An Exploration of Online Learning Readiness for University Students in Myanmar

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Abstract

While the growing COVID-19 pandemic halted all universities, public and private education centers, decision makers and education officials across the world have to shut down universities because of the growing corona virus pandemic. Conventional education process was forced to be suspended. Education community all over the world had to deliver online courses via Skype, Zoom, digital tools and other video conferencing services, and to be remotely engaging with students to keep in touch with education ongoing. We recognized that very few countries had the necessary digital system, infrastructure, methodology, software, trained human capital and experience for such a sudden shift from classrooms to online after an initial temporary excitement and success. Online courses are completely different than face-to-face courses. There are many specific skills that an online student should have in order to be successful in her or his online learning. It is critical for students to know what is expected from them and what is needed to be a successful online learner. The rise of online education has highlighted a need to figure out students' readiness for online learning and to predict their success. The primary purpose of this study was to understand the online learning readiness of Myanmar university students. There are 331 Myanmar university students participating in this study, including 104 from the University of Arts and Sciences and 227 from the University of Computer Science. To assess this construct of online readiness, several survey instruments have been developed. The present study examined

undergraduate students' online readiness using a questionnaire that included constructs such as self-efficacy (Computer/ Internet & Online Communication), self-directed learning, learner control (in an online context), and motivation for learning (in an online context). This study found that students who are attending at Computer Universities showed greater readiness in the dimensions of self-directed learning, online communication self-efficacy and motivation for learning than did the students from Arts and Science Universities but for learner control dimension in which both students are not very different. The results of our questionnaire also showed that non-information majors lack information literacy. Information literacy can be strengthened through short courses or boot camps, and this is an urgent task to be followed up.

Keywords: Online learning, Online learning readiness, Information literacy, Evaluation methodologies

Introduction

While the growing COVID-19 pandemic halted all universities, public and private education centers, the outbreak also could spur a new wave of education logic and system for millions. Crisis and human progress have often gone hand in hand throughout history in such challenging times. Decision makers and education officials across the world have to shut down universities because of the growing corona virus pandemic. All lectures and in-person classes were stopped; students were sent home. Conventional education process was forced to be suspended. In the midst of social distancing and isolation, most of us seemed to get caught off guard. Education community all over the world had to deliver online courses via Skype, Zoom, digital tools and other video conferencing services, and to be remotely engaging with students to keep in touch with education ongoing. The World Economic Forum estimated that 1.2 billion children are out of the classroom due to the COVID-19 (Li & Lalani. 2020).

The world of higher education has continued to evolve over the last decade with the rapid development of internet technology and the revolution in computer software. This has revolutionized the way learning and teaching is done, especially in distance education. Emerging concepts, such as online learning or e-learning, used mainly in higher education, have led to a large number of comparative studies on e-learning and face-to-face learning environments (Southard, Meddaug & Harris. 2015; Northey et al. 2015), student learning outcomes (González-Gómez et al. 2016; Ryan et

al. 2016), and the strengths and weaknesses of e-learning (Wang. 2010).

Distance or e-learning and teaching are very different from mere video conferences and lectures. Online interaction and engagement with students, assessment and evaluation of learning outcomes require specific methodologies, expertise and skills. The management and governance of the entire learning system through a digital learning platform requires software, certain digital tools and information literacy skills. In our world, not all countries have well-developed information infrastructures that enable students and universities to access the Internet. In Myanmar, many universities offer virtual courses alongside traditional education, and due to the influence of COVID-19, many universities are actively entering this field of online learning. However, online learning is new to many of Myanmar's domestic universities, especially the Arts and Science Universities, and the establishment of e-learning takes time to develop and implement (Mon Mon The & Usagaw. 2018). For the successful implementation of online learning in various university programs, it is important to identify and evaluate the factors that influence the implementation of online learning.

There are many specific skills that an online student should have in order to be successful in her or his online learning. It is critical for students to know what is expected from them and what is needed to be a successful online learner. The rise of online education has highlighted a need to figure out students' readiness for online learning and to predict their success. Brooks & Grajek (2020) outlined higher education's readiness to move teaching and learning online. There are many factors that influence the successful implementation of e-learning and one of the very important factors is the readiness of the student (Rasouli, Rahbania & Attaran. 2016). The primary purpose of this study was to understand the online learning readiness of Myanmar university students. There are 331 Myanmar university students participating in this study, including 104 from the University of Arts and Sciences and 227 students from the University of Computer Science. To assess this construct of online readiness, several survey instruments have been developed.

Literature Review

Online learning can be carried out in various environments and provides time freedom for both parties, namely, learners and teachers. In recent years, online learning in university education has undergone tremendous changes, from a teacher-led model to a learner-centered approach

through the use of technology (Ituma. 2011; McKnight. 2016). Online learning has many potential benefits, some of which are the ability to overcome the time and space limitations of traditional educational environments (Bates. 2005; Ituma. 2011; McKnight. 2016). Hybrid learning, blended learning, and augmented learning are other similar terminologies, which refer to the combination of online learning and face-to-face traditional classroom practice. According to the communication method and meeting time of both parties, there are two forms of online learning: synchronous and asynchronous. If all parties meet at the same time and communicate in real time, this type refers to synchronized online learning. However, if any party does not need to be online at the same time, asynchronous communication will occur. This type is called asynchronous online learning. In online learning, a combination of the two is also possible. Each type has some advantages and disadvantages, and these advantages and disadvantages must be thoroughly studied before any attempt to implement online learning. The two main advantages of online learning are convenience and flexibility. But online learning is more challenging than it seems. Online learning sounds so good that some students have unrealistic assumptions from the start. In fact, online courses require as much time and energy as traditional classroom courses, or even more. In addition, it requires specific computer skills and learning strategies to succeed.

Online learning readiness was initially proposed by Warner, Christie & Choy (1998) in their research project on Australian vocational education and training sectors. They suggested that the definition of online learning readiness includes learners' preference for a flexible instruction, competence, and confidence in the use of electronic communication, and autonomous learning. There are many online learning readiness studies (Hung et al. 2010; Hung. 2015; Lin et al. 2016; Blayone et al. 2018). McVay (2000; 2001a; 2003) have designed and created items to measure the online readiness. Three aspects of the concept of readiness were identified in the literature. The first aspect is students' preferences for the form of delivery as opposed to face-to-face classroom instruction. The second aspect is student confidence in using electronic communication for learning; and in particular, the competence and confidence in the use of internet and computer-mediated communication. The last aspect is the ability to engage in autonomous learning.

From past literature and research (Dray et al. 2011; Hung et al. 2010; Hung. 2015; Lin et al. 2016; Blayone et al. 2018),

common themes emerged from these studies that focused on "computer skills," "learner characteristics," and "self-management of the process." This study attempts to review the assessment of online learning readiness of students in postsecondary education. Increasingly, adult learners are discovering the convenience and flexibility of online learning to meet their learning goals and busy lifestyles. Over the past decade, there has been a proliferation of online degree programs, virtual universities, and courses for adult learners. While students can easily find an online program or degree program that is both convenient and accessible, they may face many challenges and will need new skills to face this type of instructional style. Educators have conducted research related to the development of student skills necessary for success in online learning, but relatively few publications have addressed this topic from the perspective of the successful online student. A number of online learning readiness studies have already been conducted, and various dimensions used to assess online learning readiness have been identified and validated. To assess the online learning readiness of students, this study focuses on the following four factors, namely, computer/Internet self-efficacy, self-directed learning, learner control, and motivation for learning.

1.1 Computer/Internet Self-efficacy

Online learners need basic computer related skills to succeed. These include the ability to create new documents, use a word processing program, navigate the Internet, and download software (Hung et al. 2010; Dray et al., 2011; Shen et al. 2013). Most online universities have new student orientation programs. These teach students how to use the university's learning management system and other online tools, but typically they don't cover the basics. If students lack basic computer skills, students may want to find an online tutorial such as the one available through the Library Network. Students will also want to check the online university's main website for their hardware and software requirements. Make sure their own computers meet those requirements.

1.2 Self-directed learning

Self-directed learning is a type of instructional strategy where students take charge of their learning process and it is an important factor for online learning readiness (Hung et al. 2010; Dray et al., 2011; Shen et al. 2013; Lin et al., 2016). Students must be able to manage their time well. Most courses are not taught in real time. There are no set times for classes and this flexibility is one of the great benefits of online learning. It can also be a drawback for a

student who is unable to stick to a routine study schedule or is not able to complete assignments without daily reminders from a teacher. Effective time-management skills do not just happen. They have to be learned. It takes time to develop good habits, but students will gain satisfaction from being well-organized and accomplishing their tasks.

1.3. Learner Control

Learner control became a crucial issue for the development and utilization of e-learning environments (Hung et al. 2010; Dray et al., 2011). Learners should be able to control the selection and presentation of content, as well as the transfer process itself, according to their needs, preferences and learning styles. Field studies of both approaches revealed several types of learner control to be supportive for self-managed learning processes.

1.4. Motivation for Learning

The motivation is why people decide to do something, how long they are willing to go on for, and how long they intend to do it (Dörnyei & Ushisoda, 2011). Online learning requires independence, responsibility, internal motivation, and a certain level of maturity (Hung et al. 2010; Dray et al., 2011). Students should be given some thought to their own personal reasons for attending university. Moreover, students should be determined and self-motivated to succeed in university. There are many numerous reasons to work hard in university. Students might want a greater level of personal satisfaction with their future career. Or perhaps it's personal pride in their accomplishments. Or maybe students are trying to seek a wider range of opportunities available to students with higher education or a higher income.

Methodology

The study began with the development of a set of questions that appeared from a group of online course faculty, and administrators we consulted for ideas. The question set was reviewed and edited by a larger group of administrators and faculty, and an online survey instrument was developed. Survey answers allow respondents to mention online learning techniques they found useful and to tell the stories of their experiences of online learning.

Participants

Participants in this study included undergraduate students taking Computer courses and Arts and Science courses at selected Universities in Myanmar. Table 1 shows the demographic data of the respondents A total of 104 participants (n = 104) from Arts and Science Universities and 227 from Computer Science Universities took part in the study. A total of 74.32% partic-

ipants were female (n = 246) while 25.68% were male (n = 85). Their ages ranged from 18 to 26 and their majors were Computer Science and technology, and Arts and Science specializations.

Instruments

An extensive review of the survey of online readiness was conducted, and items used to measure the construct were extracted, followed by discussion on item refining to provide simple items devoid of any ambiguity. Faculty took part in reviewing items used in previous studies. The targeted constructs were measured and recommendations of the researchers were considered in this process. McVay (2000) also identified two factors as potential predictors to online learner readiness which includes the behaviors and attitudes of students.

Data Collection

Participants were first given a consent form to sign. The consent form made provision information about the nature of the study, including a questionnaire that participants would complete relating to online readiness. Once individuals signed the consent form and agreed to participate, they were given the online readiness survey. The survey told the respondents to rate the questions, based on how they reflect the individual, using a Likert type scale ranging from 1 (Very untrue of me) to 7 (Very true of me). Demographic items were used to get more information about the research participants. The demographic items included questions about gender, age, specialization and other questions related to experience with and access to technology. Participants were told to answer the questions as accurately as possible.

Table 1 The Demographic data of the respondents (n=331)

Type of Students	Gender		Age		Total
	Male	Female	16-20 years old	21-25+ years old	
Arts and Science	26	78	89	15	104
Computer Science	59	168	195	32	227
Total	85	246	284	47	331

Results

Student online learning readiness continues to influence most institutions including all areas from their curricular development and pedagogies to entire academic divisions dedicated to Web-specific delivery. Measuring student readiness, it follows, should also be of great concern by institutions in order to better face this challenge. Smith (2003; 2005) administered the McVay Online Readiness Survey (2000; 2001) to 314 Australian university students and utilized a factor analysis to identify two primary factors for assessing the reliability and factorability of the instrument. This paper builds upon this prior work by administering that survey to 146 U.S. undergraduate students at a mid-sized, public university in the United States. Significance in differences between urban and rural online learners is sought to use as one predictor of success in online and blended-format in formal post-secondary courses. The two factors identified by Smith were "self managements of learning' and "comfort with e-learning."

We propose a more appropriate name for the second factor be "comfort with non-face-to-face communication.

The aim of this study is to find out online learning readiness level of university students at selected universities in Myanmar. The researchers aimed to determine students' online learning readiness level. To this end, a total of 331 students completed the questionnaire. The overall results suggest that once the internet and computer self-efficacy of the participants are improved, the students appear to be ready for the adoption of online learning. The results showed that participants tended to respond different ways to each item in measuring their online readiness.

Self-efficacy refers to "beliefs in one's capabilities to organize and execute the courses of action required producing given attainments" (Bandura. 1997). Table 2 shows the data on computer/Internet self-efficacy in online learning environments and online communication self-efficacy of the participants. Three main categories were discussed for computer/Internet self-efficacy and the other three categories for online communication self-efficacy.

Table 2 Computer/Internet self-efficacy (n=331)

Dimension	Item	Responses -Likert type scale ranging from 1 (Very untrue) to 7 (Very true)			
		Arts and Science Students		Computer Science Students	
		Total point	Average point	Total point	Average point
CIS1	I feel confident in performing the basic functions of Microsoft Office programs (MS Word, MS Excel, and MS PowerPoint).	445	4.27	1,013	4.46
CIS 2	I feel confident in my knowledge and skills of how to manage software for online learning.	378	3.63	996	4.38
CIS3	I feel confident in using the Internet (Google, Yahoo) to find or gather information for online learning.	464	4.46	1,146	5
OCS1	I feel confident in using online tools (email, discussion) to effectively communicate with others.	465	4.47	1,123	4.94
OCS 2	I feel confident in expressing myself (emotions and humor) through text.	423	4.06	1,047	4.61
OCS 3	I feel confident in posting questions in online discussions.	383	3.68	979	4.31
	Total point	2,558	24.57	6,304	27.70
	Average point	426.33	4.09	1,050.66	4.61

The result shows that the students who are attending at Computer Universities exhibited greater readiness in the dimensions of computer/Internet self-efficacy in online learning environments and online communication self-efficacy than did the students from Arts and Science Universities.

The purpose of this paper was to examine the relationship between self-efficacy and online learning environments.

Self-efficacy refers to “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura. 1997: 3). This paper reviews studies on self-efficacy in online learning environments from 1997 to 2015. Three main categories were discussed: computer self-efficacy, Internet and information-seeking self-efficacy and LMS (Learning Management Systems) self-efficacy. Possible areas of research on self-efficacy in online learning environments were suggested. Internet self-efficacy, or the belief in one’s capabilities to organize and execute courses of Internet actions required to produce given attainments, is a potentially important factor in efforts to close the digital divide that separates experienced Internet users from novices. Internet self-efficacy of students from Arts and Science Universities has been limited rather than overall attainments in relation to general Internet use. CIS 3 and OCS 1 were significantly high to Internet self-efficacy judgments.

In its broadest meaning, ‘self-directed learning’ describes a process by which individuals take the initiative, without the assistance of others, in diagnosing their learning needs, formulating learning goals, identify human and material resources for learning, choosing and implement appropriate learning. The data of five-item self-directed learning scale developed for the present study was found in Table 3.

Table 3 Self-directed learning (n=331)

Dimension	Item	Responses -Likert type scale ranging from 1 (Very untrue) to 7 (Very true)			
		Arts and Science Students		Computer Science Students	
		Total point	Average point	Total point	Average point
SDL1	I carry out my own study plan.	365	3.50	1,014	4.46
SDL2	I seek assistance when facing learning problems.	380	3.65	1,084	4.78
SDL3	I manage time well.	439	4.22	1,028	4.52

Table 3 (Continued)

Dimension	Item	Responses -Likert type scale ranging from 1 (Very untrue) to 7 (Very true)			
		Arts and Science Students		Computer Science Students	
		Total point	Average point	Total point	Average point
SDL4	I set up my learning goals.	386	3.71	1,115	4.91
SDL5	I have higher expectations for my learning performance.	368	3.53	1,218	5.36
	Total point	1,938	18.61	5,459	24.03
	Average point	387.60	3.72	1,091	4.80

Table 3 shows that students attending at Computer Universities exhibited greater readiness in the dimensions of self-directed learning than did the students from Arts and Science Universities. Participants suggest that self-directed learning helps them optimize their educational experience, allowing them to set up their learning goals. Learner control became a crucial issue for the development and utilization of e-learning environments. Learners should be able to control the selection and presentation of content, as well as the transfer process itself, according to their needs, preferences and learning styles. Survey data were collected to develop a reliable operational measure of learner control (in an online context).

Table 4 Learner control (in an online context) (n=331)

Dimension	Item	Responses Likert type scale ranging from 1 (Very untrue) to 7 (Very true)			
		Arts and Science Students		Computer Science Students	
		Total Point	Average Point	Total Point	Average Point
LC 1	I can direct my own learning progress.	397	3.81	1,047	4.61
LC 2	I am not distracted by other online activities when learning online (instant messages, Internet surfing).	367	3.53	989	4.36
LC 3	I repeated the online instructional materials on the basis of my needs.	367	3.53	972	4.28
	Total point	1,131	10.87	3,008	13.25
	Average Point	377.00	3.62	1,002.66	4.41

According to the data in Table 4, several types of learner control might be supportive for self-managed learning processes. And then, the gap in each questionnaire can be seen in learner control for students from different types of universities remarkably.

Table 5 Motivation for learning (in an online context) (n=331)

Dimension	Item	Responses Likert type scale ranging from 1 (Very untrue) to 7 (Very true)			
		Arts and Science Students		Computer Science Students	
		Total Point	Average Point	Total Point	Average Point
MFL 1	I am open to new ideas.	426	4.09	1,150	5.06
MFL 2	I have motivation to learn.	451	4.33	1,186	5.22
MFL 3	I improve from my mistakes.	379	3.64	1,213	5.34
MFL 4	I like to share my ideas with others.	381	3.66	1,238	5.45
	Total point	1,637	15.72	4,787	21.07
	Average Point	409.25	3.93	1,196.75	5.26

The reasons why motivation is an essential consideration in online teaching and learning contexts are explored. In particular, as shown in Table 5, the Arts and Science students respond that they have motivation to learn and Computer Science and Technology students like to share their ideas with others.

But as Martens, Gulikers & Bastiaens (2004) argue, online learners are often required to be more intrinsically motivated because the learning environment typically relies on intrinsic motivation and the associated characteristics of curiosity and self-regulation to engage learners. In fact, the technology itself is viewed by some as inherently motivating because it provides a number of qualities that are recognised as important in the fostering of intrinsic motivation, namely challenge, curiosity, novelty and fantasy (Lepper & Malone. 1987).

The novelty factor tends to wear off as users become accustomed to the technology (Keller & Suzuki. 2004) and intrinsic motivation can wane. Frustration with technical problems can also reduce intrinsic motivation but as Martens, Gulikers & Bastiaens (2004) argue, online learners are often required to be more intrinsically motivated because the

learning environment typically relies on intrinsic motivation and the associated characteristics of curiosity and self-regulation to engage learners. In fact, the technology itself is viewed by some as inherently motivating because it provides a number of qualities that are recognised as important in the fostering of intrinsic motivation, namely challenge, curiosity, novelty and fantasy (Lepper & Malone. 1987).

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Table 6 Comparison on four-factor structure of the student online readiness (n=331)

SN	Four-factor structure of the student online readiness	Point	
		Arts and Science Students	Computer Science Students
1	Technology self-efficacy	4.09	4.61
2	Self-directed learning	3.72	4.80
3	Learner control	3.62	4.41
4	Motivation for learning	3.93	5.26
	Total point	15.36	19.08
	Average point	3.84	4.77

To calculate average points of factor (dimensions) for each student group, the sum of the answers to each item in that factor are identified and then divided the sum by the number of that factor's items. Studies have suggested that 4.00 is an acceptable value for a reliable readiness (Fornel & Larcker. 1981). As shown in Table 6, only one indicator factor of Arts and Science students exceed the average point of 4.00. Average points ranged from 3.62 to 4.09 for Arts and Science students and 4.41 to 5.26 for Computer students. Three constructs, self-directed learning, learner control and motivation for learning, were slightly below 4.00. The average point of each construct should be greater than at least 4.00 (Fornel & Larcker. 1981).

All students' average scores relative to the different dimensions range from 3.84 to 4.77 on a 7-point Likert-type rating scale, indicating that on average these learners exhibited medium levels of readiness toward online learning. By comparing the mean of those dimensions, the higher the mean points, the more online learning readiness the self-evaluating students assigned to themselves. The comparisons of these points can indicate the rank of students' readiness of the readiness dimensions. The results show that the test further revealed that the score of factor TSE (Technology self-efficacy) was greater for Arts and Science students than the mean points of factors SDL, LC and MFL. The mean point of factor MFL (Motivation for learning) for Computer students was greater than the other three factors' mean points of factors TSE, SDL and LC.

Discussions

Online education enables the teacher and the student to set their own learning pace, and there is added flexibility of setting a schedule that fits everyone's agenda. As a result, using an online educational platform allows for a better balance of work and studies. The current study was an attempt to determine online learning readiness of the students who are attending university in Myanmar. The overall results reveal that some of the participants seem to be ready for an online learning adoption since they mostly appear to be motivated, to be self-directed over their online learning and feel confident in online communication skills. Nevertheless, others need to develop their skills in using computer, internet and software needed in the suggested online learning program. Briefly, their computer and internet self-efficacy needs to be improved. As a result of the current research, a four-factor structure of the student online readiness instrument that students who are attending at Computer Universities exhibited significantly greater readiness in the dimensions of self-directed learning, online communication self-efficacy, motivation for learning, and learner control than did the students from Arts and Science Universities. At that point Computer Science and Technology students keep in touch with internet and online communication and they can control themselves in online learning and also they have been familiar with using computer for online learning. Depending on this status, motivation for learning rate in the students at Computer University is distinctly more than that of the students of Arts and Science Universities. The data also confirm an emphasis that is placed on the learner control among four-factor structure identified in this study. The overarching goal

of the present study is to increase online courses in higher education of Myanmar. The current study explores the competencies required for student success in online learning (e.g., learner control, motivation and self-efficacy) that should be measured to better understand students' online learning readiness. This could allow learners to develop their competencies and avoid challenges that would prevent them from succeeding in online learning.

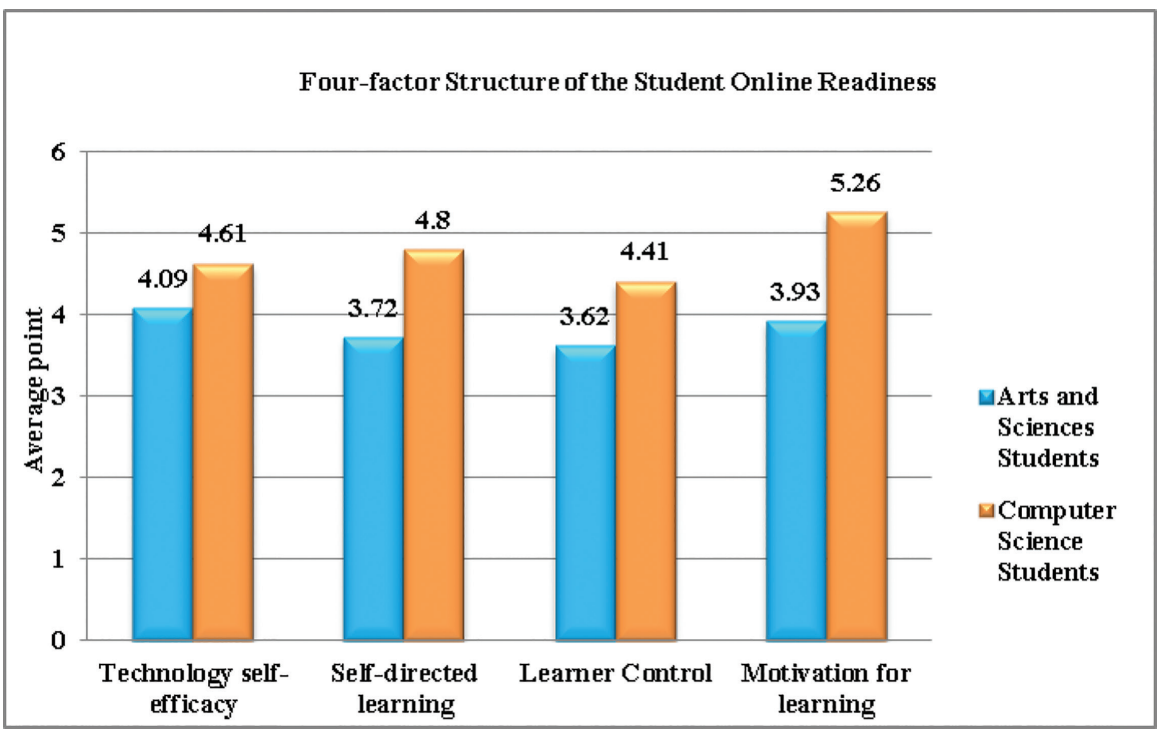

Figure 1 Four-factor structure of university student online readiness in Myanmar

Considering the findings of the current study in detail, there are some basic issues that need to be highlighted in this context. The issues are namely associated with the factors of learner control in online context and computer and internet self-efficacy. First, specifically, the participant students feel somewhat insecure since they might be deviated by other online activities like messaging or surfing when learning online. Second, they seem to be not enough self-confident skills in using the basic functions of excel, word, or power point programs. Last but not least, they have some doubts about their skills and knowledge of how to manage software for online learning.

Conclusion

Based on the questionnaire result, the following suggestions can be taken into consideration for the similar target groups with similar problems. It seems that the students should improve their basic internet and computer skills. To this end, the primary step to take is to prepare introductory informative programs, seminars and workshops for the target students (e.g. Arts and Science university students). They should be given some opportunities to experience similar learning environments and improve their skills. Their barriers towards online learning and doubts about the distracting sides of the online learning environments need to be removed by doing comprehensive training sessions. Once the needs are analyzed and problematic areas are noted, alternative solutions should be negotiated with all the stakeholders and related precautions need to be taken. The students should be informed about different dimensions of the online learning including facilities, problems and possible solutions to such problems. They clearly need to know what is brought by online environments with a focus on foreign language learning. So as to avoid probable problems resulted from the software use, simple learning environments or learning management systems which require less expertise might be preferred for the first stages. Additionally, help centers, call centers or mailing services might serve well in addressing urgent technical questions or help. In brief, it is critical to prepare students for such an innovation and support them to overcome its challenges in time.

Limitations of the Study

It is important to state that there are some limitations in the current study. Due to the nature of study, all of the findings and conclusions are limited to the Arts and Science university students and Computer Science and Technology university students in our case. The online learning readiness level of the students is determined via a mini scale which might be considered to be simple because of the number of items. When compared to the similar scales in the literature, it was viable to choose this one since validated and reliable version was available. Moreover, due to the facts of time limitation and difficult access to data, it was critical to get a picture of the reality in one and fine shot. According to the current study is aforementioned, a part of a longitudinal study and the paper scope is limited to the data collection. It is possible to triangulate and validate the collected data via different data collection methods and tools.

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