Designing framework of the learning environments enhancing the learners’ critical thinking and responsibility model in Thailand

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Abstract

The purpose of this research is to synthesize theoretical framework and designing framework of the learning environments which enhance the learners’ critical thinking and responsibility. The target group consisted of 8 experts, 3 designers and 90 students studying during the second semester of academic year 2011 at Thanakornsengkhor School, in the Nong Khai Provincial Primary Education Office Area 1. The developmental research: Phase I: Model development (Richey and Klein, 2007) was employed in this study. Several methods used were document analysis and survey. The procedures are as follows: 1) Examining and analyzing principles and theories 2) Synthesizing the theoretical framework of the learning environments enhancing learners’ critical thinking and responsibility model 3) Synthesizing the designing framework of the learning environments enhancing learners’ critical thinking and responsibility model. The results revealed that this model consisted of nine elements as follows: (1) Problem base (2) Resources Center (3) Collaborative Center (4) Scaffolding Center (5) Cognitive tools Center (6) Coaching (7) Responsibility Center (8) Critical Thinking Center (9) Related Case.

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1. Introduction

In an era where information is key to a knowledge-based economy (Ministry of Education, World-Class Standard School, 2010), it is important to rely on our intellectual abilities in order to think responsibly and critically in identifying both useful and non useful information in solving problems. Thai people need to have these abilities in order to prepare for their role in the Asian and International communities through the use of English in communicating and learning. In doing so students gain valuable ways which students can open a broader knowledge base to incorporate wisdom and critical thinking when learning and seeking new information. However, the majority of Thai students lack of responsibility in their own learning; questioning through self-reflection in order to understand their thinking (Metacognition) (Scardamalia and colleagues, 1989), and to be capable of thinking critically. This is of fundamental importance which leads to the ability to believe and act rationally (Ennis, 2002). Therefore, the students are required to improve their responsibility in learning and critical thinking skills, sustainable development to the state of social change.

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There remains a need for innovation in solving problems by applying appropriate theoretical principles as a basis to design a model which encourages students to construct the knowledge. For Piaget it is the need for accommodation when current experience cannot be assimilated in existing schema. (Piaget, 1977). Vygotsky and Von Glasersfeld (1989), discussed the philosophical foundation of knowledge in that one is fully aware of what's happening with social interaction, culture, and conscious communication, through experience and the environment. This is consistent with Mayer(2005) to use a multimedia learning environment which is stimulating students’ learning; personalization principle: people learn better when extraneous words, pictures, and sounds are excluded rather than included, and when the words are in conversational style rather than formal style. The learning environment which enhances the students to be responsible for their own learning and critical thinking while seeking answers to questions and making a clear initial decision, having clear conclusions, supposition and integration(Ennis,2002).

For the above mentioned reason, this study recognize how important of design and development of the learning environments enhancing the learners’ critical thinking and responsibility model. This may result in establishing guideline for developing the critical thinking and responsibility of the learners.

2. The purpose of this study

To design and develop a learning environment which enhances critical thinking and responsibility for the learners.

3. Research Methodology

3.1 Target group

The target group used in Phase 1: model development consisted of the following details: 8 experts for assessing in terms of content, media, model design and development.

3.2 Research variable

How to design and develop the learning environments enhancing the learners’ critical thinking and responsibility model.

4. Research Design

Developmental research phase 1: Model Development (Richey & Klein, 2007) was employed in this study.

4.1 Research Instruments in the study

The instruments in this study consisted of experimental instruments:

1) The expert review recording for checking the quality in various domains as follows: learning contents expert, model design experts and multimedia experts.

2) The document examination and analysis recording form.

3) The recording form for synthesis of the designing framework of the learning environments enhancing the learner’s critical thinking and responsibility model.

4) The opinionnaire for the characteristics of the participants is as follows: designers and developers (Richey and Klein (2007).

4.2 Data collecting and analysis

1) Synthesis of theoretical framework and Components of the learning environments enhancing the learners’ critical thinking and responsibility model. The data were collected by analyzing principles, theories, related research
and contextual studies of the constructivism theory, cognitive theory, media and technology theory, pedagogy and context.

2) Synthesis of Designing framework constructivism: The above synthesized theoretical framework was taken into this process. The underlined theories such as, constructivist theories, cognitive theories, media and technology, media attribution and symbol system, pedagogy and context were analyzes and transformed into the designing framework and component of the model. The relationship between the underlined theories, pedagogies, technology, media and contexts are illustrated as below diagram.

**Fig.1. Theoretical framework of the learning environments enhancing learner’s critical thinking and responsibility model.**
The researcher designed based on above mentioned designing framework and Components. This model was assessed by experts such as content experts, multimedia experts and instructional designers, especially in critical thinking and responsibility measurement and evaluation. The data was collected and analyzed by analytic description, interpretation and summarization.

5. Summarize

Framework of a learning environment enhancing the learner’s critical thinking and responsibility model consist of five basic psychologies of learning and knowledge construction; constructivist theory, psychology of cognitive learning, pedagogy, media and technology, and context, to generate the foundations and theories of concepts for the design elements as follows: Problem based, Resources Center, Scaffolding Center, Collaborative Center, Cognitive tools, Coaching Center, Responsibility Center, Critical Thinking Center, and Relates Case.
6. Suggestion

6.1 Recommendations for Research

1. To study the effects of the individual components affecting the promotion of critical thinking, and the responsibility of learners.
2. Study the mechanisms of the process, critical thinking, and the responsibility of learners.

6.2 Recommendations for Research Use

1. The conceptual framework for designing and developing are innovative applications in learning other subjects, social studies, science and counseling.
2. The conceptual framework for designing and developing are innovative. Application in enhancing other characteristics such as Creative thinking, Reasoning Thinking and Future problem solving.

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