E-learning Readiness of the Ifugao State University

Jo Ann D. Doculan
Ifugao State University
Nayon, Lamut, Ifugao, Philippines

Abstract—**This study is concerned at assessing the level of preparedness of the Ifugao State University towards e-learning along technology access, skills and attitudes of learners and teachers, and management. It will also analyze if the factors age, gender, cultural affiliation and accreditation status have an effect on e-learning readiness of teachers, learners and the institution as a whole. The result would be a deciding factor whether to implement e-learning or determine and identify areas in which they need to improve to execute a successful e-learning initiative. Finally, this study presents intervention strategies to an improved e-learning readiness.**

The outcomes from this study would be of particular importance to higher education decision makers at the institutional and the national levels as well as to educators especially so that the Commission on Higher Education (CHED) mandates the change of curriculum to Outcomes-Based Education in all tertiary schools in the Philippines.

I. INTRODUCTION

Learning institutions are currently integrating technology into their teaching, administration and research work because of its usefulness [1], particularly in the education sector. With continued advances in web-based learning, colleges and universities strive to meet the needs and interests of students, faculty, and staff [2].

The evolution of technology changed the way we teach and learn. Learning nowadays is either supplemented, complemented with online learning or e-learning components. The benefits of e-learning are numerous. For one, it offers extra opportunities on onsite education and training, for people who would otherwise have limited access to education, and educators who are physically challenged. These opportunities could be pedagogical, social, cultural and economic. Another benefit is that it provides educators with a new paradigm on course development. It enables organizations to transcend distances and other organizational gaps by providing a cohesive virtual learning environment [3], providing modern learning that is more learner-centered than lecturer-centered [4]. Additionally, it increases productivity [5] while enhancing independent learning [6]. This is further concluded that e-learning brings changes in pedagogical strategies and ultimately improves the efficiency of teaching and learning [7], and was agreed by [8].

Given these benefits, e-learning has become a priority for governments and educational institutions who started capitalizing on the internet as a learning tool. However, benefits of eLearning can only be experienced if the organization is deemed prepared. Before e-learning can be implemented and benefit from it, learning institutions should first assess their e-readiness to integrate the technology [9].

Reference [10] defined e-learning readiness as "the mental or physical preparedness of an organization for some e-learning experience or action". E-learning readiness assessment helps an organization to design e-learning strategies comprehensively. Learners and teachers must also be "e-ready" so that a coherent achievable strategy, tailored to meet their needs, may be implemented. E-learning readiness assessment provides key information to organizations willing to supply e-learning solutions which can cater for the specific needs of each learning group [11].

Since the Philippines' use of Information Communications Technology (ICT) is still in its infancy, there are numerous initiatives taken by the Philippine government to introduce ICT in the education sector. The ICT for schools or i-School program was created to spearhead and ensure digital literacy all over the country. This is strengthened with Senate Bill No. 909 of Senator Angara in 2010 which seeks to infuse computer education in school curriculum in primary schools. The Department of Science and Technology (DOST)'s PREGINET and lately the iGovPhil were created to provide internetworking among government agencies especially schools and provide internet connectivity. Recently, DOST has launched an e-library to provide online resources to government agencies and educational institutions. The Technical Education and Skills development Authority (TESDA) encourages the use of online course-wares and e-services. The Philippines School-net, E-Turo, FIT-Ed, Philippine Business for Sound Progress are projects created and supported by the government to increase digital literacy and eliminate digital gap. While majority of public schools still lag behind in using e-learning, private and financially

capable institutions are gearing towards online course delivery whether full or blended. The University of Santo Tomas(UST) uses its ILeap, Ateneo de Manila, AMA computer and Dela Salle Universities have been using e-learning platforms. Some state higher education institutions especially with SUC level four(4) are ready and have implemented e-learning platforms already. The University of the Philippines Open University is the first government higher institution which embarked on online course delivery and have been reaping positive outcomes. Recently, the Information Technology and E-commerce Council(ITECC) designated UPOU as e-learning competency center. The goal is for institutions who plan to implement e-learning programs to have a means of getting certified on the instructional design skills for e-learning. In 2012, CHED Memorandum Order No. 46, mandated all Philippine universities to transform curriculums to Outcomes-Based Education, promoting learner-centered learning, which is the essence of e-learning. This initiative is promising but issues arise on the readiness of state universities and colleges in adopting such change.

The Ifugao State University (IFSU), a provider of education to the marginalized sector and Indigenous Peoples (IPs) of the province and its neighboring provinces, will not be an exception to using ICT in its services and instruction. Thriving on a meager budget, the culture-rich university has embraced the use of technology in most transactions and also in the delivery of some cross-border courses. The use of ICT is in line with the school's Vision Mission Goals and Objectives(VMGO) Goal No.4 Objective No. 1 which is "to continue modernizing the College. Though Basic Computer subjects are included in all baccalaureate courses, this would not ascertain the learners' readiness to an online learning environment. Readiness in terms of technology or infrastructure, skills and attitudes of teacher and learner and the support of the management for its implementation are factors, too and should be measured.

This study is concerned at assessing the level of preparedness of IFSU towards e-learning. It will also analyze if the factors age, gender, cultural affiliation and accreditation status have an effect on e-learning readiness of teachers, students and the institution as a whole. The result would be a deciding factor whether to implement e-learning or determine and identify areas in which they need to improve to execute a successful e-learning initiative. Finally, this study presents intervention strategies to an improved e-learning readiness. The outcomes from this study would be of particular importance to higher education decision makers at the institutional level and the national level as well as to educators and business organizations in the area of e-learning.

II. METHODOLOGY

The study will employ a questionnaire adopted from [12]. It is a four-model assessment tool measuring technology access, student skills and attitude, teacher skills and attitude, and institutional readiness. Questionnaires will be administered using stratified random sampling to students, teachers and administrators of the three campuses. A correlation analysis will also be applied to determine if the factors such as gender, age, accreditation status and cultural affiliation has an impact on e-learning readiness.

Conceptual Framework

Fig.1 depicts the conceptual framework of the study. Measuring the level of e-learning implementation readiness require clear understanding of how key e-learning environmental components interact. The components of e-learning implementation to be measured are learners, teachers, technology and institution. It also looks into the accreditation level of courses and its impact on e-learning readiness. School management must always be ready to support e-learning initiatives. Intervention strategies will be introduced based on the extent of the e-learning readiness assessment which will be classified as pedagogical, technical and administrative.
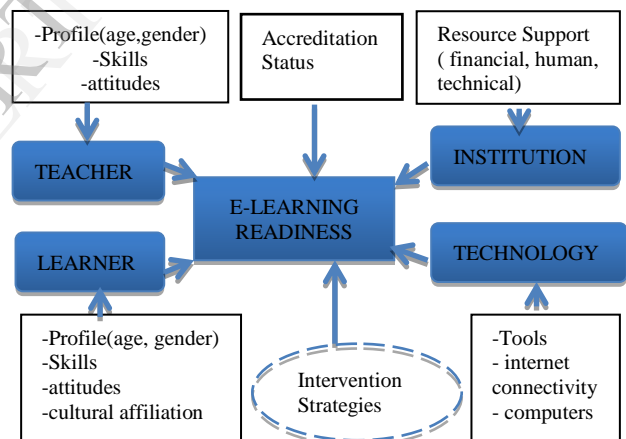

Fig. 1. Conceptual Framework

III. SURVEY RESULTS AND ANALYSIS

A. Demographic Profile

The teachers' respondents comprised 37.9 percent of the total teacher's population of 166 where of 55.5 percent are females and 44.4 percent are males. There were 30.1 percent aged between 20-29 years, 43.7 percent were between 30-39, 18 percent were between 40-49 years, and 8.2 percent were between 50-59 years. Among the learners, there were 1,672 first and second year tertiary students who participated in the study which is 30.4 percent of the total student population. Females comprise of 71.5 percent and 28.4 percent are males. Majority belong to three ethnic tribes of Ifugao namely: Tuwali(45.6%), Ayangan(31.8%),and Kalanguya(6.8%). Other students belong to the Ilocano group(12%), Gaddang(.7%)and Igorot(.4%).

B. Technology Access

Results show that the province and the school still need to improve on ICT infrastructures. Positively, students are willing to have computers and internet connections at home (60.5%) and that despite financial difficulties, they are willing to learn technologically by frequenting internet cafes(54.7%). Teachers on the other hand, have full access to technology. They own computers (92.1%), have necessary software installed (84.1%), access to computers with internet(65%), with browsers(95%) and virus protected(87.3%).

C. Technology Skills

Table I shows that students possess the basic computer skills (76.16%). Unfortunately, learners still need to improve on their internet skills (47.46%) especially in downloading PDF files and in using file compression tools. Also, trainings are needed to introduce and expose learners to e-learning because 19.78 percent of them have not attended seminars related to e-learning and have not joined online discussion forums(16.02%) which are essential to e-learning.

TABLE I.   STUDENT TECHNOLOGY SKILLS

Technology Skills	Yes(f)	No(f)
Basic computer skills	76.16	23.84
Internet Skills	47.46	52.54
Software Application	39.69	60.31

Teachers on the other hand, are more technically skilled and it is evident that they have the expected level of readiness to perform most of the basic computer operations required to start e-learning implementation, which can be gleaned in Table II. Unfortunately, only a few of them have attended online classes (25.40%), skilled in adding and modifying online course contents(30.16%), and have attended seminars on online learning(25.40%). Also, they need to train more on the use of software productivity tools.

TABLE II.   TEACHER'S TECHNOLOGY SKILLS

Technology Skills	Yes	No
Basic computer skills	77.77	22.23
Internet Skills	79..10	20.9
Software Application	56.88	43.12

As one of the research objectives, the study investigated the students' attitude towards e-learning along study habits, abilities, motivation and time management. Students were asked to respond to 25 questions that measure their attitudes. Teachers' attitudes too, were studied along teaching styles and strategies (15 questions), Abilities (14 questions), motivation (7 questions), and time management (4 questions). The questionnaires were on a 5–point Likert Scale ranging from 'never (1)' to 'always (5)'. Mean were computed to determine the trends in the responses and compared to the generic scale below:

TABLE III.   THE SCALE AND INDICATION OF MEANS

Means	Scale
0 - 2.6	not ready, needs a lot of work
2.6 - 3.4	not ready needs some work
3.4 - 4.2	Ready but needs a few improvements
4.2 - 5	Ready to go ahead

Results show in table IV that students possess good study habits(4.21) and time management(4.27) which indicate that they are ready for e-learning. However , they need to have few improvements on their abilities and motivation.

TABLE IV.   ATTITUDES TOWARDS CHARACTERISTICS OF SUCCESSFUL ONLINE STUDENT

Dimensions	Mean	Description
Study Habits	4.21	Ready to go ahead
Abilities	3.41	Ready but needs a few improvements
Motivation	4.14	Ready but needs a few improvements
Time Management	4.27	Ready to go ahead

Table V presents that teachers are ready in terms of teaching styles and strategies (4.64) and are good motivators(4.32). These are the most important factors in online teaching to be able to encourage students to engage successfully in the course. However, they need to have a few improvements on their abilities and time management.

TABLE V.   ATTITUDES TOWARDS CHARACTERISTICS OF SUCCESSFUL ONLINE TEACHER

Dimensions	Mean	Description
Teaching Style and Strategies	4.64	Ready to go ahead
Abilities	4.1	Ready but needs a few improvements
Motivation	4.32	Ready to go ahead
Time Management	3.96	Ready but needs a few improvements

The support of the management to e-learning implementation is very important. It can be gleaned from Table VI that 80.83 percent of the administrators of the university commit support to e-learning initiative in terms of policies and provision of instructional support. However, only 54.16 percent commit resource support especially financial mainly because state universities in the Philippines have limited budgets and still source out grants from funding agencies.

TABLE VI.   INSTITUTIONAL READINESS OF IFSU

Institutional Readiness	Yes	No
Administrative Support (commitment, Policies, and Instructional)	80.83	19.17
Resource Support (Financial, Human, Technical)	54.16	45.84

Furthermore, the study examines the relationship between age, gender, accreditation level and ethnic affiliation along technology access and skills of learners and teachers. The results of this analysis are summarized in Table VII. According to the results, gender and ethnic affiliation are not statistically significant in terms of technology access. It also shows that accreditation level of programs is strongly significant to technology access and technology skills of learners and teachers. It strongly suggests that the higher the accreditation level of a program, there is greater skills and access to technology by the learners and teachers. It is obvious that age too is significantly related to technology access and skills. It also shows that gender is significantly related to technological skills.

TABLE VII.   CORRELATION RESULTS

Factor	Variables	Coefficient	p-value	Remarks
Tech. Access	Gender	-0.042	0.130	Not Significant
	Age	0.146	0.000	Significant
	Accreditation Level	0.107	0.000	Significant
	Ethnic affiliation	0.012	0.668	Not Significant
Tech. Skill	Gender	0.114	0.000	Significant
	Age	0.080	0.005	Significant
	Accreditation Level	0.132	0.000	Significant
	Ethnic affiliation	0.031	0.270	Not Significant

IV. CONCLUSION

The result of the study has proven that the Philippine government especially the university itself has a lot to work to fully achieve a successful e-learning implementation. The Philippines has yet to continue providing digital literacy programs to bridge the digital gap. In the study, it may be concluded that teachers, students and administrators are moderately ready for e-learning. Further, the study had shown that policy makers and other education stakeholders have a crucial role to play in enhancing greater engagement in a technology-driven teaching-learning environment. There is need for change of mindset especially for administrators that ICT infrastructure is not the only indicator for e-learning adoption, but how ready the learners and teachers are able to use them in an enabling environment. Otherwise, regardless of positive effects of technology on student learning, technology may remain limited in use and it is unlikely to be an effective instructional tool unless e-learning implementation readiness is given priority.

V. RECOMMENDATIONS

Based from the result of the study, the researcher recommends the following intervention strategies to an improved e-learning implementation:

A. Technology Access

- Develop LMS and proper ICT infrastructure required for e- Learning.
- Provision of wireless and connected networks should be a priority for funding.
- Encourage students to once in a while visit paid internet cafes.
- Use of Wireless Mobile Devices (WMD) for learning be encouraged.
- Technical support to learners and lecturers should be facilitated.
- Increase of network bandwidth should also be prioritized to accommodate the growing number of network users.

B. Technology Skills

a. Teachers

- Needs assessment should be conducted to identify training needs.
- The institution should encourage faculty who are resistant to new technologies to attend digital literacy and online teaching trainings.
- There should be continuous provision of computer trainings.
- Up-skilling all teaching staff in eLearning capability is a priority.

C. Attitudes

a. Teachers

- The institution should encourage faculty to consider innovative methods to enhance student engagement and promote learning outcomes.
- There should be in place an IT teaching-learning program for faculty development to boost digital confidence.
- Continuous training programs should be encouraged and put in place with emphasis on e-learning benefit and outcomes.
- Teachers should supplement or complement teaching with e-learning.

b. Students

- Introduce e-learning positively.
- Subject students to e-learning trainings giving emphasis on student-centered learning.
- Supplement teaching with online resources and complement teaching with online activities.
- Provide creative solutions for students' access to online tools via WMD
- Mechanisms should also be put in place to motivate learners to pursue online courses.
- Online communication and discussion should be encouraged such as the provision of discussion boards and chat rooms, groups etc.

D. Institution

- A training plan should be developed to build capacity of staff in e-learning management, instructional design, tutoring, content development and quality assurance.

- Strategies should also be put in place to orient staff and learners on the positives to embracing e-learning.
- E-learning strategy should be developed and linked to the overall strategy and goals.
- Work plans and training plans should be developed and aligned to strategic plans.
- Funds should also be allocated for efficient and effective operationalization of e-learning.
- Conduct an e-learning implementation pilot test.
- Re-assess ICT infrastructure and personnel to determine areas to improve.
- Assess LMS functionality and identify areas to improve.
- Funding agencies should be collaborated with for funding concerns.

It is further recommended that another assessment be conducted to determine if the intervention strategies did improve the university's e-learning readiness.

Finally, future researchers develop another assessment tool which fully determines e-learning readiness of the university.

REFERENCES

[1] Ouma, G.,Awuor, F., and Kyambo, B., E-learning Readiness in Public Schools in Kenya, Europen Journal of Open, Distance Learning, ISSN 1027-5207, 2013.

[2] Lion, R. and Stark, G. A Glance at Institutional Support for Faculty Teaching in an Online Learning Environment. Educause Quarterly. ISSN 1528-5324 . Volume 33, Issue 3, 2010.

[3] Nagarajan, P. and Wiselin, J., Online Educational System (e- learning) International Journal of u- and e- Service, Science and Technology, Vol. 3, No. 4, 2010.

[4] Lee, B. C., Yoon, J. O. and Lee, I. Learners' acceptance of e-learning in South Korea: Theories and results. Computers & Education, 53(4), 1320-1329, 2009.

[5] Chen, H. J. Clarifying the empirical connection of new entrants' e-learning systems use to their job adaptation and their use patterns under the collective-individual trainingenvironment. Computers & Education, 58(1), 321-337.M, 2012.

[6] Chen, H. and Kao,C. Empirical validation of the importance of employees' learning motivation for workplace e-learning in Taiwanese organisations. Australasian Journal of Educational Technology, 28(4), 580-598,2012.

[7] Cai, H. E-learning and English teaching. IERI Procedia, 2, 841 – 846. Elsevier B.V. 2012.

[8] Akhondi, A. Taking advantage of virtual learning in improving the teaching process -learning from the perspective of university professors in Iran at year 2011.Procedia - Social and Behavioral Sciences, 28, 448 – 450, Elsevier Ltd. 2011.

[9] Saekow, A. and Samson, D. E-learning Readiness of Thailand's Comparing to USA's. International Journal of e-Education, e-Business, e-Management and e-Learning, Vol. 1, No. 2, June, 2011

[10] Borotis, S. and Poulymenakou, A. Critical Success Factors for E-Learning Adoption: Handbook of Research on Instructional Systems and Technology. Greece: IGI Global, 2008.

[11] McConnell, D. Examining Conceptions of E-learning in an Intercultural Sino-UK Context. Paper presented at the Proceedings of the 6th International Conference on Networked Learning, Halkidiki-Greece.2008.

[12] Mercado, C. Readiness Assessment Tool for an E-Learning Environment Implementation , Special Issue of the International Journal of the Computer, the Internet and Management, Vol.16 No. SP3, December, 2008.