

ONLINE LEARNING READINESS OF PRE-SERVICE TEACHERS

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Abstract

The main purpose of this study was to investigate pre-service teachers' online learning readiness. This study was a quantitative survey and a simple random sampling technique was used. A total of 600 pre-service teachers (2022-2023 AY) from Yangon University of Education participated in this study. Online Learning Readiness Scale (Hung, 2010) was used and participants indicated their opinions by using five-point Likert scales. Data from the questionnaires were coded and analyzed by using descriptive statistics, independent samples *t*-test and one-way analysis of variance (ANOVA). Descriptive statistics stated that the mean percentages of pre-service teachers' self-directed learning (78.44%) was found to be the highest and that of pre-service teachers' online communication self-efficacy (69.46 %) was the lowest. Regarding gender, the mean scores of male pre-service teachers is greater than that of females and significant difference was found on overall scale as well as four subscales such as computer/internet self-efficacy, learner control, motivation for learning and online communication self-efficacy. ANOVA results of education level showed that the fifth year pre-service teachers exhibited a great significant readiness in all dimensions of online learning readiness. Moreover, the older pre-service teachers showed significantly higher readiness than younger pre-service teachers in overall online learning readiness, computer/internet self-efficacy, self-directed learning and learner control. Then, the online learning readiness of the pre-service teachers did not differ significantly in the duration of the internet use. Finally, pre-service teachers who have attended the online training possess higher online learning readiness in the computer and internet self-efficacy than the participants who have not attended the online training. This study made the contribution that policy makers in higher education institutions should prepare a comprehensive plan focusing on not only teaching and learning strategies, online activities and examinations but also finding ways to improve the students' readiness for online learning. In addition, government should give support such as establishing infrastructure, professional training and finance to ensure the quality of online education system.

Key words: Online Learning, Online Learning Readiness, Pre-service Teachers

Introduction

An unexpected outbreak of Covid-19 around the world in 2019 posted huge challenges to the society, including the continuity of teaching learning process in the education sector. During this critical period, online learning has become an attractive option for many education institutions worldwide as it is an approach that allows teaching learning activities to be conducted in a more flexible manner.

Online learning system is not a new concept to many educational institutions from the developed countries since it has been adopted, especially in the higher education level, prior to the pandemic (Palvia et al., 2018). However, owing to the limitation of internet access in many rural areas, most of the higher educational institutions in the developing countries implemented blended learning method before the outbreak of Covid-19 (Hanan & Mervat, 2015). In fact, many educational institutions in Myanmar remained traditional learning system, depending mainly on the face-to-face interaction between students and teacher during this period.

Therefore, an overnight shift from conventional physical learning to online learning in this pandemic moment has posed a major challenge of preparedness to most educational

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institutions from the developing countries. Among a number of factors that could lead to the failure of online learning, students' readiness to online learning is one of the crucial factors as the previous studies indicated that lack of online learning experience, low level of self-discipline, poorly preparation, technical difficulties, unequal ICT infrastructure, low self-confidence and direction are key factors that affect the outcome of online learning during the COVID-19 (Bao, 2020; Bao & Zhang, 2021; Dhawan, 2020; Favale, Soro, Trevisan, Drago, & Mellia, 2020).

Borotis and Poulymenakou (2004) defined online learning readiness as being mentally and physically ready for certain online learning experience and actions. Online learning requires communications via computer and quality in learning experiences in this media, efficiency in learning activities, student interaction and active participation (de Bruyn, 2004).

Gunawardena and Duphorne (2001) stressed that when readiness increased, satisfaction from learning experiences increased as well. Davis (2006) also stated that readiness was significant in increasing the achievement of the students. Lau and Shaikh (2012) found in their study that gender, financial aid, ethnicity, and class affected the readiness of students for online learning, however learning style did not. In a study conducted by Demir Kaymak and Horzum (2013), it was also revealed that readiness of students for online learning increased the interaction in learning environment.

Together with the technology advancement in post-pandemic period, pre-service teachers need to be familiar with online learning system as an innovative method of learning and also need to have high level of readiness to online learning. Hence, this study attempted to identify the online learning readiness of pre-service teachers. This finding of this study will provide further insights to the preparedness of online learning of the higher education institutions in Myanmar.

Purposes of the Study

The main purpose of this study is

- to examine pre-service teachers' online learning readiness
- The specific objectives are
- To investigate online learning readiness of pre-service teachers by gender, educational level and age
 - To investigate online learning readiness of pre-service teachers by time spent (online using hours per day) and training

Related Literature Review

Community of Inquiry Model for Online Learning

The community of inquiry model for online learning environments developed by Garrison, Anderson and Archer (2000) is based on the concept of three distinct "presences", namely, cognitive, social, and teaching. Recognizing the overlap and relationship among the three components, their model supports the design of online and blended courses as active learning environments or communities dependent on instructors and students sharing ideas, information, and opinions. Of particular note is that "presence" is a social phenomenon and manifests itself through interactions among students and instructors. Hence, the community of inquiry is one of the more popular models for online learning which emphasizes on the engagement and active participation of learners in the successful implementation of an online learning system.

Online Learning Readiness

The concept of readiness for online learning was firstly proposed by Warner, Christie, and Choy in 1998. They conceptualized the readiness for online learning in terms of three aspects such as (1) students' preferences for the form of delivery as opposed to face-to-face classroom instruction; (2) students' confidence in using electronic communication for learning and, in particular, competence and confidence in the use of Internet and computer-mediated communication; and (3) their ability to engage in autonomous learning. Hashim and Tasir (2014) defined this readiness as the capability of the learners in using a new learning environment as well as the usage of alternative technology. As stated by Ali (2016), assessment of online learning readiness prior to the start of online learning is essential since an individual learner's success in an online course often depends on this readiness. Joosten and Cusatis (2020) also noted that students who enroll online courses have varying levels of readiness and preparedness that likely influence their success.

Method

Research Method

Questionnaire survey method and quantitative research design were used in this study.

Sampling

Simple random sampling technique was used in this study. The participants of this study were first year and final year pre-service teachers from Yangon University of Education during 2022-23 AY. A total of 600 pre-service teachers participated in this study. Among 600 pre-service teachers, 300 are males and the rest 300 are females.

Research Instrumentation

Measurement of online learning readiness scale (OLRS) was used to explore the pre-service teachers' online learning readiness. This instrument was developed by Hung (2010). This instrument is with a total of 18 items questionnaire. Item number 1 to 3 stand for computer/internet self-efficacy subscale. Item number 4 to 8 stand for self-directed learning subscale. Item number 9 to 11 stand for learner control subscale. Item number 12 to 15 stand for motivation for learning subscale and item number 16 to 18 stand for online communication self-efficacy subscale. Five-point Likert scale was used (1= strongly disagree, 2= disagree, 3= uncertain, 4= agree, 5= strongly agree). Sample items were presented as follows:

- I feel confident in performing the basic functions of Microsoft Office programmes (MS Word, MS Excel, and MS Power Point).
- I carry out my own study plan.
- I am not distracted by other online activities when learning online (instant messages, Internet surfing).
- I like to share my ideas with others.
- I feel confident in posting questions in online discussions.

Data Collection Procedure

Measurement of online learning readiness scale (OLRS) designed by Hung (2010) was used. For ensuring the face validity and content validity of this instrument, expert review was done first by the 8 experts from the Department of Educational Psychology, Yangon University of

Education. After reviewing and editing the items, pilot testing was carried out with 30 student teachers from Yangon University of Education during the first week of December, 2022. According to the piloting results, some items of the measuring scale were made necessary changes. Then, with the permission of administrative personnel of institutions, the questionnaire was administered to the student teachers from Yangon University of Education. This study explored student teachers' online learning readiness. Finally, by using the self-reported survey questionnaire, the required data was collected during the first week of January, 2023. The process of collecting data took almost two months in order to get the maximum response rate and to get complete filled in questionnaires back. The data was analyzed by SPSS version 22 for quantitative data analysis. Descriptive statistics and inferential statistics were applied to the data set in order to interpret and report the results. The detailed description of data analysis, findings and interpretation would be presented following.

Data Analysis and Research Findings

Descriptive Statistics of Pre-service Teachers' Online Learning Readiness

Pre-service teachers' online learning readiness was measured by Online Learning Readiness Scale (OLRS), and was divided into five subscales; Computer/Internet Self-efficacy, Self-directed Learning, Learner Control, Motivation for Learning and Online Communication Self-efficacy. Since the numbers of items included in each dimension and each component of online learning readiness were not the same, the mean percentages were calculated in order to enable the accurate comparison among different dimensions.

Looking across five dimensions of online learning readiness, the mean percentages of self-directed learning (78.44%) was found to be highest and on the other hand, the mean percentage of online communication self-efficacy (69.46 %) was the lowest (see Table 1).

Table 1 Descriptive Statistics of Online Learning Readiness

Scale Name	N	Minimum	Maximum	Mean	Mean%	SD
Computer/Internet Self-efficacy (3 items)	600	3	15	10.95	73.00%	3.248
Self-directed Learning (5 items)	600	12	25	19.61	78.44%	4.359
Learner Control (3 items)	600	3	15	10.82	72.13%	3.318
Motivation for Learning (4 items)	600	4	20	15.47	77.35%	3.950
Online Communication Self-efficacy (3 items)	600	3	15	10.42	69.46%	3.079

Note. SD = Standard Deviation

Comparison of Pre-service Teachers' Online Learning Readiness by Gender

Concerning the pre-service teachers' online learning readiness, the gender difference was worthwhile to explore. The subscales of online learning readiness were categorized into five parts; Computer/Internet Self-efficacy, Self-directed Learning, Learner Control, Motivation for Learning and Online Communication Self-efficacy. In order to confirm the gender difference of pre-service teachers' online learning readiness, independent samples *t*-test was applied. The mean scores and standard deviations for both male and female student teachers across five subscales as well as total scale score were reported in Table 2.

Table 2 Means, Standard Deviations and Results of Independent Samples *t*-test for Pre-service Teachers' Online Learning Readiness by Gender

Subscales	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Computer/Internet Self-efficacy	Male	300	11.21	1.69	3.710***	598	0.000
	Female	300	10.70	1.71			
Self-directed Learning	Male	300	19.72	2.01	1.375	598	0.170
	Female	300	19.50	1.89			
Learner Control	Male	300	10.98	1.65	2.378*	598	0.018
	Female	300	10.67	1.46			
Motivation for Learning	Male	300	15.71	2.14	2.897**	581	0.004
	Female	300	15.24	1.81			
Online Communication Self-efficacy	Male	300	10.73	1.99	3.805***	598	0.000
	Female	300	10.11	1.99			
Online Learning Readiness	Male	300	68.36	6.48	4.250***	598	0.000
	Female	300	66.23	5.76			

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Regarding the gender, the mean scores of male pre-service teachers were greater than that of females, a significant difference was found on overall scale as well as four subscales such as Computer/Internet Self-efficacy, Learner Control, Motivation for Learning and Online Communication Self-efficacy. Except the Self-directed Learning subscale, gender related difference was found to be on other four subscales as well as overall scale. According to the results, male student teachers possessed higher online learning readiness than that of the females.

Comparison of Pre-service Teachers' Online Learning Readiness by Educational Level

In this study, online learning readiness of pre-service teachers (First year, Second year, Third Year, Fourth year and Fifth Year) from Yangon University of Education were examined. Descriptive statistics and ANOVA was done to investigate the difference by educational level.

Table 3 Means, Standard Deviations and ANOVA Results of Pre-service Teachers' Online Readiness by Educational Level

Subscales	Institutions	N	Mean	SD	F	p
Computer/Internet Self-efficacy	First year	120	10.92	1.59	7.19***	0.000
	Second year	120	10.54	1.79		
	Third year	120	11.00	1.44		
	Fourth year	120	10.71	1.77		
	Fifth year	120	11.63	1.83		
Self-directed Learning	First year	120	19.23	2.29	10.99***	0.000
	Second year	120	18.94	1.75		
	Third year	120	19.93	1.67		
	Fourth year	120	19.54	1.87		
	Fifth year	120	20.40	1.85		
Learner Control	First year	120	10.50	1.48	4.18**	0.002
	Second year	120	10.58	1.44		
	Third year	120	10.85	1.48		
	Fourth year	120	11.02	1.36		
	Fifth year	120	11.19	1.93		
Motivation for Learning	First year	120	15.30	2.26	2.43*	0.045
	Second year	120	15.13	1.87		
	Third year	120	15.63	1.96		
	Fourth year	120	15.45	1.95		
	Fifth year	120	15.87	1.88		
Online Communication Self-efficacy	First year	120	10.18	2.08	3.94**	0.004
	Second year	120	10.14	1.92		
	Third year	120	11.03	1.70		
	Fourth year	120	10.28	1.90		
	Fifth year	120	10.50	2.33		
Online Learning Readiness	First year	120	66.13	6.39	9.65***	0.000
	Second year	120	65.34	5.47		
	Third year	120	68.43	5.34		
	Fourth year	120	67.00	5.85		
	Fifth year	120	69.58	7.04		

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Concerning the education level, a significant difference was found on the overall scale as well as all subscales of online learning readiness such as Computer/Internet Self-efficacy, Self-directed Learning, Learner Control, Motivation for Learning and Online Communication Self-efficacy. To obtain more detailed information, the Post-Hoc Test was carried out by Tukey method (see Table 4).

Table 4 Results of Tukey HSD Multiple Comparison for Pre-service Teachers' Online Readiness by Educational Level

Dependent Variable	(I) Educational Level	(J) Educational Level	Mean Difference (I-J)	Std. Error	p
Computer/Internet Self-Efficacy	Fifth year	First year	0.708*	0.218	0.011
		Second year	1.083***	0.218	0.000
		Third year	0.625*	0.218	0.035
		Fourth year	0.916***	0.218	0.000
Self-directed Learning	Third year	First year	0.700*	0.245	0.036
		Second year	0.992**	0.245	0.001
	Fifth year	First year	1.166***	0.245	0.000
		Second year	1.458***	0.245	0.000
Learner Control	Fifth year	First year	0.691**	0.200	0.005
		Second year	0.608*	0.200	0.021
Motivation for Learning	Fifth year	Second year	0.733*	0.257	0.036
Online Communication Self-efficacy	Third year	First year	0.841**	0.258	0.010
		Second year	0.883**	0.258	0.006
		Fourth year	0.257*	0.258	0.034
Online Learning Readiness	Third year	First year	2.300*	0.781	0.028
		Second year	3.092**	0.781	0.001
	Fifth year	First year	3.450***	0.781	0.000
		Second year	4.242***	0.781	0.000
		Fourth year	2.583**	0.781	0.009

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Concerning Computer/Internet Self-efficacy subscale, there was a significant difference between Fifth year pre-service teachers and pre-service teachers from First year, Second year, Third year and Fourth year. The mean scores of the pre-service teachers from Fifth year were significantly higher than those of pre-service teachers from First year, Second year, Third year and Fourth year on this attribute.

Concerning the learner control subscale, Fifth year pre-service teachers had a significant difference from pre-service teachers from First year and Second Year. The mean scores of Fifth year pre-service teachers were significantly greater than those of pre-service teachers from First year and Second Year on this attribute.

Concerning the Motivation for Learning subscale, there was a significant difference between Fifth year pre-service teachers and pre-service teachers from Second year. The mean scores of the pre-service teachers from Fifth year were significantly higher than those of student teachers from Second year on this attribute.

Concerning the Online Communication Self-efficacy subscale, there was a significant difference with Third year pre-service teachers and pre-service teachers from First year, Second

year, and Fourth year. The mean scores of participant pre-service teachers from Third year were significantly higher than those of pre-service teachers from First year, Second year and Fourth year on this attribute.

Regarding the Self-directed learning subscale and overall online learning readiness, there was significant difference with Third year pre-service teachers and First year, Second year pre-service teachers. The mean scores of participant student teachers from Third year were significantly higher than those of pre-service teachers from First year, Second year on these attributes. In addition, there was also significant difference with Fifth year pre-service teachers and pre-service teachers from First year, Second year, and Fourth year. The mean scores of participant pre-service teachers from Fifth year and Third year were significantly higher than those of pre-service teachers from First year, Second year and Fourth year on these attributes.

Comparison of Pre-service Teachers' Online Learning Readiness by Age

To investigate online learning readiness of pre-service teachers depending on their age, descriptive analysis was done and the differences in mean scores of pre-service teachers according to their age were presented. To make the confirmation of the significant differences of pre-service teachers' online learning readiness by their age, ANOVA was executed.

Table 5 Means, Standard Deviations and ANOVA Results of Pre-service Teachers' Online Readiness by Age

Subscales	Age (X)	N	Mean	SD	F	p
Computer/Internet Self-efficacy	$16 \leq x < 18$ years	113	10.90	1.60	3.636*	0.027
	$19 \leq x < 21$ years	286	10.80	1.60		
	≥ 22 years	201	11.22	1.92		
Self-directed Learning	$16 \leq x < 18$ years	113	19.28	2.32	6.731**	0.001
	$19 \leq x < 21$ years	286	19.46	1.82		
	≥ 22 years	201	20.01	1.87		
Learner Control	$16 \leq x < 18$ years	113	10.50	1.51	5.844**	0.003
	$19 \leq x < 21$ years	286	10.77	1.43		
	≥ 22 years	201	11.10	1.74		
Motivation for Learning	$16 \leq x < 18$ years	113	15.27	2.26	1.267	0.282
	$19 \leq x < 21$ years	286	15.45	1.89		
	≥ 22 years	201	15.63	2.00		
Online Communication Self-efficacy	$16 \leq x < 18$ years	113	10.20	2.10	1.364	0.256
	$19 \leq x < 21$ years	286	10.56	1.87		
	≥ 22 years	201	10.37	2.17		
Online Learning Readiness	$16 \leq x < 18$ years	113	66.15	6.52	5.009**	0.007
	$19 \leq x < 21$ years	286	67.03	5.61		
	≥ 22 years	201	68.33	6.75		

Note. * $p < 0.05$, ** $p < 0.01$.

Concerning the age, a significant difference was found on the overall scale as well as three subscales of online learning readiness such as Computer/Internet Self-efficacy, Self-directed Learning and Learner Control. To obtain more detailed information, the Post-Hoc Test was carried out by Tukey method (see Table 6).

Table 6 Results of Tukey HSD Multiple Comparison for Pre-service Teachers' Online Readiness by Age

Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	p
Computer/Internet Self-efficacy	≥ 22 years	$19 \leq x < 21$ years	0.421*	0.158	0.021
Self-directed Learning	≥ 22 years	$16 \leq x < 18$ years	0.726**	0.228	0.004
		$19 \leq x < 21$ years	0.551**	0.179	0.006
Learner Control	≥ 22 years	$16 \leq x < 18$ years	0.726**	0.228	0.004
Online Learning Readiness	≥ 22 years	$16 \leq x < 18$ years	2.177**	.727	.008

Note. * $p < 0.05$, ** $p < 0.01$.

Concerning the Computer/Internet Self-efficacy subscale, there was a significant age indicator in the oldest age group (≥ 22 years) of pre-service teachers with the age group of $19 \leq x < 21$ years. The mean scores of pre-service teachers in the oldest age group (≥ 22 years) were significantly higher than those of pre-service teachers with the age group of $19 \leq x < 21$ on this attribute.

Concerning the Self-directed Learning subscale, there was a significant age indicator in the oldest age group (≥ 22 years) of preservice teacher with the age groups of $16 \leq x < 18$ years and with the age group of $19 \leq x < 21$. The mean scores of preservice teacher in the oldest age group (≥ 22 years) were significantly higher than those of preservice teachers in the age groups of $16 \leq x < 18$ year and $19 \leq x < 21$ on this attribute.

Regarding the Learner Control subscale and overall online learning readiness, there was a significant difference indicator in the oldest age group (≥ 22 years) of preservice teacher with the age groups of $16 \leq x < 18$ years. The mean scores of preservice teacher in the oldest age group (≥ 22 years) were significantly higher than those of preservice teachers in the age group of $16 \leq x < 18$ years on this attribute.

Comparison of Pre-service Teachers' Online Learning Readiness by Time Spent (Online Using Hours per Day)

To investigate online learning readiness of preservice teachers depending on their time spent (Online Using Hours per Day), descriptive analysis was done and the differences in mean scores of pre-service teachers according to their time spent (Online Using Hours per Day) was presented. To make the confirmation of the significant differences of preservice teachers' online learning readiness by their time spent (Online Using Hours per Day), ANOVA was executed.

Table 7 Means, Standard Deviations and ANOVA Results of Pre-service Teachers' Online Learning Readiness by Time Spent (Online Using Hours per Day)

Subscales	Time Spent (Online Using Hours per Day)	N	Mean	SD	F	p
Computer/Internet Self-efficacy	$1 \leq x < 3$ Hours	355	10.90	1.77	1.035	0.356
	$4 \leq x < 6$ Hours	208	10.99	1.57		
	≥ 7 Hours	37	11.32	2.03		
Self-directed Learning	$1 \leq x < 3$ Hours	355	19.78	1.94	4.956**	0.007
	$4 \leq x < 6$ Hours	208	19.27	1.93		
	≥ 7 Hours	37	19.92	2.11		
Learner Control	$1 \leq x < 3$ Hours	355	10.83	1.53	0.017	0.983
	$4 \leq x < 6$ Hours	208	10.83	1.53		
	≥ 7 Hours	37	10.78	2.11		
Motivation for Learning	$1 \leq x < 3$ Hours	355	15.60	1.86	1.704	0.183
	$4 \leq x < 6$ Hours	208	15.29	2.15		
	≥ 7 Hours	37	15.30	2.38		
Online Communication Self-efficacy	$1 \leq x < 3$ Hours	355	10.36	1.95	1.451	0.235
	$4 \leq x < 6$ Hours	208	10.45	2.11		
	≥ 7 Hours	37	10.95	2.07		
Online Learning Readiness	$1 \leq x < 3$ Hours	355	67.47	6.24	1.188	0.305
	$4 \leq x < 6$ Hours	208	66.83	6.00		
	≥ 7 Hours	37	68.27	7.24		

Note. ** $p < 0.01$.

Concerning the time spent (Online Using Hours per Day), significant difference was not found on the overall scale as well as four subscales of online learning readiness such as Computer/Internet Self-efficacy, Motivation for Learning and Online Communication Self-efficacy, except Self-directed Learning subscale.

To obtain more detailed information, the Post-Hoc Test was carried out by Tukey method (see Table 8). Concerning the Self-directed Learning subscale, there was a significant difference between pre-service teachers who use online 1 hour-3 hours and the group of pre-service teachers who use online 4 hours-6 hours. The mean score of pre-service teacher who use online 1 hour-3 hours is higher than that of pre-service teachers who use online 4 hours-6 hours.

Table 8 Results of Tukey HSD Multiple Comparison for Online Learning Readiness Time Spent (Online Using Hours per Day)

Dependent Variable	(I) Time Spent (Online Using Hours per Day)	(J) Time Spent (Online Using Hours per Day)	Mean Difference (I-J)	Std. Error	p
Self-directed Learning	$1 \leq x < 3$ Hours	$4 \leq x < 6$ Hours	0.508**	0.170	0.008

Note. ** $p < 0.01$.

Comparison of Student Teachers' Online Learning Readiness by Training

In order to confirm the pre-service teachers' online learning readiness by Training, independent samples *t*-test was applied. The mean scores and standard deviations for both male and female pre-service teachers across five subscales as well as total scale score were reported in Table 9.

Table 9 Means, Standard Deviations and Results of Independent Samples *t*-test for Pre-service Teachers' Online Learning Readiness by Training

Subscales	Gender	N	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Computer/Internet Self-efficacy	No Training	326	10.61	1.78	-5.575***	598	0.000
	Having Training	274	11.38	1.56			
Self-directed Learning	No Training	326	19.51	1.92	-1.416	598	0.157
	Having Training	274	19.73	2.01			
Learner Control	No Training	326	10.75	1.57	-1.362	598	0.174
	Having Training	274	10.92	1.57			
Motivation for Learning	No Training	326	15.43	2.04	-.609	598	0.543
	Having Training	274	15.53	1.95			
Online Communication Self-efficacy	No Training	326	10.30	1.96	-1.631	598	0.103
	Having Training	274	10.57	2.08			
Online Learning Readiness	No Training	326	66.60	6.09	-3.039**	598	0.002
	Having Training	274	68.14	6.29			

Note. ** $p < 0.01$, *** $p < 0.001$.

Although there was a slight variation between the pre-service teachers who have attended the online training and the participants who have not attended the online training, a significant difference was found only on Computer/Internet Self-efficacy subscale and overall online learning readiness scale. Except Computer/Internet Self-efficacy subscale, significant differences were not found in other four subscales of online learning readiness such as Self-directed Learning, Learner Control, Motivation for Learning and Online Communication Self-efficacy. According to the results pre-service teachers who have attended the online training possess higher online learning readiness in computer and internet self-efficacy than that of the participants who have not attended the online training.

Conclusion, Discussion and Recommendation

Conclusion and Discussion

Since online learning has become highly popular in educational institutions during the Covid-19 pandemic, many countries started online learning in all education levels. By taking pre-service teachers' online learning readiness level into account, it will be easier to establish online learning environments. The main purpose of this study is to investigate the online learning readiness of pre-service teachers in Myanmar. Moreover, the other influencing factors such as gender, age, duration of internet use and having computer training on pre-service teachers' online learning readiness were explored. A total of 600 pre-service teachers from Yangon University of Education were chosen as a sample.

To assess online learning readiness of pre-service teachers, online learning readiness scale (OLRS) by Hung et al. (2010) was applied. The OLRS of 18 items consists of five subscales namely, (1) computer and internet self-efficacy with 3 items, (2) self-directed learning with 5 items, (3) learner control with 3 items, (4) motivation for learning (online context) with 4 items, and (5) communication efficacy with 3 items. The internal consistency reliability values of OLRS was 0.76.

Based on the results of descriptive analysis, the mean percentages of pre-service teachers' self-directed learning (78.44%) was found to be the highest and that of pre-service teachers' online communication self-efficacy (69.46 %) was the lowest. It can be assumed that most of the pre-service teachers in this study have the high tendency to claim responsibility for their own learning and meet the learning objectives they set for themselves in the online learning setting. They may be more active in participating in learning tasks such as reading online learning materials, completing classroom tasks, planning and evaluating goals of learning. Because of the lowest mean percentage in online communication self-efficacy, online learning will challenge pre-service teachers to be comfortable and confident when communicating with the lecturer and other classmates through online communication.

Regarding gender differences in online learning readiness of pre-service teachers, the mean scores of male pre-service teachers are greater than that of females and significant difference was found on overall scale as well as four subscales such as computer/internet self-efficacy, learner control, motivation for learning and online communication self-efficacy. This finding is similar to the finding of Kay (2009), male students' perception that interactive classroom communication systems improved the overall learning process was stronger than female students' corresponding perception, regardless of computer-comfort level or computer-use type. However, this finding contradicted with those found by Chung et al., (2020), Hung et al. (2010) and Atkinson and Blankenship (2009) that there were no significant differences in all five dimensions of the online learning readiness scale between males and females.

Concerning the education level, a significant difference was found on the overall scale as well as all subscales of online learning readiness such as Computer/Internet Self-efficacy, Self-directed Learning, Learner Control, Motivation for Learning and Online Communication Self-efficacy. The fifth year pre-service teachers exhibited significantly greater readiness in all dimensions of online learning readiness. This finding is congruent with Hung et al. (2010) finding that grade levels made significant differences in students' readiness for online course.

Regarding age, significant differences were found on the overall scale as well as three subscales of online learning readiness such as Computer/Internet Self-efficacy, Self-directed Learning and Learner Control. The mean scores of older pre-service teachers in were significantly higher than those of younger pre-service teachers in overall online learning readiness, Computer/Internet Self-efficacy, Self-directed Learning and Learner Control. This can be assumed that mature pre-service teachers possess greater readiness for enrolment in online courses and would exhibit, in such an environment, a better learning performance than pre-service teaches with less maturity. This finding is congruent with Wojciechowski and Palmer's (2005) finding that students who were older had few previous course withdrawals and were more likely to be successful in online classes.

In addition, the online learning readiness of the pre-service teachers did not differ significantly depending on the duration of the internet use; however, it was observed that there is a significant difference in the dimension of self-directed learning. The mean score of pre-service teachers who use online 1 hour -3 hours is higher than that of pre-service teachers who use online 4 hours-6 hours. It can be assumed that student pre-service teachers may use internet for different purposes. If they used internet only for social media, they may have less time to plan their own learning and manage their learning. For this reason, it can be concluded that the pre-service teachers who spend more time to use internet could be low in self-directed learning. This finding is consistent with the finding of Zeybek (2022) that participants who had less internet usage time obtained higher mean scores for self-directed learning and learner control.

Although there is a slight variation between the pre-service teachers who have attended the online training and the participants who have not attended the online training, significant difference was found only on Computer/Internet Self-efficacy subscale and overall online learning readiness scale. Pre-service teachers who have attended the online training possess higher online learning readiness in computer and internet self-efficacy than that of participants who have not attended the online training. It can be interpreted that by attending computer trainings, pre-service became more confident in their skills in using computer and internet in order to learn online.

Suggestion and Recommendation

According to the results of this finding, the pre-service teachers in this study had the lowest mean score in the online communication self-efficacy. Therefore, it should be suggested to the teachers to give motivation and encouragement to their pre-service teachers, especially to those with low level of online communication self-efficacy, while delivering the online courses. It can be done by encouraging the pre-service teachers to make an extensive participation in the discussions, to freely and bravely express their ideas, and to ask for immediate assistance from the teacher when facing with technical or other related problems during their online learning. Since motivation is one of the important factors in online learning, teachers should help students stay motivated in online learning (Hung et al., 2010).

Moreover, pre-service teachers' online learning readiness is not only related to one single factor such as their technical skills, but also to many other factors including their perception and attitude towards online learning, their preferences and learning styles. When it comes to readiness for online learning, all these variables should be considered together (Smith, 2005). Hergüner et al. (2020), as an example, revealed that students' online learning attitudes have a positive effect on their readiness for online learning.

The present study reports not only the current situation of online learning readiness of pre-service teachers in Yangon University of Education but also gives a valuable insight for the administrators in implementing online teaching. Policy makers in higher education institutions should prepare a comprehensive plan focusing on not only teaching and learning strategies, online activities and examinations but also finding ways to improve the students' readiness for online learning. Government should give supports such as establishing infrastructure and organizing professional trainings and finance to ensure the quality of online education system.

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