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Development of Constructivist Multimedia Learning to Enhance Students' Information Literacy skills in Demonstration School

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Abstract: The purposes of this study were as follows: 1) To design and development of constructivist multimedia learning to enhance student's Information Literacy skills in Demonstration school, 2)To examine Information Literacy skill of Grade 3 student and 3)To examine study student's opinions. The target group of this research is Grade 3 student of Demonstration School Khon Kaen University. Pre-experimental design research was employed in this study. The research instruments were constructivist multimedia learning to enhance Information Literacy skill on topic Computer Networks, information literacy skills test form, and opinions survey form. The results revealed that: 1) The designing of constructivist multimedia learning consisted of the following components; **(**1) Problem Base (2) Data Bank (3**)** Collaboration (4) Scaffolding and (5) Coaching. 2) The Information Literacy skills was found from the Information Literacy skills test form ($\overline{X}$ =21.7 and S.D. = 3.81) that every learner passes the 60% criterion of the specific scores. 3) The students' opinion towards the constructivist multimedia learning was divided into 2 aspects. They were 1) the contents can be supported concept formation of the learners, 2) characteristic of multimedia learning was designed for helping learners to easily and quickly search for information as well as to support immediate two-way communication and learning, 3) the constructivist multimedia learning supported and encouraging learners to enhancing knowledge construction , information literacy skill and innovation.

Keywords: Constructivist Learning, Multimedia Learning, Information Literacy skill

1. Introduction

Information literacy is nowadays regarded as an increasingly important subject, since we see it as a set of skills which enable individuals for life-long learning. The world has become a society of learning in the 21st century. Today's world of learning resources is as engaging as it is complex. Learners are both users and creators of information content with a world of dynamic visual, aural, interactive, and text-based resources all within the virtual library. Teachers who establish strong information literacy skills are better able to guide the development of these skills in their own students and provide resource-rich inquiry-based learning environments. (Lee et al ., 2010; Laverty & Reed, 2006). Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning.

Observations from the study during the first 2 weeks of the first semester of the academic year 2014 found that in class also the lack of activities for students to learn to search information. Students could

not search the information. Can't describe how the search information from the Internet. Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning. Information literacy encompasses computer literacy. A computer-literate person can manipulate electronic information tools to gain access to information. Computers are part of the wider category of information tools and require their own special search methodologies. Therefore, this study focusing on Information Literacy Levels Framework as follows: *Understand the information landscape*; be able to identify a limited number of key sources of information in the subject area or context, *Plan and carry out a search*; be able to identify the 'knowledge gap' and what information is needed to fill it, *Critically evaluate information*; be familiar with and begin to apply appropriate quality criteria to evaluate pre-defined information, *Manage and communicate your results*; know what is meant by plagiarism.

The study Constructivist theory that believes Students can create their own knowledge. The Learning Environment should encourage the students to create knowledge and focusing on the students to take action on their own. The researchers are interested to bring the Constructivist theory to use in the design and development of multimedia learning based on Constructivist theory to promote information literacy skills to encourage students to study and find answers on their own. And the multimedia learning features that include multiple media, literally slide, Animations, sounds and including the exchange of learning together. Results in students are interested in learning to understand the content and to learn effectively.

2. Methodology

2.1 The target group of this study

The target group of this research is Grade 3 student of Demonstration School Khon Kaen University.

2.2 Research Design

The pre-experimental design particularly a one-shot case study was employed.

3. Research results

The research finding showed as following details:

3.1 The constructivist multimedia learning to enhance student's Information Literacy skills.

The multimedia learning environment was produced based on the designing framework comprised of 5 components as follows: (1) Problem Base (2) Data Bank (3) Collaboration (4) Scaffolding and (5) Coaching obtaining from major theories in various aspects: Constructivist base; Information literacy skills base, Technologies base, Media base, and Contextual base as shown in the following Figure. 1.-4.

Figure.1 (a) Problem base; (b) Resources

Figure.1. (a) Problem base: It was shown Problem base for enhancing the learners to construct knowledge and information literacy skills; (b) Resources: It was shown Resources to provide just-in-time information to help learners comprehend and solve the problem.

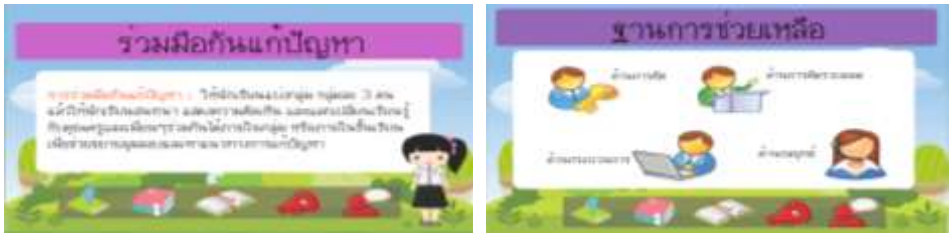

Figure.2 (c) Collaboration; (d) Scaffolding

Figure.2. (c) Collaboration: It was shown Collaboration for supporting the learners to share their experience with experts by using Face book for expanding their multiple perspectives; (d) Scaffolding: It was shown Scaffolding for enhancing students to solve problems , to learn and construct the knowledge by themselves;

Figure.3 (e) Coaching

Figure.3. (e) Coaching centre: It was shown Coaching centre by teachers and experts in computer skills with best practice.

3.2 The students' information literacy skills.

The results revealed that: The students' Information Literacy skills (Information Literacy Levels Framework for elementary school (2005) consist of 4 levels as follows: Level 1Understand the information landscape: Learners must be able to identify a limited number of key sources of information in the subject area or context, Level 2 Plan and carry out a search; Learners must be able to determine appropriate keywords including synonyms, Level 3 Critically evaluate information; Learners must be familiar with and begin to apply appropriate quality criteria to evaluate pre-defined information, and Level 4 Manage and communicate your results; Learners must know what is meant by plagiarism.) was found from the Information Literacy skills test form ($\overline{X}$ =21.7 and S.D.= 3.81) that every learner passes the 60% criterion of the specific scores.

3.3 The students' opinion towards the constructivist multimedia learning.

The results revealed that: The students' opinion towards the constructivist multimedia learning was divided into 2 aspects. They were 1) the contents can be supported concept formation of the learners, 2) characteristic of multimedia learning was designed for helping learners to easily and quickly search for information as well as to support immediate two-way communication and learning, 3) the constructivist multimedia learning supported and encouraging learners to enhancing knowledge construction , information literacy skill and innovation.

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