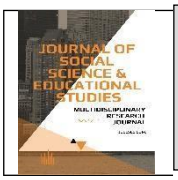

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Evaluating the Readiness of Nurses for Massive Open Online Courses (MOOCs) in Continuing Nursing Education

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ABSTRACT

E-learning is crucial for continuing education and enables flexibility, innovation, and professional advancement. Massive open online courses (MOOCs) provide quality education and support continuing education for diverse populations. Assessing participants' readiness before launching a MOOC course ensures its success. MOOC course preparation, especially in continuing nursing education, is currently understudied. Therefore, this study examined nurses' readiness for MOOC courses for continuing education. A descriptive, cross-sectional study using the convenience sampling method was conducted among registered nurses at SASMEC@IIUM in Kuantan, Malaysia through online survey with google form. The survey consisted of three parts: Part A: demographic characteristics; Part B: MOOC preparedness level in technology access, online skills and relationship, willingness to learn, learning skills in online audio/video, and ability in internet conversation; and Part C: types of preference in MOOC course format. SPSS 22.0 was used for the descriptive analysis. According to results, participants were ready to learn the MOOC course based on technology access, online skills, relationships, and internet conversation. However, it was necessary to plan for online audio and video to support their motivation and learning skills as they had lower average scores (3.8 and 3.9 respectively) than technology access, online skills, relationship and ability in internet discussion (4.4,4.2, and 4.1, respectively on a 5-point Likert scale). This study provided valuable information to the MOOC team and highlighted the need to motivate participants while delivering the MOOC course.

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INTRODUCTION

Every professional in the world is familiar with continuing professional education (CPE) as the major means of advancing their professional education on a regular basis. As a result of globalisation and technology advancements, the healthcare environment and practitioners are challenged to ensure that current practices are consistent with these changes. As nurses are the largest group of healthcare professionals, they are expected to participate in CPE to maintain their current practice and expand knowledge and skills. However, there are obstacles to continuing education for nurses such as lack of motivation and desire to continue learning **(**Mlambo et al.,2021). Continuing education is a vital part of the nursing profession and can be beneficial for professional development. It is one of the basic requirements to meet the educational needs of nurses to improve their current knowledge and also improve quality care, reduce work stress, improve critical thinking, self-confidence and initiative, eliminate work errors and perform better to provide working conditions and certify that they are qualified nurses in patient care (Yfanti & Sipitanou, 2016).
. CPE, on the other hand, is largely a self-learning process involving reductive technology and active learning methods **(**Mlambo et al.,2021). Therefore, new learning environments for nurses should be developed. As nursing is a profession with various experts and shift work, flexible and accessible ways of continuing education delivery will be more appropriate for nurses (Parkinson, 2014). Several studies have also found that web-based teaching is approximately effective as traditional teaching for nurses in continuing education. E-learning plays an essential role in continuing education because it is often widely accessible geographically, and learners can learn independently. The field of nursing has accepted e-learning as an alternative to traditional learning environment. The e-learning programme is appropriate for nurses because shift work prevents them from attending traditional classes (Bahrambeygi et al., 2018). The purpose of creating a flexible and accessible learning environment for nurses should be to improve their creative thinking and self-directed learning abilities. These abilities support nurses not only in meeting current challenges, but also in adapting to future ones (Nyback et al. 2017).

E-learning is rapidly expanding as an alternative method of delivering education in the context of continuing education and lifelong learning. E-learning will play a vital role in the future process of continuing education, and this environment provides learning flexibility, innovation, and professional advancement. MOOC is a novel form of this learning environment and poses a massive challenge to provide learners with the most appropriate training (Nyback et al.,2017; Goldberg & Crocombe, 2017).

A qualified nursing education that employs innovative and active learning methods and improves the overall quality of health care. To create educational programmes for nurses, it is vital to evaluate not only the current conditions but also the nurses' individual and overall educational needs. Continuing education is a process in the field of healthcare services that encompasses all aspects of professional life and is crucial in today's era due to the rapid occurrence of modernisation. As part of a strong restructuring of the work process, employee training is accompanied by rapid scientific and technological advancements (Yfanti & Sipitanou, 2016). Therefore, the nursing education system must incorporate technologically relevant creative ways. Active teaching approaches, such as web-based teaching and innovative methods, are currently utilised in nursing education and enable nurses to prepare for future nursing professionals (Culha, 2019; Hashim, Rusli, Yunus, & Hashim, 2019). However, it is becoming increasingly difficult for healthcare professionals, particularly nurses, to enrol in continuing professional development (CPD) programmes because of tight schedules. E-Learning offers a variety of positive perspectives and benefits that provide the flexibility needed in times of massive workplace change. E-Learning is the application of technology to allow anyone to learn anytime and wherever they prefer. E-Learning consists of training, just-in-time information sharing, and expert guidance. Due to the rapid development of Internet technologies, it has become an increasingly popular learning strategy. E-Learning enables users to gain information and further training efficiently using synchronous and asynchronous methods to meet the requirement for rapidly learning the current expertise in productive environments. The key learning objectives of e-Learning are to increase teaching learning quality, to suit the learning styles or demands of learners, to enhance user-accessibility and time flexibility in order to engage learners in the learning process, and to satisfy the needs of a diverse learner population (Mahanta, & Ahmed, 2012).
In comparison to traditional courses, MOOCs have numerous special characteristics, including accessibility, a large number of participants, networking, and individualized and self-paced learning. According to the study

conducted by Hashim, Rusli, Yunus & Hashim (2019), 72 percent of MOOC students claimed work benefits and 61 percent reported educational benefits. Jeffries et al. (2022) investigated the shift to online health professions education (HPE) and delivery methods during the COVID-19 pandemic. Some degree programmes were offered entirely online or in a hybrid mode before the pandemic, but face-to-face instruction was highly specified for the education and training of healthcare professionals. Similar to the expansion of telemedicine, the majority of healthcare visits were conducted in person. During the pandemic, the online provision of healthcare and the adoption of HPE technology accelerated in both academic and professional healthcare settings. Numerous healthcare professionals, educators, and patients have been required to practice new forms of communication. During the pandemic, online learning and simulation were often the only possible alternatives for continuing education and clinical training in order to update current knowledge. Some recommendations for HPE regarding the use of technology to better support patients, practitioners, faculty, and students include embracing the "new normal" by continuing online teaching methods that have increased student engagement and learning efficiency, ensuring faculty members have the technology and instructional design training, as well as technical support to develop courses to facilitate online delivery, and conducting systematic, ongoing evaluation.

Several studies and reviews have been conducted to investigate the influences of technology on healthcare education, as well as some of its benefits and difficulties. MOOCs are a relatively new phenomenon that is flourishing in e-Learning and enhancing self-directed learning, as described by A. Albarrak (2013). MOOCs play an important role in continuous education, ongoing professional development, and creating a flexible learning environment that facilitates learners to satisfy their intellectual integrity and develop their abilities. The platforms for MOOCs can make it easier for healthcare personnel to continue their education, which assists in improving their skills and knowledge for lifelong learning (Dhanani et al., 2016).

Furthermore, online continuous education is an attractive and effective option because it is accessible anytime, anywhere, has a low delivery cost overall, and increases its impact and stimulation for knowledge translation and delivery. In addition, it also offers numerous benefits to learners, particularly in terms of travel costs and time savings (Setia et al., 2019). According to Alturkistani et al., (2018), learning from an online course is most valuable not only when it is presented with the best quality and modern technologies, but also when it has a positive impact on learners' daily activities. MOOCs are a form of online learning in which online courses are offered at no or minimal cost, with no enrollment restrictions or prerequisites. Similar to other types of learning, MOOCs can be accessed via computers, smartphones, and other digital devices and often consist of video lectures, interactive e-learning modules, assignments, and online discussions (FAO, 2021). MOOCs that are carefully selected and properly designed can be useful resources for professional development with unrestricted access. The emergence of MOOCs brings in a new era of opportunities for nursing education and lifelong learning in nursing, thereby enhancing the safety and quality of healthcare services to help patients achieve a higher quality of life (Padilha et al., 2021).

In general, due to the need for cutting costs, time constraints, and easy access to a large group of learners, many continuing education courses are now offered online. E-learning provides users access to education anytime and from any location (Gooshi et al., 2014; Neville et al., 2015). E-learning provides nurses with more opportunities to expand their knowledge due to its flexible, access, and convenience. Therefore, CNE courses delivered through e-learning have the potential for success. However, the application of CNE through e-learning is currently inadequate. MOOC is an e-learning platform that will enhance existing teaching and learning environments by incorporating various standard and innovative features. Twenty public universities in Malaysia are developing MOOCs. Nonetheless, the use of MOOCs for continuing education, particularly in nursing education, remains inadequate. Therefore, the researcher aimed to design and develop a MOOC course for nurses for continuing nursing education programmes. Assessing participants' readiness is crucial before launching a MOOC course ensures its success. This study aimed to access Nurses’ level of readiness in Massive Open Online Courses (MOOCs) for their continuing nursing education.

LITERATURE REVIEW

The application of technology in healthcare education has established over the number of years, and it is currently being used to adapt to the challenges that are present in the healthcare environment. e-Learning will cause significant alteration in healthcare education as the current model of education shift patterns from a transmissive learning model (i.e., an approach centred on the teacher) to a collaborative and reflective learning model. In addition to this, it creates the

educational setting more flexible for younger generations as well as for adult students who rely heavily on their electronic devices in order to communicate with one another and with people all over the world (Alhassan et al., 2021). There are some similarities between this work and the work of Lewis et al. (2014), who discovered that e-Learning is well suited for faculty, lecturers, or instructors to overcome some challenges associated with healthcare education, and that it can help them encourage in self-directed learning and flexible learning opportunities for learners (Lewis et al., 2014).
There have been a number of studies and reviews carried out to investigate the influences that technology had on healthcare education, as well as some of the benefits and difficulties associated with it. Massive open online courses (MOOCs) are a relatively new phenomenon that are flourishing in e-Learning and enhancing self-directed learning, as described by Albarrak (2022). MOOCs play an important role in the process of continuous education, ongoing professional development, and the creation of a flexible learning environment that enables learners to satisfy their intellectual integrity and develop their abilities. The platforms for massive open online courses (MOOCs) can make it easier for medical faculty members to continue their education, which assists in improving their skills and knowledge for lifelong learning (Dhanani, Chavda, Patel & Tandel, 2016).

Similar ideas have been proposed by Alumu and Thiagarajan (2016), in a review paper on Massive Open Online Courses and e-Learning in Higher Education. They discovered that one of the beneficial areas affected by MOOC is Continuing Medical Education (CME), where participants can enrol in MOOC courses at their own convenience. MOOCs appears to be a substitute for a traditional CME courses because the institution's budget for CME activities was reduced in order to pay for staff participation in registration courses and travel expenses (Alumu & Thiagarajan, 2016).

Even though there are numerous studies on the application of recognition technology in the field of healthcare education, there are still some gaps in the instruction of particular competencies. These limitations are acknowledged by the authors, Sarkar and Bharadwaj (2015) suggested that careful consideration needs to be given when deciding on course topics and content for MOOC courses in healthcare education as there are some challenges in teaching of specific skills like auscultation of heart and lungs sounds, which require close supervision from instructors, and also teaching a Basic life support (BLS) programme, which is a skill-based programme, are the best taught in a hands-on setting (Sarkar & Bharadwaj, 2015). In spite of the extensive research that has been conducted into the technology's impact on the field of healthcare education, with a particular emphasis on the education of medical professionals, there is still a significant need for additional research into nursing education because nurses are essential members of the healthcare team.

Continuing nursing education and professional development have been the focus of a variety of studies in recent years. In the first place, a qualitative and quantitative study on continuing education for Haitian nurses that was carried out by Caporiccio et al., (2019) revealed that Haitian nurses have a desire to participate in continuing nursing education and that they have accepted that continuing education is necessary in order to provide quality patient care. It has been suggested that Haitian nurses require a more consistent and standardised educational foundation to begin their careers (Caporiccio et al., 2019). Similar ideas were proposed by Mlambo et al., (2021), who conducted a meta-synthesis of the qualitative literature on lifelong learning and continuing professional development. In this study, the authors emphasised that nurses should place a high priority on continuing professional development and believed that this is fundamental to both professionalism and lifelong learning. Sustaining standards of nursing care through competent practise requires active participation in continuing professional development especially on the behalf of registered nurses (Mlambo et al., 2021). In a similarly, Maziah et al. (2012) conducted a descriptive correlational study of continuing nursing education (CNE) in nursing profession. They found that the CNE programme is the best practise initiative and important. CNE will promote learning that is both lifelong and transformative within the nursing profession (Maziah et al., 2012).

The findings of Chong et al. (2014) extends the ideas of Zolfaghari et al. (2013) and Karlsen et al. (2017) in regard to the outcomes that can be achieved through the implementation of an eLearning approach in nursing education. There was a positive effect on learning outcomes and participation of the blended learning program in the educating of nursing and midwifery students in Iran as presented by Zolfaghari et al. (2013), and Karlsen et al. (2017) found that the integration of e-Learning into undergraduate, postgraduate and continuous nursing education is consistent with adult learning theory and provides effective teaching as well as deeper learning. Incorporating technology into teaching and learning activities can enhance new learning experiences for learners and teaching experiences for lecturers(Zolfaghari et al., 2013; Karlsen et al., 2017). Additionally, this study stated that traditional instructor-led training cannot be replaced by e-learning, despite the fact that e-learning has many advantages such as being easily accessible and user-friendly. However, the researchers also suggested that traditional teaching can benefit from eLearning's incorporation as a form of blended learning strategy (Karlsen et al. 2017). According to the findings of a study carried out by Chong, Francis, Cooper, Abdullah, Hmwe, and Sohod (2015), Malaysian nurses were in agreement that e-learning was necessary to increase in skills and knowledge as well as attitudes toward nursing care, competence, and also to improve clinical performance (Chong et al., 2014). Therefore, it is recommended that, when developing an educational programme, the process of incorporating e-Learning courses, such as MOOC courses, renovation of existing established medical, nursing, and other healthcare educations

should begin with a needs analysis, followed by the creation of a well-designed plan, and finally, the decision to put the plan into action.

According to Bloom (1995, cited in Engin, 2017), readiness is crucial to the education-instruction process and a significant input for the education-instruction system. Recently, an education system implemented both face-to-face and online learning. These contexts are significantly different, and the preparation of both learners and teachers should not be underestimated in these various mediums. Measuring MOOCs readiness can provide additional light on the learning readiness of participants in an open and distributed learning environment, identification of the prerequisites for MOOC enrollment, and completion of the corresponding learning activities in the MOOC course (Hashim, Rusli, Yunus & Hashim, 2019; Engin, 2017). On the other hand, it is also unknown how Malaysian nurses' MOOC preparation for continuing education can be examined. Before establishing a MOOC course for continuing nursing education, the purpose of this study was to determine the level of participants' readiness for MOOCs.

METHODOLOGY

Study design, setting and participants

A descriptive study was conducted using a MOOC readiness questionnaire and a Google form. The research was conducted between August and September of 2021. Regarding the study population and sample size for this MOOC readiness survey, the target population consisted of 108,000 registered nurses in Malaysia. (SamaSamaJaga. 2022). Due to time and financial constraints, the next phase was to identify a suitable source population. In addition, the researcher was a member of the IIUM team in order to assist in the implementation of the IIUM platform for the MOOC course. Thus, the source population consisted of registered nurses from SASMEC@IIUM, Kuantan (850 nurses). To choose a sample from the source population, it is necessary to determine the sampling procedure. Sometimes samples are selected based on judgment or convenience (Etikan, 2019). This MOOC readiness study employed convenience sampling; a non-probability sample method based on the accessibility of respondents. Therefore, the sample population for this study consisted of emergency room nurses from SASMEC@IIUM. Therefore, the representative sample size for this MOOC readiness survey was 109 nurses. This is due to the fact that a MOOC course offered by SASMEC@IIUM focuses on improving risk communication skills for application in emergency and healthcare situations.

Data collection and Data analysis

The questionnaire consists of three parts: Part A: Demographic characteristics, Part B: MOOC readiness level in technology access, online skills and relationship, motivation to learn, learning skills in online audio/video, ability in internet discussion, and Part C: types of preference MOOC in implementation and it was anonymized without participant’s name to ensure there was no social desirability bias. MOOC readiness questionnaire used 5-point Likert scale. Statistical Package SPSS (Version 22) for Windows was used to process and analyse the data and Cronbach’s alpha tests were utilised to determine the reliability of the MOOC readiness.

Ethical considerations

Ethical approval was obtained from SASRC of SASMEC@IIUM hospital and the IIUM Research Ethics Committee (IREC/2021-010).

RESEARCH FINDINGS

Demographic Characteristic

The overall response rate was 79.8 %. (i.e., 87 registered nurses replied the survey google form out of 109 nurses). Among the demographic data, in terms of education level, the majority of respondents (97.7%) held a nursing diploma, while only 2.3% held a bachelor's degree. Regarding the working experience, the majority was between 2 to 6 years. It is presented in Table 1.

Table 1: Demographic characteristic of the participants (n=87)

Demographics	Frequency (%)	Median (IQR)
Education level		
Diploma	85 (97.7)	
Degree	2 (2.3)	
Master	0	
Working experiences (in months) * (n= 71)		48 (24.00- 72.00) Minimum: 0; Max: 240

MOOC readiness among participants

As shown in Table 4.2, the responses of participants regarding on MOOC readiness in each area via 5-point Likert scale. Overall Mean score in all accessed area was (Mean=90.2, SD=11.0).

Table 2: MOOC readiness among participants (n=87)

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)	Mean (±SD) *Overall
	n (%)	n (%)	n (%)	n (%)	n (%)	* 90.2 (11.0)
1.Technology Access						
I have access to a computer with an Internet connection	2 (2.3)	3 (3.4)	5 (5.7)	34 (39.1)	43 (49.4)	17.3 (2.4)
I have access to a computer with adequate software (e.g., Microsoft Word, Adobe Acrobat).	1 (1.1)	1 (1.1)	15 (17.2)	35 (40.2)	35 (40.2)	
I am able to use a web browser/search engine to navigate the internet (e.g., Firefox, Safari, Internet Explorer, Google).	0 (0)	0 (0)	9 (10.3)	27 (31.0)	51 (58.6)	
I have experience using software such as Microsoft Office (e.g., Word, PowerPoint, and Excel)	0 (0)	1 (1.1)	7 (8.0)	39 (44.8)	40 (46.0)	

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)	Mean (±SD) *Overall
2. Online Skills & Relationships						
I have the basic skills to operate a computer (e.g., saving files, creating folders).	1 (1.1)	3 (3.4)	14 (16.1)	30 (34.5)	39 (44.8)	
I have the basic skills for finding my way around the Internet (e.g., using search engines).	0 (0)	2 (2.3)	16 (18.4)	29 (33.3)	40 (46.0)	
I can send an email with a file attached.	0 (0)	1 (1.1)	5 (5.7)	26 (29.9)	55 (63.2)	33.3 (4.5)
I think that I would be comfortable using a computer several times a week to participate in a course	1 (1.1)	0 (0)	11 (12.6)	46 (52.9)	29 (33.3)	
I think that I would be able to communicate effectively with others using online technologies (e.g., chat).	2 (2.3)	14 (16.1)	39 (44.8)	39 (36.8)	32 (36.8)	
I think that I would be able to use online tools to work on assignments with other students in different places	0 (0)	2 (2.3)	14 (16.1)	45 (51.7)	26 (29.9)	
I think that I would be able to schedule time to provide timely responses to other students and/or the instructor.	0 (0)	2 (2.3)	19 (21.8)	46 (52.9)	20 (23.0)	

I think that I would be able to ask questions and make comments in clear Writing	0 (0)	1 (1.1)	20 (23.0)	47 (54.0)	19 (21.8)	
	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)	Mean (±SD) *Overall
3. Motivation						7.5 (1.5)
I think that I would be able to remain motivated even though the instructor is not online at all times.	0 (0)	3 (3.4)	25 (28.7)	44 (50.6)	15 (17.2)	
I think that I would be able to complete my work even when there are distractions in my home (e.g., house work, children, and my duty shift, etc	3 (3.4)	7 (8.0)	19 (21.8)	44 (48.3)	16 (18.4)	
	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)	Mean (±SD) *Overall
4. Online Audio/Video						
I think that I would be able to relate the content of short video clips (1-3 minutes typically) to the information I have read online or in books.	0 (0)	1 (1.1)	21 (24.1)	47 (54.0)	18 (20.7)	
I think that I would be able to take notes while watching a video on the Computer	0 (0)	5 (5.7)	17 (19.5)	45 (51.7)	20 (23.0)	15.8 (2.5)

I think that I would be able to understand course related information when it's presented in video formats	0 (0)	4 (4.6)	16 (18.4)	49 (56.3)	18 (20.7)	
I can learn from a various instructional format (e.g., text, video, podcast, online discussions, video conferencing).	0 (0)	2 (2.3)	16 (18.4)	45 (51.7)	24 (27.6)	
	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)	Mean (±SD) *Overall
5. Internet Discussion						
I think that I would be able to carry on a conversation with others using the Internet (e.g., Internet chat, messenger and others).	0 (0)	2 (2.3)	16 (18.4)	35 (40.2)	34 (39.1)	
I think that I would be able to follow along with an online conversation (e.g.,Internet chat, messenger) while typing.	1 (1.1)	3 (3.4)	18 (20.7)	39 (44.8)	26 (29.9)	16.2 (2.7)
I sometimes prefer to have more time to prepare responses to a question	0 (0)	1 (1.1)	22 (25.3)	36 (41.4)	28 (32.2)	
I am comfortable receiving constructive feedback	0 (0)	3 (3.4)	15 (17.2)	49 (56.3)	20 (23.0)	

Technology access, online skills and relationship and ability in internet discussion of participants reported high score of readiness on MOOC course among respondents (average score 4.4,4.2 and 4.1, respectively on a 5-point scale assessing on MOOC course readiness) whereas motivation to learn and learning skills in online audio/video had averaged 3.8 and 3.9 respectively after converting Likert-scale data to numeric values. It is presented in table 3. These results demonstrated that participants were ready to participate in a MOOC course in accordance with the technology access, online skills and relationship and internet discussion skills. However, planning was required to assist their motivation and learning skills using online audio and video during the MOOC course.

Table 3. Summary of readiness level score in each area

Area	Overall average score of readiness
• technology access • online skills and relationship • motivation to learn • learning skills in online audio/video • ability in internet discussion	• 4.4 • 4.2 • 3.8 • 3.9 • 4.1

The reliability of the MOOC readiness was determined using Cronbach's alpha testing. There were 87 people who responded to the five-part MOOC preparedness survey. Table 4 demonstrates the results. The agreeableness subscale of technology access consisted 4 items ($\alpha = 0.77$), the online skills and relationships subscale consisted 8 items ($\alpha = 0.88$), the motivation subscale consisted 2 items ($\alpha = 0.60$), the online audio/video subscale consisted 4 items ($\alpha = 0.83$), the internet discussion subscale consisted 4 items ($\alpha = 0.87$), and the overall agreeableness of MOOC readiness consisted 22 items ($\alpha = 0.93$). The overall MOOC readiness indicated that excellent internal consistency while four of the five part/subscales of MOOC revealed good internal consistency (technology access, online skills and relationships and the online audio/video). The only questionable subscale was motivation, which contained only two items.

Table 4: Reliability test results for MOOC Readiness in line with Cronbach's alpha value and its interpretations

No.	Subscale	Result (Cronbach's alpha value)	Interpretation (Cronbach's alpha value& its internal consistency)
1.	Technology access	$\alpha = 0.77$	$\alpha \geq 0.9$(Excellent)
2.	Online skills and relationships	$\alpha = 0.88$	$0.9 > \alpha \geq 0.8$(Good)
3.	Motivation	$\alpha = 0.60$	$0.8 > \alpha \geq 0.7$(Acceptable)
4.	Online audio/video	$\alpha = 0.83$	$0.7 > \alpha \geq 0.6$(Questionable)
5.	Internet discussion	$\alpha = 0.87$	$0.6 > \alpha \geq 0.5$(Poor)
	OVERALL (TOTAL)	$\alpha = 0.93$	$0.5 > \alpha$ (Unacceptable)

MOOC Preferences (Course Format)

Regarding the preferences of MOOC course format, more than half of participants (52.9%) favoured both face-to-face and online modes equally when implementing MOOC and desired to meet with instructor at least once per week. As MOOC learning resources, participants in this study preferred animation videos (PowerPoint presentations with voice explanations). It was displayed in Table 5 and figures1 and 2.

Table.5: Preferences of MOOC course format among participants

If your institution, plans to implement MOOC, how much of face-to-face (f2f) vs online do you prefer? (Shown in Fig. 4.1)	Number of responses	Percentage (%)
f2f 90 %: Online 10 %	9	10.3
f2f 70 %: Online 30 %	20	23.0
f2f 50 %: Online 50 %	46	52.9
f2f 30 %: Online 70 %	8	9.2
f2f 10 %: Online 90 %	4	4.6
If your institution plans to implement MOOC, how often do you prefer to meet face-to-face with the course instructor/lecturer		
Once a week	43	49.4
Once every two weeks	20	23.0

Once a month	16	18.4
Other (please specify)	1	1.1
Once a week and once every two weeks	2	2.3
Once every two weeks and once a month	4	4.6
Once a week and once a month	1	1.1

If your institution plans to implement MOOC, what format do you prefer the teaching content to be made available online? (You may choose more than 1 answer) (shown in Fig. 4.2)	Number of responses
Reading Text Only (eg. PDF)	16
PowerPoint Presentation Only	34
Audio Only (Audio recording of teaching content)	10
Video Only (Video recording of teaching content)	18
PowerPoint with Audio (PowerPoint with audio explanation)	68
Text with Audio (Notes with audio explanation)	33
Other (please specify)	2

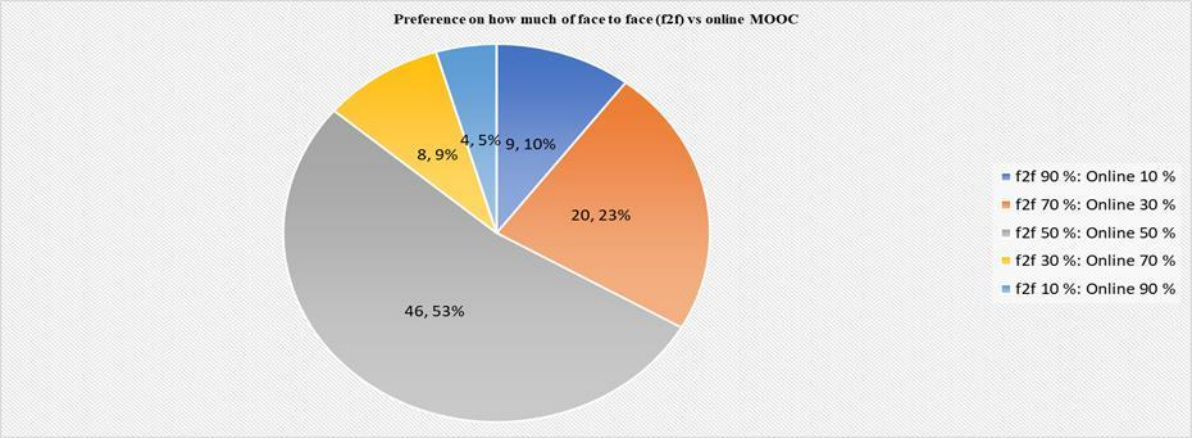

Fig. 1. Preference of participants on face-to-face (f2f) vs online

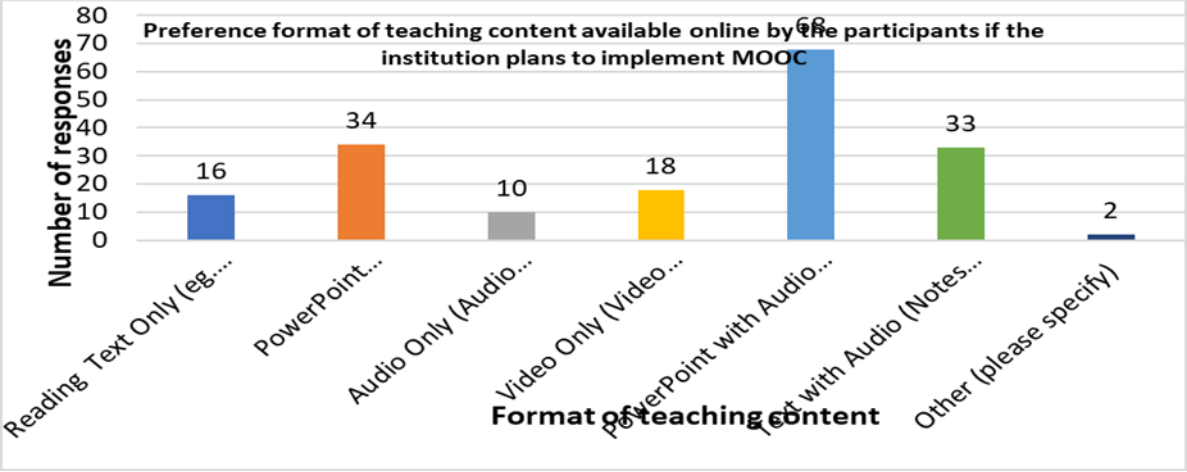

Fig. 2. Preference course format of teaching content available online by the participants

Overall, the majority of respondents to this survey were ready to participate in a MOOC course. As MOOC course learning material, they preferred PowerPoint presentations with audio explanations.

DISCUSSIONS

Changing the education ecosystem in Malaysia is one of the goals that can be accomplished through the use of educational technology, which is a new platform that enables learning, alters the manner in which information is communicated, fosters greater creativity in learning environments, and enables learners to learn more independently (Zulkifli, et.al, 2019 & Cecilia, 2008). It is important to aware that the principles and processes that constitute the pedagogical approach to online learning are becoming increasingly important. Before beginning any kind of e-learning programme, it is necessary to evaluate the learners' level of preparedness. When taking an online course, a learner's level of preparedness is typically a significant determinant of their level of success. Ability to work independently, self-motivation, advanced literacy skills, a proactive approach to learning, and a good attitude towards the learning experience also contribute to a higher level of readiness (Zulkifli, et.al, 2019 & Cecilia, 2008).

The results of this study's MOOC readiness survey showed that registered nurses have a high level of readiness for the MOOC course, with a standard deviation of 11.0 (SD=11). This result corresponded with the findings of the study that was conducted by Ranganathan et al. (2021), which revealed that undergraduate physiotherapy students have a moderate readiness for online learning, with a standard deviation of 11.0 (SD=11) in their technical, social, and communication competencies. In addition, the authors stated that having access to a reliable computer and an uninterrupted internet connection is a fundamental prerequisite for online learning, and that for both online learners and teachers, the learner's or teacher's own computer and internet connection are the primary tools that are used for learning and teaching (Cecilia, 2008 & Ranganathan et al, 2021). In addition to having access to the internet, they recommended that the instructors and the administrative staff who would be providing technical support for the implementation of an e-learning environment should have the technological skills necessary to be prepared to engage on an e-Learning journey (Cecilia, 2008 & Ranganathan et al, 2021).

In this study, participants reported that having access to technology, online skills and relationship and internet discussion skills among participants with a high readiness score (average score of 4.4,4.2 and 4.1, respectively on a 5-point scale assessing on MOOC course readiness) while preparing to study the MOOC course. However, they had a moderate preparedness score and a low level of motivation to learn the MOOC course and online learning skills via audio/video (average 3.8 and 3.9 after converting Likert-scale data to numeric values, respectively). In educational research and practice, learners' levels of motivation have a significant impact on the attitudes and behaviours they engage toward learning. When students' motivation is maintained, they transform into active learners who have an intense desire to acquire new knowledge (M.-L. Hung et al, 2010). When it came to the structure of the MOOC course, the participants in this study preferred having a meeting with their instructors once a week to discuss the content, and when it came to the format of the instructional material that could be accessed online, they preferred power point presentations with audio explanations. These results were in line with the study conducted by Badusah (2016), in which the participants preferred live-action videos and animations as MOOC learning materials and preferred a more informal communication style as opposed to formal ones. In addition, the learners showed a preference for educational materials that contained aspects of humour. Learners showed a clear preference for unstructured learning activities and collaborative learning tasks versus individual ones at that point (Badusah, et.al, 2016).

CONCLUSION AND RECOMMENDATION

This study underlines the importance of understanding factors that influence MOOCs readiness, which will assist the providers in designing effective MOOCs courses. Moreover, this study findings provided a significant input for the designer and implementers before running the MOOC course and also noted that there

is needed to motivate learners and more active participation in discussion during the implementation phase of this course to achieve course completion.

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