The Using of e-Learning to Develop Digital Citizenship and Learning Achievement in Information Technology

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Abstract—The objectives of this research were: 1) to develop digital citizenship and learning achievement in Information Technology of Suan Dusit Rajabhat University's students by using e-learning and 2) to finging correlation between digital citizenship and learning achievement. The sample consisted of 49 undergraduate students of Urban Environment and Industry who registered in the Information Technology, course of the 2012 academic year. The research instruments were the questionnaire for digital citizenship and a learning achievement test through e-learning of Suan Dusit Rajabhat University. Data were analyzed by using frequency, percentage, mean, standard deviation, t-test dependent and Pearson's Product Moment Correlation Coefficient. The results of the study were as follows : 1) digital citizenship and learning achievement could be used e-learning in Information Technolog for student of Suan Dusit Rajabhat University, development of digital citizenship increased 15.85 % and development of learning achievement increased 23.37 % 2) the correlation between digital citizenship and learning achievement were rather high level. (r = 0.79)

Index Terms—E-learning, digital citizenship, learning achievement, information technology.

I. INTRODUCTION

E-learning is a form of learning by using electronic media, using online tutorials and activities through a network. Online learning using the computer as a tool to reach their goals more easily and faster [1]. E-learning is a hallmark of learning, the learner can access to content anywhere, any time and for creating content that makes it look like something created that is constantly recycled, endless recursion and various operations. The e-learning system allows the evaluation of the test knowledge. Online learning is one way of developing people. The students can learn anything , anywhere and any time. The students will enjoy learning with an independent and flexible e-learning system to decrease the time to learn more than 50 percent, and cost less than traditional education and training to 30 to 60 percent.

Since 2011, The educational in Thailand had the critical quality. It can be seen from the indicators of education and exams several times. The student, who was a product of the study is to learn the potential to change the world and improve themselves continuously [2]. Therefore, the need to reform education reform paradigm. From the teacher as the knowledge, they will be changed to help the learning process,

interaction between instructor and students is that "learning is more important than knowledge" and "teachers are not given the knowledge," but "the design process, learning to learn together with children and youth". So what should be done is a new paradigm to develop children and young people as lifelong learning. To learn what it's up to the individual context. But is that everyone should have? The ability to learn throughout life and development continues.

"Digital Citizenship" is one of the educational technology standards proposed by the International Society for Technology Education (ISTE) to allow students to demonstrate their understanding of social issues, culture and humanity. Related to information technology. And conduct themselves in an ethical and legal channel for legal information safely and responsibly. Which are important skills in learning in the 21st century learning skills, thinking and knowledge of ICT [3], [4].

Suan Dusit Rajabhat University, has been used to study a wide variety of information technology, especially in the current e-learning and the Learning Management System (LMS) Moodle for management education course online. The technology already exists to enhance teaching and learning. Response to learning that allows students to take advantage of the learning or acquiring complete. Learning to network resources. Can be obtained from the student's screen, entering the classroom, e-book, bringing the Gospel and images were presented to the review [4]. Assessment can be done as well as seeking additional documents. It said that the introduction of e-learning into the curriculum in order to develop a citizen's digital learners can make human resources with skills in information technology is critical to the development and progress towards the ASEAN Community.

II. MATERIALS AND METHODS

A. Subject Selection and Criterions

The sample group to this study consisted of 49 undergraduate students enrolled in the Urban Environment and Industry who registered in the Information Technology, course of the 2012 academic year.

B. Instrument

The research instruments were as follows:
1) the questionnaire for digital citizenship with 5 level that perform highest, high, medium, few and least level
2) a learning achievement test for Information Technology.

C. Research Design

One group pretest-posttest design was research design in this study

$$T_1 \; X \; T_2$$

X   :   Experiment or Treatment
T$_1$:   Pretest
T$_2$:   Posttest

D. Statistic

The statistical package was uses for finding frequency, percentage, mean, standard deviation, t-test dependent and Pearson's Product Moment Correlation Coefficient.

The meaning of digital citizenship as follows:
4.21 – 5.00 was the digital citizenship level 5
3.41 – 4.20 was the digital citizenship level 4
2.61 – 3.40 was the digital citizenship level 3
1.81 – 2.60 was the digital citizenship level 2
1.00 – 1.80 was the digital citizenship level 1

E. Methods

The experimental group will learning by using e-learning for 6 weeks, the steps as follows:
week 1: Providing learning and orientation
week 2: Set learners and breaking the ice through online (e-Profile, web board and forum)
week 3: Offer knowledge and processing the learning activity (online content, resource learning and website)
week 4: Review knowledge (Blog, online text or chat)
week 5: Knowledge application (Blog)
week 6: Evaluate

III. RESULTS AND DISCUSSION

A. Digital Citizenship

Development of digital citizenship could using by teaching with e-learning. The students' digital citizenship before and after undertaking e-learning is shown in Fig. 1.
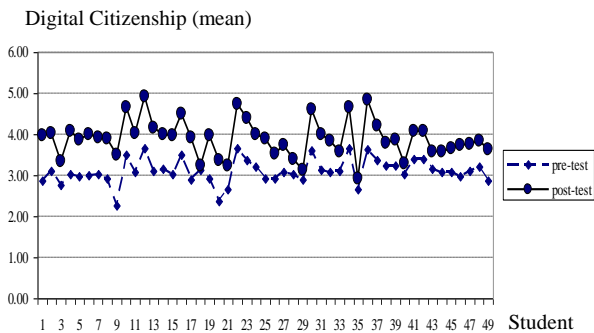

Fig. 1. The digital citizenship before and after undertaking e-learning.

The comparison of the digital citizenship of the experiment between the pre-test and post-test at the significance level of 0.05. The digital citizenship before and after undertaking e-learning were different, the development of digital citizenship were high level. The mean was 3.90, representing 15.85 percent of overall students are found to have higher digital citizenship. The compare students' teamwork skill before and after undertaking teaching is shown in Table I. The teamwork skill of experimental sample after undertaking teaching was 4 levels.

B. Learning Achievement

The learning achievement could using by teaching with e-learning. The learning achievement is shown in Fig. 2. The learning achievement before and after undertaking e-learning were different, the development of learning achievement were representing 23.37 percent of overall students are found to have higher learning achievement .The mean of 11.24.

TABLE I: THE DIGITAL CITIZENSHIP PRE-TEST AND POST-TEST

| Item	Pre-test			Post-test			t-test
	$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level	
1. Understanding of social issues	3.08	0.46	3	3.90	0.55	4	0.00*
2. Understanding of cultural issues	3.09	0.46	3	3.88	0.60	4	0.00*
3. Understanding of the human issues	3.15	0.38	3	3.95	0.50	4	0.00*
4. Ethical and legal channel	3.08	0.38	3	3.82	0.47	4	0.00*
5. Use of the right technology and lifelong learning	3.09	0.31	3	3.91	0.48	4	0.00*
Over view	**3.10**	**0.29**	**3**	**3.90**	**0.45**	**4**	**0.00***

*$p < 0.05$
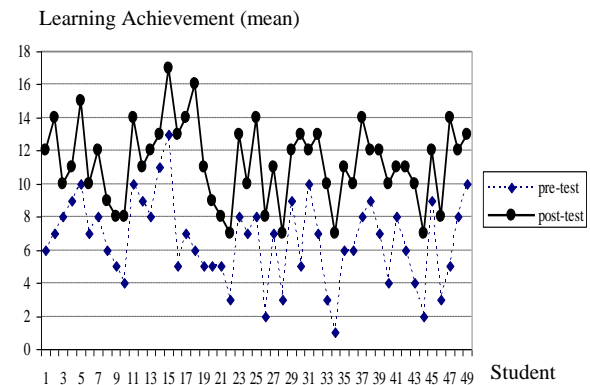
Fig. 2. The learning achievement before and after undertaking e-learning.

The compare students' learning achievement before and after undertaking e-learning shown in table II, their post-test scores on learning achievement were significantly higher than pre-test scores at .05 significant level.

TABLE II: THE LEARNING ACHIEVEMENT PRE-TEST AND POST-TEST

Testing	Mean	S.D.	t	df	Sig.
Pre-test	6.57	2.57	17.34	48	0.00*
Post-test	11.24	2.43			

*$p < 0.05$

TABLE III: THE CORRELATION BETWEEN DIGITAL CITIZENSHIP AND LEARNING ACHIEVEMENT

Digital Citizenship		Learning Achievement		*r*
Mean	S.D.	Mean	S.D.	
3.90	0.45	11.24	2.43	0.79

*$p < 0.05$

C. The Correlation

The correlation between digital citizenship and learning achievement were at high level, shown in Table III.

IV. CONCLUSION

The development of digital citizenship could using by teaching with e-Learning. The digital citizenship of experimental sample after undertaking e-Learning was 4 level. The compare students' learning achievement post-test scores on learning achievement were significantly higher than pre-test scores at .05 significant level. The correlation between digital citizenship and learning achievement were at high level. Digital citizenship are important for digital life. You want to get the best out of using the internet and keep yourself and others safe and healthy in an online world. Use these materials to learn what it takes to become a positive digital citizen [5]. Digital citizenship, help learner make great decisions so they can take advantage of the powerful technology that fills their lives. The learner wants to explore for digital life, enjoy, communicate, and create. So they are protected or they know how to protect themselves. If the learner is going to thrive with digital media or online digital, they must balance the negative with the positive, privacy with protection and know how to be safe and responsible before letting them loose. The learner need to see both the possibilities and the perils so they can act responsibly and seize all that is wondrous and have it enrich their lives as people and citizens [6].

APPENDIX

The e-learning of Suan Dusit Rajabhat University is shown in Fig. 3- Fig. 6.
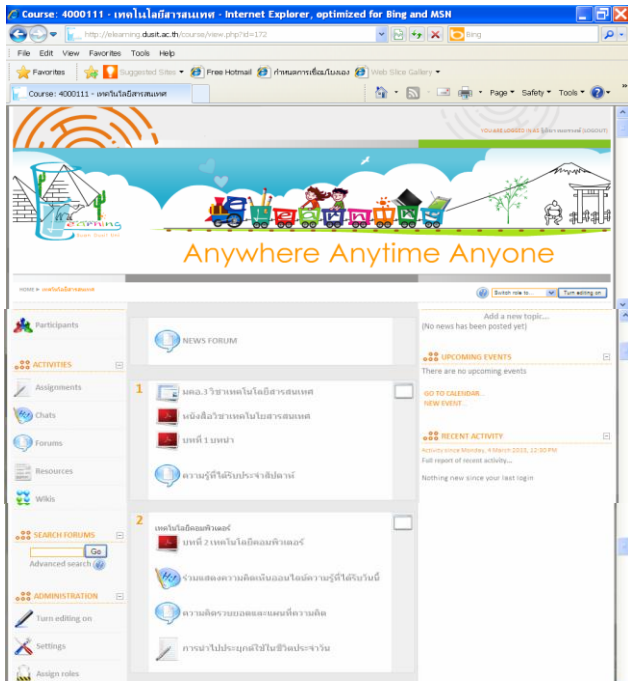

Fig. 3. The e-learning of Suan Dusit Rajabhat University.
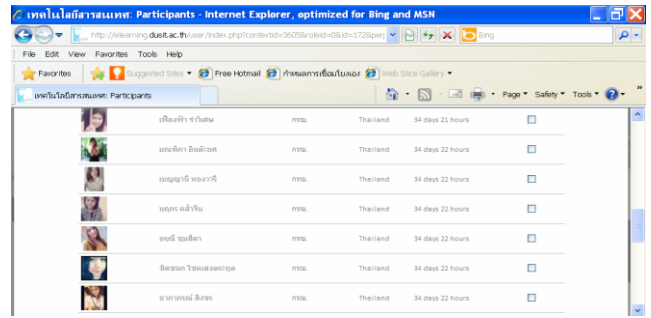

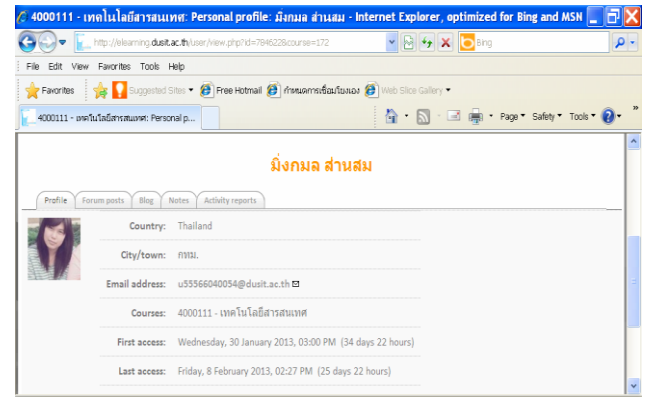Fig. 4. The participants of e-learning.

Fig. 5. The personal profile of e-learning.

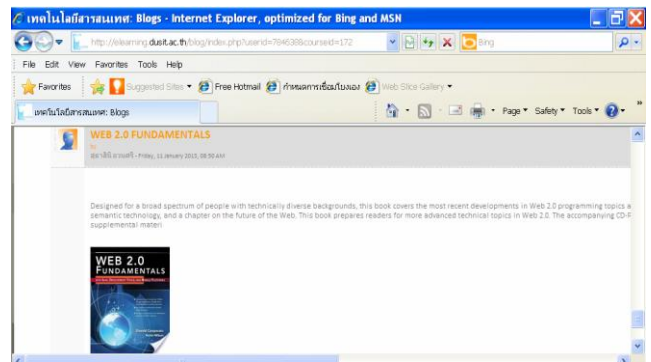
Fig. 6. The Blogs of e-learning

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