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ÖĞRENCİLERİN PANDEMİ SONRASI DÖNEMDE ÇEVRİMİÇİ ÖĞRENMEYE YÖNELİK MEMNUNİYETİ VE TERCİHLERİ

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Özet

Teknolojik gelişmelerin artmasıyla birlikte, çevrimiçi öğrenme yıllar içinde eğitimde dönüştürücü bir güç olarak ortaya çıkmış ve insanların bilgi ve beceri edinme biçiminde köklü değişikliklere sebep olmuştur. Çevrimiçi öğrenmenin küresel eğitim sisteminde tam olarak yerleşmesi KOVID-19 salgınına kadar gerçekleşmemiştir. Dünya iyileşirken, geleneksel yüz yüze eğitim ortamı restore edilmiştir. Ancak, çevrimiçi öğrenme tartışmalarını çevreleyen hava değişmiş gibi görünmektedir. Dünya artık çevrimiçi öğrenmeye ve onun yarattığı potansiyele yönelik daha da yüksek bir takdirle daha da aydınlanmaktadır. Kurumlar tarafından verilen dersler, değerlendirmeler ve seminerler yüz yüze eğitimin yanı sıra çevrimiçi olarak da yapılmaya devam etmektedir. Bu nedenle bu makale, yükseköğrenim öğrencileri arasında çevrimiçi öğrenmeye yönelik tercihleri ve memnuniyet düzeyini belirlemeye odaklanarak, pandemi sonrası çevrimiçi öğrenme dönemini incelemeyi amaçlamaktadır. Çalışma kapsamında, bir yükseköğretim kurumundan toplam 380 öğrenci rastgele olarak seçilmiş ve Google Formlar aracılığıyla yapılandırılmış bir anketi yanıtlamıştır. Bulgular, öğrencilerin çevrimiçi öğrenmenin uygulanmasına yönelik memnuniyet ve tercihlerinin yüksek olduğunu ortaya koymuştur. Öğrenciler, çevrimiçi öğrenmenin öğrenme süreçlerine yardımcı olduğunu algıladıklarını belirtmiştir. İncelenen üç boyuttan, öğretim görevlisi boyutunun öğrencilerin çevrimiçi öğrenmeden duyduğu memnuniyeti etkileyen ana faktör olduğu bulunmuştur. Öğrenen ve teknolojik boyutlar, öğrencilerin çevrimiçi öğrenmeye yönelik tercihleriyle güçlü bir şekilde ilişkili bulunmuştur. Çevrimiçi eğitimin zaman içinde nasıl değiştiğini göz önünde bulundurarak, bu çalışmanın bulgularının eğitim politikası yapıcılarının ve paydaşların mevcut pandemi sonrası dönemde kapsayıcı ve dayanıklı bir çevrimiçi eğitim oluşturmasına, daha iyi bir öğrenme ortamı oluşturmasına ve gelecekte herkes için eşit eğitim fırsatları sağlamasına yardımcı olacağı umulmaktadır.

Anahtar Kelimeler: Çevrimiçi öğrenme, öğrenci memnuniyeti, öğrenci tercihleri, pandemi-sonrası eğitim

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STUDENTS' SATISFACTION AND PREFERENCES TOWARDS ONLINE LEARNING IN THE POST-PANDEMIC ERA

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Abstract

With the advent of technological advancements, online learning has emerged as a transformative force in education over the years, revolutionizing the way people acquire knowledge and skills. It was not until the COVID-19 pandemic that online learning fully took hold in the global educational system. As the world recovers, the traditional face-to-face educational setting is restored. However, the air surrounding the discussion of online learning seems to have changed. The world is now more illuminated with an even higher appreciation for online learning and the potential it musters. Lessons, assessments, and seminars by institutions alike continue to be held online on top of the face-to-face setting. This paper therefore aims to explore the post-pandemic era of online learning, focusing on identifying the preferences and level of satisfaction with online learning among higher education students. A total of 380 students from Sultan Idris Shah Polytechnic were randomly selected to answer a structured questionnaire via Google Forms. The findings revealed that the students' satisfaction and preferences towards the implementation of online learning were high. Students perceived that online learning helped aid in their learning process. Of the three examined dimensions, the lecturer dimension was found to be the main factor affecting students' satisfaction with online learning. The learner and technological dimensions were strongly correlated with students' preferences towards online learning. Considering how online education has changed over time, it is hoped that the findings of this study will help educational policymakers and stakeholders build an inclusive and resilient online education in the present post-pandemic era, fostering a better learning environment and ensuring equitable educational opportunities for all in the future.

Keywords: Online learning, student satisfaction, student preferences, post-pandemic.

1. INTRODUCTION

Since the colonial era, Malaysia has been adopting the traditional classroom-based education system, where students attended physical schools and were taught by teachers in-person (Saleh & Aziz, 2012, & Tengku Kasim (2014). In recent decades, Malaysia's educational system has evolved and reformed significantly due to the advancement of technology. As the demand for being technology savvy has increased tremendously over the years, online education has embarked on the Malaysian educational system (Suhaidi, 2023; Subramaniam, 2023).

Before the pandemic struck, online or blended learning had been adopted as one of the teaching and learning approaches in Malaysian educational institutions. Most Malaysian educational institutions from primary to tertiary levels tended to deploy blended face-to-face and online learning activities, archived learning materials, Web-accessed resources, etc. For instance, polytechnics in Malaysia have been deploying the e-learning or blended learning approach with the adoption of the Curriculum Information Document Online System Learning Management

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System (CIDOS LMS) and the emergence of virtual universities, University Tun Abdul Razak (UNITAR) and Open University of Malaysia (OUM), for lifelong and distance learning education via virtual platforms. These are aligned with the 12th Malaysian Plan (2021-2025), where the Malaysian government aims to develop future-ready talent by leveraging emerging technologies and to build world-class human capital by strengthening lifelong learning (LLL).

Though the Malaysian government has been committed to supporting the implementation of online learning, face-to-face learning remained the predominant approach by Malaysian educational institutions until the COVID-19 pandemic struck the world. In response to the COVID-19 pandemic, educational institutions around the world have had to adapt to the circumstances and make a significant shift to wholly online learning as the primary mode of education. It prompted a significant transformation in the education sector, with educators and students embracing entirely online platforms and tools for teaching and learning.

As the pandemic subsides and normalcy gradually returns, the Malaysian government has announced the reopening of educational institutions in stages until the implementation fully takes place starting in mid-2022. Though the adoption of wholly online learning in Malaysia during the pandemic was driven by necessity, the experiences and lessons learned during the pandemic have undoubtedly accelerated the acceptance of online learning in the Malaysian educational system. It has opened up opportunities for exploring the potential benefits of online platforms such as MS Team, Webex, Google Classroom, etc., which have allowed greater flexibility in teaching and learning as well as the development of digital literacy skills among students and educators. Consequently, in this post-pandemic era, the integration of online learning remained seen in the Malaysian educational system, particularly in higher education such as polytechnics.

Despite the resumption of the face-to-face mode of education, educators still embrace the online mode for lessons, assignments, assessments, webinars, etc. to accustom to the need and necessity from time to time. The same goes for students, as their prior experiences with online learning during the pandemic have varied widely, and these experiences have greatly shaped their perspectives on the mode of education. Considering these varied experiences, the effectiveness and satisfaction with online learning may vary among the students. For instance, some students may have discovered the benefits and flexibility of online teaching and learning. Together with the newly developed skills and digital literacy during the pandemic, it could influence their preferences for the online mode of education. Others may be eager to return to a face-to-face classroom setting. Thus, it is crucial for educational institutions to consider students' perspectives and feedback, as these voices add significant value to creating a more inclusive and effective online learning environment in this post-pandemic era.

Hence, this study aims to examine students' satisfaction with online learning, considering the three key dimensions—the learner, lecturer, and technological dimensions, as well as their preferences in comparison to face-to-face learning in the post-pandemic era. The term "online learning" in this study is defined as online teaching and learning via online platforms. The research was conducted to study the following research objectives:

a) To identify the level of satisfaction towards online learning among students.
b) To identify students' preferences between online and face-to-face learning.

2. LITERATURE REVIEW

As technological advancements continue to reshape the education landscape, online learning has become a viable alternative to traditional classroom settings. Online learning was the term used when the web-based system WebCT was developed as the first Learning Management System (LMS) in 1995, and this term was used for uploading documents or files online (Bates, 2014, as cited in Singh & Thurman, 2019). A systematic review by Singh and Thurman (2019) revealed that different terms have been used by researchers over the years in describing online learning, such as e-learning, hybrid/blended learning, online education, online courses, etc. Based on the review of 37 past studies, Singh and Thurman (2019) have proposed the definition of online learning as "learning experienced through the internet or online computers in a synchronous classroom where students interact with instructors and other students and are not dependent on their physical location for participating in this online learning experience" or "learning experience through the internet in an asynchronous environment where students engage with instructors and fellow students at a time of their convenience and do not need to be co-present online or in a physical space." Other researchers in their studies described online learning as a learning process with the use of technology (Benson, 2002; Conrad, 2002), learning with the aid of information and communication technology (ICT) (Jenkins & Hanson, 2003), being wholly online (Oblinger & Oblinger, 2005), and distance education (Scagnoli, 2009).

Sharma et al. (2020) stated that online learning plays an essential role as far as education is concerned as it catalyses active learning, enhancing one's creativity, learning motivation, knowledge, and communication. Studies related to online learning have often been conducted on students' perceptions of their learning experiences and engagement in the context of satisfaction. Online learning satisfaction, according to Yu (2022), is defined as the evaluation of learners' opinions and feelings towards online learning provided by educators. Previous studies tended to identify the dimensions or factors affecting students' satisfaction towards online learning. Among the studied dimensions were learners, instructors, course/learning design, and technological dimensions (Yu, 2022; Sharma et al., 2020; Malik, 2010; Li et al., 2016), instructional design (Yu, 2022; Malik, 2010), internet self-efficacy, self-motivation, and interaction (Tan et al., 2016; Kuo et al., 2013). Previous studies have reported different findings on the studied factors and dimensions as strong predictors that impacted students' satisfaction with online education. The findings revealed that learner and instructor behaviours (Arbaugh, 2014) and course/learning design (Li et al., 2016) significantly impacted the students' satisfaction. Eom and Ashill (2016), in empirical research on university online education, reported that course design, instructor, and dialogue turned out to be the strongest determinants of students' satisfaction and learning outcomes.

Prior studies have shown diverse findings on online learning and students' preferences between face-to-face learning and online learning. It was revealed that online learning provides learners with better learning experiences and satisfaction compared to face-to-face learning (Sharma et al., 2020; Arbaugh, 2014; Baharin et al., 2015). Similarly, Juanis and Ejus (2020), in a study among polytechnic students, reported that students have a positive attitude towards online learning in English language learning using CIDOS as an online learning tool. However, a study by Fortune et al. (2011) revealed that there were no significant differences in learning preferences among higher education students in Northern California for both online and face-to-face learning. Studies in Malaysia, on the other hand, reported that face-to-face learning would be a better option as it

was a great challenge for students in online learning due to technical and connection problems (Harun et al., 2021), particularly in rural areas (Jafar et al., 2022). Despite all the challenges faced in the adoption of online learning, the impact of the COVID-19 pandemic has made online learning an inevitable and irreversible trend in the development of global education (Cen et al., 2020, as cited in Yu, 2022). Thus, researching students' satisfaction with online learning in the post-pandemic era provides a comprehensive understanding of the strengths and weaknesses of current online education practices. This knowledge empowers educators and institutions to make data-driven decisions, ultimately improving the quality of current educational practices for a better learning experience.

3. RESEARCH METHODOLOGY

Under this title, the subject and purpose of the research, its universe and sample, assumptions and method should be explained.

3.1. Population and Sample of the Research

The respondents were selected using random sampling, which comprised 380 Sultan Idris Shah Polytechnic students, with 235 female students and 145 male students from various departments (i.e., Department of Civil Engineering, Department of Electrical Engineering, Department of Tourism and Hospitality, Department of Commerce, and Department of Information Technology & Communication). Of the sample, 329 students are Malay, 50 are Indian, and 1 student is Chinese. The students were those who had experienced both face-to-face learning (i.e., before the pandemic struck) and wholly online learning (i.e., during the pandemic with the implementation of Movement Control Order (MCO)).

3.2. Research Method

A structured questionnaire was distributed to students via the Google Form platform for data collection. The following is the description of the items included in the questionnaire:

3.2.1 Background Questionnaire

The purpose of the survey's background questions was to gather fundamental demographic information (age, gender, race, academic programme, academic semester, etc.) as well as information regarding internet accessibility and the types of online platforms used and preferred by students for online learning.

3.2.2 Questionnaire Items

The questionnaire items were designed in response to the set objectives of the study with reference to past studies. The questionnaire comprises 33 items, and the answer option is set to a five-point Likert-type scale from 1= “Strongly Disagree” to 5 = “Strongly Agree”. The items were categorized under three domains: Learner’s dimension, lecturer’s dimension, and technological dimension.

The learner dimension consisted of 12 items that began with the words “I feel/I am satisfied,” referring to the feelings, beliefs, and expressions of satisfaction towards online learning. This domain was to access the students’ characteristics like their motivation to learn, self-studying habits, peer interaction, and individual financial factors. Items 1 to 4 measured the students' satisfaction with the helpfulness of online classes in the learning process. For example, “I feel online learning enhances my motivation to learn/ enhances my cognitive skills (e.g., creativity

and problem-solving skills)/ build my self-studying habit," and "I am satisfied as I am exposed to the latest technology that aids my learning process." Items 5 to 12 measured the students' satisfaction towards online classes (e.g., I feel online class is comfortable and enjoyable/ enable me to have enough time to study on my own/ enable me to save more money (e.g., accommodation and transportation, etc.).

The lecturer's dimension consists of nine items measuring the lecturer's characteristics in terms of their manner of feedback, delivery, frequency of interaction, and accessibility. Students' satisfaction regarding the lecturer's manner of feedback and delivery is reflected under Items 13–16 and Item 18 (e.g., I am satisfied with my lecturer's ability to engage students during an online class/give clear instruction or a sense of belonging/ prepare or conduct comfortable or interesting online lessons). Item 17 and Item 19–21, on the other hand, explore students' satisfaction with the lecturer's accessibility. For example, "I am satisfied with my lecturer's teaching ability with the use of various communication techniques and online platforms." and "I am satisfied with my lecturer's supportiveness and responsiveness towards my questions."

The technological dimension, on the other hand, covers the technological characteristics, from the usability of technology, ease of use, access to communication, and information display, to environmental disruption. Most of the items start with the words "I feel/I am satisfied" and are meant to explore students' satisfaction with online learning from the technological aspects. Items 22 to 24 study the ease of use and usability of technology in online learning with examples such as "I have no problem learning through the online platform used by my lecturer" and "I feel the online platform used by my lecturer enables me to do assessments and activities with ease." Students' satisfaction with the information display is studied under Item 26, with "I am satisfied with the learning materials such as the notes, sound, and picture (ppt) being displayed on the online platform." Items 27 to 33 measure students' satisfaction with communication access in terms of devices, connection strength, internet charges, environmental disruption, and technological errors. For example, "Necessary devices (such as mobile phone, laptop, or PC) are not a problem for me" and "I feel internet connection strength determines the effectiveness of my online learning."

Cronbach Alpha was calculated to verify the reliability of the instrument, and the result revealed strong reliability with a Cronbach coefficient alpha of 0.975. The Cronbach alpha value between the range of 0.80 to 0.90 is acceptable (Kubiszyn & Borich, 2000), and at least 0.80 should be achieved for widespread use (Carmines & Zeller, 1979, as cited in Bali & Liu, 2018).

3.2.3 Procedures

The questionnaire was designed and uploaded to Google Forms to be randomly distributed to the students. There was no time limit or set date for the questionnaire to be answered. They simply had to answer based on their experience and understanding by choosing a scale point that reflected those elements.

3.2.4 Data Analysis

In providing us with an understanding of the study sample, the data were described using standard descriptive statistics, wherein the mean (SD) or frequency (percentage) were utilized as applicable. The correlation analysis was conducted to explore the relationship between the studied dimensions, that is the learner, lecturer, and technological dimensions, as well as the students'

satisfaction and preferences towards online learning. As the Likert scale is from 1 to 5, the midpoint for the mean score is 3.00. A mean score > 3.00 indicates that the students have positive feelings or are satisfied with online learning, and a mean score < 3.00 indicates that the students have negative feelings or a low satisfaction level towards online learning.

4. RESULTS

Table 1 below shows the respondents' demographic information (n = 380). The items elicited information on the respondents' age, gender, race, department of studies, and academic semester. The respondents were those aged between 18 and 21 years old, with females taking up 61.6% and males 38.2%. The majority of them are Malay (86.6%), followed by Indian and Chinese (13.2% and 0.3%, respectively). More than half of the respondents were from engineering departments: JKA and JKE (56.3%), and the rest were from JP (32.6%), JTMK (10.5%), and JPH (0.5%). Most of the respondents, 58.2%, were in their first academic semester, and 41.8% were considered seniors (i.e., those who were in the 2nd to 5th academic semesters).

Table 1: Respondents' demographic information

Demographic Information		Number	Percentage (%)
Age	18	1	0.3
	19	169	44.5
	20	170	36.8
	21 and above	70	18.4
Gender	Male	145	38.2
	Female	234	61.6
Race	Malay	329	86.6
	Chinese	1	0.3
	Indian	50	13.2
Department	Civil Engineering (JKA)	163	42.9
	Electrical Engineering (JKE)	51	13.4
	Commerce (JP)	124	32.6
	Tourism and Hospitality (JPH)	2	0.5
	Information Technology & Communication (JTMK)	40	10.5
Academic Semester	1	221	58.2
	2	14	3.7
	3	67	17.6
	4	70	18.4
	5	8	2.1

Table 2 below shows the internet accessibility and online platforms used by students for online learning. There are four main online platforms commonly used by polytechnic students: Zoom, Microsoft Team, Cisco Webex, and Google Meet. It was discovered that the majority of polytechnic students preferred to use Microsoft Teams (92.9%) over other online learning platforms, with Google Meet (5.5%), Cisco Webex (1.3%), and Zoom (0.3%). This could be because Microsoft Team has been used as the polytechnic's official online platform and students are more familiar with the MS Team interface than with other platforms. For online learning, the students have internet accessibility using data (75.3%) and Wi-Fi/broadband (24.7%), but the strength of the internet may differ depending on the type of network and location of their residence, that is urban or rural areas. Most students had no problem accessing the online classes

(94.2%), while a small percentage of students reported having an unreliable internet signal or no connection (5.8%).

Table 2: Internet accessibility and online platforms used for online learning.

		Number	Percentage
Online platform	Microsoft Team	353	92.9
	Google Meet	21	5.5
	Cisco Webex	5	1.3
	Zoom	1	0.3
Internet accessibility	Data	286	75.3
	Wi-Fi / Broadband	94	24.7
Internet strength	Good/reliable signal	358	94.2
	Unreliable/ No connection	22	5.8

4.1 Online Learning Dimensions

In this study, means were calculated for each dimension, that is, the learner, lecturer, and technological dimensions, to get the average results from the data collected as well as the satisfaction with online learning as shown in Table 3.

Table 3: Mean and standard deviation of the online learning dimensions

Online Learning Dimensions	Mean	Std. Deviation
Learner Dimension	4.02	0.770
Lecturer Dimension	4.29	0.707
Technological Dimension	4.08	0.669
Satisfaction towards online learning	4.67	0.749

Notes: Means range from 1 to 5, and the mid-point is 3.00.

The results revealed that the mean scores for the three examined dimensions were above the midpoint of 3.00. The mean score range of 4.21–5.00 is interpreted as "very high," the score range of 3.21–4.20 as "high," the score range of 2.61–3.20 as medium, and the score range of 2.60 and below as low (Moidunny, 2009). The lecturer dimension recorded the highest mean score of 4.29, followed by the technological and learner dimensions with mean scores of 4.08 and 4.02, respectively. This indicated that the students were highly satisfied and had a strong positive feeling towards the lecturer's delivery quality via the online platform. This encompasses various aspects such as the lecturer's ability to create a sense of belonging and involvement during the online lesson, organizing and preparing a comfortable online learning environment, the usage of various communication techniques, as well as clear instructions, explanations, and discussion during the online class. These were crucial for maintaining students' engagement during the online lesson. Other studies also have shown that students' engagement (Gao et al., 2020; Han, et al., 2021 and She, et al., 2021), interactions, (e.g. the learner-instructor and learner-content interactions) (Kuo, et al., 2014; Eoms & Hills, 2016; Tan, et al., 2016) and clear instruction on the content and learning activities (Chakraborty & Nafukho, 2014) have a great effect on students' satisfaction towards online learning. In addition, the lecturer's characteristics, such as professional behaviour, punctuality, supportiveness, and responsiveness during online learning, played an

important role in fostering a positive learning environment as well as a sense of trust and reliability in the learning process.

As for the technological dimension, the mean of 4.08 revealed that the students' satisfaction with online platforms, applications, gadgets, and the internet was high. In general, students have no problems with the gadgets used for online learning, as they can easily access online classes via a laptop, PC, smartphone, or tablet. Under this domain, the mean score for Items 1–8 (i.e., satisfaction with an online platform or gadget) recorded a mean score of 4.17. The students felt that the online platform used during the online learning was user-friendly, which enabled them to interact and collaborate with peers easily, as well as do the assessments and activities with ease. Cole et. al (2014) in their study pointed out that the online learning platform was a significant reason for one's satisfaction and dissatisfaction with online learning. Besides, the students expressed satisfaction with the learning materials, and they can rest assured that the online learning or classes will not be interrupted or cancelled due to weather. Items 9–12 (i.e., satisfaction with the network or internet connection) recorded a mean score of 3.89. The mean score, which was slightly lower than 4.00, could be due to a small number of students (n = 22) who had problems with unreliable or no internet connection, as reported in Table 2.

Regarding the learner's dimension, there was no discernible difference in the average mean scores for items 1 – 4 (i.e., satisfaction towards helpfulness of online classes in the learning process) and items 5 – 12 (i.e., satisfaction towards online classes) as both had the same mean score of 4.02. It showed that the students were satisfied with the online classes and perceived that online classes helped to aid their learning process. The students perceived that online learning enabled them to build self-studying habits and enhance their cognitive skills and motivation to learn and that they had no problem in assessing the activities and assessments during the online lesson. Here, it can be inferred that the perceived usefulness and ease of use contributed significantly in promoting students' positive feelings and satisfaction towards online learning, which is consistent with both Chen & Yao (2016) and Liaw & Huang (2013). The study conducted by Chen and Yao (2016) reported that the perceived usefulness and ease of use affect the e-learners' satisfaction. The higher the perceived usefulness and ease of use of the online learning system, the higher learning satisfaction is expected (Chen & Yao, 2016); and perceived satisfaction towards e-learning is a contributor to the perceived usefulness of e-learning (Liaw & Huang, 2013). Additionally, the students in this study felt that online learning helped them to save time and money as they do not have to commute from home to the institution and thus, they have more time to study and reflect on their learning. The experiences of learning online have fostered students' positive attitudes and sense of satisfaction towards online learning. This is similar to the study by Aslanian and Clinefilter (2012) where 80 percent of the students agreed that online learning helps to save cost and time to commute to campus and provides more flexibility. Another study by Cole, et.al. (2014) reported that 'convenience' was the most cited reason for satisfaction with online learning among students.

Overall, there was a high level of satisfaction with online learning among the students, with a total mean score of 4.67. It can be inferred from the results of the three studied dimensions (i.e., the learner, lecturer, and technological dimensions) that the lecturer had a significant impact on students' feelings of satisfaction and optimism regarding online learning. This study also aimed to identify students' preferences between online and face-to-face learning. For this, an additional

question was added to the learner domain to ascertain whether students prefer online classes over face-to-face classes. The students' responses are shown in Table 4 below.

Table 4: Students' responses on the preferences towards online classes.

Statement	The frequency and percentage of responses					Mean
	SD	D	N	A	SA	
Overall, I prefer online classes more than face-to-face classes	28 (7.4%)	31 (8.2)	92 (24.2)	98 (25.8)	131 (34.5)	3.72

Notes: SD-Strongly disagree, D-Disagree, N-Neutral, A-Agree, and SA-Strongly Agree

The majority of the students (n = 229) agreed that they preferred to attend classes online rather than face-to-face. On the other hand, 59 students expressed their disagreement, as they felt that face-to-face classes would be a better choice for teaching and learning. The remaining 92 students neither agreed nor disagreed with the statement. Overall, the students' preferences towards online learning were considered high (mean of 3.72).

In order to determine the relationship between the three studied dimensions and students' preferences towards online learning, Pearson's correlation was conducted. The correlation results of this study would be based on Cohen's (1992) correlation scores, that is, a correlation of 0.10 is small, 0.30 is medium and 0.50 is strong. The findings are shown in Table 5 below.

Table 5: Pearson's correlations between the three examined dimensions and preferences towards online learning.

	Preferences towards online learning
Learner dimension	.715**
	.000
Lecturer dimension	.427**
	.000
Technological Dimension	.594**
	.000
Overall Satisfaction	.633**
	.000

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

Among the three examined dimensions, the learner and technological dimensions were highly correlated with the student's preferences towards online learning (R = 0.715 and 0.594, respectively, p <.01). The former result reflects that the students' positive experiences and perceived usefulness of online classes in the learning process strongly affect their preferences for online learning. The latter revealed that the integration of the latest technology in online learning has provided students with immersive exposure to a vast array of technology tools that facilitate their learning. The utilization of various online platforms and applications that enable the students to engage, interact, and collaborate with peers and lecturers with ease could have strengthened their positive feelings about learning online and thus fostered their preference for online classes over traditional classroom settings.

Next, the lecturer dimension has a moderate but significant correlation with the student's preferences towards online learning (R = 0.427, p <.01). As the lecturer dimension refers to the

lecturer's delivery quality, it indicates that the lecturer's online teaching methods and their professional characteristics have somehow influenced the students' choice of online learning over face-to-face learning. In other words, the integration of various communication techniques and an interactive and supportive learning environment by the lecturers has significantly contributed to students' interest and enthusiasm for online learning.

Finally, the student's overall satisfaction has a significant and strong correlation with their preferences towards online learning ($R = 0.633$, $p < .01$). This highlighted that the students' overall positive online learning experiences, which encompassed the learner, lecturer, and technological dimensions, have influenced their choice of mode of education. This is aligned with the idea that positive experiences contribute to a favourable attitude.

5. DISCUSSION

This study attempted to examine the students' satisfaction towards online learning in the post-pandemic era in a sample of higher education students at Malaysia polytechnic. In general, this study revealed that the students were satisfied with online learning and most of the students do prefer online learning over face-to-face learning which supported the previous studies (Cole, et al., 2014; Sharma, et al., 2020; Arbaugh, 2014; Baharin et al., 2015; & Juanis & Ejus, 2020) except a small percentage of students who preferred face-to-face learning due to having unreliable or no network issues. This is similar to the studies by Harun et al. (2021) and Jafar et al. (2022) when technical and connections became the main concern of online learning among students.

Of the three examined dimensions (i.e., the learner, the lecturer, and the technological dimensions), the findings revealed that all have a positive and significant relationship with the students' satisfaction towards online learning. This finding supported the ideas of Malik (2010), that the learner, instructor, and technological factors were essential factors that lead to student's satisfaction. The lecturer dimension was found to be a strong contributor in promoting students' positive feelings and satisfaction towards online learning. This was consistent with previous studies which pointed out that the role of instructors has a significant impact on the students' online learning satisfaction (Eoms & Ashill, 2016; Li, et al., 2016; Arbaugh, 2014; Cole, et al., 2014 & Kuo, et al., 2014) and interaction with instructors is one of the key elements affecting learning outcome and satisfaction (Kuo. et al., 2014; Malik, 2010; Eoms & Ashill, 2016).

Similarly, the technological dimension is another significant factor affecting student's satisfaction towards online learning. It is apparent that an internet connection or network and accessibility to technology are essential when it comes to online learning. As mentioned earlier, the majority of the students in this study had no problem accessing the network and the online platform was easily accessible with the use of available devices or gadgets, thus, it was found that student's satisfaction towards online learning was significantly and positively related to technological dimension. This finding is consistent with other scholars where technological dimensions (i.e., the quality of the network, internet speed and connectivity, and availability of devices) were an essential factor in affecting students' satisfaction (Cole, et al., 2014; Sharma, 2020) and were a key challenge for students if obstacles occur under this dimension (Harun et al.,2021; Jafar et al., 2022).

In comparison to the other examined dimension, though the learner dimension was found to be the third influential factor affecting students' satisfaction, the result showed that it is significant and has a strong and positive relationship with students' preferences towards online learning. This

supports the previous studies where perceived satisfaction has a high and significant relationship with perceived usefulness and ease of use (Chen & Yao, 2016; Liaw & Huang, 2013; Liaw et al., 2008), saving time and cost (Aslanian & Clinefilter, 2012) as well as convenience (Cole, et al., 2014).

6. CONCLUSION

The study examined the higher education students' satisfaction with online learning and their preferences between online and face-to-face classes in the post-pandemic era. It is apparent that the learner, lecturer, and technological dimensions played a vital role in contributing to the student's satisfaction and preferences towards online learning over face-to-face learning. The study showed that the lecturer's professional behaviour and online teaching methods have a strong influence on students' satisfaction with online learning. The integration of educational technology has further enhanced their positive feelings toward online learning. As students have become more accustomed to digital tools, virtual classrooms, and online resources, it has led to the acceptance of online education among them. The exposure to the educational digital world and the students' positive experiences with online learning have significantly shaped their perspective, leading to a growing preference towards online learning over traditional face-to-face learning. These findings align with a broader trend in the growing acceptance and preference for online education in this post-pandemic era due to the integration of educational technology and flexible learning options. Hence, it is crucial for educators, stakeholders, and institutions to acknowledge and consider students' perceptions and preferences of the mode of education to foster a positive and effective educational environment for the betterment of students and the future of education. As this study was conducted among students at Sultan Idris Shah Polytechnic, the findings may not reflect all higher education students in Malaysia. Hence, it is suggested that future research with a broader range of respondents is essential for a more comprehensive and representative understanding of students' perspectives and preferences on the mode of education.

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