

Constructing Electronic Learning Portfolio for Parent-Teacher Communication

Lai-Chung Lee* Whei-Jane Wei**

* National Taipei University of Technology
Taipei, Taiwan, f10666@ntut.edu.tw

** Taipei Municipal University of Education
Taipei, Taiwan, wwj9801@gmail.com

Abstract: Ubiquitous computing in education has radically affected the way in academy; however, it is still in outset especially with emphasis on database in the field of early childhood education. The study constructed a web-based learning portfolio to enhance teacher-parent communication in kindergartens. The interface design of e-learning portfolio was divided into two parts of private area and public area. The private area named as learning and growth comprised three sections of learning portfolio, formative assessment and online discussion that was in need of password to login. The public area included update news, about us, class information learning activities pictures and large group activity pictures. Participants worked on the platform and answered the questionnaire. The results described that participants were satisfied with the private area including four competence profiles that characterized the platform different from the others. The study suggested that it is in need to merge teaching portfolio and learning portfolio as a whole platform.

Key words: *Interface design, Electronic learning portfolio, Parent and teacher communication , Kindergarten*

1. Introduction

Learning portfolio is a trend of assessment for a developmentally appropriate practice. An electronic learning portfolio can enhance communication between parents and teachers by using online discussion. To enhance communication between teachers and parents, the study is to (1) to ensure if the platform enhanced the parent-teacher communication; (2) to identify which interface design makes differences; (3) to compare effectiveness of communication between Class Information and Non-class Information; (4) to compare effectiveness of parent-teacher communication between the private area and the public area.

1.1 Learning Portfolio for Young Children

Learning portfolio includes reflection, documentation, and collaboration. Reflection is to ensure if learning is occurred through working sheets. Documentation is to provide children's works along with each competence indicators. Collaboration describes how the teacher collaborates with children and parents. Learning portfolio for young children was a performance-based assessment that teachers evaluated child's competences against the indicators with evidences [1]. A teacher executes an individualized education plan according to each child's

performance profile through portfolio assessment. Learning portfolio is a formative assessment and a sort of reflective diary.

1.2 Construction of an Electronic Learning Portfolio Platform (CELPP)

An electronic learning portfolio assessment includes analysis, design, implementation, and evaluation. Analysis is on user requirements and web resources. Design concerns about institutive interface and emphasis on visual impacts. CELPP is good for parents and teachers to review and communicate children learning and growth by multimedia [2,3,4,5]. Parents do any search through platform [6]. The study supports that the platform enhances communication, parent participation and child's learning [7]. However, there are few studies on database development and online discussion. It is the rationale for the study that parents can access the platform whenever and wherever to review children's learning and growth, and to have online discussion with teachers.

2. Method

2.1 Research Design

We used an one-group pretest-posttest design for seven weeks. Before the experiment, one focus group discussion was administered to demonstrate how to use the platform. A pre-test questionnaire on satisfaction with the platform was executed to participants one week after the demonstration. During the period of the experiment, another focus group discussion was conducted to ensure if there were any problems of the interface design to be solved. At the last week, all participants filled out a post-test questionnaire and attended the final focus group discussion.

2.2 Participants

Thirty participants were selected from four classes of a public elementary school supplementary kindergarten. There were two teachers each class and 22 parents were selected from four classes. Data of questionnaires and login record were collected during 4th April and 27th May, 2009.

2.3 Instruments

The instruments included an e-learning portfolio platform and a questionnaire for satisfaction survey. The platform is a web-based environment (<http://140.124.80.159/index.html>) developed for the Taipei Municipal YungAn Elementary School Supplementary Kindergarten. The questionnaire for satisfaction survey was to ensure if the platform enhanced the communication between teachers and parents. Forty items were generated according to the interface design divided into two parts of private area and public area. The private area named as learning and growth comprised three sections of learning portfolio, formative assessment and online discussion that was in need of password to login. The public area included update news, about us, class information learning activities pictures and group activity pictures.

3. Results and Discussion

The purpose of the study was to construct an electronic platform for facilitating the communication between parents and teachers. There were four goals to achieve as follows: (1) to ensure if the platform enhanced the parent-teacher communication; (2) to identify which interface design makes differences; (3) to compare the

interface design between Class Information and Non-class Information; (4) to prove if the private area of the interface design did more contribution to the communication than the public area did. To answer the question one, participants required to fill up the pretest and posttest questionnaire for a t-test analysis. The findings were given below.

Table1. Analysis on satisfaction of communication by e-learning portfolio (N=30)

Items	t test	Mean		Single-tail p value	Standard Deviation		T test result
		Pre-test	Post-test		Pre-test	Post-test	
Q1~Q40	-5.34	4.18	4.37	0.001***	0.20	0.21	Significant

Note : *p<.05 , **p<.01 , ***p<.001.

Table 1 indicated that the pretest (M=4.18, SD=0.20) and posttest (M=4.37, SD=0.21) were significantly different (p<0.001). Findings described that the platform construction did significantly enhance the communication between parents and teachers. This claim was supported by Zubizzareta (2004) indicating that an electronic learning portfolio platform for young children did enhance parent-teacher communication. Q14~Q21 and Q38~Q40 were significantly different between pretest and posttest. For instance, Q14 related to the vision descriptions for children, teachers and parents that enhanced the communication between parents and teachers. Child vision comprised happiness, initiation, respect, and innovation. Q15~Q20 involved with the curriculum rationales such as competence indicators, thematic lesson plan, competence indicators for learning centers, independent study, class schedule and related websites. The findings supported that participants were satisfied with competence indicators developed and available in the interface. Q21 was regarded to environment and equipment that was parents' most concern. Q38~Q40 were in private login area in terms of learning and growth including learning records, learning assessment and online discussion. Teachers regularly login the private area to assess the child's competence performance and parents reflect on their viewpoints through online discussion. The findings echoed with the theory of learning portfolio with a particular emphasis on cooperation. To answer the question three, a t-test analysis was conducted to compare the interface design between Class Information (Q30-40) and Non-Class Information (Q1~Q29). Class Information was designed for four classes. Non-Class Information comprised 'Updated News' and 'About Us'. The results were presented in Table 2.

Table 2. Analysis on satisfaction of communication through 'Updated News' and 'About Us' against 'Class Information' (N=30)

Items	t test	Mean	Single-tail p value	Standard Deviation	T test result
Q1~Q29	-3.74	4.32	0.001***	0.80	Significant
Q30~Q40		4.48		0.57	

Note : *p<.05 , **p<.01 , ***p<.001.

Table 2 described the differences between class information (Q30-40) and non-class information (Q1~Q29). Findings indicated that participants felt more satisfied with class information (Q30-40) than non-class information (Q1~Q29). Q30~Q37 were in public area for displaying all kinds of children's learning activity pictures. Parents required to login into the private area of Q38~Q40 to look up child's learning records and assessment. They felt free to have an online discussion whenever and wherever as needed. A lot of studies also supported that the platform enhanced the interaction [3,4,5].

To answer the question four, a t-test analysis was carried out to compare the private area (Q38~Q40) of the

interface design with the public area (Q30~Q37). The findings were shown in Table 3.

Table 3. Analysis on satisfaction of communication through public area against private login area (N=30)

Items	t test	Mean	Single-tail p value	Standard Deviation	T test result
Q30~Q37		4.43		0.55	
Q38~Q40	-2.58	4.61	0.005**	0.59	Significant

Note : *p<.05 , **p<.01 , ***p<.001.

Participants' satisfaction was significantly different between private and public areas. A post hoc test indicated that participants felt more satisfied with the private area than the public area did. For instance, Bo Bo Dragon class parents could conveniently communicate with teachers through online discussion. The findings were consistent with the other related studies [7]. On the other hand, literature pointed out that parents might be worried about their children in an unfair situation because they hadn't got a computer.

4. Conclusion

The study conducted a web-based learning portfolio for young children that the platform did significantly enhance parent-teacher communication ($p < .001$). Eleven items of Q14~Q21 and Q38~Q40 showed statistically significant differences. Class information of Q30~Q40 better promoted parent-teacher communication than the others ($P < 0.001$). Participants felt more satisfied with the private area of Q38~Q40 than the public area of Q30~Q37 ($P < 0.005$). Findings were somewhat in line with the previous research that participants in this study reported high levels of satisfaction with the interface design of platform. On a scale of 1 to 5, the pretest average reported was 4.18 and the posttest was 4.37 that participants significantly felt satisfied with the platform ($P < 0.001$). It is better to be as comprehensive as possible during the first stage of system analysis.

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References

- [1] Wei, W.J. (2002) Portfolio assessment: Reflective practice for improving student learning. In *Proceedings of the Learning Portfolio 2002*, Taipei Municipal University of Education Press, pp 22-25.
- [2] Zubizarreta, J. (2004) *The Learning Portfolio*. Bolton, MA: Anker.
- [3] Holahan, M.E.F. (1992) *An Analysis of Parent-Teacher Communication*. Unpublished doctoral dissertation, University of Maryland at College Park.
- [4] Chao, S.-C. (1998) A Study of Parent-Teacher Communication and the Related Factors. Unpublished master thesis, Taipei Municipal University of Education.
- [5] Lin, C.-Y. (2002) *A Case Study of Parent-Teacher-Communication Process in Elementary School*. Unpublished master thesis, National Hualien University of Education.
- [6] Trotter, A. (1997) Parents, educators make new connections with the Internet. *Education Week*, 16, pp13.
- [7] Nelms, E. L. (2002) The effects of a teacher-created web page on parent communication: An action research study. Available at <<http://www.classkey.com/classkey/documentation/nelms.pdf>>