster.

conceptualised differently by different designers. Those who have cultural-epistemic injustice in mind tend to focus on the geopolitics of the content and inclusive processes, whereas those who emphasise material injustice concentrate on socio-economic and infrastructural inequalities. Considering injustice is conceptualised in different ways, a multilayer approach to tackle different dimensions of injustice seems to be essential.

Meri-Yilan (2020), on the other hand, explores learners' perceptions of how studying a MOOC shaped their sense of social inclusion. Based on data from student surveys and diaries, she found that engaging with the MOOC enhanced students' level of social inclusion, as it enabled them to engage in online learning that is often not available to those in marginal regions and communities. She concludes that although this is a rather elementary form of social inclusion, it is still an important access opportunity for marginalised learners.

This cluster concludes with a paper (Iniesto et al. 2021) on creating a more inclusive and equitable education considering the sustainable development goals of the UNESCO 2030 agenda (United Nations 2015). It outlines the key challenges that we are currently facing in open education for achieving this goal by using examples from the Global OER Graduate Network (GO-GN) – a research network that facilitates collaborative research around open education. The first challenge is a lack of using accessibility metadata standards for labelling OER, which reduces the chances of reusing these resources and meeting accessibility needs. This also applies to the profiling used in OER repositories and recommender systems. Another challenge relates to little evaluation of OER's inclusive design through frameworks such as Universal Design Learning to inform designers' and educators' content development. Finally, there are limited numbers of action-oriented MOOCs and OER which enable promoting sustainability.

LOOKING AHEAD

By approaching the tenth anniversary of MOOCs, many MOOC stakeholders have commented on the future of these courses. For example, in reviewing online learning trends, Brown (2021) describes a new area of future growth for MOOCs, i.e. "schooling education" where these courses will be used by younger learners and teachers. New potential public-private partnerships for MOOCs will further challenge traditional business models (Brown 2021); for example, by observing the MOOC production trends, Shah (2021b) predicts that MOOC providers will rely less on universities for course creation, and they will be using corporate partners such as Google, Amazon and Microsoft. Corbeil, Khan and Corbeil (2019) envisage that MOOCs will not be as massive and open as they currently are and the name MOOC will be replaced by terms such as Nanodegrees or MicroMasters as MOOC providers aim to differentiate their products and create their own brand. They also believe that there will be more AI-powered MOOCs for a more personalised learning experience.

Considering the thematic analysis of JIME articles reported here and the recent focus on the use of MOOCs to facilitate social inclusion and promote social justice, it seems that one way that these courses will continue to support education is to help equity and equality be it in addressing the needs of learners with disability, widening access and participation, giving marginalised group such as refugees access to education and the opportunity to develop their skills to help their independence and voice.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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