Readiness in E-Learning: Challenges Faced by Post-Registration Nursing Students at Open University Malaysia

Rosnida Abu Bakar¹ ● Yee Bit-Lian*¹ ● Aniszahura Abu Salim¹ ● Raziana Che Aziz¹

¹ Faculty of Technology and Applied Sciences, Open University Malaysia, Petaling Jaya, Malaysia.

*Corresponding author. Email: yeebl@oum.edu.my

Abstract

E-learning has emerged as a predominant and widely embraced instructional approach within various academic disciplines in higher education institutions, and nursing education stands out as a notable example of its extensive adoption. The integration of e-learning offers substantial and adaptable prospects for employed nurses, facilitating their educational progression and fostering continuous professional development conducive to lifelong learning. This investigation focused on the obstacles confronted by nursing students enrolled at Open University Malaysia as they prepare for e-learning. The study encompassed a comprehensive cohort of 1,332 nursing students who enrolled between the January 2020 and January 2022 semesters, spread across nine learning centres offering the Bachelor of Nursing with Honours programme. Employing a quantitative research framework, the study deployed a questionnaire comprising two segments: Section A compiled sociodemographic data, while Section B concentrated on respondents' challenges, adapted from Mehmet et al. (2019). The results reveal that employment-related challenges were the most frequently encountered, with institutional challenges assuming a comparatively lesser influence. The findings underscored the university's need to provide counselling services to address study-related challenges. Concurrently, students are encouraged to prioritise effective time management strategies to surmount these problems, emphasising the pivotal role of proactive support services in enhancing the overall e-learning experience for nursing students.

Keywords: Challenges, eLearning, nursing students, post-registration, online learning, readiness

1. Introduction

Over the past decade, significant changes have occurred in colleges and universities due to advancements in Internet and software technologies (Tayebinik & Puteh, 2012). With its increasingly comprehensive role in education, digital technology has led to a shift from traditional to e-learning modes (Kashada et al., 2018; Sprenger & Schwaninger, 2021), sparking numerous comparative studies between online and traditional classrooms (Northey et al., 2015; Southard et al., 2015). 'E-learning' is often used interchangeably with 'online learning' and 'distance learning' (Aldiab et al., 2016). It encompasses various ideas and technologies like remote, digital, electronic, online, and mobile learning (Phillips et al., 2011; Rouleau et al., 2017; Liˇcen, 2021).

As a consequence of integrating technology into education, e-learning facilitates the development of novel research and delivery systems, particularly in contemporary learning (Taha, 2014). Nursing education has

witnessed an increased enrolment in bachelor's degree programmes via e-learning, evolving from blended to fully online courses, providing students access to a new educational platform (Rouleau et al., 2017; Hesham et al., 2022).

Open University Malaysia (OUM) is a pioneer in online learning in Malaysia, having offered high-quality education for more than 20 years. OUM's *myINSPIRE* learning management system allows students to access course materials anytime and anywhere and promotes a self-paced study approach. The nursing programme at OUM, initiated in 2007, utilises online discussion forums and digital resources to facilitate student-instructor and peer-peer communication. Teaching methods in higher education are rapidly evolving to keep up with knowledge growth and online resource availability (Hetty et al., 2015). In nursing education, the integration of e-learning and web-based learning continues to demonstrate benefits such as active learning, improved teaching quality, and flexibility in studying at one's own pace and location (Ali, 2016).

1.1. Problem Statement

OUM has offered the Bachelor of Nursing Sciences with Honours (BNS) programme since May 2007, initially enrolling 108 licensed nurses. Over the years, the programme has witnessed significant growth, reaching 7,945 students in May 2022. This degree programme caters to diploma-level registered nurses aspiring to pursue higher education and entails face-to-face tutorials throughout. Recognised by the Malaysian Nursing Board and accredited by the Malaysian Qualifications Agency since its first cohort in 2008, the programme was initially conducted through a blended learning approach.

In response to the challenges posed by the COVID-19 pandemic, OUM made a strategic shift to fully online learning after 21 years of employing the blended method. This transformation aligned with the evolving educational landscape, which is driven by increased enrollment, diverse teaching styles, and rapidly advancing technology. The nursing profession, in particular, demands continuous adaptation to new industry developments and effective utilisation of information technologies. Data collected from the Programme Management Unit at OUM between May 2007 and January 2022 indicated an attrition rate of around 22% and dormant cases accounting for 10.76% (825) of nursing students. Approximately 11.23% of these nursing students formally requested to leave the programme, shedding light on the challenges they face in continuing their studies despite the numerous advantages offered by online education.

While online learning presents a cost-effective and accessible alternative, it also brings challenges that warrant investigation to ensure successful implementation. This study adopts a quantitative research design to examine the challenges confronted by nursing students enrolled in the bachelor's degree programme at OUM. A Google Form was distributed to respondents via email, who, as adult learners with over two years of clinical experience, bear greater professional responsibilities than recent nursing school graduates.

2. Literature Review

Many universities and colleges worldwide have adopted information and communication technology (ICT) as a standard practice for disseminating course materials and facilitating student learning (Latchem, 2018). As its influence grows, ICT helps to raise the quality, sustainability, accessibility, and delivery of education in developing countries up to par to that of developed nations. Promising and significantly positive results have been seen from ICT-based innovations and tools from higher education institutes in developing countries (Reddy et al., 2016, 2020; Sharma & Reddy, 2015; Sharma et al., 2018). Graham (2019) argues that e-learning is particularly important for reaching students in geographically remote areas and improving the equity of education system delivery. However, there are still barriers to using ICT and e-learning to improve educational equity (Lim et al., 2020; Yang et al., 2018).

E-learning poses several challenges, ranging from problems for students to problems for lecturers and problems with material concerns. According to Bhuasiri et al. (2012), technological factors are essential in a successful e-learning system; hence, the readiness for technological aspects must be extensively

investigated to examine entire e-learning readiness. Some technological elements, such as appropriate software and hardware or broadband connections, can significantly impact the effectiveness of e-learning deployment (Keramati et al., 2011), which requires reliable Internet access because the Internet serves as the principal e-learning medium. Online education cannot be implemented properly and effectively without broad Internet access coverage. Students must have good Internet access, which is a requisite when enrolling in online education.

Another challenge students experience is inadequate support from families and workplaces. Adult learners, in particular, often play multiple roles, such as spouse, parent, and colleague, each carrying its responsibilities and workload (Thompson & Porto, 2014). At OUM, most students are working adults with vast experience in their professional fields. Having to assume many roles, often without a proper support system, may cause the students to feel stressed and encounter problems while studying. Online learners also find it hard to stay motivated in an online course. Students who do not have enough self-motivation and independence do not do as well as their peers (Fletcher & Sarkar, 2012). Learners who do not have self-control often do not give themselves enough time to finish their tasks, so they turn in low-quality work or submit their assignments late. A study by Mehmet et al. (2019) on challenges adult learners face in online distance education revealed three themes: internal, external, and programmed-related challenges. Their findings were based on a systematic literature review from 36 key journals in distance education, instructional technology, and adult and lifelong education. The researchers used these themes to identify challenges faced by respondents in this study. Figure 1 shows the seven types of challenges related to the readiness of e-learning.
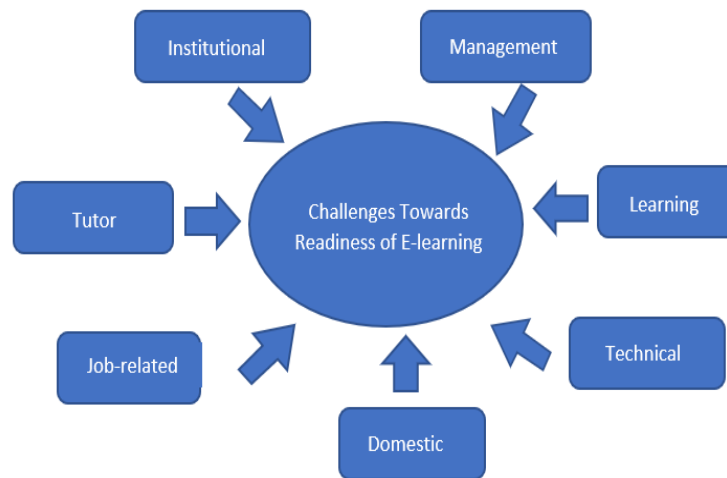

Figure 1. Challenges Related to the Readiness of E-learning

Chung et al. conducted a study in 2020 to explore the online readiness of students at Universiti Teknologi MARA (UiTM), a local public university, in the east Malaysian state of Sarawak. A total of 91 students from three different study programmes were assessed using the 18-item Online Learning Readiness Scale (OLRS). The findings revealed that students exhibited high readiness in computer and Internet self-efficacy, intermediate readiness in self-directed learning and desire for learning, and poor readiness in learner control. Gender was found to be a non-significant factor influencing online readiness. Notably, poor Internet connectivity emerged as a significant challenge faced by students. Lau and Shaikh (2012) in a Malaysia-based study discovered that students' e-learning readiness was substantially influenced by computer and Internet efficacy, as well as personal variables like gender, ethnicity, course year level, and financial assistance status.

Nayci (2021) study on associate degree students' online learning readiness indicated high general readiness levels. Utilising a sequential explanatory design, Nayci found moderate overall readiness levels, with self-directed learning scores higher among females and online communication self-efficacy higher among males. Fearnley and Malay's (2021) research involving 457 respondents in a Manila-based private higher

education institution found motivation in learning to be the most prominent readiness factor. Additionally, Wagiran et al. (2022) study highlighted motivation as a mediator in the relationship between technological skills, equipment capabilities, user satisfaction, and e-learning readiness.

Moreover, Wotto and belanger (2016) explored critical success factors for implementing e-learning in higher education institutions. Their comprehensive review identified technical, institutional, pedagogical, management, ethical, evaluation, resource, and social interaction factors as crucial for successful e-learning implementation. Nursyahidah et al. (2012) found 10 elements, including ease of use, appearance, linkage, structure and layout, information, reliability, efficiency, support, communication, and security, essential for ensuring e-learning success at another UiTM campus in the peninsular Malaysian state of Pahang. Additionally, Alina and Abdullah (2023) investigated nursing students' attitudes towards e-learning and identified a range of positive and negative attitudes. Factors such as motivation, personalities, backgrounds, and perceptions of control over the educational process must be considered in implementing e-learning for nursing students.

Overall, these studies shed light on the multifaceted aspects of online learning readiness, providing valuable insights for educators, institutions, and policymakers. The research objective of this study was to identify the specific challenges nursing students at OUM encounter in their readiness for e-learning.

3.   Research Method

The study's population consisted of all registered nurses pursuing a post-registration degree programme in nursing science at OUM. The researchers chose a simple random sampling, with inclusion criteria involving all nursing students enrolled in the BNS programme from January 2020 until January 2022. Nursing students who had deferred their study during data collection and those on maternity or medical leave during the same period were excluded from the study. The Faculty of Technology and Applied Sciences at OUM granted ethical approval for this study. A survey was distributed via Google Forms to respondents after approval was granted.

The instrument used by the researcher comprised three sections. Section A described the sociodemographic characteristics of respondents. This section contained their personal information, such as age, sex, ethnicity, marital status, current semester, cumulative grade point average, area of residency, monthly income, and funding. Section B discussed the OLRS, and Section C focused on the challenges they encountered in their studies. The OLRS by Hung, Chou, Chen, and Own (2010) was utilised with the primary author's consent for this study.

The OLRS comprises 18 items in five dimensions: computer/Internet self-efficacy (three items), self-directed learning (five items), learner control (three items), motivation for learning (four items), and online communication self-efficacy (three items). The students responded to a five-point Likert-type scale ranging from one ("strongly disagree") to five ("strongly agree").

Learner control refers to the student's ability to exercise discipline over the learning process, and online communication refers to the student's ability to communicate online. Self-directed learning focuses on the student's accountability in achieving their learning objectives, motivation for learning describes the students' attitude toward online course delivery, and learner control refers to the student's ability to communicate online. Self-efficacy refers to the ability to use the Internet as a medium for online learning.

This 18-item survey was sent via Google Forms, along with questions regarding respondents' socio-demographic information and questions related to challenges in online learning. The Google Forms link was delivered through email to respondents. Even though the OLRS is a validated instrument with a composite reliability between 0.727 to 0.871 (Hung et al., 2010), many researchers examine its reliability in the Malaysian setting. Using the same questionnaire, Chung et al. (2020b) and Chung et al. (2020a) previously examined university students' preparation for online learning at UiTM (2010). The values of composite dependability for the five dimensions ranged between 0.781 and 0.883 and confirmed to be between 0.841 and 0.911. The reliability test is explained in the pilot study section of this study.

Questions in Section C were based on Mehmet et al. (2019) study on challenges faced by adult learners in online distance education, whose findings show that three themes represent the challenges among adult learners, namely internal, external, and programme-related challenges.

Internal challenges include the unique problems that adult learners face due to their own characteristics, categorizable as management, learning, and technical challenges. External challenges include problems arising from professional and household situations, as well as duties of adult learners that are independent of their personal characteristics. These challenges were divided into two sub-themes: job-related and domestic challenges. The context of each programme might also be a source of challenge in itself. This describes programme-related challenges, in which there are two sub-themes: tutor-related and institutional challenges. A total of 27 statements required respondents to check the suitable column related to their challenges. More than one answer was possible for each statement.

4.   Findings

Table 1 shows the descriptive statistics describing the respondents' challenges. The mean for management challenges was 1.15 with SD = 0.76. The skewness and kurtosis were within the acceptable range. Learning challenges had a mean of 1.41 (SD = 0.84), technical challenges had a mean of 1.33 (SD = 0.62), and job-related challenges had a mean of 2.45 (SD=1.28). Among these dimensions, only job-related challenges had a standard deviation higher than one.

Table 1. Descriptive Data of Respondents' Challenges (n=254)

Category	n	Mean	Std. Deviation
Management Challenges	254	1.5551	.76155
Learning Challenges	254	1.4134	.83783
Technical Challenges	254	1.3386	.62517
Job-related Challenges	254	2.4528	1.28373
Domestic Challenges	254	1.2874	.50303
Tutor Challenges	254	1.4252	.67735
Institutional Challenges	254	1.1929	.46857

The primary aim of this study was to examine the various challenges encountered by respondents during their academic journey at OUM. Table 2 provides a comprehensive breakdown of these challenges, presenting the frequency and percentage of specific challenges selected by respondents. In this section, respondents were tasked with identifying, through ticking, statements from a provided list that resonated with the challenges that they personally faced. Given the nominal nature of this data, the presentation of findings involves creating a frequency table.

Examining Table 2, it becomes evident that work overload emerged as the most prevalent challenge, garnering a substantial 76.4% response rate. This outcome was not unexpected, considering the part-time nature of the BNS programme at OUM, and that all respondents were gainfully employed adults. Following closely in the second position is limited environment for study, a challenge that resonated with 68.1% of participants. This could be attributed to the likelihood that many respondents pursued their studies fully online while lacking a conducive home environment for academic endeavours. Occupational and familial challenges faced by working adult respondents surfaced prominently, particularly in relation to conflicts with colleagues due to work schedules, especially for nurses working in shifts. Compounding these challenges is the scheduling conflict among the working nurses, whereby some of them are eager to attend the synchronous live sessions of e-tutorials scheduled every Saturday, making it impractical for respondents to take leave or adjust their shifts every week.

The struggle to strike a balance between education and work is ranked fourth, affecting 59.4% of respondents. This predicament arises from their dual roles as employees and students, seeking certification for career advancement while managing additional commitments. Surprisingly, low interaction with tutors emerged as the fifth challenge (56.3%), which is noteworthy considering the non-

compulsory nature of tutorial attendance at OUM. OUM provides *myINSPIRE* as the online platform for interaction, with access to e-tutorial recordings, but data indicate a lapse in its effective utilisation.

The sixth most prevalent challenge, chosen by 55.1% of respondents, revolved around the perceived difficulty and demand of the academic programme. This sixth-level qualification, as categorised under the Malaysian Qualifications Agency, coupled with the diverse educational backgrounds of the students (who predominantly have diploma or post-basic qualifications), contributes to their struggle with the academic workload. Additional complexities arise from the Malaysian Nursing Board's minimum requirement of 120 credit hours for a bachelor's degree, to which compulsory general courses are added (*mata pelajaran umum*, or MPU), increasing the credit load to a total of 145 credits. This further burdens these post-registered-level students. The seventh and eighth challenges affecting 52.8% of respondents involve difficulties in accessing reliable information and facing technical issues. The former suggests gaps in leveraging available digital resources, including the digital library and learning centres. The latter encompasses technical problems related to *myINSPIRE*, particularly involving assignment submission and examinations with a multiple-choice-question format. These technical issues compound the challenges faced by adult learners, leading to a low concentration on the study (51.2%).

The ninth challenge, time management difficulties (50.4%), underscores the struggle to balance work commitments, academic responsibilities, and family obligations. A noteworthy aspect is the higher frequency of married respondents (65.7%), potentially influenced by the predominance of female participants (91.3%). The interrelation between challenges persists, with difficulties in balancing education and family or social life (45.7%) emerging as the tenth challenge. Communication challenges through the Internet (45.7%) and the limitation of study time (45.3%) are additional hurdles, highlighting the intricate juggling act faced by adult learners. The eleventh challenge, i.e., the inability to understand course materials (38.2%), highlights the impact of non-compulsory e-tutorial attendance for OUM students. Lack of interaction in forums potentially hinders their ability to seek clarification. Lack of institutional support (37.8%) emphasises the important role played by *myINSPIRE*, and reveals need for better awareness among students regarding available support. Insufficient computing skills (35.4%) further amplifies the technological challenges these adult learners face, particularly those with more than a decade of professional experience.

Financial challenges emerged as the twelfth challenge, affecting almost a third of respondents (30.7%) who were predominantly self-funded (85.8%). The ability to pay fees through monthly allocations and instalments cushioned the financial impact to some extent. Other challenges, such as a lower level of commitment to education and lack of one's employer's support (28.7%), lack of prerequisite knowledge (28.0%), and unsuitable learning materials (26.4%), reflect a myriad of obstacles faced by these respondents in their academic pursuit. Notably, low self-confidence (22.0%) and challenges related to course requirements (18.1%) present as themes that, while less prevalent, still affect a considerable proportion of respondents. Feelings of isolation (16.9%), lack of family support (9.4%), and disinterest in programmes or materials (1.2%) rounded off the list, reflecting challenges faced by a smaller yet significant percentage of participants.

In conclusion, this thorough analysis of the challenges faced by respondents at OUM underscores the multifaceted nature of their struggles. From work-related burdens to technical issues and complexities surrounding the academic programme, the study sheds light on the intricate challenges that working adult learners encounter during their educational journey.

Table 2. Frequency and percentage of challenges among respondents (n=254)

Challenges	Frequency	Percentage
Work overload	194	76.4
Limited environment to study	173	68.1
Schedule conflicts	163	64.2
Inability to create balance between education and work	151	59.4
Low interaction with tutors	143	56.3

Challenges	Frequency	Percentage
Too difficult or demanding programme	140	55.1
Difficulty in accessing reliable information	134	52.8
Low concentration on study	130	51.2
Technical problems	130	51.2
Low interaction with learners	130	51.2
Difficulty in time management	128	50.4
Inability to create balance between education and family or social life	116	45.7
Difficulty in communication through the Internet	116	45.7
Limited time to study	115	45.3
Inability to understand course materials	97	38.2
Lack of institutional support	96	37.8
Insufficient computing skills	90	35.4
Financial problems	78	30.7
Less commitment to education	73	28.7
Lack of employing organisation's support	73	28.7
Lack of prerequisite knowledge	71	28.0
Unsuitable learning materials	67	26.4
Low self-confidence	56	22.0
Unsuitable course requirements	46	18.1
Feeling of isolation	43	16.9
Lack of family support	24	9.4
Lack of interest in programme or materials	3	1.2

5.   Discussion

This study aimed to explore and analyse the challenges faced by OUM students, emphasising the distribution of frequency and percentage of each identified challenge. Table 2 reveals that work overload ranked as the main challenge, affecting 76.4% of respondents. The study primarily involved working adults engaged in part-time studies, so the burden of work commitments significantly contributed to this challenge. The second most prevalent issue, affecting 68.1% of respondents, was the limited environment for study, attributed to the fully online nature of the programme and the absence of a dedicated study space at home.

The challenges associated with job-related factors were of utmost concern, with issues such as work overload, lack of organisational support, schedule conflicts, financial problems, and limited study time dominating the respondents' experiences. The demanding nature of the nursing profession, particularly that of registered nurses (RNs), was identified as a significant factor in these challenges. Responsible for personalised patient care, RNs play a crucial professional role and thus face difficulties in managing their schedules and obtaining leave for educational commitments.

Financial problems are another issue because salaries in Malaysia are relatively low compared to those in other countries. A staff nurse in Malaysia (whether in government or private medical facilities) typically earns around MYR5,040 per month; this monthly salary can range from MYR2,570 to MYR7,770 (http://www.salaryexplorer.com/salary). This range depends on individual experiences, educational levels, and positions. In this study, most respondents (66.9%) received monthly salaries between MYR3,001 to MYR6,000. Saedah and Yee (2019) conducted a study at OUM that found a majority of respondents (54.3%) concurred that financial constraints were their most formidable study obstacle. The present findings are consistent with those of Ahmad (2018), who found that a considerable number of

nurses experienced distress over increasing expenses associated with pursuing higher education, which can hinder those unable to take time off from work to engage in academic pursuits.

The second-highest category of challenges identified was management-related issues, with a mean score of 1.55. Challenges such as creating a balance between education and work, education and family or social life, and time management were prevalent. Most respondents, who were married and working staff nurses aged between 25 to 41 years experienced unique challenges. Younger nurses struggled with adjusting to their workload and educational demands, while older nurses faced challenges in adapting to new learning technologies. With additional responsibilities as students, important personal commitments like attendance at weddings, birthday parties, or family gatherings had to be forgone. According to Chitra and Raj (2018), e-learning is convenient because it allows students to integrate education into their lifestyles, allowing even those with the busiest schedules to pursue a career and obtain new qualifications successfully. This is because students enrolled in e-learning programmes can access course materials and utilise resources at their convenience. However, another study contradicted their finding. In Mukasa et al. (2021), 64% of participants indicated poor time management as the problem, and 46% believed they were not accountable for their learning.

Tutor-related challenges constituted the third category, with a mean score of 1.43. The specific challenges identified were low interaction with tutors and learners, feelings of isolation, and unsuitable course requirements. The study emphasised the importance of tutors in delivering the programme, particularly part-time tutors who facilitate communication and support through platforms like Google Meet and *myINSPIRE*. At OUM, tutors play an important role in ensuring appropriate programme delivery. Most classes are run by the part-tutors employed by OUM to serve as intermediaries between the university and its students. Each tutor is responsible for a group of approximately 100 to 150 students to provide content-specific support for learning through Google Meet designed to encourage collaborative learning.

The core subjects of the BNS program necessitate that tutors allocate 10 hours per subject for instructional purposes, with the pertinent materials furnished via *myINSPIRE*., which serves as the platform to access subject-specific content for the semester in which students are enrolled. Additionally, students can use *myINSPIRE* to communicate with their tutors and peers.

In a comparable study, Kew and Tasir (2021) used content analysis to assess students' cognitive involvement in e-learning discussion forums. They discovered that they had a low degree of cognitive engagement. One of the challenges students encounter when taking an online course involves navigating the complexity of thought and intellectual stimulation. Part-time tutors must ensure that learning outcomes are specified so that students can take ownership of their learning, monitor their progress, and assess their achievement. A study by Mariya et al. (2022) found that a significant proportion of students (75.9%) identified a lack of face-to-face interaction with teachers and classmates as the primary challenge of online classes.

Learning challenges were identified as the fourth category, with a mean score of 1.41. Respondents reported less commitment to education, lack of interest in the programme or materials, inability to understand course materials, lack of prerequisite knowledge, low concentration levels, and low self-confidence. The study suggested that implementing digital technology could enhance student accountability and enthusiasm in the learning process, aligning with the recommendations in previous research. According to Bennett et al. (2017) and Dhillon and Murray (2021), the implementation of digital technology has been proposed to improve student accountability for their learning processes and amplify their enthusiasm and involvement in the teaching-learning process.

Technical challenges were the fifth category of issues, with a mean score of 1.29. Difficulties in communication through the Internet, insufficient computing skills, and challenges in accessing reliable information were reported. Despite the availability of a digital library, technological barriers persisted, affecting students' confidence in online communication and information retrieval. The study highlighted the crucial role of technological support for students lacking adequate digital literacy. Siemens et al. (2015) demonstrated that technological support is crucial for students who lack the levels required for computer and information literacy, and self-efficacy. It is also crucial to understand the underlying causes of student

decline. By its very nature, online learning is entirely dependent on technological devices and the Internet, so it is undeniable that technology is the greatest obstacle to online learning if those involved in the teaching and learning process lack digital competence due to a lack of experience or inadequate training. A study by Mukasa et al. (2021) regarding nursing students' readiness in the United Arab Emirates found that obstacles encountered in e-learning or teaching encompassed issues such as inadequate privacy, connectivity issues with the learning platform, and communication difficulties. They also discovered that more than half of the respondents lacked confidence in communicating via writing online. According to Ibrahim and Al-Khafaf (2013), most students lack computer and Internet abilities, which can be attributed to the fact that they do not utilise computers and the Internet regularly. In a study done in Seoul, South Korea, by Jamil et al. (2016), some students felt that technology use is not as wonderful as promised and that, to some extent, technology has its drawbacks, such as delaying the students' ability to complete their tasks and making them dependent on technology. This claim has been confirmed by Williamson and Muckle (2018), who proved that technology use might pose a problem in terms of regarding security threats, technological malfunction, and information retention.

Domestic challenges were identified as the sixth major category, with a mean score of 1.29. Technical problems, a limited study environment, and a lack of family support were specific challenges under this category. This echoed previous research findings, indicating that reliability and connectivity issues were significant barriers to online learning and lack of intrinsic motivation (Kumar et al., 2021). The study found that the most significant technological barriers to online learning were reliability and connectivity issues, with a mean score of 2.26 ± 0.534. The next most significant barrier was the lack of inherent motivation in the online learning environment, with a mean score of 2.20 ± 0.634. Intermediating the support of senior management between the implementation of digital learning technology and user awareness, perceived usefulness, and perceived ease of use offers significant and vital proof to endorse the successful integration of such technology in learning processes (Khasada & Li, 2018).

The last category identified was institutional challenges, with the lowest mean score of 1.19. Challenges such as unsuitable learning materials, demanding programmes, and lack of institutional support were reported. While respondents perceived these challenges as less critical, they still contributed to the overall complexity of their learning experience. A Russian study illustrated that the digitisation efforts in universities typically mirror the anticipation of their future advancement and a favourable student outlook on the existing opportunities (Ronzhina et al., 2021).

Overall, this study provided a comprehensive overview of the challenges nursing students face at OUM. Job-related challenges, financial constraints, management-related issues, tutor-related challenges, learning challenges, technical barriers, domestic challenges, and institutional issues were identified as key factors affecting their ability to navigate their educational journey. Understanding these challenges is crucial for institutions and policymakers to design effective support mechanisms and interventions to enhance the overall learning experience for adult learners, particularly those engaged in part-time studies while managing demanding professional and personal responsibilities.

6.   Conclusion

E-learning is a flexible option, offering working nurses the opportunity to enhance their educational qualifications and engage in continuous professional development, thus fostering a better commitment to lifelong learning. Despite the potential for acquiring advanced skills and knowledge, nurses in open and distance learning programmes face various challenges that can hinder their study progress. The effective management of job-related and learning challenges is thus crucial, necessitating nursing students to balance time and effort between work and study commitments. Employers are pivotal in creating a supportive environment for nurses striving to elevate their professional and educational levels. To ensure the success of nursing students in open and distance learning, the educational provider must conduct a comprehensive assessment of its support services, coursework, and resources. This evaluation aims to ascertain whether these components adequately meet the unique needs of nursing students and contribute to overcoming the challenges they face. Implementing proactive engagement strategies, characterised by targeted interventions and continuous opportunities for connection, seeks to support nursing students

throughout their entire educational journey. These efforts enhance persistence and success by providing comprehensive student support within and beyond the classroom settings, reinforcing the commitment to lifelong learning among working nurses.

References

Ahmad, Z. (2018). A phenomenological analysis of the experience of nursing students' usage of various technologies within a hybrid degree program. *Canadian Journal of Nursing Informatics, 13*(2).

Aldiab, A., Chowdhury, H., Kootsookos, A., & Alam F. (2016). Prospect of e-learning in higher education sectors of Saudi Arabia: A review. *Energy Procedia*, 110, 574-580.

Ali, W. G. M. (2016). Nursing students' readiness for e-learning Experience. *Gynecol Obstet (Sunnyvale), 6*(6), 1-6.

Nursyahidah Alias, Zazaleena Zakariah, Nor Zalina Ismail, & Mohd Norafizal Abd Aziz (2012). E-learning successful elements for higher learning institution in Malaysia. *Procedia - Social and Behavioral Sciences, 67, 484–489.* https://doi.org/10.1016/j.sbspro.2012.11.353

Alina, de las M. M. S., & Abdullah, K. (2023). Nursing student´s attitudes toward e-learning: A quantitative approach. *Education and Information Technologies, 28*, 2129–2143. https://doi.org/10.1007/s10639-022-11226-x.

Bennett, S., Phillip, D., Bearman, M., Molloy, E., & Boud, D. (2017). How technology shapes assessment design: Findings from a study of university teachers. *British Journal of Educational Technology, 48*(2), 672–682. https://doi.org/10.1111/bjet.12439

Bhuasiri, W., Xaymoungkhoun, O., Zo, H., Rho, J., & Ciganek, A. (2012). Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty. *Computers & Education, 58*(2), 843-855.

Chitra, A. P., & Raj, M. A. (2018). E-learning. *Journal of Applied and Advanced Research*, 3(Suppl. 1), 11−13.

Chung, E., Norlina Mohamed Noor, & Vloreen N. M. (2020a). Are you ready? An assessment of online learning readiness among university students. *International Journal of Academic Research in Progressive Education and Development, 9*(1), 301–317.

Chung, E., Subramaniam, G., & Dass, L. C. (2020b). Online learning readiness among university students in Malaysia amidst COVID-19. *Asian Journal of University Education (AJUE), 16*(2), 46-58.

Dhillon, S., & Murray, N. (2021). An investigation of EAP teachers' views and experiences of e-learning technology. *Education Sciences, 11*(2), 54.

Fearnley, M. & Malay, C. (2021). Assessing students' online learning readiness: Are college freshmen ready? *Asia-Pacific Social Science Review, 21*(3), 249-259.

Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise, 13*(5), 669–678. https://psycnet.apa.org/doi/10.1016/j.psychsport.2012.04.007

Graham, A. (2019). Benefits of online teaching for face-to-face teaching at historically black colleges and universities. *Online Learning, 23*(1), 144–163.

Hetty, R., Kurniabudi, K., & Sharipuddin, B. (2015). A literature review: Readiness factors to measuring online learning readiness in higher education. International Conference on Computer Science and Computational Intelligence. *Procedia Computer Science, 59,* 230-234.

Hesham, M., Ahmed, N, Saurav, N., & Mohammad, A. (2022). Critical success factors of e-learning implementation in higher education institutions: A proposed framework for success. *Global Business and Management Research: An International Journal,14*(2s), 20-38.

Ibrahim, R. H., & AL-Khafaf, E. S. (2013). *Mosul nursing students' perception about E-learning* [Paper presented]. The eleventh nursing conference, Mosul, Iraq.

Jamil, B., Sethi, A. & Ali, S. (2016). Attitude of nursing students towards e-learning. *Adv Health Prof Educ. 2*(1), 24-29

Keramati, A., Afshari-Mofrad, M. & Kamrani, A. (2011). The role of readiness factors in E-learning outcomes: An empirical study. *Computers & Education, 57*(3), 1919-1929. https://www.learntechlib.org/p/50789/.

Kew, S. N., & Tasir, Z. (2021). Analysing students' cognitive engagement in e-learning discussion forums through content analysis. *Knowledge Management & E-Learning, 13*(1), 39–57. https://doi.org/10.34105/j.kmel.2021.13.0

Khasada, A., & Hongguang, Li. (2018). Analysis approach to identify factors influence digital learning technology adoption and utilization in developing countries. *International Journal of Emerging Technologies in Learning (iJET). 13*(02),48

Kumar, A., Kalal, N., Rana, N., Vyas, H., Choudhary, V., & Rani, R. (2021). Online learning in nursing students: Satisfaction and barriers. *J Edu Health Promot, 10,* 411.

Latchem, C. (2018). Mobile learning. *Open and distance non-formal education in developing countries* (pp. 29–35). https://doi.org/10.1007/978-981-10-6741-9_4

Lau, C. Y., & Shaikh, J. M. (2012). The impacts of personal qualities on online learning readiness at Curtin Sarawak Malaysia (CSM). *Educational Research and Reviews, 7*(20), 430-444.

Liˇcen, S. (2021). Nursing education in the time of COVID-19: What has it taught us? *Slov. Nurs. Rev*, *55*, 4–6.

Lim, C. P., Ra, S., Chin, B., & Wang, T. (2020). Leveraging Information and Communication Technologies (ICT) to enhance education equity, quality, and efficiency: Case studies of Bangladesh and Nepal. *Educational Media International, 57*(2), 87-111. https://doi.org/10.1080/09523987.2020.1786774.

Mariya, K. M., Adnan, S., Tasneem, S., Hasan, R. N., Nasim, A., & Masood, A. S. (2022). Analysing the role of gender and place of residence in acceptability and satisfaction towards e-learning among university students' during COVID-19 pandemic in India. *SN Soc Sci, 2,*233. https://doi.org/10.1007/s43545-022-00544-z.

Mehmet, K., Fatih, E., Mehmet, K., & Kursat, C. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis, 11*(1), 5–22.

Mukasa, J., Otim, M., Monaco, B., Al Marzouqi, A., Breinener, P., & Jawahar, L. (2021). Nursing students' perspectives and readiness to transition to e-learning during COVID-19 in the UAE: A cross-sectional study. *Advances in Medical Education and Practice, 12*, 1505–1512.

Nayci, Ö. (2021). Online learning readiness of associate degree students and their experiences regarding online learning process. *International Journal of Eurasian Education and Culture, 6*(12), 235-285. http://dx.doi.org/10.35826/ijoecc.324

Northey, G., Bucic, T., Chylinski, M., & Govind, R., (2015). Increasing student engagement using asynchronous learning. *Journal of Marketing Education, 37*(3), 171-180.

Phillips, R., McNaught, C., & Kennedy, G. (2011). *Evaluating e-learning: Guiding research and practice. Connecting with e-learning*. Routledge, Taylor & Francis Group.

Reddy, E., Reddy, P., Sharma, B., Reddy, K., & Khan, M. (2016). Student readiness and perception to the use of smart phones for higher education in the Pacific. *Proceedings of the 3rd Asia-Pacific World Congress on Computer Science and Engineering* (pp. 258–64). IEEE. https://doi.org/10.1109/APWC-on-CSE.2016.049

Reddy, P., Chaudhary, K., Sharma, B., & Chand, R. (2020). The two perfect scorers for technology acceptance. *Education and Information Technologies, 26*(2), 1505–26. https://doi.org/10.1007/s10639-020-10320-2

Rouleau, G., Gagnon, M.P., Côté, J., Payne-Gagnon, J., Hudson, E., Bouix-Picasso, J., & Dubois, C.-A. (2017). Effects of e-learning in a continuing education context on nursing care: A review of systematic qualitative, quantitative and mixed studies reviews (Protocol). *BMJ Open, 7*, e018441.

Ronzhina, N., Kondyurina, I., Voronina, A., Igishev, & K., Loginova, N. (2021). Digitalization of modern education: problems and solutions. *Int. J. Emerg. Technol. Learn. 16*(4), 122–135.

Saedah, M. & Yee, B. L. (2019). Perceived challenges in open and distance learning among nursing students of Open University Malaysia: A descriptive analysis [Paper presented]. *International Conference on Education (ICE 2019), Malaysia.*

Sharma, B., & Reddy, P. (2015). Effectiveness of tablet learning in online courses at the University of the South Pacific. *2nd Asia-Pacific World Congress on Computer Science and Engineering* (pp. 1–9). IEEE. https://doi.org/10.1109/APWCCSE.2015.7476229

Sharma, B., Nand, R., Mohammed, N., Reddy, E., Narayan, S., & Reddy, K. (2018). Smart learning in the Pacific: Design of new pedagogical tools. *IEEE International Conference on Teaching, Assessment, and Learning for Engineering* (pp. 573–580). IEEE. https://doi.org/10.1109/ TALE.2018.8615269

Sharma, B., Reddy, E., Mohammed, N., & Nand, R. (2019). Effectiveness of online presence in a blended higher learning environment in the Pacific. *Studies in Higher Education*, *45*(8), 1547–65. https://doi.org/10.1080/03075079.2 019.1602756

Siemens, G., Gasevic, D., & Dawson, S. (2015) *Preparing for the digital university: A Review of the history and current state of distance, blended, and online learning.* https://linkresearchlab.org/PreparingDigitalUniversity.pdf.

Southard, S., Meddaugh, J., & France-Harris, A. (2015). Can SPOC (self-paced online course) live long and prosper? A comparison study of a new species of online course delivery. *Online Journal of Distance Learning Administration, 18*. http://www.westga.edu/~distance/ojdla/

Sprenger, D. A., & Schwaninger, A., (2021). Technology acceptance of four digital learning technologies (classroom response system, classroom chat, e-lectures, and mobile virtual reality) after three months' usage. *Int. J. Educ. Technol. Higher Educ. 18*(1), 1–17.

Taha, M. (2014*). Investigating the success of E-learning in secondary schools: The case of the Kingdom of Bahrain.* Brunel University.

Tayebinik, M., & Puteh, M. (2012). Blended learning or e-learning? *International Magazine on Advances in Computer Science and Telecommunications, 3*(1), 103-110.

Thompson, J., & Porto, S. (2014). Supporting wellness in adult online education. *Open Praxis, 6*(1), 17–28. https://doi.org/10.5944/openpraxis.6.1.100

Wagiran, W., Suharjana, S., Muhammad, N., & Farid, M. (2022). Determining the e-learning readiness of higher education students: A study during the COVID-19 pandemic. *Heliyon* 8(e11160), 1-11.

Williamson, K. M. & Muckle, J. (2018). Students' perception of technology use in nursing education. *Computers, Informatics, Nursing, 36*(2), 70-76.

Wotto, M., & Belanger, P. (2016). A framework on the critical success factors of e-learning implementation in higher education: a review of the literature. *International Journal Of Social, Behavioral, Educational, Economic, Business And Industrial Engineering 10*(7), 2409-2414.

Yang, J. C., Lin, M. Y. D., & Chen, S. Y. (2018). Effects of anxiety levels on learning performance and gaming performance in digital game - based learning. *Journal of Computer Assisted Learning, 1,* 1–11.