



Learner readiness for MOOCs in Omani higher education institutions: disparities between projections and reality

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Received: 29 October 2021 / Accepted: 17 June 2022 / Published online: 29 June 2022

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Abstract

This study investigates the level of readiness for massive open online courses (MOOCs) of students in Oman. It compares the readiness of ordinary students in the Omani higher education institutions (HEIs) and those outside HEIs who took a MOOC from the larger Omani society and tests for the differences between their levels of readiness. Additionally, it tests for the best predictor for future participation in MOOCs. In this study, readiness is defined as the possession of three sets of skills: technological, metacognitive, and motivational. A sequential two-phase research approach was used by first collecting data from 428 students in different HEIs and then collecting the same data from 253 non-HEI students from the general public who were offered and took a MOOC specifically designed for this study. While high levels of the three sets of skills were found in both study samples, the MOOC students were found to have significantly higher motivational and metacognitive skills than the higher education students. In this study, binary regression results indicate that comfort with eLearning is the best predictor for future participation in MOOCs. Given the high student readiness for MOOCs in Oman in this study, some recommendations are provided for higher education institutions to benefit from the fast-moving MOOC phenomenon.

Keywords MOOCs · Learner readiness · Self-efficacy · Self-directed learning · Comfort with eLearning

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1 Introduction

Massive open online courses (MOOCs) offer a no-/low-cost option for lifelong learners who want to explore and gain an understanding of a diversity of subjects, without constraints and on their own time. The term MOOC was first coined by Georges Siemens and Dave Cormier in 2008 to describe a course called *Connectivism and Connective Knowledge* offered by two educators interested in open learning, Georges Siemens and Stephen Downes. Beginning as a credit course for 25 tuition-fee-paying students at Canada's University of Manitoba, the course was later opened to over 2,000 participants from the general public who took the online class free of charge (Cormier & Siemens, 2010; Thille, 2013). Since then, according to Shah (2020) from Class Central, MOOCs have grown from a simple experiment "into a global phenomenon with 120 million learners, 13.5 thousand courses, 900+ universities, and 50 online degrees from providers all over the world".

The greatest advantage of MOOCs is their massive scalability; they could potentially reach a sizeable proportion of the world's population and meet the needs of all those who desire to be lifelong learners but cannot be accommodated in traditional classrooms and institutions. MOOCs also present new pedagogical frameworks, which call into question the plausibility of our traditional concepts of learning, such as face-to-face and one-on-one interaction (Dray et al., 2011). This hybrid and exponentially changing landscape presents education with innovative learning models and targets groups not usually catered to by conventional institutions. MOOCs have evolved from their initial format of single courses to offering full degree programs at a number of educational levels; they also offer the option of accredited student learning through microcredentials (Oliver, 2016). MOOC-based and blended professional degree programs (Littenberg-Tobias & Reich, 2020) are also being developed, an exploration that offers an alternative point of entry to higher education and harnesses the full capabilities of MOOCs. They are widening the "back door" to education, which Wedemeyer (1981) describes as one of the advantages of open and distance education.

While MOOCs have become widely used and accepted in many parts of the world, they are still a new phenomenon in the Middle East, and until the arrival of the COVID pandemic, most people were unfamiliar even with the concept of online learning. This is partly because higher education in the region has almost entirely failed to invest in MOOCs and partly because there was little use of any kind for online learning prior to the pandemic. Other issues hindering the take-up of MOOCs in an international context were identified by an analysis conducted by the International Council for Open and Distance Education (ICDE). They noted that nonparticipation in online learning is often attributable to a lack of information technology (IT) infrastructure and to the low number of fully online educational institutions (Mathes, 2019). Recently, of course, the global impact of COVID-19 has brought rapid and major changes to this situation, leading to a forced recognition of online learning and its use across the globe, including in the Arab world.

Even before the pandemic, however, a number of MOOC platforms had been created in the Middle East, and the two most prominent are Edraak and Rwaq, which came as noted by Mutawa (2017) as a way to fill the need to localize MOOCs to the

Arab context. Edraak, launched in Jordan in 2013 by the Queen Rania Foundation for Education and Development (QRF), used the open-source platform edX, with courses primarily in Arabic and including translations of courses from Harvard and MIT. The courses cover a number of disciplines, such as entrepreneurship, communication, health, information technology, design, and filmmaking, and typically run for between 3 and 8 weeks. Another open learning platform is Rwaq, which was launched at the same time as Edraak by two Saudi businessmen. It solicits Arab lecturers to register and offer open courses, mainly targeting computer sciences, Islamic science and creativity and innovation (Rwaq, 2021). There is also the country-unique MOOC in Egypt called Egymooocs (Egymooocs, 2017). Additionally, there are professional training platforms such as Nadrus, which started in the United Arab Emirates (Sallam, 2017). In Oman, the focus of our study, some platforms have begun to offer open content in the past few years, but to our knowledge, full MOOCs are not yet being offered by HEIs, either as short courses or as full degrees. The exception, and the oldest example of online learning in the country, is administered by the College of Shari'a Sciences, which offers a completely online degree program in Shari'a/ Islamic sciences. This is offered only to fee-paying students, with still some face-to-face requirements.

Other Omani HEIs are increasingly using blended courses, providing more electronic content to students and communicating with them online; some, such as Sultan Qaboos University, are venturing into the provision of online courses within their formal degrees. However, outside the formal offering of online content, all nonacademic professional training courses and workshops have thus far been offered through face-to-face training. If this situation were to change, as may well happen as a result of the pandemic, there is a need to assess student readiness for MOOCs. This readiness is investigated in this paper, and it is explored by examining the extent to which students possess the skills required for MOOCs.

A number of studies have already explored and described these skills and the factors that contribute to learners' acceptance of and participation in MOOCs. Recently, Albelbisi (2020) developed a scale for success in MOOCs, which addressed the areas of system quality, information quality, attitude, course quality and satisfaction. However, when focusing on the learners, these important factors need to be seen in the context of the extensive literature on learner self-directedness and autonomy, two key foundation blocks described in studies of distance education. These concepts have been well developed in Moore's theory of transactional distance, which focuses on learner autonomy as a key factor in independent learning (Moore, 1997). The idea that people must know how to learn on their own is crucial when trying to understand the skills required for taking MOOCs, and it is not something that can be taken for granted. Beaven et al., (2014) from The Open University explain that when people make a voluntary choice to opt into this type of education, they are also making a decision both about their commitment to it and about their possession of the literacy skills it requires. In a study of Chinese learners, Zhou (2016) similarly noted that when considering their participation in MOOCs, learners are guided by their attitudes toward them as well as by their perception of how easy or difficult taking them will be. Therefore, as suggested by Fidalgo et al., (2020), understanding how receptive

learners are to this type of education can assist higher education institutions in using better strategies for supporting and encouraging learners toward it.

Another helpful context in which to view readiness for MOOCs is the notion that there are three types of learning: pedagogy, andragogy and heutagogy, with the latter often seen as particularly relevant to the way in which many learners participate in MOOCs. Pedagogy is at one end of the continuum and is teacher-led, with teachers controlling the subjects and structure of what is to be learned. In andragogy, or self-directed learning, students have a more active role. Teachers create a structure and provide guidance, but students seek their own solutions to the tasks they are given. At the other end of the continuum is heutagogy, or “self-learning”, a term coined by Hase & Kenyon (2007). Here, the learner is the one determining the learning process and goals. Teachers do not assign tasks but rather provide context and support to students as they find areas of a subject they wish to investigate. This high level of learner autonomy must be matched by a high level of learner maturity.

A number of educationists, such as Blaschke (2012), see heutagogy as a helpful concept for describing distance learning and note that the two share key characteristics. Both use emerging technology, both demand learner autonomy, and both have a learner profile that emphasizes a high level of control and independence as well as the role of personal experience and agency for learning in complex and adaptive environments. Many, if not most, MOOC-takers are self-determined individuals who make their own decisions about what MOOCs to take, with minimal guidance from instructors or control by the course structure. According to Khan et al., (2018), learners’ acceptance of MOOCs is also affected by the macro factors surrounding them. For example, how well-recognized are they in the wider social and economic environment, do learners perceive competence in relation to them, will they add to a learner’s perceived relatedness to others, and what is their perceived reputation?

Overall, then, a perception of readiness comes from learners’ self-assessment of whether they possess the *heutagogical* abilities and skills needed to succeed in online learning. Three main categories of skills are involved, namely, technological, metacognitive, and motivational. First, studying online requires a basic familiarity with information and communication technology (ICT) (Fini, 2009). Learners will thus clearly need to know how to use technological devices to access courses, as well as simple navigation and communication skills needed to readily participate in MOOCs. Conole (2013) explains that the use of technology in MOOCs is not an end in itself but rather a tool that will not only support the approach adopted by the instructors but also enhance the true purpose and nature of the course, making it more “associative, constructivist, situative and connectivist” (p. 17). In other words, the use of ICT needs to be aligned with and supportive of the pedagogical purpose of the course.

The second set of skills needed are metacognitive skills, the “higher-order thinking which involves active control over the cognitive processes engaged in learning” (Livingston, 2003, p. 2). These include metacognitive regulation processes such as planning for learning tasks, monitoring one’s understanding of such tasks, and evaluating one’s progress in performing them. Learners must therefore be able to assess their ability to study online and to regulate their online learning process (Zeidner et al., 2000). If they possess or can develop these skills, their interest in the MOOC will increase, and they may well complete the course (Tsai et al., 2018), something that is

not actually very common. Tsai et al. also suggest that the ability to use metacognitive skills leads to more enjoyment of and engagement in the course, an impact that in itself can be viewed as successful MOOC learning (Tsai et al., 2018).

The third requirement is motivation, and because the locus of control in MOOCs moves from the teacher to the learner, student motivation is vital. Students are generally motivated to take MOOCs for either professional development reasons (extrinsic motivation) or personal development (intrinsic motivation). External motivation may include the desire to gain a certificate or credit toward a degree, the desire to develop one's career, or the wish to enhance one's chances of future employment. Internal motivation includes a personal interest in the course content and material and, more generally, in learning new things (Joo et al., 2018). The type of motivation will very much influence both learner strategy and the level of perseverance necessary to complete the course. Littlejohn et al., (2016) found, students who are seeking certification will focus on completing all the activities linked to assessment, while those taking the MOOC for professional development will focus on the components of the course that they can apply in their work contexts. Those taking a MOOC purely out of personal interest in the subject are also likely to focus on the elements of the course that engage them and to ignore other parts. In all three cases, learners may have achieved their goals successfully and with enjoyment, even though they may not have covered every aspect of the course. This clearly suggests that completion rates should not be seen as the only measure of learning and success in MOOCs.

Today, MOOCs can be classified according to learners' reasons for taking them. On the one hand, there are certificate and credit MOOCs, and on the other hand, there are professional development MOOCs. The first type targets a specific type of student and a niche, the local market, while the second targets a wide range of students and a mass, global market (Tømte et al., 2017). In addition, as more platforms offer whole degrees through MOOCs, the MOOC degree can be seen as a third type. In all these cases, however, learners need to be supported if they are to increase their chances of personal learning (Huang, 2015). The OpenupEd model described by Ossiannilsson et al., (2016) confirms the importance of following a learner-centered approach when developing MOOCs, which means providing a rich learning environment with learner-centered activities. This model suggests the need to use built-in support for independent learning, including tutoring, online resources, and media-supported interactivity. Thus, it suggests a more heutagogical approach to MOOC development.

Based on the elaborated situation for the required readiness to participate in MOOCs within this unique Arab context, the study tackles these research questions:

1. What is the current level of learner readiness (technological, metacognitive, and motivational) of students in the Omani higher education institutions (HEIs) and those outside HEIs who took a MOOC from the larger Omani society?
2. Are there any significant differences between general higher education students (HESs) and other MOOC-takers in their levels of learner readiness for MOOCs?
3. Which learner readiness variables best predict the likelihood of future participation in MOOCs of Omani HESs?

To present the research methodology and results for these questions, this paper is structured into three main sections. First, we describe the research methodology by explaining the theoretical framework, tools, research phases, data collection process, and sample. Then, we present and discuss the study findings, including both descriptive and predictive results. Finally, in the [conclusion](#) section, we reflect on our research findings, provide practical recommendations, and project some ideas for future research.

2 Research Methodology

2.1 Theoretical Framework and Tools

In this study, learners' readiness to take MOOCs was conceptualized through three sets of skills: technological, metacognitive, and motivational. As depicted in Fig. 1, it is theorized that this readiness will predict future participation in MOOCs. Hence, the overarching research hypothesis in this study is that learners' technological, metacognitive, and motivational readiness will predict their future participation in MOOCs, and it is expected that the level of readiness will differ for students who are attracted to MOOCs than for ordinary higher education students.

Technological readiness was assessed by measuring learners' actual use of technology and their competence in skills such as sending and receiving emails and browsing the internet; these are as specified in the computer skills scale from the Test of Online Learning Success (ToOLS) (DeBey, 2016).

Metacognitive readiness was assessed by measuring three indicators: the level of awareness of MOOCs, readiness for self-directed or self-managed learning, and learner comfort with eLearning. The first was measured with a single Likert-scale

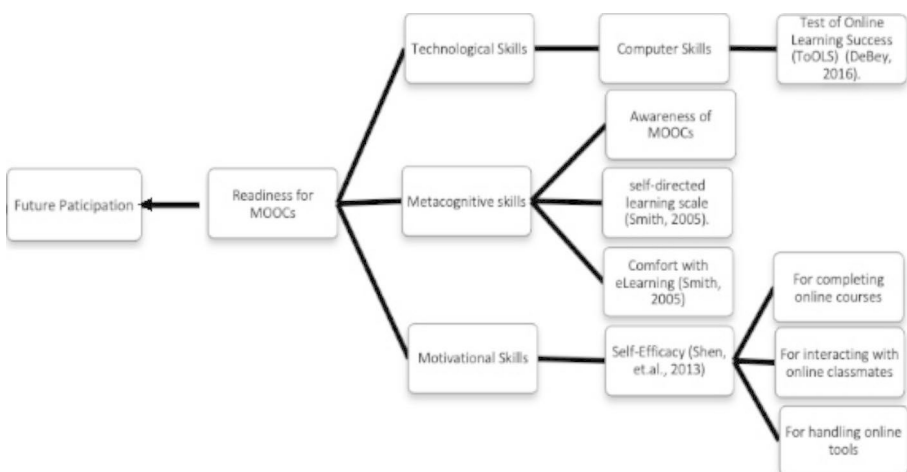


Fig. 1 A Theoretical Framework for MOOC Readiness

item, while the categories and items for the second and third were taken from Smith (2005) and are detailed in Table 1 below. For Smith (2005), comfort with eLearning reflects a “willingness to engage with others through electronic means, and comfort with accessing learning resources from electronic sources such as the internet” (Smith, 2005, p.6). Motivational readiness was assessed through the indicators of learner self-efficacy for learning online; this reflected learners’ perceptions of and confidence in their ability to work in an online environment. This area included self-efficacy for completing online courses, interacting with online classmates, and handling online tools; all were measured by a scale adapted from Shen et al., (2013).

All the study scale items were translated into Arabic using forward and back-translation (Smith, 2010) to ensure that items were clear and represented the same meaning as that intended in the English version. When differences were found, the wording was modified to address translation issues. For example, the word “competent” in the item ‘I am a competent internet browser’ from the ToOLS tool by DeBey (2016) was back-translated to “effective”. The word was therefore deleted from both the original and the translated scales because the level of effectiveness would in any case be measured through the scale levels.

Table 1 Demographics of Study Samples

$n_1=428$ (Higher education students, HESs)				$n_2=253$ (General MOOC-takers, GMTs)			
<i>Variable</i>	<i>Sub-variable</i>	Number	%	<i>Variable</i>	<i>Sub-variable</i>	Number	%
<i>Gender</i>	Male	149	34.8	<i>Gender</i>	Male	145	57
	Female	266	62.2		Female	105	41.5
	Not reported	13	3.0		Not reported	3	1.2
<i>Degree Programme</i>	Diploma	77	18.0	<i>Education Level</i>	Less than a secondary school diploma	1	0.4
	Bachelor	305	71.3		Secondary school diploma	61	24.1
	Master	32	4.9		Bachelor’s degree	127	50.2
	Doctorate	5	1.2		Master’s degree	41	16.2
	Not reported	20	4.7		Doctorate	20	7.9
<i>Year level</i>	Foundation year	22	5.1	<i>Employment Status</i>	Not Employed	87	34.4
	Year 1	52	12.1		Employed	159	62.8
	Year 2	43	10.0		Not reported	7	2.8
	Year 3	71	16.6				
	Year 4 and above	119	27.8				
	Not reported	121	27.8				
<i>Specialization</i>	Arts and Humanities	160	37.4				
	Sciences	244	57.0				
	Not reported	24	5.6				

The language option given to those taking the survey needed to accommodate learner diversity in the country and be appropriate to the linguistic situation. Higher education institutions in Oman teach mostly in English, but Arabic is the mother tongue for most students. Respondents were therefore given the option to respond to the survey in either Arabic or English; this was possible through the use of the multi-lingual survey function in the QuestionPro survey system.

In the higher education student (HES) sample, all the study scales were found to have acceptable reliability measures, as indicated by Cronbach coefficient alphas (all above 0.75) (Cortina, 1993) and shown in Table 2. There were significant moderate correlations between all the study variables.

2.2 Research Phases and Sample

A sequential two-phase research approach was used in this study through two phases, for each of which ethics approval was granted through the ethics committee at Sultan Qaboos University. Phase one consisted of a survey of the population of higher education students (HESs) in Oman to measure their readiness for MOOCs. The sample consisted of 428 students from a cross-sectional sample of students who were recruited in two stages. Those recruited initially were from ten higher education institutions in Oman, selected to represent different types of institutions (university/college), different specializations (sciences/social sciences), and different geographical

Table 2 Reliability and Correlations for Study Variables

Variables	Num- ber of Items	Cron- bach Alpha	Mean (Standard Deviation)	Pearson Correlation Domains					
				1	2	3	4	5	6
1. Computer Skills	11	0.933	4.462 (0.685)	1	0.404**	0.285**	0.485**	0.315**	0.455**
2. Self-efficacy for completing an online course (SE COC)	8	0.900	4.029 (0.669)	0.404**	1	0.502**	0.687**	0.422**	0.566**
3. Self-efficacy for interacting with classmates for academic purpose (SE IC)	6	0.860	4.090 (0.699)	0.285**	0.502**	1	0.404**	0.392**	0.582**
4. Self-efficacy for for handling online tools (SE OT)	6	0.871	4.185 (0.701)	0.485**	0.687**	0.404**	1	0.342**	0.508**
5. Self-directed Learning (SDL)	6	0.882	3.915 (0.744)	0.315**	0.422**	0.392**	0.342**	1	0.473**
6. Comfort for eLearning	4	0.753	3.972 (0.690)	0.455**	0.566**	0.582**	0.508**	0.473**	1

** Correlation is significant at the 0.01 level (2-tailed)

locations. However, when not enough were recruited in this first stage, online social media platforms were used to open the survey to students at other HE institutions.

In the second phase, a MOOC was specifically developed in this study and was offered to the general public to recruit a second sample. The MOOC topic was chosen so that it would be of relevance and interest to the general Omani community. It was entitled “Digital Citizenship” and focused on the basic knowledge and skills needed to be a good digital citizen. Areas covered included digital identity, cybersecurity, digital parenting, the legal and ethical responsibilities of a digital citizen, how to maintain the security of digital devices and how to exercise parental control. Three hundred seventy-five people registered for the MOOC, which ran for five weeks. Of those registering, 44 actually completed the course, a completion rate of 11%. Most MOOCs suffer from huge attrition, so this completion rate was significantly higher than the global completion average, which ranges from 2 to 4% (Pickard, 2018). Before beginning the MOOC, the general MOOC-takers (GMTs) were asked if they would be willing to participate in the readiness survey; 253 agreed to do so and thus formed the second sample.

For both groups, consent to participate was acquired through the online survey system. Individuals who did not provide consent were excluded from the survey before starting it. Table 1 presents the demographic details of the study samples. Interestingly, the characteristics of both samples reflect the international demographics of learners in higher education and MOOCs. There are more females than males in higher education in general (Wang & Parker, 2011), but more males take MOOCs (Bayeck, 2016; Blackmon et al., 2016), a situation also reflected in this study. The GMTs in this study were slightly older and more highly educated than the HESs, with almost 75% of them already having bachelor’s or postgraduate degrees; again, this is similar to international MOOC demographics (Shah, 2017).

Table 3 MOOC actual readiness level

<i>Scales</i>	<i>Higher Education Sample (HESs) (n=428)</i>	<i>General MOOC-taker Sample (GMTs) (n=253)</i>	<i>t-test</i>
Computer Skills	4.46 (0.93)	3.16 (0.81)	t=18.7695, df=691, SE=0.069, p<.0001
Self-directed Learning	3.92 (0.74)	4.06 (0.91)	t=2.2134, df=691, SE=0.063, p=.027
Comfort with eLearning	3.97 (0.70)	4.13 (0.96)	t=2.5294, df=691, SE=0.063, p=.012
Self-efficacy for online course completion	4.03 (0.67)	4.29 (0.78)	t=4.6584, df=691, SE=0.056, p<.0001

3 Results and discussion

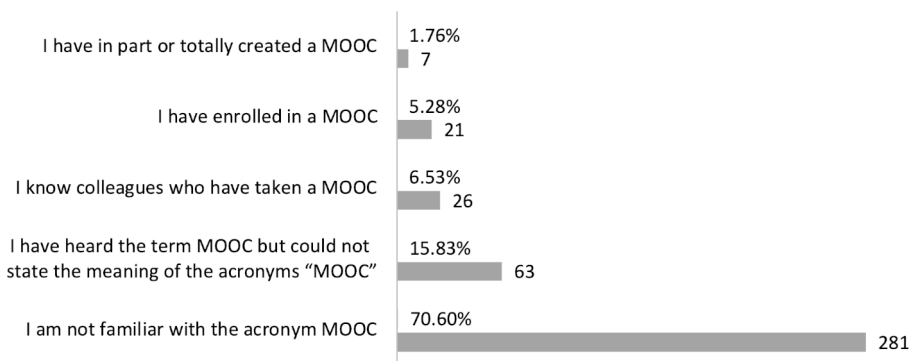
Descriptive statistics are used to answer the first question about learner readiness for MOOCs in the two study samples, HESs and GMTs. These statistics indicated a high level of readiness for MOOCs, as the mean scores for all three sets of skills were above 3.0, as presented in Table 3. This means that students reported high agreement with the statements, above the theoretical mean of 3.0.

For HESs, this finding seemed to be in contrast with the fact that 30% of them reported no prior experience or understanding of MOOCs, and 70% had never come across the acronym. However, while only 5% had taken a MOOC before (see Figs. 2), 80% reported that they would enroll for such courses in the future.

For the second question, about the differences between HESs and GMTs in the level of readiness for MOOCs, there were observable differences in the levels of all three skill types: computer, motivational and metacognitive. These comparisons are presented in Table 3. The GMTs reported higher scores for self-directed learning, greater comfort with eLearning, and greater self-efficacy for online course completion, while the HESs scored higher only in computer skills. This latter is to be expected, as the HESs are slightly younger than the GMTs and are fully engaged in studying for their bachelor's degrees, so they will be constantly using technology, which may not be true for those who finished their degrees some time ago.

Next, we used a t test to check whether these observable differences were significant, and they all were *significant at the 0.05 alpha level*. This indicates that MOOC-takers are individuals who possess greater motivation and metacognitive skills than most other people and are able to work independently on online courses. Similarly, Fidalgo et al., (2020) reported the lack of some study skills needed for distance education, including planning and motivation, with a sample of higher education students from the United Arab Emirates, a neighboring country to Oman.

The higher metacognitive and motivational skills of MOOC-takers (GMTs) locate them at the heutagogical point on Blaschke's (2012) pedagogy–andragogy–heuta-



*Note: $n=398$ (This is the number from the sub-sample who responded to this item.)

Fig. 2 Student distribution on their MOOC knowledge

gogy continuum; this also sees them as more mature than other learners and more capable of learning autonomously. This is because their reason for taking MOOCs is usually different from that of university students, a difference elaborated by Watted & Barak (2018). General MOOC participants are motivated by a desire to explore subjects and achieve professional advancement, while undergraduate university students seek to gain their degree certificates and improve their basic content knowledge.

While acknowledging the limitation of plausible moderator variables between the two samples in the study, what this means is that MOOCs still need to be designed to fit the group they are targeting, a recommendation made persuasively by Watted & Barak (2018). Thus, academic MOOCs offered for university students need to focus on content knowledge and new ideas within this area, while MOOCs designed for the general public or professionals should focus rather on personal growth and new skillsets, notions that fit better with a heutagogical approach to learning. MOOCs offered for university students would still need to use pedagogical practices if they are to develop students' knowledge base and increase their engagement in learning.

A helpful way of looking at the features needed in these different types of MOOCs is Siemens' distinction between xMOOCs and cMOOCs. While the first MOOCs were cMOOCs, described below, major universities such as Harvard, MIT, and Stanford have more recently shifted more toward xMOOCs; these are seen as more appropriate in a full-time academic setting. xMOOCs have a clearly predetermined course structure of delivery and content (Smith & Eng, 2013); despite being online, they are closer to a traditional classroom in which instructors play a greater role than learners, and instruction usually consists of a video lecture followed by a variety of assessments that students must do. However, they may also try to cultivate some more andragogical elements, such as encouraging self-direction, making use of learner experience, and using problem-centered rather than subject-centered learning (Merriam, 1999).

The cMOOCs offered for professionals/experts and the general public need to create a different learning environment. They need to push the boundaries toward heutagogy by providing more opportunities for learners to assume control of their learning, by having flexible structures, and by creating opportunities for learners to network with other learners and create a learning community. These are what Siemens calls cMOOCs, where the role of the instructor is minimized, and learners are encouraged to share and cocreate content and experiences (Smith & Eng, 2013).

It is also vital to emphasize that the development of and participation in MOOCs is not primarily about the technology used but rather about the pedagogy of online education. While technological knowledge and skill are generally important as a gateway to the world of online education and MOOCs in particular, only basic technological competence is needed to access and participate in these courses. What is more important is that the way the technology is used should reflect the pedagogical approach of the MOOC instructors (Conole, 2013), so that the focus will be less on purely technical support and more on supporting students to be independent online learners. This approach will help them undertake and finish MOOCs as autonomous learners, and indeed, it has already been established that the greater the learner's ability to be self-directed and take responsibility for their educational experience, the more likely they are to complete a MOOC (Schulze, 2014). Providing this support may

pose a challenge for higher education institutions, and Schulze (2014) suggests that three aspects of support are needed to help learners succeed in normal campus online courses: “strategic course design, interactive and engaging teaching strategies, and sound support” (p.65). With MOOCs, the situation is more complicated; because they are usually free and are offered to a wide group of learners with diverse motivations for learning, many providers do not offer any institutional student support services.

Finally, for the third question, about identifying the best predictors from these six skills to determine the likelihood of future student participation in MOOCs, we used binary logistic regression, using the enter method because of the dichotomous nature of the dependent variable (Cohen et al., 2003), which was a yes/no response to a question about the intention to participate in the future. Table 4 summarizes the results, which show that the entire model, Model 1 in Table 4, significantly predicted future participation, $X^2(6, N=32)=54.079$, ($p<.000$). This model explains between 15.4% (Cox and Snell R Square) and 24.9% (Nagelkerke R Square) of the variance in future participation in MOOCs. The model correctly classified 82.1% of the cases, but a closer examination showed that only comfort with eLearning was a significant predictor of future participation ($OR=0.280$, $p<.000$).

As a result, a reduced model was explored, Model 2 in Table 3, with only comfort with eLearning examined as a predictor of future participation. This model significantly predicted future participation, $X^2(1, N=328)=42.482$, ($p<.000$). The explanation value of the model was slightly reduced to 12% (Cox and Snell R Square) and 19.7% (Nagelkerke R Square), but it accurately classified 81.4% of the cases, which was relatively close to the previous model. According to Model 2, students with a high degree of comfort with eLearning were 0.251 times more likely to participate in MOOCs in the future than those with a low degree of comfort with eLearning. The significance of being comfortable with eLearning emphasizes the importance of prior experience for those taking online courses in general and MOOCs in particular. As Dai et al., (2020) explain, future behavior needs to be guided by both intention and habit. The authors suggest a number of self-regulating learning strategies that will help to create the habitual behavior needed; these include planning, self-monitoring,

Table 4 Binary Logistic Regression Model for Predicting Future MOOC Enrolment by Learner Readiness Skills

Model 1						
	<i>B</i>	S.E.	Wald	<i>df</i>	<i>p</i>	Exp (B)
Computer Skills	-0.106	0.266	0.160	1	0.689	0.899
Self-directed Learning	0.037	0.245	0.023	1	0.880	1.038
Comfort with eLearning	-1.273	0.331	14.787	1	0.000	0.280
Self-efficacy for online course completion	-0.218	0.350	0.389	1	0.533	0.804
Self-efficacy for handling online tools	-0.602	0.318	3.573	1	0.059	0.548
Self-efficacy for interacting with classmates for academic purpose	0.275	0.287	0.920	1	0.338	1.317
Constant)	5.872	1.400	17.594	1	0.000	354.956
Model 2						
Comfort with eLearning	-1.383	0.237	34.022	1	0.000	0.251
Constant)	3.782	0.886	18.214	1	0.000	43.907

and creating relevance. This study was carried out before the COVID-19 pandemic took hold, at a point when online courses were not widespread in higher education institutions (HEIs) in Oman. Even at the time of writing, in April 2021, no MOOCs were offered by HEIs in the country. However, the impact of the pandemic means that students have now gained a good deal of experience with online learning and teachers with online teaching so that they are more likely now to be more comfortable with eLearning and thus with MOOCs.

The previous models showed that the possession of motivational and technological skills was not a significant predictor of participation in MOOCs. The motivational components represented by the self-efficacy variables did not predict future participation in MOOCs, a finding that could be explained by the fact that the majority of respondents had not tried MOOCs and thus could not be expected to have a clear picture of their ability to interact with other learners, use online tools or complete an online course. Computer skills, a measure of technological skills, were not a predictor of participation. Students were already competent in computer skills, which had the highest mean of all the skills surveyed ($m=4.462$), but computer self-efficacy was not found to be associated with any interest in online learning. Similar results were noted by Jan (2015), who found that possession of computer-related skills had no impact on the desire for online learning. This suggests the need for future studies to re-evaluate the use of this variable as a predictor in online learning; the focus should be on motivational and metacognitive factors rather than on technological ones.

4 Conclusions

The findings of this study suggest that if MOOCs can be a sustained innovation in higher education in countries (Bower & Christensen, 1995), such as Oman, that have not yet invested in strategic plans to benefit from them, then they need to find ways to extend their current practices. In this specific case of Oman, it is clear that higher education students have a sufficiently high level of technological, metacognitive, and motivational skills, reflecting their readiness to take MOOCs. What is lacking, however, is a national strategic vision that would extend the scope of Omani higher education to include MOOCs. As pointed out by Ossiannilsson et al., (2016), MOOCs are here to stay and are already changing the learning landscape in higher education. Given that numerous other countries have solid experience in providing such courses, it is imperative that higher education in Oman takes advantage of the numerous opportunities afforded by MOOCs, which can provide one-time learning and training as well as full degrees and microcredentials. HEIs can strategically plan to benefit from MOOCs to enhance their reputation, increase their ability to serve current students and attract new students, and strengthen their capacity for public service, pedagogical change, and research opportunities (Mesquita, 2015). As Omani students already possess a high level of readiness, such opportunities will be not only accepted but also welcomed.

To encourage the intention of Omanies to enroll in MOOCs, HEIs can individually or collectively launch a sustainable Omani MOOC platform, which will be recognized and frequently checked by the Omani people. MOOC courses offered

through such platforms will need to reflect international quality standards in terms of content quality, delivery mechanisms and learner support. Recognition, certification and possibly accreditation of MOOC programs and providers will boost the people's confidence in not only entering them but also investing their own resources to take them. This is plausible because of the high demand for higher education degrees and professional development in young Omani higher education. As an alternative to an Oman platform, as suggested by Mutawa (2017), aggregated efforts, such as a regional platform, from regional bodies such as the Arab Cooperating Council could shorten the path toward the legitimacy and acceptance of MOOCs in higher education institutions in the Gulf region.

Finally, since MOOCs have always attracted individuals based on the unique topics they offer, it is essential to choose topics that will appeal to the interests and needs of the different segments of the Omani people. For example, with the rising youth unemployment in the country, MOOCs in career development and entrepreneurship are needed. Additionally, in its long-term strategic plan, "2040 Vision", the Omani government specified sixteen areas as national priorities, in all of which MOOCs can be an enabler to enhance the skills and capabilities of the Omani people on a large scale. These recommendations are in sync with the trends extracted from a large-scale study on the role of local/regional MOOC providers in comparison with the global ones by Ruipérez-Valiente et al., (2022). As supported by the researchers, local/regional MOOC providers have the capability to attract larger local populations, cater to local/regional needs, and capitalize on the reputation and recognition of local institutions. Instead, additional design considerations are needed from global MOOC providers if they decide to offer more inclusive MOOCs, which could include strategies such as offering courses in different languages and providing accommodations for cultural diversity, regional challenges, equity, and gender issues.

In theory, all of the previously mentioned sociocultural issues can be easily addressed by local MOOCs; however, the reality of the situation is that they could also be easily overlooked if not intentionally designed for. This is especially important for developing MOOCs for the Omani people, given the complex cultural context, which includes multiple cultural groups and languages, women's position in society, and competing social and economic priorities. Therefore, Zhu et al., (2018) strongly recommended conducting an analysis of the localized context and the region's educational needs, as well as having strong research paradigms and clear goals for what MOOCs are seeking to achieve. Additionally, localizing MOOCs to suit the learning culture (Dai et al., 2020) helps to design MOOCs suitable for cultural differences. Al-Harhi (2010) found that when compared to American students, Arab students reported a preference for a more rigid structure and a need for more interaction with their instructors.

In conclusion, with the COVID-19 pandemic, online education moved from the periphery to the center stage on the education scene, which resulted in increased experience of and comfort with using it as a mechanism for teaching and learning in higher education. Although at this point many of the practices in Oman have arisen as emergency-based online education, they are increasing learners' experience with online education, found by this study to be the key predictor for future participation in MOOCs. What now remains is for higher education institutions to include MOOC

provision as part of their educational mission. This period could mark the start of a new era for online education in the region, but only if higher education institutions become more entrepreneurial and take advantage of the potential of MOOCs to bring positive change and educational progress. Additionally, the context of learners, their characteristics and future needs will need to be the guiding pedagogical framework for such developments to assure learner engagement (Deng et al., 2020) and the success of MOOCs in the region.

Acknowledgements Not applicable.

Authors' contributions Author 1/Corresponding author contributed to conceptualization, methodology, formal analysis, resources, investigation, data Curation, writing, review, editing, project administration, and funding acquisition. Author 2 contributed to conceptualization, funding acquisition, project administration, and writing-review.

Funding This research was funded by The Ministry of Higher Education, Research and Innovation, formally known as The Omani Research Council, Sultanate of Oman, (Project code: RC/EDU/DEFA/16/01).

Data availability The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Declarations

Competing interests we declare no competing interests.

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