

Assessment of E-Learning Readiness of Pangasinan State University

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Abstract—The fast development of web and communication technologies has materially altered several characteristics and ideas of the learning atmosphere. E-learning has begun to move into developing countries and is believed to possess vast potential for governments striving to experience a growing demand for education whereas facing a shortage of skilled lecturers, a shortage of updated textbooks, and restricted teaching materials. With the diverse e-learning implementation in most Universities and Colleges in the Philippines, assessment on the readiness of students was not observed. This quantitative and qualitative research evaluates the readiness of students in implementing e-learning at Pangasinan State University (PSU). Particularly, to identify the factors that could affect students in adopting e-learning for individual development. Moreover, to recognize the attitude of students in implementing e-learning and to distinguish students' perception on implementing e-learning into faculty's perception.

Findings reveal that technology advancement like e-learning is not always expected in IT-related programs but it's more acceptable to adopt in non-IT-related programs. However, students' attitude in implementing e-learning is surprising due to the average result of the survey in recognizing the attitude of students. This means that e-learning at PSU is not ready to be implemented as reflected also in faculty's perception. Since the PSU Urdaneta Campus offers board programs, students and faculty believe that face-to-face learning is still effective in terms of delivering instruction for learning. However, since both students and faculty are active internet users, the majority of the respondents agreed that the internet, specifically utilizing online social networks could be adopted as supplemental e-learning for students.

Keywords— e-learning, readiness, readiness assessment, Philippine e-learning

INTRODUCTION

A various author claims that e-learning will ultimately become the incipient training paradigm, taking its place alongside traditional contact situation training and transmuting the face of training generally [1-3]. Several trends, which include technological developments and the magnification of the Internet, legislation, and business imperatives have expedited the peregrinate to e-learning in the corporate world [1]. However, adopting the technological advancement of e-learning has also brought a number of challenges. Several formidable challenges including the ones due to the following facts [4]:

- The patterns of trade, competition, and technological innovation are changing at an ever-increasing rate.
- There is an exponential growth of knowledge, again, at an ever-increasing rate.
- There are worldwide social concerns for freedom and general quality of life.

- Demand for universal access in respect of opportunities for relevant and quality education — especially for economic survival and advantage

In view of the above-mentioned challenges, for a community or nation to endure and lead, it is essential that at least, its working-age group is provided betokens for mass learning/edification so that it is well-equipped with the latest required skills for sundry economic and astute activities.

Providing education and training to the masses on a gigantic scale, for economic survival and to meet the ever-changing requisites of the society and also to meet the individual's special requirements and tastes, is not possible through the conventional system of education predicated on brick-and-mortar schools, colleges and universities [5]. Distance Education, E-learning, and Virtual Universities may provide the desired solution.

In terms of growth rate in e-learning, the report entitled "The Asia Market for Self-paced e-Learning Products and Services: 2011-2016 Forecast and Analysis" finds that Asia has the highest growth rate for e-learning worldwide and the Philippines placed seventh

[6]. This means that education in the Philippines is not just for few learners who can reach schools but for everyone by utilizing e-learning.

Leading Higher Education Institutions (HEIs) such as the University of the Philippines, University of Sto. Tomas, Ateneo de Manila University, De La Salle University, and other major universities spearheaded the campaign of integrating E-Learning in the Philippines, whether with the utilization of prepackaged programs provided by suppliers or by engendering their own [7].

State Universities and Colleges in the Region also adopt e-learning including the Pangasinan State University with its Open University Systems (PSU-OUS) and integrating Google Classroom for undergrad students. To facilitate the access of more preponderant numbers of people ameliorate student-learning outcomes and has the potential to contribute to perennial development and well-being - which is the ultimate purpose of education. However, geographical location, lack of cognizance and skills to utilize ICT, financial limitations, pedagogical and convivial concerns are key concerns that affect ICT integration in Open and Distance Learning (ODL) [8]. For HEIs, specifically SUCs, to genuinely benefit from E-Learning, an extensive assessment of their readiness should be conducted. Readiness is a powerful factor in successful e-learning implementation [11]. The readiness of students, professors, and technology, is the most significant readiness aspect in this context. Also, the attitude of the people, especially students, is a key factor determining e-learning success or failure [12].

Thus, the objective of this study is to assess the readiness of implementing e-learning in PSU from the student's perspective. In particular, to identify the factors that affect the student in utilizing e-learning, to recognize the attitude of students in the utilization of e-learning, and to determine the relationship between faculty's perception into students.

Pangasinan State University (PSU) is one of the state universities across the Philippines. It was formally founded way back in 1979 and well-known for its many locations around Pangasinan. PSU is mandated to provide advanced instruction in the arts, agricultural, and natural sciences as well as in technological and professional fields. With its new vision to become an ASEAN Premier State University by 2020, the Pangasinan State University is now undergoing through series of changes in infrastructure, facilities, and operation. But to achieve this goal, physical and concrete changes must not only be monitored but also the services it offers.

The PSU Urdaneta Campus is one of the leading campuses of the University with its trademark, "The Home of the Top Notchers". It offers nine-degree

programs under Bachelor of Science (BS) and Bachelor of Arts (AB) courses as follows: BS Civil Engineering (CE), BS Mechanical Engineering (ME), BS Electrical Engineering (EE), BS Computer Engineering (CoE), BS Architecture, BS Information Technology (IT), BS Mathematics (MATH), BS Secondary and Elementary Education (EDUC) and BA in English Language (ABEL).

METHODOLOGY

The study employed quantitative descriptive research through a survey questionnaire and qualitative research utilizing interviews. A total of 335 respondents from the University using random sampling technique was used in data gathering. There are 317 students who participated in the survey and 18 faculty members who participated in the interview from nine departments respectively. The rubrics used were adapted from Mercado [9] and Doculan [10]. Technology skills, Attitude, and Technology Access were dealt with in the aspect of determining the E-Readiness of students. However, for the faculty, an interview was employed to determine their perception on the readiness on the e-learning implementation. Assessment of technology skills of students focused on basic computer skills, basic internet skills, and literacy on software application. However, the assessment tool for students' attitude dealt with areas of the individual learners concerning study habits, abilities, motivation, and time management. Students' technology access was assessed based on the ability to avail of the following resources such as computer, internet connectivity, and other relevant tools. The researcher employed a 5-point scale to differentiate the level of the students' attitude: 1= Not at all, 2=Very least extent, 3= little extent, 4= Great extent, 5= very great extent for each statement. For the results gathered, Table 1 shows the norm of interpretation which was arbitrarily set for data analysis:

Table 1. Data Interpretation

Quantitative Scale	Statistical Limit	Descriptive Equivalent
1	1.00-1.79	Not at all
2	1.80-2.59	Very least extent
3	2.60-3.39	Little extent
4	3.40-4.19	Great extent
5	4.20-5.00	Very great extent

RESULTS AND DISCUSSION

As cited in the study of Mercado [9], access refers to the ability/inability of persons, to avail of, and participate in, a widely available service. A rudimentary

requirement for online learning is the access to an unchanging Internet connection and reliable computer. For online learners and teachers, their computer and Internet access are the main tools of learning/teaching. Table 2 shows the result of Technology Access from the student’s perspective per program.

Table 2. Survey Result In Technology Access

TECHNOLOGY ACCESS								
Programs	Technology Access							
	TA1	TA2	TA3	TA4	TA5	TA6	TA7	TA8
CE	1.00	0.23	0.67	0.31	0.26	0.33	0.77	0.67
ME	1.00	0.41	0.89	0.57	0.68	0.57	0.92	0.81
EE	0.88	0.71	0.50	0.24	0.62	0.29	0.85	0.38
COE	0.91	0.35	0.91	0.35	0.65	0.50	1.00	0.85
ARCHI	0.90	0.57	0.60	0.57	0.80	0.27	1.00	0.47
IT	0.97	0.51	0.77	0.36	0.51	0.54	0.82	0.77
MATH	0.80	0.63	0.70	0.47	0.50	0.90	1.00	0.47
EDUC	1.00	0.46	0.79	0.54	0.36	0.62	0.79	0.79
ABEL	1.00	0.83	0.83	0.40	0.54	0.40	0.83	0.66

LEGEND:

Code Survey Question According To Technology Access

- TA1 1. I own a computer (PC or Laptop)/smartphone.
- TA2 2. I have access to a dependable computer (in school, cafes)
- TA3 3. I have access to a computer with the necessary software installed
- TA4 4. I have access to a computer with a printer installed
- TA5 5. I have access to a computer and internet connection at home
- TA6 6. I have access to a computer in campus or internet cafes with internet connection
- TA7 7. I have access to a computer installed with search engines (ex. Google, Ask) and internet browsers(ex. IE, Firefox, Google Chrome)
- TA8 8. I have a virus protection on my computer.

However, Figure 1 shows the graphical representation of the Technology Access from students’ perspective. It shows that Mechanical Engineering (ME) has the highest mean of 0.73 followed by both CoE and ABEL which has 0.69, MATH has 0.68, EDUC has 0.67, unexpectedly IT has 0.66, ARCHI has 0.665, EE has 0.56 and the least program with lowest technology access is the CE with 0.53 mean.

A. Factors that affects student in utilizing e-learning

This study utilizes five factors to assess the technological confidence, support and training of students in the implementation of e-learning in the University. These factors are: Basic Computer Skills (BC), Internet/Online Skills (IO), Social Application Skills (SA), Training (T) and Social Support (SS). The Table III shows the summary of 5 factors on Technological confidence, support and training.

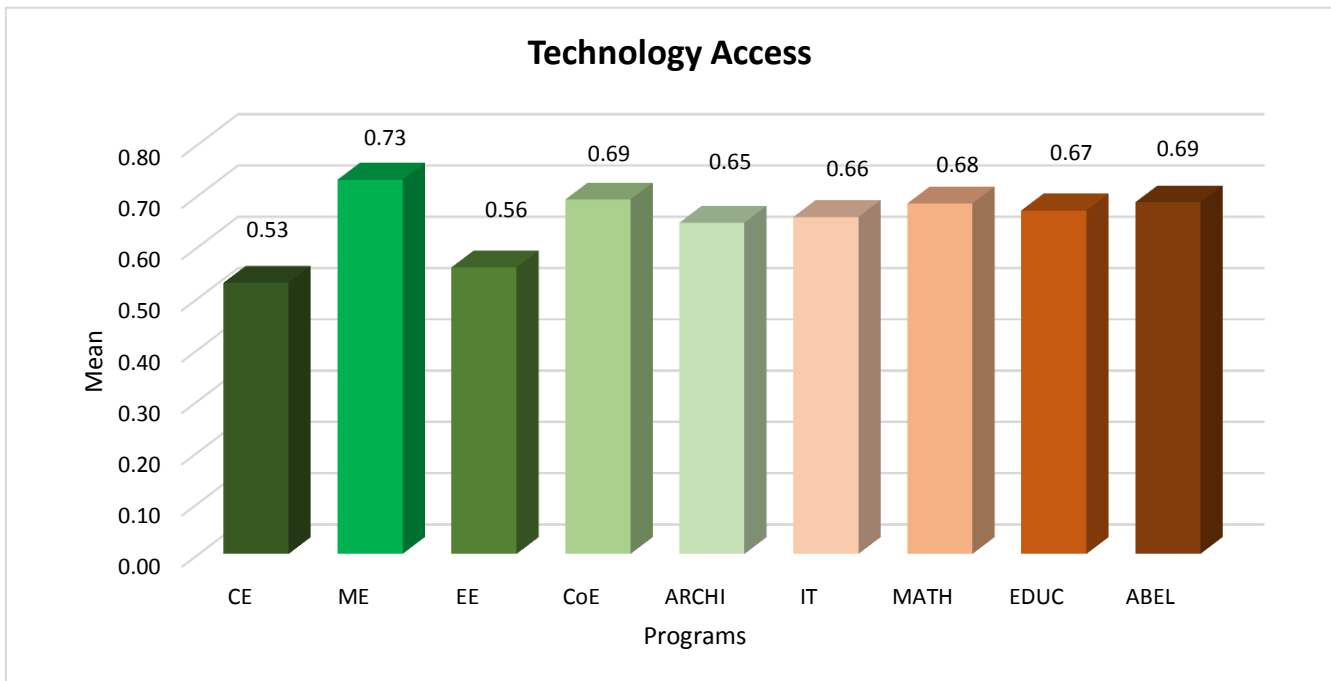


Figure 1. Summary on Technology Access

Another factor is the Internet/Online Skills where surprisingly, ARCHI has the highest mean rating of 4.46 followed by ABEL and IT with 4.40 mean rating which means these 3 programs has the quantitative scale of 5 equivalent to Very Great Extent. However, the rest of the programs (CE, EE, ME, CoE, Math, and EDUC) have a quantitative scale of 4 with the descriptive equivalent of Great Extent.

For the factor Social Application Skills, ARCHI still leads which has the quantitative scale of 4 with the descriptive equivalent of Great Extent with CE, IT, ME, EE, CoE, EDUC, and MATH, respectively. However, ABEL has the lowest mean rating of 2.78 with the quantitative scale value of 3 which means the little extent to the said factor.

Training is the most important factor where surprisingly, ARCHI rules the group with the quantitative scale value of 3 with the descriptive equivalent of Little Extent together with ME, EE, Math, and ABEL. Unexpectedly, among CE, CoE, and EDUC, IT has also the quantitative value of 2 with the descriptive equivalent of Very Least Extent.

Lastly, the Social Support factor where still ARCHI leads with the quantitative scale value of 4 with the descriptive equivalent Great Extent with ME, CoE, IT, EDUC, and ABEL respectively. Yet, CE, EE, and Math have the quantitative scale value of 3 which has the descriptive equivalent of Little Extent.

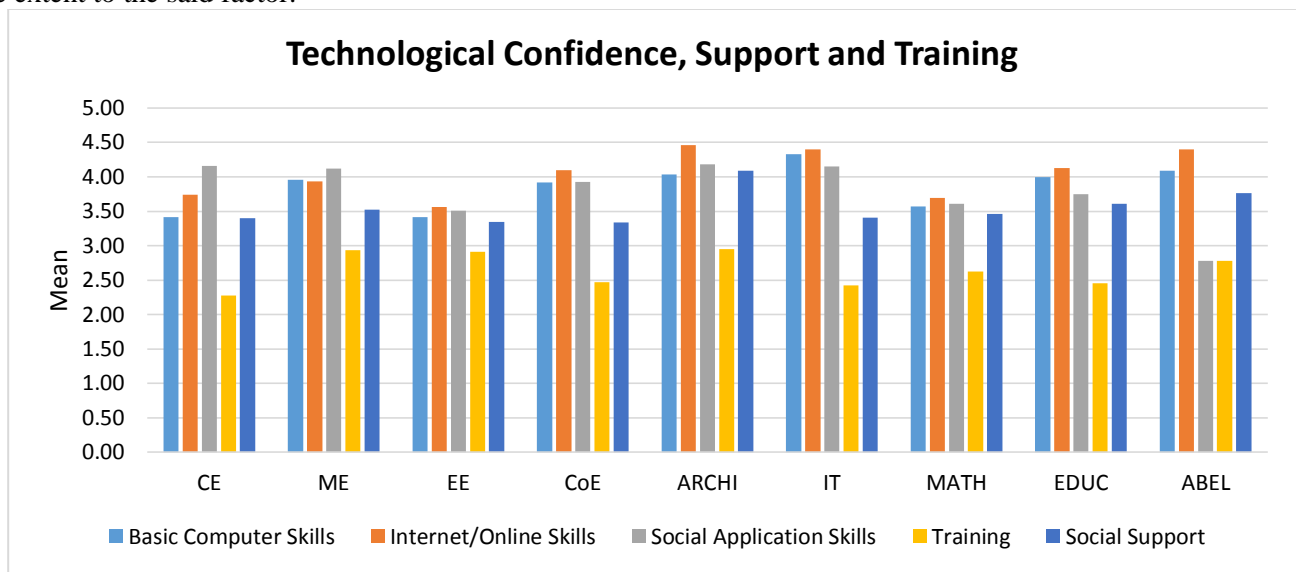


Figure 2. Technological Confidence, Support, and Training

B. The attitude of students in the utilization of e-learning

This study employed the five factors to identify the attitude of students towards the implementation of e-learning in the University. These factors are study habits, abilities, motivation, time management, and usefulness. Table 4 shows the summary of students who participated in the study from 9 different programs.

Basically, study habits may define the interest of the student in the course enrolled. As shown in Table IV, EDUC has the highest quantitative scale of 3.04 with the descriptive equivalent of little extent same with the other programs. On the other hand, abilities may showcase the technical skills of students concerning their chosen degree course. In this factor, ABEL leads with the quantitative scale of 3.1 and descriptive equivalent to a little extent with CE, ME, EE, CoE,

ARCHI, IT, and EDUC. MATH has the lowest quantitative scale of 2.40 with the very least extent abilities towards self.

Another factor is motivation which is hard to earn. But once students are determined to accomplish things, definitely they can do everything. Most of the students from 9 programs are closely motivated with the quantitative scale of 3 which has little extent. But still, MATH has the very least extent motivated with a scale of 2.

Time management is another factor employed in the study. Most students from 8 programs still need to learn how to maximize time properly for they have a little extent of time management with a scale of 3. Consistently, MATH is still at the bottom with the very least extent of time management among the 9 programs.

Lastly, the usefulness of implementing e-learning to the University. ABEL shows the highest interest with the little extent on the use of e-learning in studying. Same with CE, ME, EE, CoE, ARCHI, IT, and EDUC. However, MATH is at the bottom with the very least extent to the use of e-learning.

On the other hand, Figure 3 shows the overall result of students' attitude towards the implementation of e-learning in the University.

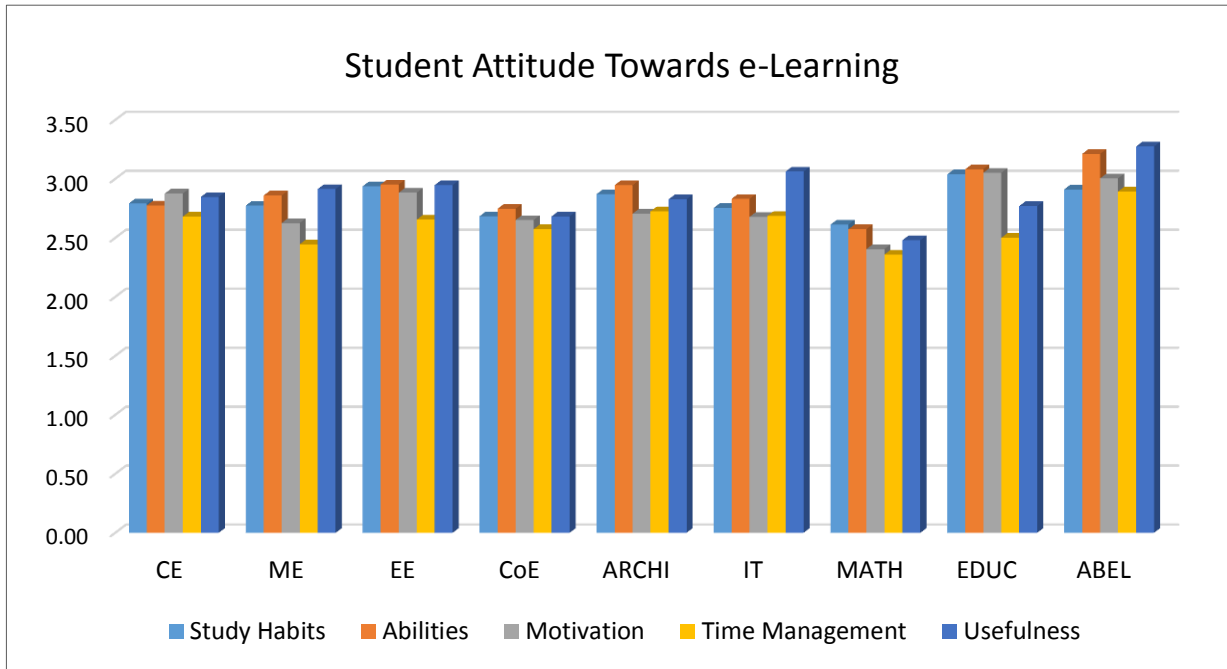


Figure 3. Student Attitude Towards E-Learning

C. To distinguish students' perception on implementing e-learning into faculty's perception.

This study employed qualitative research utilizing interviews with the faculty of PSU-Urdaneta Campus from all the departments. Figure 4 shows that faculty members in the University almost have the same thoughts towards readiness in the implementation of e-

learning. Fifty-six percent (56%) of the faculty thought that they are not yet ready to adopt e-learning and 44% of faculty have positive thoughts about utilizing e-learning in the classroom. However, most of the faculty still recommend face-to-face way of teaching methodology where they find it the most effective way of learning.

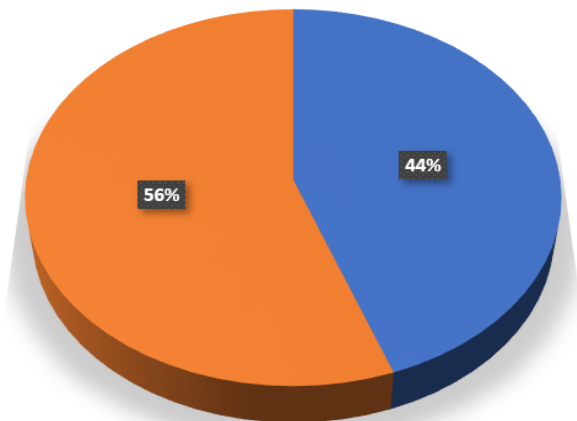


Figure 4. Faculty Members Perception towards E-learning Implementation

CONCLUSIONS AND RECOMMENDATION

This paper discusses the readiness of students in the implementation of e-learning. It was found out that most students in Pangasinan State University utilize technology to access learning materials. However, it was also found out that non-technical students like under the engineering programs are more exposed to technology than technical students like under the IT program. Another finding shows that the identification of factors that affects students to implement e-learning is the Internet/Online Skills. Moreover, the basic computer skills also show that students nowadays are exposed to various devices even without training. With that, findings also support that most students lack the training that causes them to still adopt the face-to-face

method where they are used to. Attitude is very important in all matters. The behavior of students towards learning affects their performance. Finally, faculty perception towards the implementation of e-learning shows that they're not closing doors for innovation. With the majority of the faculty participated in the study, along with students, e-learning still finds its way to be implemented for it is a must needed.

Other factors and readiness of the University will be for future study. Moreover, more factors for the faculty will be the basis for future assessment. Also, identifying the strengths and weaknesses of traditional education at universities in the Philippines and matching these with the strengths and weaknesses of virtual education will lead to a better understanding of threats and opportunities in implementing e-learning.

One of the appropriate approaches to success in implementing this system includes familiarizing students with the concept of e-learning and the advantages and disadvantages of this type of learning before they enter the e-learning system. Maybe not now, but tomorrow will be a better learning environment for everyone by embracing technology in preparation for the Industrial Revolution 4.0.

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