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RESEARCH ARTICLE

The foreign language students' readiness for online learning in response to COVID-19: A case of Malaysia

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ABSTRACT

This study aimed to assess the foreign language (FL) students' readiness due to the transition from traditional face-to-face learning to full-scale online learning during the COVID-19 pandemic in Malaysia. For data collection, an online questionnaire was used to gather data from 227 FL students from public and private universities. Online communication self-efficacy, self-directed learning, learner control, motivation of learning, and computer/internet self-efficacy are the five variables used to evaluate the students' readiness for online learning (OLR). The results revealed that most FL students are prepared for online learning, with computer/internet self-efficacy ranking as the most important OLR component. Additionally, it was discovered that the students were confident using the internet to search for the information they required for their online courses. There were no significant variations in perceptions across all the variables according to the respondents' gender and places of education. However, students from different program levels showed significantly contrasting opinions on self-directed learning in which the bachelor's degree students were more ready for online learning in comparison to the diploma students. It becomes apparent that Internet connectivity also plays an important role in influencing the students' OLR. These findings will assist Malaysian universities in mapping out consistent policies and guidelines in the curriculum and improving the quality of online learning.

Keywords: online learning; online learning readiness; COVID-19; foreign language students; Malaysia

1. Introduction

The COVID-19 data update by Worldometer[1] showed that the total number of confirmed cases globally reached 70 million, of which the United States reached the highest number with more than 25 million cases, followed by India with more than 10 million cases. In the Southeast Asia, Indonesia (951,651) and Malaysia (172,549) ranked the highest among the pandemic-hit countries. Since 2020, COVID-19 has become a growing concern worldwide and has caused damage in several aspects, such as socioeconomics, education, politics, and health. Many nations have sparked an emergency response to alleviate the pandemic's adverse effects. They have adopted many measures, including 'state lockdowns, home quarantine, and physical distancing[2,3]. In early January 2020, the COVID-19 pandemic in Malaysia increased rapidly in the last four months of 2020. The number of confirmed cases has rapidly increased from 10,000 cases in September 2020 to more than 200,000 by the end of January 2021[1].

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In line with the Movement Control Order (MCO), the Malaysian government has imposed new regulations to handle the situation. Malaysians are required to wear face masks in public areas, keep a social distance across the districts and states to control the infections and reduce the spread of the diseases[4]. Hence, the development of research in vaccines is indeed a life-saving antidote to battle this pandemic as it has become a central focus by many countries worldwide. Researchers from the United States, China, India, the United Kingdom, United Arab Emirates, and other countries are working on a vaccine to combat COVID-19 which has caused the death of more than 767,000 people and infected 21.3 million people all over the world[5]. During the declaration of MCO in March 2020, the Ministry of Education (MoE) and Ministry of Higher Education (MoHE) in Malaysia has called for the teaching and learning among educators and students at all education levels to be conducted online to safeguard them from the virus. As a result, most educational institutions were closed temporarily, and online education thus has replaced the conventional way of teaching in the classroom and become the standard form of teaching delivery[6].

The education paradigm has shifted and making online learning a subject of interest. However, the main question then leads to how successfully this dramatic shift in the learning method is implemented. Lecturers and students may experience a sense of disconnection and uncertain expectations in the transition process from face-to-face mode to virtual online learning[7]. Since the pandemic has forced instructors in the education sector to integrate online learning, the implementation of this mode of learning needs to be researched further[7,8]. There is a growing concern about assessing the students' readiness for online learning to take place successfully in the respective settings. Therefore, it is very important to have shared perceptions among the students in terms of the implementation of online learning so that the instructors can ultimately devise the most preferred online learning methods specifically for the students at tertiary levels.

There are limited studies conducted to assess the readiness for online learning among foreign language (FL) students, especially in the Malaysia context. Selected studies have mostly conducted on the readiness for online learning in the English language during this pandemic[7,9], but not many studies have been completely narrowed down the scope to foreign languages. Hence, this study is deemed important as language learning involves collaboration and interaction and requires many engaging activities with the students to stimulate their language skills[9]. Therefore, there is an immediate need to assess students' readiness and experiences at the initial stage, which may challenge the learning commitment and performance of the students. This study intends to explore the readiness of online learning among FL students in Malaysian Higher Education Institutions (HEIs) and how they view their initial experiences in learning the language at full-scale online learning during the pandemic.

This study will specifically address the four research questions as mentioned below:

RQ1- What is the level of readiness for full-scale online learning among FL learners during the COVID-19 pandemic?

RQ2- Do genders and program levels predict a significant difference in readiness for full-scale online learning?

RQ3- Do learning locations affect the FL students' readiness for full-scale online learning?

RQ4- Does internet connectivity affect the FL students' readiness for full-scale online learning?

The present study contributed to a fundamental understanding experienced by the students during an immediate transition from traditional face-to-face learning to online learning during unprecedented events. The researchers aimed to explore the students' readiness for language learning via online mode during such events. Hence, this study will inform language teachers and instructors how to participate competently in the

changing process, promote a smooth transition, and develop action plans for future teaching pedagogy. Therefore, this study would be useful in the field of language learning and online education, especially during the pandemic. This study will also assist the students in preparing their learning activities accordingly based on the findings of the present study. Thus, the students become well-informed about those barriers encountered during online learning and learn the target language effectively.

2. Literature reviews

Due to the switch from traditional learning to online learning has opted the educational sectors to change their teaching and learning methods. Online learning has made teaching–learning process shifts towards student-centeredness, innovation, and flexibility[10]. Online learning, also known as digital learning, e-learning, or computer-based learning, is defined as classroom instructions provided via the internet and digital devices to enhance the learning process[11]. It is important to acknowledge that technology has been integral to the online learning process. Online learning needs information and communication technology (ICT) supports such as a desktop computer, laptop, tablet, smart screen, internet access, and online learning platforms (software/mobile apps) to aid the teaching and learning. It is recommended that the students should have access to a minimal number of equipment stated to obtain an effective learning experience. Since the middle of the 1990s, it has been increasingly incorporated into education, drawing on the history of online learning[12]. This mode of learning has been accepted and made available by a number of notable institutions, including the University of North Texas (beginning in 1995) and Stanford University (starting in 2005) that contributes to the development of online learning in the present[13].

This offers insights for educational institutions in most countries to shift their learning and teaching practices from physical to online mode due to the COVID-19 pandemic. Since then, researchers have made several attempts to identify the factors that may have influenced the students' readiness for online learning during the outbreak. This results in an increase towards the recent development of literature emerging on this subject matter. The study by Naji et al.[14] on engineering students, which examined the variables that affected how prepared they were for online learning during the COVID-19 epidemic, yielded important conclusions. They discovered four variables: 1) initial motivation and preparation for online learning, 2) self-efficacy beliefs about online learning, 3) self-directed online learning, and 4) online learning assistance. On a similar note, Prihastiwi et al.[15] investigated students' e-learning experiences in Indonesia during the COVID-19 outbreak and discovered that Indonesian students were open to an online learning environment. Self-directed learning, internet access, and online communication self-efficacy were the top-ranked factors that significantly influenced the students' e-learning readiness. In Malaysia, Chung et al.[16] conducted related research on online learning during the pandemic. In comparison to male students and those pursuing diploma programs, it was found that female students enrolling in bachelor's degree programs felt more at ease with online learning. In addition, if given the choice, the students reportedly favored face-to-face instructions over online instructions. This demonstrated that the students were mostly ready for online learning during the pandemic.

Online learning has significant impacts on overall students' performance[15,17]. Although certain educational institutions have implemented online learning before the pandemic, its full potential has merely been realized due to the pandemic. Online learning offers students a vast array of advantages and benefits, including flexibility[17], versatility[18], time savings, collaboration, and opportunities to interact with others across physical boundaries[19] . Meanwhile, Prihastiwi et al.[15] claimed that online learning turned teacher-centered learning into learner-centered learning. This learning approach would enable active learners to develop their knowledge based on synchronous or asynchronous instructions.

The shift to online learning requires active participation on the part of the students and instructors. The

students must be mentally and physically ready to adopt online learning to fully engage in their language learning process at maximum levels. Nonetheless, most language educators and students were not prepared for the swift transition, as they were required to follow the instruction of the Ministry of Education[20]. Online learning is indeed the best option during this unprecedented situation, but there are undoubtedly some drawbacks. Chung et al.[16] asserted that online learning cannot replace direct face-to-face human interaction, or the level of social interaction experienced in a physical classroom. These difficulties significantly affect the students as they feel something needs to be improved compared to conventional face-to-face classes, resulting in decreased student interaction and engagement and the substandard learning process.

Past studies on online learning have been carried out particularly during the COVID-19 pandemic. Recent literature on students' perceptions on their readiness towards online learning provides insightful discussion among scholars. These include studies by Krishnapatria[7] in Indonesia and Mad et al.[13] in Malaysia investigating the students' perception of online learning in respective countries. Both studies revealed that most students had a positive view of online learning but opted for face-to-face learning. On a different note, Rafiee and Abbasian-Naghneh's[18] study on English as Foreign Language (EFL) learners in Iran indicated a positive relationship between the perceived usefulness, perceived ease of use, e-learning motivation, online communication self-efficacy towards the language learners' acceptance and readiness of e-learning. From this study, it is also reported that perceived enjoyment did not significantly influence e-learning acceptance and readiness among language learners.

On a different perspective, Gao and Zhang[2] and Wargadinata[21] illustrated some challenges faced by language students regarding online learning in China and Indonesia, respectively, in terms of occasional interruption during the teaching and learning sessions. Several studies in the past have also been conducted to assess the students' readiness towards online learning during the pandemic[14–16,19,22]. However, none of these stated studies focused on the students' readiness in learning Foreign Languages (FL) via online mode from Malaysian context. Therefore, this study assesses the online learning readiness of foreign language learners currently studying in Malaysian HEIs.

Karuppannan and Mohammed[20] demonstrated several contributing factors that influence online learning among language learners, such as the instructional strategies, psychological variables and language proficiency levels among the learners in learning the target language. Language learners generally prefer memorization of the grammatical rules, syntax, vocabulary, and basic terms of language. This learning method is essential to build up their language proficiency that can change the learners' behavior towards learning the target language[9]. Syllabus and teaching methodologies used by instructors and the learners would be more convenient if the language is taught based on meaningful communication and interaction in the classroom[20]. Learning any language is inadequate without mastering one of its four skills: writing, reading, speaking and listening. Hence, online learning is an excellent platform for the dissemination of language knowledge in sharing many related videos, posts, and relevant tutorials through digital learning mediums. However, Shahzad et al.[9] opposed that it is not possible to fully establish and impart the teaching and learning of all language skills to the learners online. Lau et al.[23] stated that the learners faced significant difficulties in learning to spell the word and various difficulties in enhancing their spelling abilities particularly when the lessons was conducted online during the pandemic COVID-19. Therefore, the key concern on this matter is imparting the input (reading and listening) and output (writing and speaking) of the language based on the learners' learning styles preferences, the components, and the learners' skills. Nevertheless, it is learned that the virtual environment may interrupt the learning session as the instructors cannot effectively evaluate the students' learning pace, which can lead to confusion or misunderstanding, particularly in teaching delivery[20].

The learning mode has completely changed from face-to-face to online learning as this concept has been

established since the 90s. Online learning readiness can be defined as the degree to which the students are collectively and individually prepared, inspired, confident, and ready to implement changes in the context of transitions to full-scale online learning during the pandemic[14]. The students' readiness for online learning can be divided into three categories based on three different traits[24]: (1) their preference for online instruction over face-to-face instruction in the classroom; (2) their confidence in using online communication for learning, particularly their knowledge of and proficiency with the use of the internet and computer-mediated communication; and (3) their capacity for self-directed learning. The Online Learning Readiness Scale (OLRS), created by Hung et al.[19], measures quantitatively the students' readiness for online learning. The scale contained five components that addressed every facet of preparedness for online learning: 1) computer/internet self-efficacy, 2) self-directed learning, 3) learner control, 4) motivation for learning, and 5) online communication self-efficacy. The following dimensions have been integrated into the present study using the OLR conceptual model. **Table 1** provides further information on the dimensions used in the OLRS adopted in this study.

Table 1. Description of constructs in the OLRS.

Constructs	Explanation
Computer/Internet self-efficacy	Students are comfortable using Microsoft Office programs (Word, Excel, and PowerPoint) in their core tasks. Students are also comfortable collecting information on the internet about new knowledge in FL.
Self-guided learning	Students independently define their foreign language learning objectives and study schedules. Furthermore, they exhibit effective time management skills and proactively seek assistance when encountering challenges in their language studies. Additionally, students hold themselves to elevated expectations for their foreign language learning achievements.
Learner control	Students maintain their focus on learning tasks, free from distractions such as instant messaging and social media browsing. They additionally engage in tailored reviews of online learning materials to meet their specific learning requirements.
Motivation for learning	Students display a keen interest in exploring new online content. They readily embrace novel ideas and relish the opportunity to exchange ideas with peers. Furthermore, the students exhibit a willingness to derive valuable lessons from their experiences, even when faced with setbacks.
Online communication self-efficacy	Students display self-assurance in their capacity to engage in open discussions regarding foreign languages through online platforms like email and virtual discussions. They are at ease when conveying their emotions and humor through text messaging. Additionally, students confidently participate in online forums, both by posting queries and responding to others.

3. Research methodology

The research design utilised in this study was quantitative, wherein participants from higher education institutions in Malaysia were requested respond to a set of 18 questions derived from the Online Learning Readiness Scale (OLRS) developed by Hung et al.[19]. The respondents were asked to rate their agreement with each item on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). With permission from the primary author, the questionnaire used in this study (i.e., OLRS) has been slightly adapted and modified in response to the scope of the study focusing on the FL students' readiness during the pandemic. The scale comprises five components, namely self-directed learning, learner control, learning motivation, computer/internet self-efficacy, and online communication self-efficacy. The survey instrument also contained demographic data, encompassing variables such as gender, educational attainment (i.e., Diploma/Bachelor's Degree), learning locations, and access to internet connectivity. The final questionnaire was created afterward in Google Forms and posted online with a link. This method was used to make sure that the survey reached as many respondents as possible given the status of the movement control order in the country. The online survey link was sent to the heads of the respective departments, who distributed it to their prospective participants for data collection purpose. The participants were also contacted via the researchers' contacts and the friends-of-

friends method.

The study involved 250 students of Universiti Kuala Lumpur Malaysian Institute of Information Technology (UniKL MIIT) and International Islamic University of Malaysia (IIUM) enrolling for Foreign Language (FL) Courses like Korean and Mandarin language for selected semesters. Both universities implemented a full-scale synchronous online learning in response to the COVID-19 lockdown starting in April 2020. Microsoft Teams, Meet, and Zoom are the leading online platforms for teaching and learning activities. Before the implementation of full-scale online learning, blended learning was already implemented in the teaching and learning at both UniKL and IIUM. In both universities, the FL courses are offered as a University Compulsory Subject, and students are required to select one of the offered subjects, including Korean, Mandarin, French and Japanese language. All students participating in this research were the pioneer batch of full-scale online learning. It took much work to get responses from the participants due to the COVID-19 pandemic which motivated the researchers to employ the Purposive Sampling Method to distribute the questionnaire. Only students who took Foreign Language for the respective semester were asked to participate in this study to evaluate their readiness on full-scale online learning. For the statistical analyses, the collected data were imported into the Statistical Package for Social Sciences (SPSS) version 22.

After meeting the reliability requirements, the composite reliability of the 18 scale items underwent verification using the Cronbach alpha value. This reliability assessment is critical since the Cronbach alpha value serves as an indicator of result consistency. As the value approaches 1.0, it signifies a higher level of internal reliability for multi-item measures and underscores the validity of the findings[25]. While the OLRS instrument is already validated with a scale reliability ranging from 0.727 to 0.871[16,19], this study further scrutinizes the instrument's reliability within its specific context. In this study, the scores fall between 0.841 and 0.911, signifying the importance of evaluating its reliability for this research. Before proceeding with further analyses, the composite reliability of the OLRS was assessed by conducting Cronbach alpha tests on a pilot study involving 50 FL students, which resulted in a value of 0.906. This value confirms that items are suitably distributed across five dimensions: self-directed learning, learner control, learning motivation, computer/internet self-efficacy, and online communication self-efficacy, with a high level of reliability and strong internal consistency. Consequently, these items are deemed valid for use in this study.

The average mean for the five dimensions of the OLRS is used to assess the respondents' overall readiness for online learning. One-way Analysis of Variance (ANOVA) is used to determine any significant differences between online learning readiness dimensions in terms of their learning locations and internet connectivity. On a separate test, an independent sample *T*-test is used to determine whether there is a statistically significant difference between the means of two groups, namely gender and program levels (i.e., Diploma and Bachelor Degree), for the online learning readiness dimensions.

4. Results and discussions

4.1. Demographics profiles

After an extensive follow-up, 227 students responded to the survey, and only 219 forms were completed and valid for further analysis. **Table 2** shows the demographic information of respondents. The information included gender, learning location, program level, and internet connectivity level. Among the respondents, 144 were female students (65.8%), and 75 were male (34.2%). From the total number of respondents, 70.8% of respondents (n = 155) were bachelor's degree students, and the rest, 29.2% (n = 64), were diploma program students. Most respondents live in urban areas during online classes (n = 150, 68.49%). 41 students were at their hometowns (rural areas), and the remainder stayed at the hostel (n = 28, 12.79%). It was found that

internet connectivity is important in the implementation of online classes as most respondents rated 'very good' and 'good' (n = 184, 84%) for internet connectivity.

Table 2. Demographic profile of respondents.

Demographic background	Variable	n	%
Gender	Male	75	34.2
	Female	144	65.8
Program level	Bachelor	155	70.8
	Diploma	64	29.2
Learning Venue	Home in town	150	68.5
	Home in rural	41	18.7
	University hostel	28	12.8
Connectivity Status	Very good	55	25.1
	Good	129	58.9
	Average	32	14.6
	Poor	3	1.4

4.2. Data analysis

RQ1- What is the level of readiness for full-scale online learning among FL learners during the COVID-19 pandemic?

The respondents were given an 18-item questionnaire with a five-point Likert scale to assess their perceptions of readiness for online learning during the period of full-scale online learning. A mean-level scale is derived from the five-point Likert scale ranging between 1 (strongly disagree) and 5 (strongly agree). To determine the mean difference, a simple mathematical calculation was performed by subtracting 1 from 5 and dividing by 3 to obtain the mean, which was categorized as low, medium, and high. As shown in **Table 3**, the low mean levels range from 1.00 to 2.33, the moderate mean levels range from 2.34 to 3.67, and the high mean levels range from 3.68 to 5.00. **Table 4** displays the mean (M) and standard deviation (SD) of the participants' responses for each question. With a mean score of 3.96 (SD = 0.715), computer/Internet self-efficacy represents the highest level of readiness for online learning among FL students.

Moreover, the findings revealed that during full-scale online learning, FL students were highly confident in their ability to locate and gather information for their online learning lessons using internet search engines such as Google, Yahoo and Microsoft Bing. Likewise, motivation for learning (M = 3.74, SD = 0.685), self-directed learning (M = 3.58, SD = 0.715), and online communication self-efficacy (M = 3.50, SD = 0.765) were the next highest-rated dimensions. Furthermore, **Figure 1** shows the respondents' responses on the OLRS dimensions towards FL students' readiness for FL online learning courses. As illustrated in **Figure 1**, all respondents responded well to self-directed learning, learner control, learning motivation, computer/internet self-efficacy, and online communication self-efficacy. This study's findings are consistent with those of Chung et al.[16] and Hung et al.[19], who found that students exhibited comparable levels of readiness for participating in online learning. In addition, the study conducted by Rafique et al.[22] yielded similar results, demonstrating the importance of computer self-efficacy in the context of online learning and its strong association with student readiness for online learning.

However, it is worth noting that among FL students in Malaysia, learner control was found to be the OLR dimension with the lowest ranking, as indicated by a mean score of 3.33 (SD = 0.646). This finding aligns with the findings of previous studies conducted by Naji et al.[14] and Hung et al.[19], which suggested that students

perceive learner control as a factor of online learning readiness (OLR) that is rated lower compared to other dimensions. The students perceived less control in relation to their online learning environment. Online learning differs from conventional face-to-face learning as there are greater chances of interruption, such as engaging in online gaming, browsing the internet, or engaging in chat or instant messaging with friends. Since the students reported that they lack control over their online environment, it is important for the course instructors to explore alternate methods to actively involve each student in task-based online group discussions. This initiative will encourage student participation in online classes while discouraging distracting behaviors such as chatting, texting, and online gaming.

Table 3. Mean score range.

Mean Scale	Level
1.00–2.33	Low
2.34–3.67	Moderate
3.68–5.00	High

Table 4. Online learning readiness mean score.

Variables	M	SD
Computer/Internet self-efficacy (CS)	3.96	0.715
CS 1	3.97	0.801
CS 2	3.79	0.819
CS 3	4.10	0.837
Self-guided learning (SL)	3.58	0.622
SL1	3.61	0.778
SL2	3.77	0.865
SL3	3.25	0.869
SL4	3.52	0.885
SL5	3.76	0.783
Learner control (LC)	3.33	0.646
LC1	3.43	0.772
LC2	2.81	0.979
LC3	3.74	0.815
Motivation for learning (ML)	3.74	0.685
ML1	3.78	0.849
ML2	3.59	0.926
ML3	3.84	0.802
ML4	3.74	0.826
Online communication self-efficacy (OCSS)	3.50	0.764
OCSS1	3.70	0.857
OCSS2	3.52	0.949
OCSS3	3.28	0.934

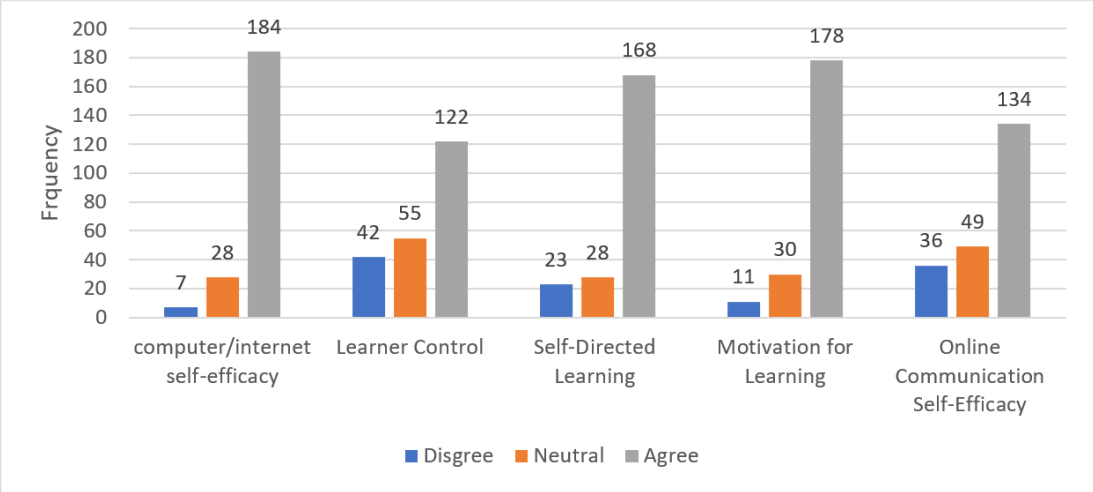

Figure 1. The response to the online learning readiness scale (OLRS) dimensions.

RQ2- Do gender and program level predict a significant difference in readiness for full-scale online learning?

In this study, the 0.05 significant level was set as an indicator of result testing. The independent sample *T*-test compares all the items related to readiness for online learning concerning genders and program levels. The dimensions were self-directed learning (SL), learner control (LC), motivation for learning (ML), computer/internet self-efficacy (CS), and online communication self-efficacy (OCSS). The results indicated that the overall readiness for online learning was not influenced by gender. Thus, there is no significant difference in overall readiness for online learning between males and females. This finding is supported by Chung et al.[16] and Hung et al.[19]. However, these results contradict those of Rafique et al.[22]'s study, who found significant differences in male and female students' perceptions of computer/internet self-efficacy and online communication self-efficacy. They found that the males had higher perception of both dimensions than their female counterparts. The sociocultural and socioeconomic differences among the respondents of these studies may be one reason for this inconsistency.

The result showed that only the P-value for self-directed learning (t (397) = −4.707, p = 0.005) between program levels was less than the 0.05 significance level. The rest of the dimensions have the *P*-values that were more than 0.05 significance level. The result was supported by the mean value of the bachelor's degree level (M = 3.76, SD = 0.565) which is higher than the diploma level (M = 3.50, SD = 0.631). From this result, it is learned that the bachelor's degree students were more prepared for online learning than the diploma students. This is because the bachelor's degree students mostly aged between 21 and 25 who spent more time in the university and were more mature than the diploma students from younger ages, mainly between the ages of 19 and 20. Wojciechowski[26] stated that more mature students showed more self-directed learning in comparison to less mature students which contributed towards the students' readiness for online learning.

RQ3- Does learning location affect the FL students' readiness for full-scale online learning?

A one-way ANOVA test was used to assess the effect of the learning locations of FL students on their online learning readiness during the COVID-19 pandemic. Nonetheless, none of the dimensions generated a *P*-value less than 0.05 (**Table 5**). The *P*-values of more than 0.05 indicate no significant difference for all the readiness items in the learning locations. This result is in line with the demographic survey that showed most respondents rated 'good' for internet connectivity. Although students are living in the rural areas, they can still follow the online lessons effectively. This is also due to the government and private telecommunication companies' initiatives, which enable the students to participate in online classes by offering a free 1 Gigabyte

of broadband data daily from 8 a.m. to 6 p.m. This result is also supported by the Malaysian Communication and Multimedia Commission data indicating that the broadband penetration rates per 100 people have increased from 17% in 2010 to 131% in 2019[27].

Table 5. A summary of results.

Variables	**Statistical Test**	**CIS**	**SDL**	**LC**	**MFL**	**OSCC**
		***P*-value**	***P*-value**	***P*-value**	***P*-value**	***P*-value**
Gender	Independent sample *T*-test	0.186	0.969	0.627	0.266	0.680
Program levels	Independent sample *T*-test	0.387	0.005	0.089	0.489	0.193
Learning locations	One-way ANOVA	0.249	0.281	0.895	0.866	0.308
Internet Connectivity	One-way ANOVA	0.007	0.442	0.340	0.002	0.004

RQ4- Does internet connectivity affect the FL students' readiness for full-scale online learning?

There was a statistically significant difference between internet connectivity and computer and internet self-efficacy (F (3215) = 4.160, p = 0.007), motivation for learning (F (3215) = 5.042, p = 0.02) and online communication self-efficacy (F (3215) = 4.480, p = 0.04) as shown in **Table 5**. The result reveals that poor Internet connections can affect the students to stay motivated in class and complete the assignments. Callo and Yazon[28] and Chung et al.[16] also concluded that internet connectivity is an important factor for online learning readiness. This is also in consistent with Hasani and Adnan[29]'s study as technical factors, especially internet connectivity, strongly influence the Indonesian students' perceived readiness for distance learning.

5. Conclusions

This study contributes to understanding students' experiences during the transition to online learning and will aid educators in facilitating this transition effectively. Drawing from the findings, it was revealed that the levels of online learning readiness among FL students were moderate to high. It was discovered that FL students have high levels of computer and internet self-efficacy. Although several past studies claimed that online learning exposes students to technology anxiety (i.e., computer anxiety), this study found that students with computer skills and IT-savvy increase self-efficacy and indirectly reduce their levels of computer anxiety, particularly during the pandemic[30]. Several other conclusions can be made based on the objectives of the study. Firstly, there is no significant difference in the foreign language students' perceptions on online learning readiness across genders and learning locations. Secondly, it was found that bachelor's degree students have more readiness for self-directed learning than diploma students. Lastly, there is a significant difference between internet connectivity and computer/internet self-efficacy, motivation for learning, and online communication self-efficacy.

This study has a few limitations that may render some suggestions for future studies. Firstly, the results of this study cannot be generalized to other online learning disciplines since it was performed with a limited sample of undergraduate students, and the survey responses cannot be assumed to represent the views of all students at large. Further research can be expanded to include all students of various programs offered at higher education institutions in Malaysia for generalization. Moreover, this study did not make a comparison between the students' results before and after the implementation of online learning because this study was carried out at the initial stage of the student's transition from conventional method to online learning mode. Therefore, it is recommended that future research discover the relationship between online learning readiness and students' academic performance. As this study focused on the variables pertinent to assess the students' readiness for online learning during the pandemic, future studies can also be conducted to measure other variables that may

impact the students' readiness for online learning such as socio-economic background, access to technology, and prior experience with online learning.

This research holds broader implications for language learning and online education, especially in the context of the COVID-19 pandemic. This preliminary research in the scope of Malaysian foreign language students will promote new exploration for potential researchers to investigate the students' readiness for online learning based on the variables used in this study. Given that online learning may remain part of teaching and learning landscape in the post-pandemic era, the findings of this study could be applied to foreign language students in other countries to measure the students' perceptions towards language learning in the area of online learning readiness. It is learned that the students' readiness for online learning seems to be a major factor influencing their performance in online learning courses. The effects of online learning satisfaction on their plan to continue using it need to be explored further using multidimensional multi-item instruments. Future research could also examine whether there are any moderating factors influencing students' readiness for online learning. These findings have implications for Malaysian universities in developing consistent policies and guidelines for online learning, thereby improving its quality. This will assist higher education institutions in mapping out online teaching and learning policies and guidelines to produce graduates who are prepared to meet the challenges and expectations in line with the Fourth Industrial Revolution (IR 4.0).

Author contributions

Conceptualization, MHI and SNDHMA; methodology, NS; software, NS; validation, MHI, NS and SNDHMA; formal analysis, MHI; investigation, MHI; resources, MHI; data curation, NS; writing—original draft preparation, MHI; writing—review and editing, SNDHMA; visualization, NS; supervision, MHI; project administration, MHI; funding acquisition, MHI. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

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