

Ladderized Bachelor of Industrial Technology (LBIT) Students' Online Learning Readiness

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Abstract – *Students on-line learning preparedness tends to affect most institutions, including all disciplines, from curricular growth and pedagogy to the entire academic division devoted to web-specific delivery. Measuring student readiness online can also be of considerable interest to schools in order to properly answer this problem. This research is focused on the administration of an online survey of randomly selected individuals particularly the two hundred and four (204) Ladderized Bachelor of Industrial Technology (LBIT) students of Pangasinan State University (PSU) – Lingayen Campus. The E-learning Readiness Evaluation Tool for the Philippine Higher Education Institutions has been embraced as an instrument. This instrument was disseminated to the respondents utilizing Microsoft Forms. The results of the study revealed that students had positive insight into online learning, with the majority of respondents were associated with online learning. It is proposed that a simulated learning environment be developed for the benefit of students. It was manifested that the LBIT students of Pangasinan State University – Lingayen Campus are ready and competent when it comes to online learning.*

Keywords – *online learning readiness, student assessment, Industrial Technology, Pangasinan State University, Philippine Higher Education Institutions.*

INTRODUCTION

The World Health Organization has announced Covid-19 to be a pandemic that presents a contemporary threat to all of mankind. This pandemic has successfully prompted the global shutdown of a variety of operations, including educational activities, and has resulted in a massive crisis-response migration of online learning universities operating as an educational hub [1]. Online learning is one of the most commonly used innovations in recent times. Online learning is basically a learning method that relates to the use of digital devices and information and communication technologies (ICT). Online learning may be understood such as online instruction, computer-based teaching, technology-enhanced learning, and so on. Online learning has been played out in separate branches of education and at the systematic level of learning. The importance of e-learning has contributed to the need to evaluate the mental and physical readiness of students when accessing the online learning environment. Online learning preparation is also required to ensure that

students are able to make the most possible use of online learning experience technologies. Practically speaking, online learning preparation is the willingness of prospective e-learning participants to use a new learning environment as well as relevant technologies. The findings of this particular study should be seen as a form of encouragement, perhaps, for further advancement of the online learning experience for any change that seems to be needed [2].

OBJECTIVES OF THE STUDY

The main objective of this research was to assess the online learning readiness of the LBIT students of PSU – Lingayen Campus particularly in Technology Access, Technological Confidence, Support and Training, and, Attitudes towards a successful online learner.

LITERATURE REVIEW

On the study entitled “Teachers’ Readiness in Online Teaching Environment: A Case of

Department of Education Teachers” [3], where it explores the readiness of the teachers of the Department of Education in Open and Distance Education Environment which includes technical skills, experience with online teaching and learning, attitudes toward online learning, and time management and commitment. Respondents were elementary and secondary teachers of the Department of Education who are currently studying in Pangasinan State University, Open University Systems and Master's degrees in Educational Management. Quantitative approach was used in data processing methods and the correlation has been used to assess the important discrepancy. The research concludes that the bulk of respondents are confident for online instruction. Despite the neutral perception of online education, the mindset of teachers in open distance e-learning (oDel) is constructive and leads to the willingness of teachers. The report also suggested that the Department of Education (DepEd) concentrate on long-term adoption in order to meet the growing demand for distance learning and technical adaptation. In addition, State Universities and Colleges in the Philippines can support DepEd institutions with an extension project to help schools facilitate literacy, since the existence of technologies cannot be used without awareness and recognition of technologies for online education.

Another study entitled “E-Learning Readiness Assessment Tool for Philippine Higher Education Institutions” [4], When it provides a preparedness appraisal tool for the Philippine Higher Education Institutions. It also acts as a framework for evaluating needs. This study then followed this established and validated appraisal instrument. The center of the survey was a compilation of topics that were examined in the literature to determine the preparation for e-learning. It also assesses the variables that affect the performance of e-learning programs. These are grouped into three collections of variables that represent the institutional separation of positions in higher education institutions. There are institutional, instructional, and student influences. Thus this research concentrated only on online learning preparedness for students. The method explains the readiness of students and tests access to technology and confidence. It also tests behaviors, preparation, social reinforcement and perceived usefulness of students on online learning.

METHODOLOGY

In this research the author followed a quantitative research approach [5] [6] [7] [8]. The survey was observed as a data gathering tool and has gained traction over the years thanks to a great deal of useful knowledge on what people think. The E-learning Readiness Evaluation Method for the Philippine Higher Education Institutions was introduced as an instrument in this analysis. This tool has been distributed to respondents through online utilizing the Microsoft Forms.

Sources of Data

The sources of information for this study were the students of the Ladderized Bachelor of Industrial Technology at Pangasinan State University – Lingayen Campus, specifically enrolled for the first semester of the School Year 2020-2021, which was the first semester of the implementation of the online learning management system in the said university. LBIT was one of the flagship programs of the PSU – Lingayen Campus, with seven hundred ninety-nine (799) students enrolled in the first semester of the 2020-2021 academic year. The demographic of this study was twenty five percent (25) percent of the total population. Respondents were asked to complete an online survey within two weeks from the date of issue in particular from 14 to 25 of September 2020. The researcher has posted a survey link to all of the discussions or announcement fora of the respondents in the Microsoft Teams Channel Class.

Statistical Treatment

Frequency and Percentage were used to assess the online learning readiness of respondents especially in the category of Technology Access. Average weighted mean (AWM) was also used to assess the degree of readiness in the fields of Technological Confidence, Support and Training. Below is an interpretation of Table 1 based on the Likert rating system used.

Table 1. Likert rating scale for the extent of readiness in Technological Confidence, Support and Training.

Likert Rating Scale	Range	Interpretation Scale
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5	4.51 - 5.00	Very Great Extent
4	3.51 - 4.50	Great Extent
3	2.51 - 3.50	Little Extent
2	1.51 - 2.50	Very least Extent
1	1.00 - 1.50	Not at all

Average weighted mean was also used to assess attitudes toward a successful online learner. Below is an interpretation of Table 2 based on the Likert rating system used.

Table 2. Likert rating scale for the attitudes towards a successful online learner.

Likert Rating Scale	Range	Interpretation Scale
4	3.51 - 4.00	Very Often
3	2.51 - 3.50	Often
2	1.51 - 2.50	Sometimes
1	1.00 - 1.50	Never

RESULTS AND DISCUSSION

The results generated from the Microsoft Forms have been extracted to Microsoft Excel format. The findings of the analysis are shown.

As shown in Table 3, the access to technology by the LBIT students revealed that majority has his/her own computer, maybe a desktop computer, laptop computer or at least a smartphone. It also shows that majority of the respondents have an access to a dependable computer in home or in a computer shop installed with a necessary software like browser and anti-virus application and of course with an internet connections. The table also shows that most of the students does not have a printer. Based on the table, it implies that majority of the student-respondents has the necessary computer hardware and software with internet connections readily available for online learning class sessions. It also means that students are confident and have a good study environment towards online learning. This also implies that technologies such as computers or smartphone were considered as “needs” not “wants” and essentials in today’s contemporary

times. Another consideration is that the cheaper cost of having a computer or smartphone or even both with reliable internet connections makes the students more confident in accepting the challenge of online learning.

Table 3. Access to Technology of the Students

Technology Access		YES	NO
1	I have a computer (pc, laptop, smartphone).	155	49
		76%	24%
2	I have access to a reliable computer, either at home or in a computer shop.	154	50
		75%	25%
3	I have access to a computer that is pre-installed with the requisite tools.	162	42
		79%	21%
4	I have access to a computer that has a printer installed.	14	190
		7%	93%
5	At home, I have access to a computer with an internet connection.	155	49
		76%	24%
6	In shop windows, I can use a computer with an internet connection.	165	39
		81%	19%
7	I have access to a device that is pre-installed with search engines (such as Google and Ask) and internet browsers (ex. IE, Firefox, Google Chrome).	163	41
		79%	21%
8	My device is protected against viruses.	156	48
		76%	24%

Online learners require the basic technological skills needed to excel. As seen in Table 4, the technological confidence, support and training, particularly the basic computer skills of the LBIT students, it has shown that most respondents know the basic functions of computer hardware components and install the appropriate software and change configuration settings, know how to solve typical hardware or software problems, and lastly students knows how to open and save documents. This implies that the student-respondents were very technical people when it comes to computer operations

considering the AWM on this category was 3.78 which means great extent. Evidently, most of the LBIT students, particularly first year to third year students were a product of Senior High School by the DepEd where in computer operation courses were mandated.

Table 4. Basic Computer Skills of the Students
AWM = 3.78 (Great Extent)

Technological Confidence, Support and Training						
Basic Computer Skills		1	2	3	4	5
9	I know the basic functions of computer hardware components (CPU and monitor) including its peripherals like the printer, speaker and mouse.	8	24	75	18	79
		4%	12%	36%	9%	39%
10	I know how to save/open documents to/from.	14	25	62	71	32
		7%	12%	30%	35%	16%
11	I am comfortable with things like installing software and changing configuration settings on my computer.	6	14	58	37	89
		3%	7%	28%	18%	44%
12	I know how to resolve common hardware or software problems or I can access a technical support in case I encounter a problem.	0	12	54	37	101
		0%	6%	26%	18%	50%

As shown in Table 5, the technological confidence, support and training, particularly the internet / online skills of the LBIT students also revealed that most users know how to send emails with file attachments, how to browse the internet and access the web, how to scan, set bookmarks, and open files, and how to use chat software. This is very evidently on the table with a great extent ratings with an AWM of 3.65. Another revelations of this study is

that students had a rating of greatly extent rating particularly on how to resolve common online errors, how to navigate the online library, other resource directory, and online etiquette. This shows that student-respondents were ready to face the online learning challenges by having a high online skills.

Table 5. Internet/Online Skills of the Students

Technological Confidence, Support and Training						
Internet / Online Skills		1	2	3	4	5
13	I can send an email with file attachments.	16	29	30	53	76
		8%	14%	15%	26%	37%
14	I am familiar with online etiquette.	9	30	70	54	41
		4%	15%	34%	26%	21%
15	I know how to surf the internet and navigate the web.	11	29	46	48	70
		5%	14%	23%	24%	34%
16	I can use web browsers (e.g. Internet Explorer, Google Chrome) confidently.	14	18	35	61	76
		7%	9%	17%	30%	37%
17	I know how to resolve common errors while surfing the internet like "page cannot be found" or "connection time out".	7	23	61	83	30
		3%	11%	30%	41%	15%
18	I am comfortable with things like doing searches, setting bookmarks, and downloading files.	16	23	22	55	88
		8%	11%	11%	27%	43%
19	I know how to access an online library and other resource database.	3	37	72	67	25
		1%	18%	36%	33%	12%
20	I know how to use asynchronous tools (e.g. Discussion boards, chat tools) effectively.	2	26	42	69	65
		1%	13%	21%	34%	31%

AWM = 3.65 (Great Exten

As shown in Table 6, the technological confidence, support and training, particularly the software application skills of the LBIT students revealed that majority were proficient on the use of word processing and spreadsheets applications. Respondents knows also download and view learning resource materials such as portable document format (PDF) files and open at the same time several applications. This implies that students now-a-days were digital natives wherein technological applications were in easy access and very user friendly and very evident because it gain an AWM of 3.75 which has a descriptive rating of great extent.

Table 6. Software Application Skills of the Students

Technological Confidence, Support and Training						
Software Application Skills		1	2	3	4	5
21	I understand what PDF files are and can download and open them.	17	21	26	65	75
		8%	10%	13%	32%	37%
22	I am at ease with word processing and use it often.	11	35	30	43	85
		5%	17%	15%	21%	42%
23	I may have multiple apps open at the same time and switch between them.	3	29	80	54	38
		1%	14%	39%	26%	19%
24	I am familiar with the spreadsheet application.	4	17	33	74	76
		2%	8%	16%	36%	37%

AWM = 3.75 (Great Extent)

As shown in Table 7, the technological confidence, support and training, particularly the trainings attended by the LBIT students revealed that majority of the respondents had previously attended online learning sessions and knows how to utilized learning management systems (LMS) such as Microsoft Team, which is the official LMS of the PSU. Another revelation is that most of the student-respondents have a great extent with an AWM of 3.70 on online learning readiness on the areas of prior training on online learning, prior seminar-workshop on online learning activities, and, skills in modifying

the content and assessment using a LMS. This implies students have necessary knowledge on the use of LMS and other online learning tools. This is can be considered acceptable because this was the first semester of implementation of online learning in the PSU System due to COVID-19 pandemic crisis and the whole administration were in transition period in embracing the online learning technology particularly in the undergraduate courses.

Table 7. Training of the Students

Technological Confidence, Support and Training						
Trainings		1	2	3	4	5
25	I have previous experience in e-learning.	1	21	80	67	35
		0%	10%	40%	33%	17%
26	I've taken online lessons.	5	7	19	57	116
		2%	3%	9%	28%	58%
27	I've previously used a learning management framework.	0	33	35	80	56
		0%	16%	17%	40%	27%
28	I am capable of modifying and including content and assessments using an online learning management system.	2	27	88	43	44
		1%	13%	43%	21%	22%
29	I've been to seminars/worksh ops on online learning events.	10	33	68	62	31
		5%	16%	34%	30%	15%

AWM = 3.70 (Great Extent)

As shown in Table 8, the technological confidence, support and training, particularly the social support experienced by the LBIT students revealed that majority of the respondents gain support great from their parents, teachers, and friends and most especially from the school administration on the use of electronic device for online learning purposes. This is very evident on the table because the results shows a little extent with an AWM of 3.46 on the online learning readiness response the students. This implies that the student-respondents were likely

motivated to utilized electronic devices such smartphone for online learning purposes.

Table 8. Social Support of the Students

Technological Confidence, Support and Training						
Social Support		1	2	3	4	5
30	My parents help me to use the internet to read.	26	26	56	63	33
		13%	13%	27%	31%	16%
31	My parents advise me to use mobile devices to help me study.	28	25	73	57	21
		14%	12%	36%	28%	10%
32	My teachers inspire me to use the internet to read.	12	16	41	91	44
		6%	8%	20%	45%	21%
33	My friends inspire me to learn using the internet and electronic resources.	20	21	25	77	61
		10%	10%	12%	38%	30%
34	The school provides us with e-learning resources as well as the ability to read online.	14	25	36	86	43
		7%	12%	18%	42%	21%

AWM = 3.46 (Little Extent)

As shown in Table 9, the Attitudes towards a successful online learner, particularly the study habits of the LBIT students revealed that majority of the respondents often students like to research and look forward to learning new skills. It also emerged that students are always very optimistic, willing to resist distractions and remain on the job while studying, eager to remain in school despite difficult circumstances, and do not require clear lessons to grasp learning materials. This implies that LBIT students were independent and have a positive

attitude towards online learning technologies. This is obvious because it gain an AWM of 2.79 which has a descriptive rating of often.

Table 9. Study Habits of the Students

Attitudes towards a successful online learner					
Study Habits		1	2	3	4
35	My attitude about online learning is that I prepare because I have a big assignment.	14	69	103	18
		7%	34%	50%	9%
36	I like to research or work by myself.	8	54	127	15
		4%	26%	63%	7%
37	I'm excited to learn new things and easily master them.	6	84	90	24
		3%	41%	44%	12%
38	As a student, I am extremely optimistic.	5	69	99	31
		2%	34%	49%	15%
39	I am able to avoid distractions and remain focused while training.	7	65	118	14
		3%	32%	58%	7%
40	I do not put off learning new technology when asked to do so.	11	19	124	50
		5%	9%	61%	25%
41	Despite the difficulties, I am determined to continue my research.	5	73	91	35
		2%	36%	45%	17%
42	I don't need direct lecture to comprehend learning materials.	5	27	123	49
		2%	13%	61%	24%

AWM = 2.79 (Often)

As shown in Table 10, the Attitudes towards a successful online learner, particularly the abilities by the LBIT students revealed that majority of the respondents often with an AWM of 3.03, were able to communicate their thoughts and ideas by writing, were able to quickly communicate with others using online platforms, took responsibility for their own learning, took responsibility for staying in contact with teachers, and were especially self-starters. This means that the student-respondents' contact abilities are effective and appropriate. Communication skills

are essential for online learning and students must receive assistance where they need it. Instructors are willing to assist their students. To connect with the students, use the LMS's communication methods. This may include e-mail, discussion boards, chat rooms, and even text messaging.

Table 10. Abilities of the Students

Attitudes towards a successful online learner					
Abilities		1	2	3	4
43	I am able to express my thoughts and ideas in writing.	2	29	122	51
		1%	14%	60%	25%
44	I am a self-starter.	14	61	112	17
		7%	30%	55%	8%
45	I am able to communicate effectively with others using online technologies.	7	31	92	74
		3%	15%	46%	36%
46	I take responsibility for my own learning.	7	45	77	75
		3%	22%	38%	37%
47	Taking responsibility for staying in contact with my instructor would be easy for me.	7	21	100	76
		3%	10%	49%	38%

AWM = 3.03 (Often)

As shown in Table 11, the Attitudes towards a successful online learner, particularly the motivations of the LBIT students revealed that majority of the respondents often with an AWM of 3.14, were flexibility in time on online learning, highly motivated and enthusiastic, enjoy learning that is both interesting and challenging, able to keep inspired even though the teacher is not online at all times, be able complete the class task even when there are online distractions, and able to complete all the class task. This implies that student-respondents were independent, persistent and well-motivated towards online learning. Online learning requires flexibility, individual's ability, accountability and a certain degree of competence. There are many worthy causes to work hard at college. Students will want a higher degree of personal fulfillment with their career

path. Or maybe it's genuine pride in your achievements. Or maybe you're aiming for a broader variety of prospects.

Table 11. Motivations of the Students

Attitudes towards a successful online learner					
Motivations		1	2	3	4
48	Time versatility is a significant motivator for me to take an online class.	9	33	86	76
		4%	16%	43%	37%
49	I am highly motivated and enthusiastic to take an online course.	12	21	103	68
		6%	10%	51%	33%
50	I love something that is both exciting and demanding, and I am inspired to go beyond and above the minimum criteria of those cases.	5	20	109	70
		2%	10%	54%	34%
51	I will be able to stay inspired even though the teacher was not around at all times.	12	12	115	65
		6%	6%	56%	32%
52	Before beginning a mission, I establish an objective.	5	35	91	73
		2%	17%	45%	36%
53	I would be able complete my work even when there are online distractions (e.g. Friends sending emails, websites to search).	10	17	103	74
		5%	8%	51%	36%
54	I would be able to complete my work even when there are in my home (e.g. Television, children and such).	11	25	100	68
		5%	12%	49%	34%

AWM = 3.14 (Often)

As shown in Table 12, the Attitudes towards a successful online learner, particularly the time management of the LBIT Students also revealed that

most of the respondents are often with an AWM of 3.19, were also able to invest a substantial amount of time and energy on online learning, to plan my time well so that jobs and activities do not pile up, do not have a problem completing tasks on time, and may lose their personal time to complete assignments and readings. This suggests the students-answers have become flexible for online learning. One of the primary advantages of online learning is its flexibility. This can also be a disadvantage for a student who is unable to sustain a regular study routine due to procrastination, or unable to perform assignments without repeated reminders from the teacher. Solid time management skills don't just occur, it is essential to be learned. It's going to support the entire life until it's mastered. It requires time to cultivate healthier habits, such that incentives can be obtained by being well-organized and completing tasks.

Table 12. Time Management of the Students

Attitudes towards a successful online learner					
Time Management		1	2	3	4
55	Given my workload, I am willing to devote considerable time and resources to participating in an online learning program.	6	29	89	80
		3%	14%	44%	39%
56	I am very good at finishing tasks on schedule.	9	14	136	45
		4%	7%	67%	22%
57	I am able to effectively manage my time so that task and projects do not pile up.	7	20	63	114
		3%	10%	31%	56%
58	I am willing to give up personal time to complete tasks and readings.	2	39	94	69
		1%	19%	46%	34%

AWM = 3.19 (Often)

As shown in Table 13, the Attitudes towards a successful online learner, particularly the time usefulness of the online learning revealed that Most of the respondents often with an AWM of 3.09, were also claim that learning can be more efficient with the use of online learning materials, online learning

decreases the time I spend on unproductive tasks, online learning reduces the time I spend on unproductive activities, online learning saves me money I spend on printed learning materials and transportation costs, and online collaboration increases my written correspondence. This implies that student-respondents take the online learning beneficial on their part. For student, the lower costs associated with money spend on modules and fares going physically to schools. With technological developments, nothing is missed or compromised in terms of the standard of education that can be provided. In reality, using multimedia technology will make online learning even more accessible and immersive, offering high-quality education to students.

Table 13. Usefulness of Online Learning

Attitudes towards a successful online learner					
Usefulness		1	2	3	4
59	Learning would be more successful if online learning materials were used.	15	23	101	65
		7%	11%	50%	32%
60	My learning experience will be enhanced by online learning.	9	14	113	68
		4%	7%	56%	33%
61	Learning online allows me to waste less time on unproductive tasks.	9	13	130	52
		4%	6%	65%	25%
62	Learning online saves me money that I would have spent on written learning materials and transportation.	22	27	101	54
		11%	13%	50%	26%
63	My written writing and critical reasoning capabilities develop as a result of online collaboration.	10	11	113	70
		5%	5%	56%	34%

AWM = 3.09 (Often)

CONCLUSIONS AND RECOMMENDATIONS

Internet learning is rising in classrooms and colleges as a result of the pandemic and acknowledges the opportunities it provides to students. When is that phenomenon increasing in popularity, but it could also be the main way for students to attend school, learn in their careers, and take part in continuing training to keep their experience and skills up-to-date and important in today's fast-paced business environment. The main benefit of online learning is that students can undertake their classes at their own time and with their own schedules. Recorded lectures, written materials, webinars and shared online learning software make it convenient for those with an internet connection to access what they need. The research concludes that the majority of respondents are eager for online learning. Despite the positive experience of online learning, the outlook of respondents to online learning is optimistic and leads to student readiness. It is proposed that the Pangasinan State University – Lingayen Campus concentrate on long-term adoption in order to meet the increasing need for online learning and technical adaptation. State University and colleges in the Philippines can also support students through a webinar to help students encourage learning, since the existence of technologies cannot be used without knowledge and acceptance of technologies for online education.

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