Development of Electronic Portfolio for Blended Supervision in Professional Experiences on Computer by Smart Phone Device in Rajabhat University

Amnat Sawatnate
Division of Information and Communication Technology for Education
Faculty of Technical Education
King Mongkut's University of Technology North Bangkok, Bangkok, Thailand
E-mail: amnats.cru @gmail.com

Pallop Piriyasurawong
Division of Information and Communication Technology for Education
Faculty of Technical Education
King Mongkut's University of Technology North Bangkok, Bangkok, Thailand
E-mail: palloppi@gmail.com

***Abstract*— This research aim is to develop electronic portfolio for blended supervision in professional experiences on computer by smart phone device in Rajabhat University (ePORT for BSPEC) which included development and evaluation of ePORT for BSPEC. The sample group consists of 10 experts in arranging information technology, computer technology and education technology were selected by purposive sampling. The research tools are ePORT for BSPEC and the efficiency evaluation form. The statistical methods used in the research are arithmetic mean and standard deviation. This research findings are the result of development ePORT for BSPEC with all4 modules: student, teacher, mentor and administrator. The result of evaluation ePORT for BSPEC has effectiveness in the good level.**

Keywords- ePortfolio, Electronic Portfolio for Blended Supervision in Professional Experiences on Computer, Efficiency of ePORT for BSPEC

I. INTRODUCTION

The Rajabhat University is the institution of higher education in Thailand. Course of the Professional Training Course, which is the last year before graduation [1]. The course is a course that is important for you to work. In their study And practice of collaboration within the organization. The Practice The key elements include the student, adviser supervisor and mentors However, there are many students for supervision of professional experiences thoroughly. Implementation of an electronic portfolio to apply for training experience. Training will help the process that needs to be submitted. The Counselling Training Event Logging Achieved even better.

II. RESEARCH OBJECTIVES

1) To develop Electronic Portfolio for Blended Supervision in Professional Experiences on Computer by Smart Phone Device in Rajabhat University.

2) To evaluate Electronic Portfolio for Blended Supervision in Professional Experiences on Computer by Smart Phone Device in Rajabhat University.

3) To assess the satisfaction of Electronic Portfolio for Blended Supervision in Professional Experiences on Computer by Smart Phone Device in Rajabhat University.

III. RELEVANT THEORIES

ePortfolio. Electronic Portfolio (ePortfolio) is an electronic collection of evidence that shows your learning journey over time. Portfolios can relate to specific academic fields or your lifelong learning. Evidence may include writing samples, photos, videos, research projects, observations by mentors and peers, and/or reflective thinking [2].

Professional experience. Professional experiences make the skills and experience that students are ready for the knowledge, both in theory and practice. And access to the profession after graduation. Students will have the knowledge of the theoretical to the practical training period. The knowledge and experience that will help students see the real picture of the work. This will help students understand the real needs in the work of self and establishments [3].Professional experiences, a process that requires three elements to perform. Training and Faculty Mentors and supervisors in the workplace. At the Practice Faculty must be supervised by an internship to meet students at the workplace at least 1 time [4]. The next time the supervisor can use other forms of supervision, for example. Supervision, online, etc.

Software Development Life Cycle (SDLC). Software Development Life Cycle is a process used by software industry to design, develop and test high quality software. The SDLC aims to produce a high-quality software that meets or exceeds customer expectations, reaches completion within times and cost estimates [5]. There are various software development life cycle models defined and designed which are followed during software development process. These models are also referred as "Software Development Process Models". Each process model follows a Series of steps unique to its type, in order to ensure success in process of software development. Following are the most important and popular SDLC models followed in the industry:

- Waterfall Model

- Iterative Model

- Spiral Model

- V-Model

- Big Bang Model Software Testing. Software testing is an important technique for assessing the quality of a software product. In this chapter, we will explain the following [6] :

- the basics of software testing, a verification and validation practice, throughout the entire software development lifecycle

- the two basic techniques of software testing, black-box testing and white-box testing

- six types of testing that involve both black- and white-box techniques.

- strategies for writing fewer test cases and still finding as many faults as possible

- using a template for writing repeatable, defined test cases

There are two basic classes of software testing, black box testing and white box testing.

For now, you just need to understand the very basic difference between the two classes, clarified by the definitions below [7]:

- Black box testing (also called functional testing) is testing that ignores the internal mechanism of a system or component and focuses solely on the outputs generated in response to selected inputs and execution conditions.

- White box testing (also called structural testing and glass box testing) is testing that takes into account the internal mechanism of a system or component.

Smartphone device. Smartphones device such as the iPhone and the BlackBerry might get all the headlines, but most Americans continue to opt for less-expensive feature phones. Feature phones, which are dumb phones that have elements (but not the full connectivity) of smartphones, accounted for an astounding 72 percent of new handset sales in the U.S. in the second quarter, according to a new report by NPD. [8]

Rating Scale. We used the rating scale in order to measure the satisfaction. We define rate 1 as Not at all acceptable 2 as slightly acceptable 3 as moderately acceptable 4 as Very acceptable and 5 as completely acceptable.

IV. METHODOLOGY

The research methodology is divided into 2 steps which are:

1) The first step

The first step of development ePORT for BSPEC with all 4 modules: (1) student (2) teacher (3) mentor and (4) Administrator

a. Student

b. Teacher

c. Mentor

d. Administrator

The Architecture of ePORT for BSPEC shown in Figure. 1

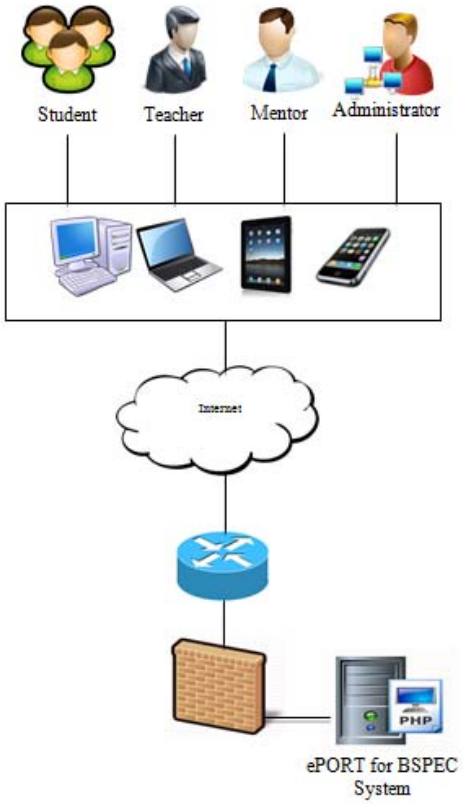

Figure 1. Architecture of Electronic Portfolio for Blended Supervisionin Professional Experiences on Computer by Smart Phone Device in Rajabhat University (ePORT for BSPEC)

2) The Second step

The second step : to evaluate efficiency of ePORT for BSPEC

- Present the developed information system to the 10 experts have evaluated the design of system, they give the opinion that the design of ePORT for BSPEC.

- Analyze the results of evaluation of the design using means (X) and standard deviation (S.D.)

The questionnaire of this study is show the efficiency measurement of the system by using tables that consists of question lists.

A. Integration Test

C. Function Test

C. Usability Test

D. Security Test

E. Performance Test

3) The Final Step

We make a questionnaire to evaluate ePORT for BSPEC System and we selected 60 students, 15 teachers and 10 Mentors as our sampling group. These selected groups evaluated our question by rating scale.

V. CONCLUSION

The results from development electronic portfolio for blended supervision in professional experiences on computer by smart phone device in Rajabhat University can be seen in Table 1.

Table1. The results from development electronic portfolio for blended supervision in professional experiences on computer by smart phone device in Rajabhat University.

Questions Lists	Results		Leve lof Efficiency
	$\overline{X}$	S.D.	
Integration Test	4.36	0.60	Good
Function Test	4.35	0.61	Good
Usability Test	4.50	0.60	very Good
Security Test	4.40	0.56	Good
Performance Test	4.20	0.79	Good
Summary	**4.40**	**0.60**	**Good**

The Table 1 shows that the experts agree that a ePORT for BSPEC from the results of Unit Test as shown in Table 1, the appropriation of details in the Electronic Portfolio for Blended Supervision in Professional Experiences on Computer by Smart Phone Device in Rajabhat University reveals that the it was the highest score ($\overline{X}$ = 4.40). In fact, the first two highest means from the highest to the lowest were usability test with the highest score of ($\overline{X}$ = 4.52). The second rank went to security test ($\overline{X}$ = 4.40), integration test ($\overline{X}$ = 4.36) and function test and performance test ($\overline{X}$ = 4.35).

Table 2. The satisfaction of ePORT for BSPEC

Questions Lists	Results		Leve lof Efficiency
	$\overline{X}$	S.D.	
1. Use of system	**3.94**	**0.32**	**Good**
Easy to use	3.96	0.42	Good
Fast data access	3.96	0.29	Good
Find data and information	3.92	0.32	Good
Operating the menu	3.91	0.29	Good
Used by smart phone device	3.94	0.24	Good
2. Design system	**3.74**	**0.54**	**Good**
Appropriate font size	3.75	0.55	Good
Appropriate font color and background color	3.73	0.56	Good
Appropriate image on web	3.71	0.55	Good
Appropriate web design	3.78	0.47	Good
3. Operation system	**3.85**	**0.46**	**Good**
Stable system operation	3.85	0.48	Good
Speed processing system	3.85	0.45	Good
Accuracy data	3.87	0.43	Good
Linking data system	3.82	0.49	Good
4. Capability system	**4.10**	**0.54**	**Good**
Ability to manage data.	4.19	0.57	Good
System can send files works	4.14	0.54	Good
System can save Supervision	4.13	0.46	Good
System can save scores	4.12	0.57	Good
System can evaluate	4.04	0.61	Good
System can be summarized report	3.98	0.51	Good
5. Security System	**3.90**	**0.47**	**Good**
Check the system log	3.88	0.45	Good
Classification system user	3.92	0.49	Good
Appropriate username and password	3.89	0.46	Good
Summary	**3.92**	**0.49**	**Good**

Table 2 showed that the evaluation of satisfaction our overall system satisfied with use of system with very satisfaction level, average and standard deviation were 3.92 and 0.49, respectively. So, use of system satisfied with very satisfaction level, average 3.94 and SD 0.32. Design system satisfied with very satisfaction level, average 3.74 and SD 0.54.

Operation system satisfied with very satisfaction level, average 3.85 and SD 0.46. Capacity system satisfied with very satisfaction, average 4.10, SD 0.54 and security system satisfaction with very satisfaction, average 3.90 and SD 0.47.

VI. DISCUSSION

This research is provided to show system operations and system structures. The work was tested under defined scopes and found that the system can operate with efficiencies and work for the real applications in addition with higher education institutions under all defined project scopes mentioned. The satisfaction our overall system satisfied with use of system with very satisfaction level.

Also, the system has all defined system requirement features and deep understands to develop systems.

REFERENCES

[1] Student's manual for bachelor's degree. Chandrakasem Rajabhat Univesity, Bangkok Thailand, 2014, pp. 96-97.

[2] Butler, P.(2006) "Review of the Literature on Portfolios and Eportfolios". Information onhttps://eduforge.org/docman/view.php /176/1111/ePortfolio_Project_Research_Report.pdf

[3] Knowledge of professional experiences. Information on https://www.dekwtt.com/book/export/html/221

[4] cooperative Association. "Standards and quality assurance operations of cooperative".Nakhon Ratchasima Province, Thailand, 2009, pp. 17-19.

[5] tutorialspoint.com. SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC). Information on http://www.tutorialspoint.com/sdlc /sdlc_tutorial.pdf

[6] Testing Overview and Black-Box Testing Techniques . Information on http://agile.csc.ncsu.edu/SEMaterials/BlackBox.pdf

[7] IEEE, "IEEE Standard 610.12-1990, IEEE Standard Glossary of Software Engineering Terminology", 1990.

[8] Andrew Nusca. Smartphone vs. feature phone arms race heats up; which did you buy?.Information on http://www.zdnet.com/article/smartphone-vs-feature-phone-arms-race-heats-up-which-did-you-buy/