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Are MOOC learning designs culturally inclusive (enough)?

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Abstract

Background: Extensive research on massive open online courses (MOOCs) has focused on analysing learners' behavioural trace data to understand navigation and activity patterns, which are known to vary systematically across geo-cultural contexts. However, the perception of learners regarding the role of different learning design elements in sustaining their engagement in the course is still unclear.

Objectives: This study aimed to examine learners' perception of learning design elements in MOOCs and explore the ways in which these perceptions differ between geo-cultural contexts.

Methods: We conducted interviews with 22 learners from seven geo-cultural regions to gather insights into their learning design preferences.

Results: Our findings indicate that learners from regions such as South Asia exhibit a strong inclination towards video-based content and a lesser preference for reading textual resources. In contrast, learners from regions such as Anglo-Saxon demonstrate a high preference for reading texts such as articles and video transcripts.

Conclusion: The observed variations in self-reported interests in various learning design elements raise intriguing questions about the nature and extent of participation of various geo-cultural groups. This study underscores the need to develop inclusive MOOC designs and implement learning analytics approaches that adapt to the cultural preferences of learners.

KEYWORDS

Geo-cultural context, Learning design, MOOC

1 | INTRODUCTION

Massive Open Online Courses (MOOCs) are designed to provide online education to a large, global audience, with only minimal technical requirements for enrolment (Jansen & Schuwer, 2015). However, prior literature shows that many learners disengage from MOOCs at an early stage (Reich & Ruipérez-Valiente, 2019; Ruipérez-Valiente et al., 2020). Quantitative research into online learning environments has linked course design and learners' engagement (Nguyen et al., 2017; Rienties & Toetenel, 2016; Rizvi et al., 2020), and engagement with

various content types (articles, discussions, quizzes, videos, etc.) has been found to vary across regional and geo-cultural contexts (Bearman et al., 2020; Kizilcec et al., 2017; Liu et al., 2016; Ogan et al., 2015; Rizvi et al., 2022). Additionally, low persistence rates have been observed in learners from non-western regions, particularly from the global South (Kizilcec & Kambhampaty, 2020; Ruipérez-Valiente et al., 2020). The cultural diversity represented in course enrolments combined with the continued presence of geographic gaps in learner engagement and achievement raises the question of whether MOOC learning designs are culturally inclusive (enough)?

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People's cultural background is known to shape their experience with technology. Cultural and regional contexts have been found to affect users' perceived enjoyment and their perceived usefulness of a resource, which are correlated with their intention to remain engaged with that resource (Davis et al., 1992; Hornbæk et al., 2017; Reinecke & Bernstein, 2013). In this article, engagement refers to the level of involvement and interaction of the learner with the course activities, instructors, and other learners, for example, regularly accessing instructional videos, reading material, taking assessments, and participating in course discussions. This study adopts a similar approach to that of previous research in culturally adaptive user interfaces, where a higher perceived usefulness and enjoyment were expected to increase resource engagement (Reinecke & Bernstein, 2013; Reinecke & Gajos, 2014). A culturally adaptive MOOC design may thus increase participation from otherwise marginalised, under-represented group of learners. Recent work on Psychologically Inclusive Design has examined how various cues (visual, verbal, design, and interaction) affect learners' feelings of belonging and self-efficacy in an online course based on their social and cultural identity (Kizilcec et al., 2020; Kizilcec & Kambampaty, 2020; Kizilcec & Saltarelli, 2019a; Kizilcec & Saltarelli, 2019b). But, rather than focusing on content or interface design cues, this work examines established dimensions of course learning design.

A recent large-scale quantitative study in open, online learning environment examined the predictive links between different learning activities and learners' engagement (Rizvi et al., 2022). The study analysed learners' engagement in 10 FutureLearn MOOCs, focusing on assimilative activities (such as reading material or articles, instructional videos), communication activities (such as discussion-based learning), and assessment activities (such as quizzes). It was found that engagement with these learning activities varied largely between geo-cultural contexts, but the reasons behind these differences cannot be determined from quantitative analyses.

The aim of this study is to understand why learners from different geo-cultural contexts engage differently with various learning activities within open, online learning environment. Our contribution to this special issue on learning analytics and learning design is to explore learners' perceptions of various learning design elements in MOOCs using a qualitative approach, and to identify commonalities and differences between geo-cultural contexts. Our findings provide novel insights into the development of inclusive online learning designs and learning analytics approaches that adapt to the cultural needs of respective learners.

1.1 | Perception of learning design and learning behaviour

This study conceptualises learning design as a process for developing online courses, where designers design a series of learning activities such as audio/video content, reading material, discussion-based activities, and course assessments. These activities are arranged in a sequence to provide learners with a recommended path to follow.

However, the course structure is generally not static and allows for multiple navigation options (Sharples, 2015). Allowing multiple navigation options means learners can choose their own path and pace through the activities. Still, it is important to note that certain types of learning activities may be more useful for some learners, whereas others may not find them useful (Bearman et al., 2020; Rizvi et al., 2022).

Previous research in open, online learning has utilised learners' trace data, which is in situ and stored in course logs, to gain insights into their persistence, level of activity engagement, and patterns of linear navigation (Davis et al., 2016; Guo & Reinecke, 2014; Shi et al., 2020). However, the role of learning design in maintaining learner interest is not well understood and it remains unclear how learners engage and make sense of the various activity types, and if predetermined path enhances their learning experience.

1.2 | Theoretical framework and geo-cultural contexts

The concept of 'culture' is complex and multi-dimensional, traditionally defined by anthropologists and behavioural scientists as the 'collective complexes of learned behaviors and perceptions of individuals in a society' (Tylor, 1871). To understand cross-cultural differences, researchers have used frameworks such as Hofstede's National Cultural Dimensions (NCD). Hofstede presented six dimensions that aimed to elucidate cross-cultural variations worldwide. He also emphasised the societal differences in the way educators and learners approach learning, identifying distinct cognitive and intellectual abilities for each society (Hofstede, 1986a; Hofstede, 1986b). According to his argument, cultural contexts might shape specific learning preferences (Hofstede, 1994; Hofstede & McCrae, 2004). Another closely associated framework is known as GLOBE, which stands for Global Leadership and Organisational Behaviour Effectiveness. It was developed by House et al. (2004) and classified countries into 10 major cultural groups.

These frameworks are often used to understand cross-cultural differences in learners' behaviours (see, e.g., Baker et al., 2020; Joy & Kolb, 2009; Kizilcec & Cohen, 2017; Mensah & Chen, 2013). This study draws upon two dimensions commonly employed in learning sciences. First dimension is Power Distance (PD) Index, which pertains to the level of equality that individuals anticipate in the distribution of power. The second dimension is Individualism/Collectivism, which refers to the extent to which institutions encourage collective action and distribution of resources. As listed in Table 1, the 10 geo-cultural groups can be divided into two subgroups based on their PD and collectivism scores: one with high PD and high Collectivism, and the other with low PD and Individualism.

1.3 | Culturally adaptive user interface designs with implications for learning

Several studies on the user interface (UI) design and user experience (UX) have explored users' behavioural intention to use a technology,

TABLE 1 Geo-cultural regions categorisation based on the region's median score in two NCD dimensions; Power Distance Index and Individualism/Collectivism.

Cultural dimension		Geo-cultural region
Power Distance	High Power Distance	Sub-Saharan Africa (AF), Confucian Asia (CA), Eastern Europe (EE), Latin America (LA), Latin Europe (LE), Middle East (ME), and Southern Asia (SA)
	Low Power Distance	Anglo-Saxon (AS), Germanic Europe (GE), and Nordic Europe (NE)
Individualism	High (Individualist)	Anglo-Saxon (AS), Germanic Europe (GE), Nordic Europe (NE), and Latin Europe (LE)
	Low (Collectivist)	Sub-Saharan Africa (AF), Confucian Asia (CA), Eastern Europe (EE), Latin America (LA), Middle East (ME), and Southern Asia (SA)

software, website, or other web-based resources. The technology acceptance model (TAM) by Davis (1989) is commonly used to understand the underlying psychological and experiential factors that potentially influence behavioural intention. The TAM focused on two primary constructs; perceived usefulness and perceived ease of use that impact a users' behavioural intention to use a technology, software or website. The model was further extended by adding perceived enjoyment as a critical experiential aspect that affects behavioural intention as well as perceived usefulness and ease of use (Davis et al., 1992; Hornbæk & Hertzum, 2017).

The model construct, perceived usefulness pertains to a user's belief that target behaviour (i.e., learning resource use) or object (i.e., learning resource) offers a potential to augment their knowledge or performance (Davis, 1989). On the other hand, perceived enjoyment denotes the extent to which users find the target behaviour (i.e., learning resource use), or object (i.e., learning resource) enjoyable, regardless of its effects on their performance (Davis et al., 1992). In previous research, perceived usefulness and perceived enjoyment have been consistently hypothesised to be the primary determinants of sustained usage of technology- or web-based multimedia resource. Several studies have demonstrated a robust, positive correlation between perceived enjoyment and users' self-reported current and future usage (see e.g., Teo et al., 1999; Teo & Noyes, 2011). However, some researchers have suggested that perceived enjoyment may have a more substantial effect on users' attitudes and intention to use the technology or resource than perceived usefulness and perceived ease of use (Hornbæk & Hertzum, 2017).

A new research approach has arisen in the fields of UI design and UX, which merges cross-cultural frameworks with TAM constructs. It highlights the significance of *culturally adaptive interface designs*. *Culturally adaptive* designs refer to software, websites, and other web-based resources, that adapt their *content type (text vs. visuals e.g.)*, and look and feel (*like colours, interface design, modalities*) to suit the *visual preferences* of users from different geo-cultural contexts (Reinecke & Bernstein, 2011; Reinecke & Bernstein, 2013).

This research has shown that individuals' aesthetic and visual preferences may be influenced by their identification with particular cultural groups (Reinecke & Gajos, 2014). Countries with proximity within a region seem to share similar design preferences. For example,

users from Nordic and Germanic Europe (countries such as Finland, Germany, etc.) were found to prefer an interface design with low visual complexity along with low colourfulness, standing in contrast with the users from Eastern European region (e.g., Romania) or Confucian Asian region (e.g., China). It is important to note here that factors such as a regular exchange of (cultural) values (e.g., due to migration) may also influence users' preferences.

Previous work on culturally adaptive design found that a user's perceived usefulness (thereof their satisfaction and enjoyment) of a web-based or software interface was closely linked to an underlying sense of accomplishment (Reinecke & Bernstein, 2011, p. 2). When a resource is perceived as useful and enjoyable, users may attribute higher relevance and value to the content or activities within it. This perception potentially creates a positive association, where users see the resource as meaningful, significant, and worthy of their time and effort. As a result, they are more likely to actively engage and explore the resource further. Overall, satisfaction and *perceived* enjoyment resulting from the resource interactions were found to be strongly and meaningfully correlated with *self-reported current usage*, and *self-predicted future usage* of the respective web-based resource or software (Reinecke & Bernstein, 2011). Users' self-reported preferences for a user interface design can be influenced by various factors, including their previous experiences and cultural background, which can result in preferential bias. The following section elaborates on how this bias may manifest in educational settings.

1.4 | Learning behavioural preferences in geo-cultural contexts

Recent research has identified significant disparities in online education attainment that are influenced by regional, racial, cultural, and socio-economic factors. Specifically, the factors include learners' race and ethnicity (Stich & Reeves, 2017; Wladis et al., 2015), geographic location (Kizilcec et al., 2015; Reich & Ruipérez-Valiente, 2019), nature and extent of social integration and help-seeking behaviour (Cagiltay et al., 2020; Ogan et al., 2015), and learners native language (Guo, 2018; Uchidiuno et al., 2018). Drawing on extensive previous research on open, online learning environment, the following section outlines four anticipated patterns of behaviour as well as the potential role of language used for instruction.

1.4.1 | Predetermined learning path

According to Hofstede and McCrae (2004), low PD societies tend to stimulate *independent exploration* more than high PD societies, as the latter stress more on a hierarchical structure. For content presentation in web-based resources, this design aspect encompasses interactivity and multiple navigation possibilities (Reinecke & Bernstein, 2013; Reinecke & Gajos, 2014). Navigation possibilities in a user interface design refer to the degree to which users are able to interact with the user interface, enabling them to actively engage with it.

In the context of learning design, we can translate navigation possibilities as predetermined learning paths, or set sequence of activities in a course. Previous work suggests that teachers expect students to find their own paths in a course in societies with small PD scores. In contrast, in societies with large PD scores, students expect the teacher to outline paths to follow, and dutifully obey the instructions they receive (Hofstede, 1986a, 1986b; Hofstede & McCrae, 2004; Reinecke & Bernstein, 2013; Reinecke & Gajos, 2014). This finding may imply that learners from High PD regions (such as Sub-Saharan Africa, Confucian Asia, Eastern Europe, Latin America, Latin Europe (borderline), Middle East, and Southern Asia) tend to navigate linearly with a preference for a structured path. In contrast, learners from low PD regions (such as Anglo-Saxon, Germanic, and Nordic Europe) prefer multimodal designs. While following an unstructured, non-linear navigation pattern, they are expected to find their own path through learning activities. This is particularly relevant in this study given that the FutureLearn courses were designed and implemented from a low PD region, UK.

1.4.2 | Discussion-based learning activities

Differences between high and low PD societies have been instrumental in explaining variation in help-seeking behaviours, and the social relationships individuals may develop in online courses. Drawing on the extensive literature on cultural differences in online learners' interaction, we identified two distinct priorities for communication (Bozkurt & Aydin, 2018; Liu et al., 2016; Manathunga et al., 2017; Ogan et al., 2015). One, a student-centric approach that appreciates learners' spontaneous participation in discussion with the minimal agency of the instructor. Two, where the communication activity is initiated and guided by the instructor or a moderator. We, therefore, divided discussion-based learning activities into two types: instructor-led discussion (i.e., course steps in FutureLearn titled as *discussion*) and user-led discussion (i.e., use of FutureLearn MOOCs' functionality that allows learners to comment or start a discussion underneath any course activity). Previous work suggests that virtually all communication activities are expected to be initiated by the authority figure (e.g., teacher) in societies with high PD scores, where learners would only speak when invited by the teacher (Hofstede, 1986a, 1986b). On the other hand, in societies where the PD scores are low, individuals are more likely to take the initiative to communicate, regardless of the size of the group, as they tend to speak up simultaneously (Hofstede, 1986a, 1986b).

1.4.3 | Reading material (articles) versus videos

Bayeck and Choi (2018) discovered that culture influences learners' understanding and interpretation of images and other audio-visual or textual content in open, online courses. Researchers have investigated the relationship between culture and users' interaction with different types of course content and examined learners' preferences for image-to-text ratios (Liu et al., 2016; Uchidiuno et al., 2018). In the context of learning designs, similar investigations (Reinecke & Bernstein, 2013; Reinecke & Gajos, 2014; Uchidiuno et al., 2018) have identified two distinct preferences; a preference for text-based learning material and a preference for visual or video-based learning material. Learners from societies with high individualism scores (such as Latin Europe, Nordic Europe, Anglo-Saxon, and Germanic Europe) may show an appreciation for text-based content, whereas learners from collectivist societies (such as Eastern Europe, Latin America, Sub-Saharan Africa, Middle East, Southern Asia, and Confucian Asia) may exhibit a relatively strong preference for visuals or video-based content in a course (referred to as high image/visuals-to-text ratio).

1.4.4 | Assessment activities

As documented in various literature sources, we identified a challenging and perhaps controversial learning preference, which is learners' inclination to obtain a certificate, with or without acquiring knowledge (Cagiltay et al., 2020; Hone & El Said, 2016). This study examines the contextual differences in the preference for competence over certification (or vice versa). According to Hofstede (1986a, 1986b), collectivism may prefer acquiring a certificate over competence, originally stated as '*in collectivist societies, education is a way of gaining prestige in one's social environment and of joining a higher status group ('a ticket to a ride'). Where Diploma or certificates are important and displayed on walls and acquiring certificates even through illegal means (cheating or corruption) is more important than acquiring competence*' (Hofstede, 1986a, Hofstede, 1986b, p. 12). Conversely, the same literature suggests the exact opposite expected behaviour from individualist societies, that is, a strong preference for competence over certification.

As discussed in Section 2, this study has formulated two extremes in learning behaviours expected from different geo-cultural regions. However, at the start of this qualitative research, it was anticipated that participants' self-reported behavioural preferences would lie somewhere between these two extremes.

1.4.5 | Language of instruction

As a phenomenon that started in the United States, most MOOCs to date use English as the primary language of instruction. In addition to broader cultural and regional factors influencing learners' participation, language is also closely linked with learners' engagement. Several studies found that online learners with a non-native English speaking

background may face additional language-related challenges due to difficult or unfamiliar words, linguistic complexities, or accents (Rets & Rogaten, 2020; Uchidiuno et al., 2016; Uchidiuno et al., 2018). For content comprehension, these learners occasionally require further audio-visual support and more time with the resources (Nguyen et al., 2020; Uchidiuno et al., 2018). Interestingly, even within highly technical courses such as computer programming, non-native English-speaking learners expressed a preference for instructional material in simplified English, with fewer culture-specific jargons and more visuals and multimedia support (Guo, 2018).

1.5 | Purpose of the study and research questions

Several studies have investigated the relationship between learning design elements (such as activity types and sequence) and MOOC learners' performance (Davis et al., 2018; Rizvi et al., 2020; Shi et al., 2020). However, the link between these elements and performance was found to differ between geo-cultural regions (Rizvi et al., 2022). Moreover, most studies in this area have relied on in situ course log data to understand behavioural engagement patterns, with limited consideration of learners' perspectives on learning design elements. Consequently, there is a paucity in research that takes a qualitative approach to explore the broader *how* and *why* behind learning design preferences that may vary between geo-cultural contexts. In addition to learning design elements, this study aims to assess MOOC learners' perspective on the role of English as the primary language of instruction. The following research questions are proposed:

RQ1. What are learners' perceptions of different learning design elements (e.g., activity types, predetermined path) in relation to their engagement in open, online courses?

RQ2. In what ways do learners' perceptions (from RQ1) differ between geo-cultural contexts?

2 | METHODOLOGY

2.1 | Setting and participants

Participants were recruited through a social media call using Facebook and Twitter. Recruiting through social media was both convenient and cost-effective, and allowed for the swift and widespread outreach to a diverse pool of potential participants. Participation in the interviews was voluntary. To ensure that the participants had a shared understanding of a typical MOOC learning design, all participants included in the study had experience with at least one FutureLearn MOOC within the last year. Each interview lasted between 30 and 50 min. All interviews were conducted via the video meeting platform Zoom and were audio recorded. After receiving a significant response to the interview call, primary selection criteria for participants was diversity.

This criterion helped us ensure a representative and varied sample, with consideration for factors such as gender, and regional contexts.

Semi-structured interviews were conducted with 22 participants from seven geo-cultural regions (see Table A1 for details on each participant). The largest number of participants belonged to Anglo-Saxon countries ($n = 6$, 27%), closely followed by South Asian ($n = 5$, 23%), and Middle Eastern ($n = 3$, 14%) participants. The sample contained no participants from Nordic Europe (NE), Confucian Asian (CA), and Latin Europe (LE). In terms of gender, there was an equal number of male and female participants ($n = 11$, 50%). There were slightly more participants with a Masters' degree ($n = 13$, 59%) in the sample.

2.2 | Procedure and data collection instrument

For each participant, qualitative data were collected using semi-structured interviews (see Table A2). The interview questions were retrospective and laid a foundation for further exploration with the help of a cultural artefact. The interviews began with a brief introduction to the host and this research project, followed by a set of warm-up questions exploring learners' motivation for enrolment and their overall experience with the course. A set of questions scrutinised the experience with various learning design elements such as predetermined pathway, activity types, and instructional language. Using the flexible follow-up 'why?' question enabled interviewer to gather more detailed and nuanced information concerning participant's perspectives and experiences. Figure 1 illustrates different research stages involved in this qualitative work.

Since distinguishing preferences in a cultural context is a sensitive topic, any potential learning behaviour stereotyping must be established subtly. Therefore, instead of asking direct questions (e.g., 'Do you favour video-content over reading material as previous research suggests that learners from your region favour video-based content?' or 'Do you feel comfortable following the predetermined learning path?'), the study utilised a visual mediating artefact in line with recommendations by Mittelmeier et al. (2018). The hypothesised behaviours discussed in Section 1.4 were therefore translated into an artefact illustrated in Figure 2. This artefact presented the examples of eight profile learners (Learner 1 to Learner 8), each with a distinct preference for one of the learning behavioural extremes discussed in Section 1.4. For each profile, the potential originating geo-cultural groups were also mentioned. The information from the artefact was also presented in text form on a separate page, without any accompanying visuals.

The artefact offered some freedom to explore new dimensions and provided the interviewees with a way to reaffirm, refute, or elaborate on their learning preferences reported earlier. Towards the end of the interview, participants were requested to review the visualisation and then asked to reflect on the information provided in it, e.g., which learner's profile was more relatable to participants' own experience in a MOOC learning environment, and *why*? The visualisation contained complementary information already covered in the

FIGURE 1 Various stages involved in this qualitative research.

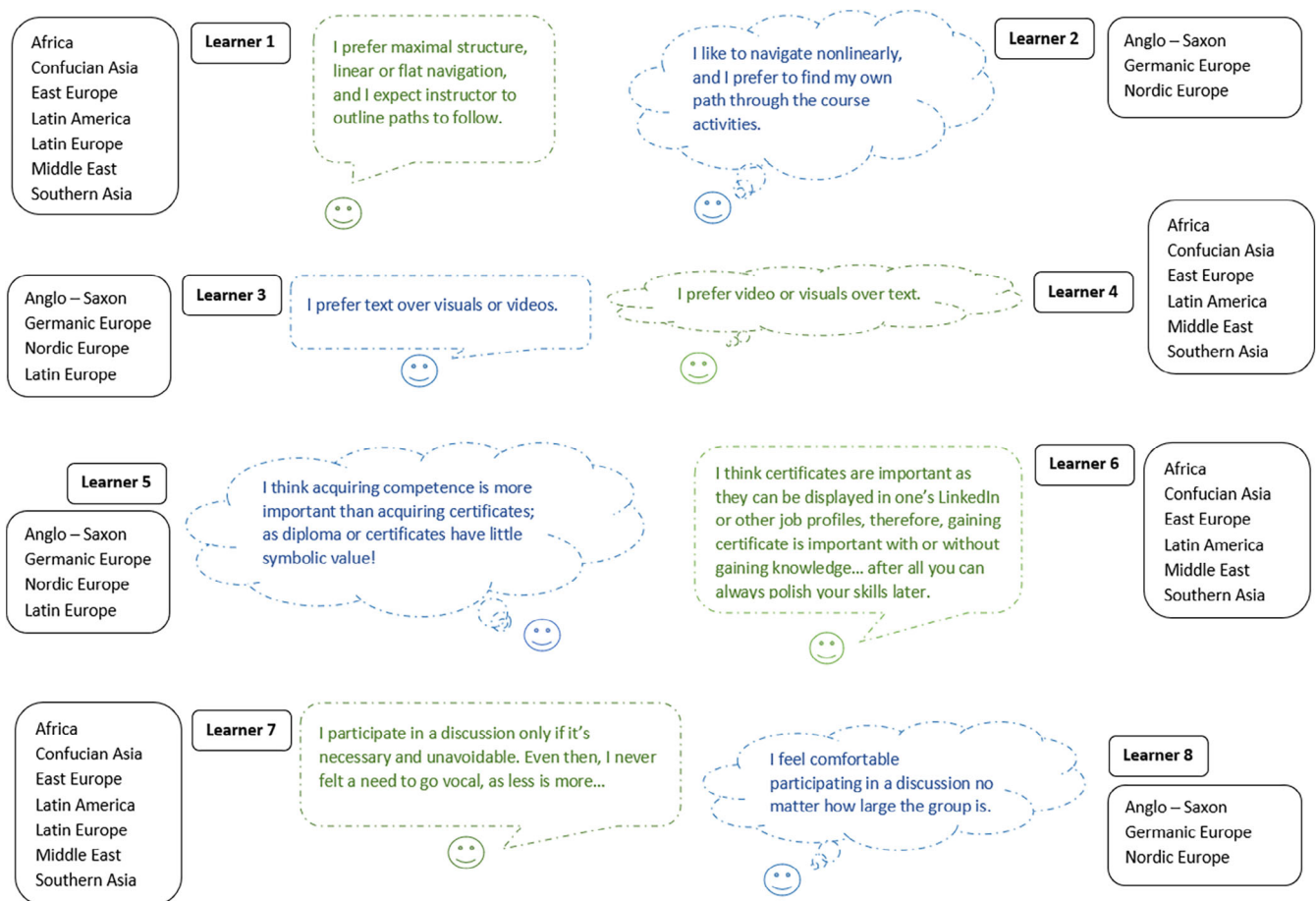
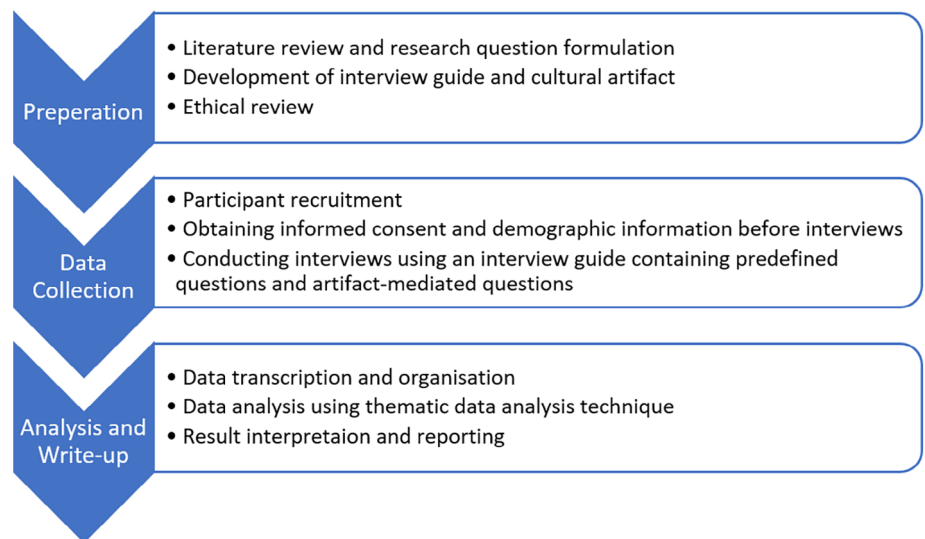


FIGURE 2 Cultural artefact.

main interview questions (e.g., ‘which learning activity type do you enjoyed the most?’). The cultural artefact is discussed in Section 3 in the interview guide, whereas Sections 1 and 2 contained learning design and language-related questions, respectively.

The artefact illustrated perhaps some stereotypical cross-cultural behaviours, but this method helped researchers channel the discussions into more exciting and informative directions. Even when based on an extensive body of literature, stereotypic assumptions should be

made with caution. Therefore, the interviewer used safe and non-intrusive prompts and assertions to engage in an open discussion with participants. The instruments and procedures used in this study were developed in line with institutional research ethics procedures and in accordance with FutureLearn ethical guidelines and privacy statements. The study was conducted after attaining approvals from the university's human research ethics committee.

2.3 | Data analysis methods

Interviews were initially transcribed using the transcription tool *otter.ai*. Subsequently, first author checked the automated transcriptions and made corrections where needed. Thematic analysis (TA) was used to explore contextual differences in participants' perception of learning design (RQ1). By definition, TA is a qualitative data analysis method used for 'identifying, analysing, and reporting patterns (themes) within data' (Braun & Clarke, 2006, p. 6). The method helps make sense of qualitative data by reporting participants' experiences and meanings, referred to as the *reality of the participants* (Braun & Clarke, 2006, p. 9). Overall, the TA comprises six-phased processing of interview data to understand the subjective experiences, perceptions and the interviewees (Braun & Clarke, 2006). To avoid the risk of subjectivity in generated codes, the analysis was repeated by another expert coder and one member of the supervision team. Using the percentage agreement measure for inter-rater reliability, the results section below reports the codes that achieved an inter-coder agreement of more than 75% between both coders, indicating a substantial level of consensus in the coding process. The next section quantifies and describes in detail how often the literature-driven expectations were met.

3 | RESULTS

This study conceptualised learners' perception of various learning design elements to be linked with their behavioural intention to stay engaged with the MOOC. After clustering the codes under themes, metrics coding analyses were performed to explore the effect of demographic data on their perception of different aspects of MOOC and learning behaviour. All common themes were then scrutinised for any potential link with geo-cultural identities. While examining the perceptions about the MOOC learning environment, several themes were found to be linked with either learning design elements or language or both.

Table 2 reports the summary and definitions of the codes. Five relevant themes that emerged are discussed below.

3.1 | Structure and pedagogy

One of the most prominent themes was about the structure and pedagogy of FutureLearn MOOCs. Fourteen participants described their

varied experiences towards the course structure and content organisation. An overall positive opinion about weekly workload was noted, suggesting that the courses fitted well within their daily routine. Participants expressed their satisfaction with the structure and *manageable* workload. Several participants reported their satisfaction with the content's clarity, practicality, and the time a learner is expected to spend on the course material.

I liked the interface, or the way the course is designed in a way they have these videos for example. So, it's not just text but there's a lot of interactive kind of videos ... they have this kind of videos to help you with captions to understand what you're reading and, and some of the different tests, like discussion, all that kind of testing yourself, or the different assignments. (p15, Male, AF).

Overall, the participants thought that the courses were very organised and well structured. Combining assimilative activities (such as videos and text) with other activities such as discussions and assignments gave the learner a positive learning experience. However, various interesting perspectives were expressed concerning the virtually zero possibility of interface customisation and a lack of flexibility in content layout.

As mentioned in another theme of *language and culture*, cultural identities surfaced several times. Participants mentioned a broader need to find ways to improve diversity in the course.

I've taught a lot of Chinese students, for example, and I think having a really clear structure in place is often very helpful. (p3, Female, AS).

Taken together, we found a small yet clear, identifiable link between participants' geo-cultural identities and their perceptions of course structure, interface, content, and organisation. Most participants from high PD, collectivist regions remained satisfied with the easy-to-follow interface of FutureLearn MOOCs, stating the comments like 'feel lost in the course if left without a structure' (p7, Female, ME). In contrast, participants who expressed negative experiences with either the workload, content presentation, or course layout, belonged to low PD, individualist regions (AS or GE).

3.2 | Interactivity

Many participants (about 46%) reported feeling that the courses lacked interactivity. Although participants recognised the difficulties related to human and technological resources, they stated a preference for increased course providers' involvement in the form of an engaged instructor, moderator, or facilitator.

Make the discussion a little bit more interactive with the people who are actually facilitating the course. But

TABLE 2 Summary and definitions of semi-structured interview codes.

Code	Number of participants who mentioned code (%)	Sub-categories	Definition of code
Structure and pedagogy	14 (63.6)	<ul style="list-style-type: none"> a. Interface design and content organisation b. Workload distribution and content difficulty level 	Participants' perspective on FutureLearn MOOC structure and organisation of learning content, including statements related to the pedagogy, platform interface and overall learning design
Interactivity	10 (45.4)	<ul style="list-style-type: none"> a. Interactive communication (instructors' presence in discussions) b. Interactive videos (instructors' presence on screen) c. Video embedded quizzes (or quizzes immediately followed by videos) 	Statements related to the need for improved moderation, including comments and suggestions related to video-interactivity with instructor's on-screen presence, and video-embedded quizzes
Language and culture	20 (90.9)	<ul style="list-style-type: none"> a. Language barrier in content comprehension (overlapping sub-theme with the theme: Preferential bias) b. Language barrier in communication (overlapping sub-theme with the theme: Communication) c. Accent and culture-specific references (including speed, vocabulary, culture/region-specific examples and jargons) d. Previous cultural exposure 	Participants' response related to the role of language as a barrier in learning. The code also covers opinion linked to accent, speed, vocabulary and various jargons used in the MOOC content. Also includes general statements about role of culture and culture-specific references in the visual or textual content
Communication	20 (90.9)	<ul style="list-style-type: none"> a. Essential discussion-based activities (that is, instructor-led discussion steps) (overlapping sub-theme with the theme Preferential bias) b. User-led discussions c. Lack of privacy/agency 	Statements about issues related to communications (Instructor-led and User-led), including a discomfort over lack of agency over one's own comments, and privacy concerns
Preferential bias	19 (86.4)	<ul style="list-style-type: none"> a. Preferential bias for activity type (slightly overlapping sub-theme with the theme: Communication) b. Preferential bias for progression 	Statements about preferences for learning activity type (i.e., articles, videos, discussions, quizzes). Also includes statements mentioning preferences in linear versus non-linear progression and its link with other factors such as the purpose of enrolment, background knowledge, and inclination towards certification.

Abbreviation: MOOC, massive open online courses.

I know that's quite difficult because obviously, the whole point of a MOOC is that it has potentially kind of thousands of participants. (p3, Female, AS).

A notable finding was participants' expressed desire for better means of communication in course discussions, particularly through the implementation of user-tagging or comparable social media functionalities. As discussed in *communication* theme, participants sought to see several features to improve the flow of two-way information, with enhanced control over their comments.

Active live chats! I will comment, and I will engage in a discussion because I would know that there is a person there, reading my comments at that time and liking my comment at that time. And then once the chat is over, my comment is gone. So, there is that control over the comments. So, I have the control I might say, I comment on it, and I know that, I know the reaction. And then once the chat is over, I know that it's gone. So, I

think I would feel more comfortable with that function. (p8, Female, ME)

Interactivity was desired not only in discussion steps but also in videos. Most participants also favoured interactive quizzes, quizzes embedded in videos, or placed right after the instructional videos.

In the video content itself, there should be some quizzes. That whatever it was, in the teaching, did you get something? I mean based on that there should be a questionnaire. (p2, Male, SA)

This theme consistently surfaced (8 out of 10 occurrences) in the excerpts of participants from high PD, collectivists regions who urged more on interactivity within various learning design elements. In contrast, participants from low PD preferred design elements that were synchronised with their inputs. This could be in the form of quizzes embedded within videos, or a facilitator communicating in real-time, responding to their queries.

3.3 | Language and culture

Interview participants did not find language to be an obstacle in open, online learning environment. In this respect, we noticed no substantial difference between native and non-native English speakers. Most participants found FutureLearn courses language to be easy to follow. However, the language was a potential determining factor to some learning behaviours and implicitly caused preferential bias (see Theme 5 below) towards specific learning design elements such as reading material and social interactions. Occasionally, participants from non-native English-speaking background indicated their struggle with reading textual material. This was cited as 'when it's not in [participants' native language]...but in English, it takes you time to pick up those points and absorb that information.' (p6, Male, SA).

Several participants reported to be hesitant to participate in course discussion forums mainly because they were not confident about their writing style, grammar, sentence structure, and so forth. None of the non-native English-speaking participants reported difficult words in any course activity but the only pertinent concerns noted, if any, were about accent and speed.

Not the language, okay. Language English I prefer, I am able to understand it. But definitely the tone...the tone, tone quality, you know, the voice was not clear. Whatever he [the instructor] was telling, I was not able to understand. The accent actually! So, that was a language barrier for me...So many times, we don't understand so we will feel, you know, lack of interest. That if I'm not understanding anything, I will not put any efforts to whatever is going on. (p2, Male, SA)

More than once, participants mentioned prior language skills and a certain level of digital literacy as an *informal prerequisite* to MOOC enrolment.

A small yet clear link was found between participants' experiences who perceived language as a learning barrier and their geo-cultural identities. Most participants from high PD, collectivist regions like the Middle East (two out of three) and Africa (one out of three) thought that the English language could be a potential barrier. South Asian learners reported mixed feelings. Several participants from different contexts, raised a need for an internationalised and global perspective, particularly in instructor-led discussions when they struggled to understand culture/region-specific references and jargons.

Sometimes the instructor was giving some examples, which are for mostly for [native] English speaking people? Like some kind of jokes, and that kind of stuff, maybe movies? He was just typing that kind of things [in discussions]. And I couldn't understand at that point, and I had to go to Google and search for it and understand it. Yeah, it didn't affect my participation, but I prefer to see more global jokes or more global examples. (p7, Female, ME)

Likewise, cultural sensitivity and openness within the platform were mentioned recurrently. Others pointed out an interlinked and complex influence of culture and language as a dynamic factor, which varied with the discussion topic. Overall, we found several links between geo-cultural identities and issues related to language or culture-specific content. Participants from high PD and collectivists regions expressed relatively more challenges associated with the language such as less familiar words, accent, speed, or culture-specific references in the content and facilitators' discussions. Native-English speakers naturally reported no such issues.

3.4 | Communication

Instructor-led discussion activity was mentioned by the participants occasionally as *repetitive*. Participants thought these activities as an obligation, that they would skip when possible. Several reasons were cited for this.

Personally, if they weren't compulsory, I wouldn't do them. Because I don't like my comments to be seen by different people and because it's online. (p8, Female, ME)

Consequently, some preferred instructors' involvement (as mentioned in another theme: Interactivity). Another critical reason cited recurrently was that when students visited the forums, the course had already been concluded, and there was nothing interesting to engage with. From entirely different cultural contexts, two participants referred to that experience using phrases like 'feels like coming late to the party'. In contrast, those who liked communication-based activities thought that instructor-led discussion was an engaging way to trigger interesting debates which contributed towards their learning. Others found them stimulating and confidence-building.

It was important to interact with other students and see if they had some issues, and whether their issues are similar to yours? (p15, Male, AF)

No obvious link was found between the preference of discussions in a course and the geo-cultural identities. It was mentioned as the least enjoyable, 'almost unnecessary' activity by most Latin American and South Asian participants. This opinion was echoed in other cultural groups as well. If they engaged, Anglo-Saxon participants complained about 'playing catch-up' or 'lack of focus or direction' mainly due to a lack of moderation. While the instructor-led discussion may eventually evolve to a user-led discussion, such conversations were referred to as 'so much noise made by so many people...' by one of the Anglo-Saxon participants.

Some thought the discussion platform was often very unorganised. But, the interviewees who liked user-led discussion took them as an opportunity to advance their understanding of the perspectives from around the globe. Conversely, lack of privacy and control in

discussion forums consistently emerged as a reason for disfavour. As the platform does not offer anonymity, learners often hesitated to engage in such an open public forum under their real names. Regardless of their geo-cultural background, only female participants expressed concerns over these issues.

I'm okay to share my thoughts face to face, because you say it and it's gone. But in your live platform, your comment stays there...It's beneficial. But to me as a learner, it's not comfortable. (p8, Female, ME)

Regardless of the geo-cultural contexts, several respondents reported user-led discussions to be the least enjoyable and presumably least useful activity. However, the underlying reasons seemed complex. In contrast with Anglo-Saxon participants, only a few African, South Asian, and Latin American participants found the discussions to be an exciting learning activity. A participant from South Asia enthusiastically stated that discussions were '*an alternative way to clarify one's concepts.*' However, others from high PD, collectivist regions stated time and difficulty to express oneself in writing in a second language (English) as a potential barrier for engaging.

I mean I write my comment, I finish it, and I look at it over and over again, to see whether it is correct or not. So, maybe it's correct. Maybe it's like, it's a perfect comment. But still, I don't feel that confident, just typing and posting it. So, I have to like, check it again and again before posting. (p8, Female, ME)

Overall, most participants either tended to skip discussions or remained silent observers. Within open and self-paced open, online learning environment, discussion participation seemed to be intrinsically motivated. When participants said they would be involved in a user-led conversation at their convenience and pace, they still felt irritated by the asynchronous nature of contributions. On the one hand, more participants wished to see an increased presence of instructors, moderators, or subject matter experts. On the other hand, they felt *unnecessarily* obliged to participate at a forum where all learners were permitted to read the content from any ongoing discussions without actively participating. Few benefitted from the information shared by fellow learners, without leaving any comments.

After introducing the artefact, another interesting dimension emerged related to the discussion group size. The qualitative data show that more participants from low PD, collectivist cultural groups were less likely to engage. However, none of them reported concerns about the discussion group size. Amongst high PD, collectivist participants, more South Asian participants remained open to contribute more. This theme was slightly overlapping with another theme: Preferential bias. Overall, participants who found discussions useful preferred actively facilitated, synchronous, and live discussions. They also thought they could learn from the forum even after the course/topic has been concluded.

3.5 | Preferential bias for learning design (activity type and predetermined path)

This theme reflected participants' preference for learning activity types (articles, videos, quizzes, instructor-led discussions) and progression through those activities. While 'keyness' of a theme is not necessarily quantifiable (Braun & Clarke, 2006), within and across the data items this theme naturally had one of the most prominent occurrences. The sub-theme preferential bias for activity type referred to the instances where a participant mentioned a fondness or disfavour for one particular activity type. Videos were cited as the most enjoyable and useful. Overall, the least enjoyable activity was discussion. Next, this section moves on to the responses for distinct activity type.

3.5.1 | Videos

Several participants found instructional videos to be concise yet informative that added value to their learning. The high-quality videos with an on-screen instructor were sometimes perceived as an excellent alternative to face-to-face learning, and experience a participant referred to as 'a virtual classroom' (p14, Male, SA). This is how several non-native English-speaking participants expressed a need for on-screen instructors' presence.

I needed to see an instructor when I was watching the videos, it was not there. English is not my first language, so I need to see mimics or the face expressions. (p7, Female, ME)

In contrast, fluent/native English speakers, primarily from the low PD, collectivist regions found such instructional videos to be *too slow* for their taste. These participants preferred reading the transcripts and elicited the feeling that increasing the video speed only makes them 'weird' (p16, Female, GE).

I hate talking-head videos. They're just too slow for me... Give me the script and I'll print it and read it... Add something that can't be conveyed in text. (p16, Female, GE)

About 11 out of 15 participants from high PD, collectivist regions, favoured short videos. It was interesting to notice how video-related priorities were distinct in different cultural contexts. Yet, a combination of video and transcript was often found to be useful. Few participants who did not like videos mentioned reasons like (long) duration, (slow) speed, and other technical or aesthetic issues such as low-quality audio/video, instructors' absence (only low PD, collectivist), and colourfulness (or lack of it). The majority of people who liked video were South Asians (all five), and Latin American (both), followed by Eastern Europeans (two out of three).

While South Asian participants thought that videos invoked a feeling of real-life classroom experience, Anglo-Saxon participants had different reasons for liking the videos, for example, concision and availability of transcripts. The video's length was mainly the issue when the videos were not instructional but conversational (interviews, focus groups, etc.) because the content did not require viewers' engagement beyond a certain level. Whereas slightly *slow*, clear, and easy to follow videos were deemed most useful, engaging learners from the collectivist, non-English speaking learners, providing an experience similar to *face-to-face learning*. No participant from non-English speaking background said they read transcripts; nonetheless, some would watch videos multiple times to understand the content.

3.5.2 | Articles

Reading-based activities were considered enjoyable by the second largest number of respondents. Articles were deemed to be detailed, *rich*, engaging, and informative activities that often provide external links. For some, the video was difficult to focus upon, but articles kept them engaged with the topic.

I think I learned much better kind of reading things then kind of watching videos, and I am much more focused doing that. (p3, Female, AS)

The choice of articles as an enjoyable activity was not equally distributed throughout the sample. We found that interviewees with doctoral and/or professional degree favoured articles more than other activities. For instance, four out of six participants who reported articles to be the most enjoyable activity held a doctoral degree ('reading-type people' [p9, Male, ME]). Several geo-cultural groups found text-based activities slightly disengaging. In particular learners from South Asia (all except one) and those from Latin America (both) consistently regarded textual content with disfavour, citing them hard to engage with and *boring*. Although no specific reasons were given, length of articles, language-related difficulties, and availability of more interesting information through similar (web-based) resources were often mentioned. Reflecting the general sentiment of participants from high PD, collectivist regions, a participant suggested that text-based material has 'no place in MOOCs' (p22, Male, SA).

The preferential bias was naturally evident after introducing participants to the artefact, that is, after asking participants to choose between Videos and Articles. Few participants cited that in comparison to text-based content, they attained equally useful information from videos but in substantially less amount of time. Indeed, a moderate relationship was noticed between the preference of video over text or vice-versa and geo-cultural identities. Interestingly, all South Asians preferred video over text. All learners (except two; one with a reading disability) from individualist regions, on the other hand, preferred either a reasonable combination of both, depending upon the context (discipline, etc.) or else strongly preferred text over videos.

3.5.3 | Discussions (instructor-led)

Instructor-led discussions were mentioned by the second largest group of participants and discussed extensively under the theme *Communication*.

3.5.4 | Quizzes

We noticed a mixed response about assessment activities such as quizzes. Around nine participants mentioned quizzes as either most or least enjoyable activity. Participants liked quizzes because they were short and simple, perceived as an interesting tool for self-evaluation. Whereas, those who did not enjoy quizzes offered several reasons. For example, the activity was meant to test their knowledge, and they did not like to be tested in a self-paced, flexible learning environment. Few found quizzes to be too generic or easy to pass (the same reasons cited by other participants for liking the quizzes, deemed a stress-free activity). Others preferred more challenging and interactive quizzes or quizzes embedded within videos. In open, online courses, learners do not always access all content and exhibit choose-and-pick behaviour. Therefore, participants felt reluctant on being quizzed on course material they might have missed.

I was looking at [topic name], for example, and a lot of the stuff wasn't really relevant, so I wanted to skip it. So, being quizzed on it was on wasn't going to make me learn anymore. (p11, Female, AS)

On the contrary, we consistently noted a need for more interactive quizzes or quizzes integrated within instructional videos (discussed briefly in the *interactivity* theme). We found no link between a participant's geo-cultural background and their preference for assessment activities. The only apparent connection was that all participants who raised a need for interactivity belonged to collectivists, high PD regions.

Since the primary purpose of MOOC enrolment was also diverse, some participants liked to engage with simple assessments or quizzes (cited as *fun* several times). These participants reported gaining competency, informal continuous professional development (CPD), or following their interest as enrolment purposes. Most participants from low PD, individualist regions said that they enrolled to gain competency (or CPD) or following their curiosity. While those from other regions (like South Asia and Latin America) said, they valued both certificate and competency; still they exhibited little enthusiasm about assessments. As discussed in the next section, previous work (Kizilcec et al., 2015; Liu et al., 2016) has also found learners from these regions to be comparatively less persistent in taking part in MOOC assessments.

3.6 | Preferential bias for progression

The factors reported to influence participants' decision to follow (or not to follow) the predetermined path included background

knowledge and purpose of enrolment (skill development, certification, personal interest, etc.). Most respondents felt comfortable following the designed path. A substantial number of participants thought they would skip steps or slightly go forward if they think the content is straightforward and they have authority on the subject. Few participants said they went directly to the steps they felt interesting and/or necessary.

Out of nine participants who reported a strong preference for linear progression, six belonged to high PD, collectivists countries. These participants either followed the designed path or else their behaviour depended upon the nature of the course, academic background, and purpose of enrolment. All except one South Asian, one Eastern European, and one African learner reported a strong or moderate preference for following the predetermined structure. Likewise, other participants from high PD, collectivists regions liked the direction provided by designers as it *made more sense* and because they *trust* the instructors or designers. They felt a *sense of achievement* when they ticked the list of activities as 'completed' (a feature in FutureLearn MOOC design).

Because I think it makes more sense.[Because] Someone has actually spent a lot of time thinking about the layout, thinking about the procedure of the learning outcomes. (p21, Female, EE)

This opinion consistently echoed in excerpts of several other participants. As discussed before (theme: Structure and organisation), the participants reported their liking for the structure provided by course designers.

I like going one by one... otherwise, I feel like I missed something. I don't like skipping sessions or skipping, like exercises or something like that. I like going in order if you like. (p8, Female, ME)

Few participants had a unique perspective; for instance, South Asian learners recurrently reported linearity in progression but occasionally skipped activities to see only the video content.

I always watch the video lectures... I think I follow the path designed by the instructors instead of (except for) discussion forums and article reading and unnecessary things that are not required to complete the course. (p4, Male, SA)

Most participants from low PD, individualist regions said they did not follow the path and indicated a belief in *personal choices*. Most Anglo-Saxon and Germanic European participants preferred to pick and choose their own activities of interest. They would only follow the structure if they were unfamiliar with the subject area. Still, we found mixed opinions dependent upon other factors such as discipline and content difficulty level, the extent to which learners are familiar with the topic, and the purpose of enrolment. Individuals who desire

to develop their skill set may opt to select specific activities, while those who aim to obtain a certificate are more likely to follow a predetermined path.

4 | DISCUSSION AND CONCLUSION

The study set out to explore learners' perceptions of various learning design elements in MOOCs and the extent to which these perceptions vary between geo-cultural contexts. While a large number of empirical studies (Bearman et al., 2020; Kizilcec et al., 2017; Liu et al., 2016; Ogan et al., 2015; Rizvi et al., 2022) found global inequality in MOOCs, both in terms of the learning process as well as in learning outcomes and content engagement, there remain questions about the sources of such variations in engagement. Qualitative research can provide useful evidence to address those questions and explore *why* these differences might occur. Findings from this semi-structured interview-based study revealed substantial differences in learners' perceptions that in part were related to geo-cultural contexts and explored some of the reasons behind those differences.

Assimilative activities that involved watching videos were considered as most engaging by most participants. This finding points out the critical role of many instructional videos in maintaining learners' engagement in MOOCs. A generally strong preference for the video was most dominant in non-English speaking participants from high PD, collectivist regions such as South Asia and Latin America. The result partly confirms the previous research (Rizvi et al., 2022) that suggested an association between a large number of videos and low drop-out risk for learners from high PD collectivist regions. While previous work (e.g., Uchidiuno et al., 2018) has found several issues that may cause disinterest in learning activities, this study found additional challenges including (long) duration, speed, instructors' accent, and low-quality visuals in instructional videos. In contrast, participants from low PD, primarily individualist regions, reported disfavour for instructional videos from FutureLearn MOOCs, deeming them too slow and slightly disengaging.

Reading-based assimilative activities (articles) were considered least enjoyable, especially by most non-native or less fluent English speakers from high PD, collectivist regions. These findings are in line with other studies (Rizvi et al., 2022; Uchidiuno et al., 2018), that suggest that non-native or less fluent learners from regions such as Asia and Africa tend to find it difficult to engage with text-based activities. It could be due to a need to spend more time with reading-based activities (Nguyen et al., 2020) or pausing videos presenting textual information (lecture summary; Uchidiuno et al., 2018).

Contrary to expectations set by extensive previous work (Hofstede, 1986a, 1986b; Liu et al., 2016; Ogan et al., 2015), more participants from low PD, individualist regions remained reluctant to engage in communication activities that were part of the course design (e.g., instructor-led discussions). In contrast with previous work on critical role of discussions learning (Manathunga et al., 2017; Allon et al., 2016), we found that learning designs, which provide many

opportunities to interact with the peers by instructing learners to discuss certain course topics, may actually avert active participation of learners from non-English speaking geo-cultural regions, such as Sub-Saharan Africa and South Asia.

In line with previous research (Hofstede, 1986a, 1986b; Reinecke & Bernstein, 2013; Reinecke & Gajos, 2014), more participants from high PD, collectivist regions reported following the designed paths in MOOCs. The need for more instructor support and external regulation may go against many of the social learning design principles of FutureLearn, and in particular the premise from many UK learning designers that it is important for learners to co-construct and share knowledge and expertise with other learners. English language was said to potentially restrict non-English speakers' engagement in course discussions.

A large number of MOOCs have been predominantly developed by individualistic countries with low power distance (Jadin & Gaisch, 2014). This may have remained unnoticed previously, but extensive literature now increasingly indicates the need for overall diversity, and that specific requirements of different societies should be taken into consideration. Our findings support these notions.

5 | LIMITATIONS AND FUTURE RESEARCH

The overall findings from this study should be taken with caution as the preferences for learning design elements do not necessarily correlate with learning gains from them. Although the study found many strong links between geo-cultural identities and learners' shared perception about various learning design elements, it failed to address several other factors potentially affecting perception. A few participants pointed out that the generalisation based on geo-cultural belonging could be restrictive and of little use, a limitation indicated by Baker et al. (2020), as a *trap of overgeneralising* from large cultural groups to individuals. We acknowledge that several other factors like age, gender, educational background, digital literacy level, and employment status should also be taken into consideration due to their potential to change the perception over time. These factors merit exploration in future studies. Moreover, the identified findings could potentially be attributed to individual learner preferences rather than cultural tendencies. The sample size of the study is limited, which may restrict the ability to generalise or identify underlying patterns. Further research is recommended to investigate the phenomenon in more depth and with a larger and more diverse sample population. Maybe using experimental and quantitative designs to explore potential causal relationship between geo-cultural background's effect on engagement in learning.

The study presumed all participants to be representatives of the cultural values of their country of origin. One obvious difficulty is that the approach does not consider culturally ambiguous learners, that is, learners born and raised in a different country while residing in another during MOOC offering, or those who have been exposed extensively to other cultures. Since this research is based on *perceived*

usefulness, enjoyment, and resulting satisfaction, there is a strong possibility that the perception changes with the context, or varies with exposure, experience, gender, education or digital literacy level, disability status, and other contextual features. This merits more in-depth research. This study only focuses on monolingual MOOCs, where English was the primary language of instruction. A multilingual MOOC platform, or examining MOOCs offered via regional and local platforms may yield different results.

It is important to note that learners engage with free online courses at their own discretion, pursuing their own interests and objectives within the open platform. But, the learner may not always be a representative of their geo-cultural region, and it would be reasonable to expect that MOOC learners from the underdeveloped regions in our data may represent a minority, which may not be entirely underserved. Another important caveat could be sample/response bias. Perhaps the volunteer respondents were individuals who felt comfortable enough to be interviewed in English. These language-related limitations may have affected the findings, so further research in this direction, one that controls language proficiency may be useful. One limitation of this research is that the majority or participants had higher level of education than the typical MOOC population, which may limit the generalisability.

In conclusion, while we acknowledge that designing localised or culturally adaptive versions of free online courses may not always be cost-effective, we still recommend moving away from one-size-fits-all MOOC designs. Despite the methodological limitations of this study, it provides a strong basis for mainstream MOOC providers to take the recent advances in learning technology as an opportunity to design more culturally adaptive, modifiable open online learning environments that facilitate the diverse needs of different groups of learners, not automatically, but only if learners opt in.

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DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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APPENDIX A

TABLE A1 Participants' demographic information.

Participant no.	Country of origin	Current country of residence	Geo-culture	Gender	Age group	Highest education	Employment area	Employment status	Exposure to other cultures/regions
P1	Columbia	UK	LA	F	26–35	Master's degree	Educational sector	Fulltime PhD student	Extensive
P2	India	India	SA	M	26–35	Bachelor's degree	Software engineering	Fulltime	Brief
P3	UK	UK	AS	F	26–35	Doctoral/professional degree	Educational sector	Looking for job	Brief
P4	Pakistan	Pakistan	SA	M	18–25	Bachelor's degree	Finance	Fulltime Masters Student	Brief
P5	UK	UK	AS	M	26–35	Master's degree	Mechanical engineering	Fulltime PhD student	Brief
P6	Pakistan	Pakistan	SA	M	26–35	Master's degree	Agricultural sciences	Lecturer	Brief
P7	Turkey	UK	ME	F	26–35	Master's degree	Learning design	Part time learning designer	Extensive
P8	Turkey	UK	ME	F	26–35	Doctoral/professional degree	Languages / academics	Part time lecturer/ researcher	Extensive
P9	Iraq	Iraq	ME	M	45–55	Doctoral/professional degree	Computer Science	Fulltime Assistant Professor	Extensive
P10	Greece	UK	EE	F	26–35	Doctoral/professional degree	Educational Technology	Fulltime researcher	Extensive
P11	Argentina	UK (41+ yrs)	AS	F	45–55	Master's degree	Educational Technology	Fulltime PhD student	Extensive
P12	UK	UK	AS	F	45–55	Master's degree	Educational Technology	Fulltime PhD student	Brief
P13	UK	UK	AS	M	35–45	Master's degree	Multimedia design	Fulltime media editor	Brief
P14	India	India	SA	M	26–35	Master's degree	HR management	Fulltime HR manager	Brief
P15	Uganda	Norway	AF	M	26–35	Master's degree	Educational Technology	Fulltime researcher	Extensive
P16	Netherlands	Netherlands	GE	F	26–35	Master's degree	Environmental Science	Looking for job	Brief
P17	UK	UK	AS	F	35–45	Master's degree	Ancient history and Museums	Fulltime in museum management	Brief
P18	Greece	UK	EE	F	26–35	Doctoral/professional degree	Multicultural Education	Fulltime researcher	Extensive
P19	Brazil	UK	LA	M	26–35	Master's degree	Computer Science	Fulltime PhD student	Brief
P20	South Africa	South Africa	AF	M	55–65	Doctoral/professional degree	Education	Professor	Extensive
P21	Greece	France	EE	F	26–35	Master's degree	Education	Fulltime primary school teacher	Extensive
P22	Pakistan	China	SA	M	18–25	Bachelor's degree	Mechanical Engineering	Fulltime Student	Brief

TABLE A2 Semi-structured interview guide.

Introduction

- Self-introduction
- Project introduction (aims and purpose in brief)
- Collect consent form and ask for permission to start the recording

Warm up

- Which FutureLearn MOOC did you attend?
- Why did you attend this MOOC?
- For example, you attended MOOC to complement or achieve the following:
 - compulsory courses at your institution,
 - elective courses at your institution,
 - continuing education/career development,
 - get a nano degree, vocational/technical/programming training,
 - attain university credit.
- How do you describe your overall experience with the FutureLearn MOOCs?
- What was your most favourite part of the course?
- What was your least favourite part of the course?

1. Experience with the learning design

Experience with the learning design—predetermined learning pathway

- Do you follow the designed learning pathway, or do you use 'to do' list to find activities that interest you?

Experience with the learning design—learning activity types

- Which of the following activity types in FutureLearn did you enjoy most? Why?
 - a. Articles
 - b. Quizzes
 - c. Instructor-led Discussion steps
- Which of the above activity types in FutureLearn did you enjoy least? Why?

Experience with the learning design—User-led discussions (comments, replies, likes)

- How would you describe your experience with the user-led comments functionality in FutureLearn? Using this functionality, a learner can comment, on any course step, or respond or like other learners' comments.

2. Language as a potential barrier?

- Do you think language was a potential barrier, impacting your interest or participation in this MOOC?

3. For geo-cultural aspects, refer to the Artefact:

- Which of the learner(s)' views you find more relatable to?
- Why?

Wrap up and conclude:

- What suggestions or advice would you give to MOOC providers to design or facilitate better MOOCs?
- Is there something we should have asked in this interview that we did not ask? Is there an experience or a feedback you would like to share with us?
- Thank you for your participation

Abbreviation: MOOCs, massive open online courses.