# *Model of Learning Environment for Creative Education on Social Network to Develop Creative Thinking*

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## Abstract

The purposes of the research study were 1) to investigate factors essential for the learning environment of creative education on social network to develop creative thinking (LECES), 2) to design a model for development learning environment, and 3) to evaluate the developed model. Three steps of the research study were: 1) reviewing literature to analyze and synthesize the factors essential to the model, 2) designing the model, and 3) evaluating the model. The sample group included eight experts who specialized in education, information and technology, and creative thinking. The study revealed the following results: three elements were essential for development of LECES Model feature. Knowledge creation through learning process included seven elements: problem finding, data acquisition, analysis, solution finding, revise/evaluation, acceptance finding, and convergent thinking. Resource for learning environment included four elements: learning media, technological, context, and communication. Technologies through social network in learning environment consisted of six elements: identity network, creative network, interested network, collaboration network, gaming/virtual reality, and peer to peer communication. The evaluation appropriation of the LECES Model was in the very high level in both overall picture and each aspect i.e., theories and aspect element concept, development factors, and the appropriateness of the design.

**Keywords:** Learning Environment, Creative Education, Social Network, Creative Thinking

## Introduction

Education Management was essential for the growth of every nation due to the reason that education provides foundation for the growth in social, economic, political and technology sectors. Smart Thailand was part of the national ICT framework called 'ICT2020', a development blueprint for the country that will lead and guide all parts of the economy, especially the government sector, to move forward with ICT development (Ministry of Information and Communication Technology, 2011).

Ministry of Education (2011: 4-5) presented the information and communication technology (ICT) for education. The ICT was tools in broadband policy to develop ICT for social, ICT for people, and ICT for government, and using ICT for governance on management. Wangpipatwong, Tanakorn (2010: 82) presented role of the information and communication technology on daily life such as social network: Google, Wikipedia, Twitter, and YouTube. The better educational direction known as the 21st-Century Skills that focused on individual skillset of the students, the focus of educational development should be on critical thinking, communication, collaboration, and creativity known as the 4Cs. (Partnership for 21st Century Skills, 2011)

In the age of technology was educator would create model to develop students and apply technology on process learning. The researcher interested in designing model of learning environment to develop students' creative thinking in higher education. The study aimed to find factors essential for development of model education to develop creative thinking and to develop innovation on social network for education.

## Objectives of the study

The objectives of the study were (1) to investigate factors essential for the learning environment of creative education on social network to develop creative thinking, (2) to design a model to develop learning environment, and (3) to evaluate the developed model.

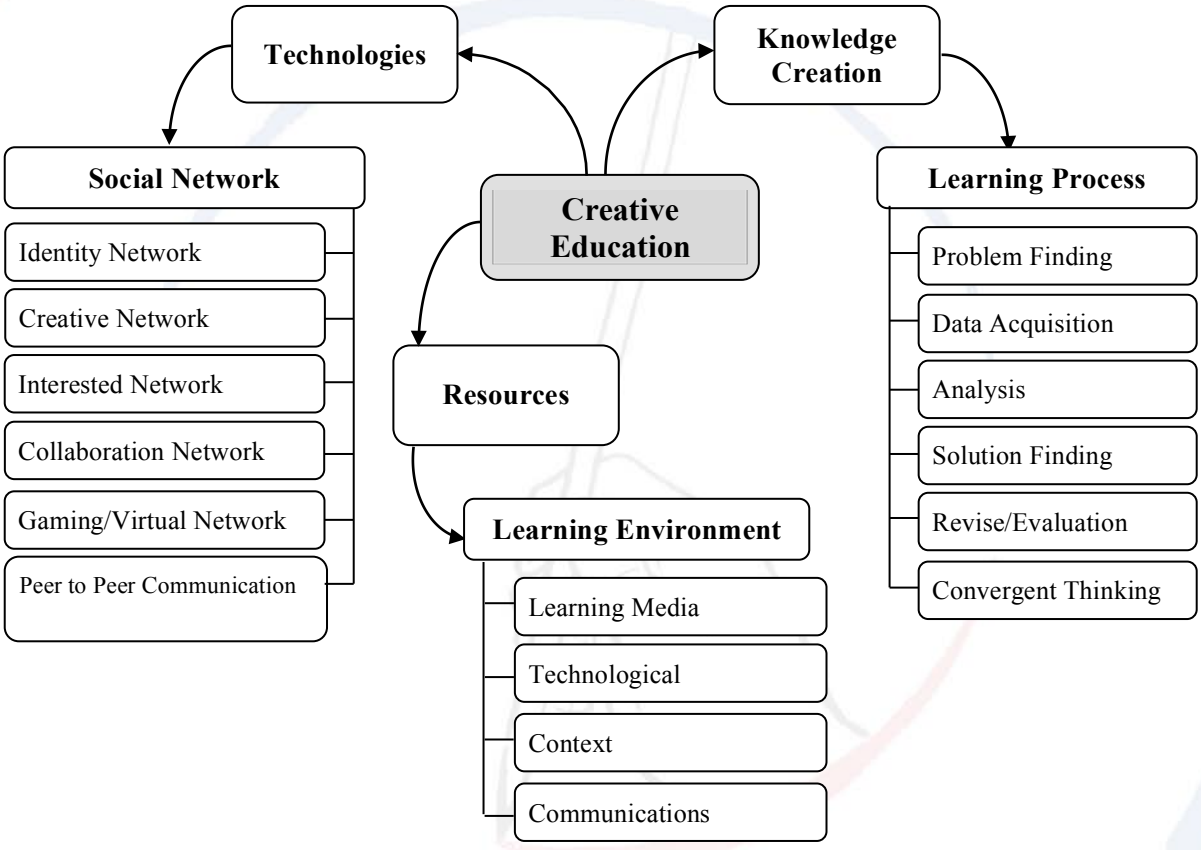
## Research Procedures

Three steps in the study:

Step 1: Analyzing factors essential for development of learning environment of creative education on social network. Four theories and concepts: 1) creative education, 2) learning environment, 3) social network, and 4) creative thinking.
Step 2: Designing the model of learning environment of creative education on social network: Factors essential from step 1 to develop the model for developing of learning environment on social network.
Step 3: Evaluating the LECES model: Eight experts who were specialists in education, information and communication technology, and creative thinking. Questionnaires were employed to collect data which were analyzed to find arithmetic mean and standard division. The results were presented in tables followed with description.

**Results**

Result of step 1: there were two essential levels for the development of learning environment of creative education on social network. Main concept of creative education consisted of three factors included resource factors, knowledge creation factors, and technologies factors. The resource factors on learning environment consisted of four elements: learning media, technological, context, and communication. The technology factors on social network consisted of six elements: identity network, creative network, interested network, collaboration network, gaming virtual reality, and peer to peer communication. The knowledge creation factors on learning process consisted of six elements: problem finding, data




acquisition, analysis, solution finding, revise evaluation, and convergent thinking. Mind map showed the relation of factors essential for development of learning environment for creative education on social network, shown in

Figure 1.

Figure 1: Mind map of factors essential for development of learning environment of creative education on social network
*Source: Designed by Papattha (2013)*

Result of step 2: (Draft) the LECES model applied from related factors essential for developing the learning environment on the social network consisted of various subjects, shown in Figure 2.

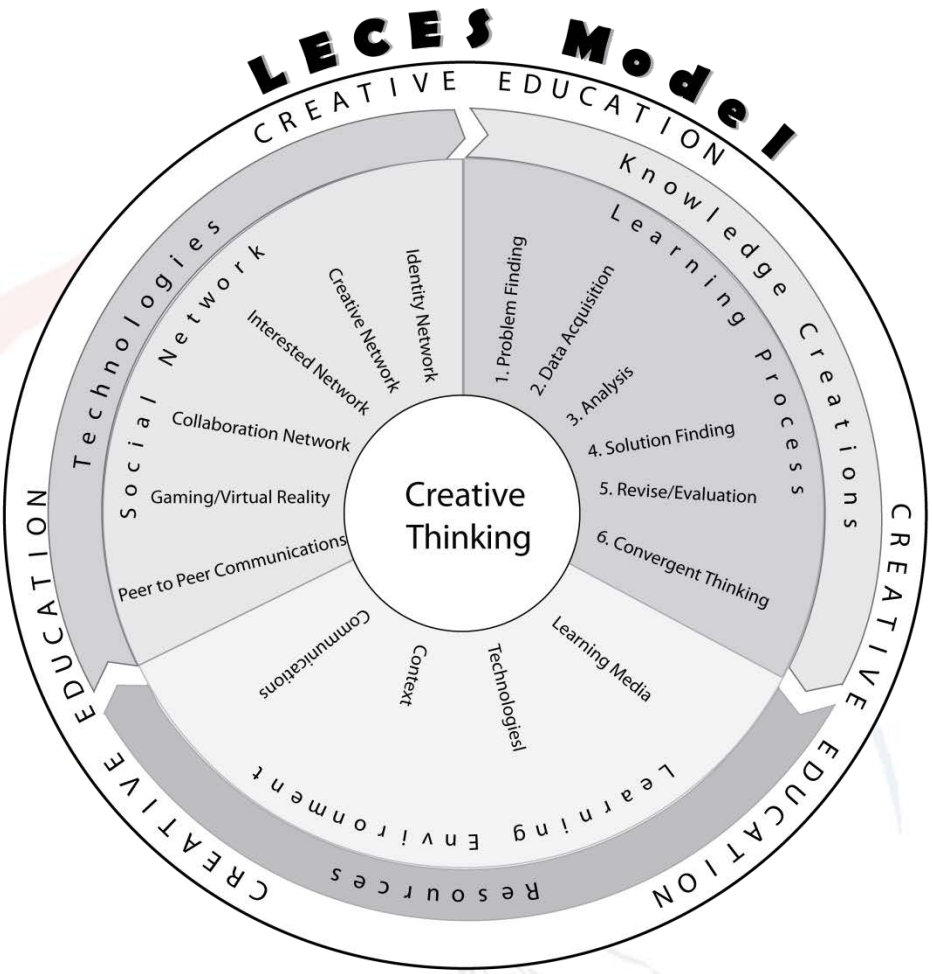



Figure 2: (Draft) The model of learning environment on the social network (LECES)
*Source: Designed by Papattha (2013)*

Figure 2 presented LECES model that was the model of learning environment for creative education on social network. The LECES model applied tools on social network to manage learning environment.

The first circle was creative education area.

The second circle consisted of three zone included resource factors, technology factors, and knowledge creations factors. The resource factors in learning environment consisted of learning media, technologies, context, and communications. The technology factors on social network consisted of identity network, creative network, interest network, collaboration network gaming/virtual reality, and peer to peer communication. The knowledge creation factor on learning process consisted of problem finding, data acquisition, analysis, solution finding, revise/evaluation, and convergent thinking.

The third circle in the middle was learning outcome which was creative thinking.

Result of Step 3: Evaluating the LECES model.
Past 1: Theories and concepts for the application in LECES model

Table 1.1: Appropriateness of Theories and Concepts in LECES model

| ***List of items*** | | ***S.D.*** | ***Appropriateness*** |
|---|---|---|---|
| *Theories and concepts for analysis to design LECES Model* | *4.44* | *0.62* | *Very high* |
| *Three factors for creative education (resources factors, technology factors, and knowledge creation factors)* | *4.21* | *0.72* | *Very high* |
| ***Overall Appropriateness*** | ***4.34*** | ***0.67*** | ***Very high*** |

Table 1.1 showed evaluation of appropriateness of theories and concepts for apply in the LECES model, overall appropriateness was very high (=4.34, S.D.=0.67). The evaluation of appropriateness of the theories and concepts for analysis to design LECES model, appropriateness was very high (=4.44, S.D.=0.62). The evaluation of appropriateness of three factors for creative education (source factors, technology factors, and knowledge creation factors), appropriateness was very high (=4.21, S.D.=0.72).

Past 2: Factors in LECES model

Table 1.2: The evaluation of appropriateness of factors in the LECES model

| ***List of items*** | | ***S.D.*** | ***Appropriateness*** |
|---|---|---|---|
| *Resources factors in learning environment* | *4.50* | *0.72* | *Very high* |
| *Technology factors on social network* | *4.42* | *0.71* | *Very high* |
| *Knowledge creation factors on process learning* | *4.33* | *0.63* | *Very high* |
| ***Overall Appropriateness*** | ***4.41*** | ***0.68*** | ***Very high*** |

Table 1.2 showed evaluation of appropriateness of factors in the LECES model, overall appropriateness was very high (=4.41, S.D.=0.68). The evaluation of appropriateness of three factors in the LECES model, overall appropriateness was very high i.e. Resources factors in learning environment (=4.50, S.D.=0.72), Technology factors on social network (=4.42, S.D.=0.71), and knowledge creation on learning process (=4.33, S.D.=0.63).

Past 3: Designing and applying the LECES model to develop creative thinking of students

Table 1.3: The evaluation of appropriateness of designing and applying the LECES model to develop creative thinking of students

| *List of items* | *()* | *(S.D.)* | *Appropriateness* |
|---|---|---|---|
| *Reviewing literature to analyze and synthesize the factors essential to the model* | *4.63* | *0.52* | *Very high* |
| *Designing the LECES model were composed to outcome learning of students* | *4.25* | *0.46* | *Very high* |
| *The LECES model to develop creative thinking of students* | *4.63* | *0.52* | *Very high* |
| ***Overall Appropriateness*** | ***4.50*** | ***0.51*** | ***Very high*** |

Table 1.3 showed evaluation of appropriateness of designing and applying the LECES model, overall appropriateness was very high (=4.50, S.D.=0.51). The evaluation of appropriateness of the reviewing literature to analyze and synthesize the factors essential to the model, appropriateness was very high (=4.63, S.D.=0.52). The evaluation of appropriateness of designing the LECES model were composed to outcome learning of students, appropriateness was very high (=4.25, S.D.=0.46). The evaluation of appropriateness of the LECES model to develop creative thinking of students, appropriateness was very high (=4.63, S.D.=0.52). Eight experts commented improving the LECES model on reviewing convergent thinking step. Form the literature review of creative thinking to improve the learning process consisted of seven elements: problem finding, data acquisition, analysis, solution finding, revise/evaluation, acceptance finding, and convergent thinking. The revised LECES model was presented in Figure 3.

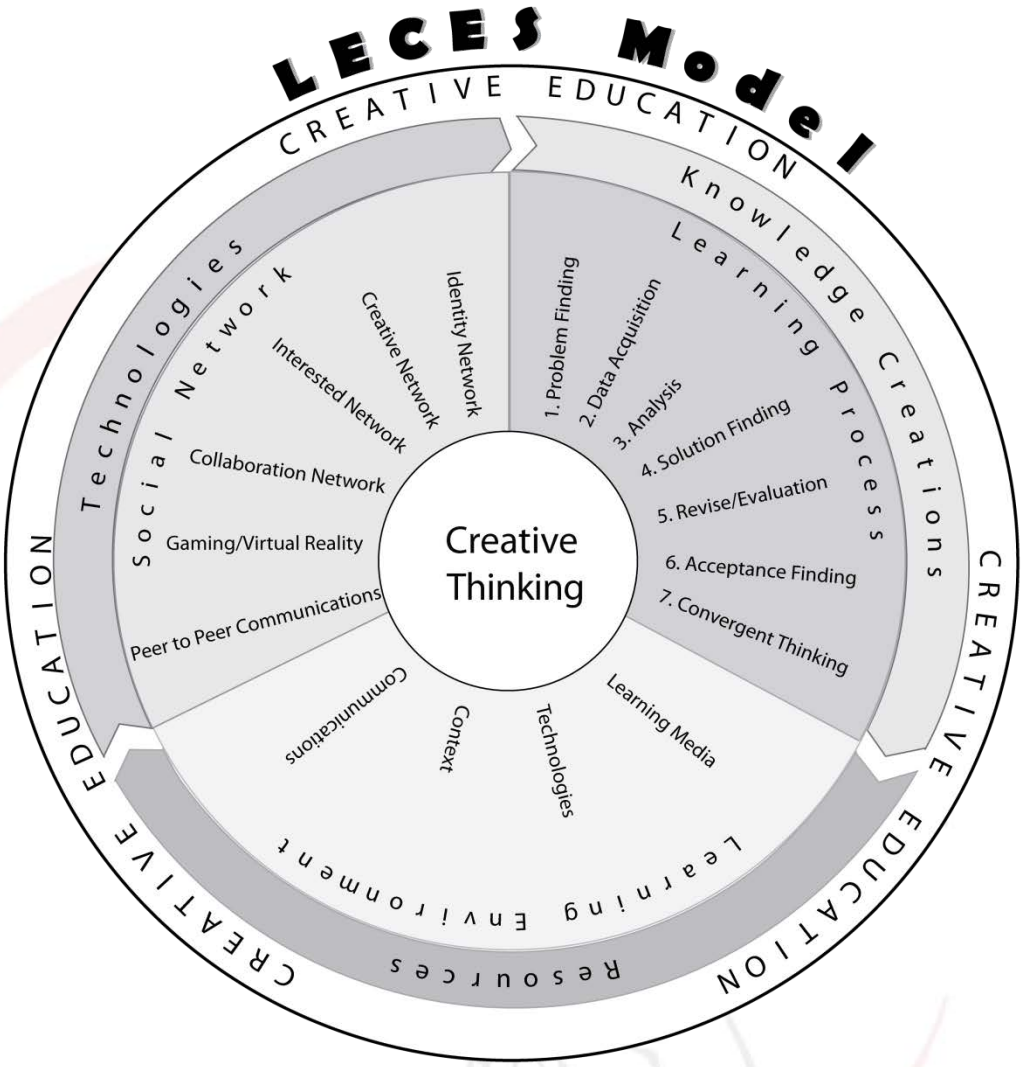



Figure 3: The revised LECES Model improved by eight experts
*Source: Designed by Papattha (2013)*

Finally, Figure 3 showed the revised LECES model on three factors included resources, technologies, and knowledge creation. The resources factors in learning environment consisted of four elements included learning media, technologies media, context, and communication. The technology on social network consisted of six elements included identity network, creative network, interested network, collaboration network, gaming/virtual reality, and peer to peer communication. The knowledge creation factors on learning process consisted of six elements included problem finding, data acquisition, analysis, solution finding, revise/evaluation, and convergent thinking,

**Discussions**

The evaluation of appropriateness of the theories and concepts to apply in the LECES model showed overall appropriateness at very high level which was congruent to the studies by Office of the Education Council (2003: 5). Creative education was learning process to develop thinking skills, imagination of students to design product. Creative education were to apply curriculum, learning process, assessment and evaluation and link between education institute and learning centers. Mascharat, Thawan (2010: 67-68) presented the principle of creative education consisting of three elements: 1) teacher changed teaching process, 2) students were free to learn and think of learning, and 3) students had thinking skills and practical skills. Ageyev, Valentin (2012: 1-9) showed the creative education affected to motivated and interested in learning. Creative education was affected to recognize of students and teach of teachers.

Suitability evaluation of factors to develop LECES model with the overall appropriateness at very high level which supported the studies by Pornkul, Tanatip (2011: 48-49) that presented learning environment concept included of a regular basis of thought processes of learning activities. These activities reflected thinking of students and teachers. The teacher designing of education in classroom included of three segments: design classroom environment, suitability learning media, and design interactive activity in classroom. Promwong, Chaiyong (2005: 65) presented learning environment was influenced of learning that supporting and blocked leaning. Learning environment was important three issues: 1) using technologies to support learning, 2) designing learning environment to develop student experiences, and 3) assigning learning condition to apply media for learning, adjust attitude, and predict academic achievement.

Appropriation of designing and applying the LECES model overall appropriateness in very high level which were consisted to the studies by Lin, Yu-Sien (2011: 149-155). Creative thinking process and strategies was the environment to support learning, consistency between the data insights of learning strategically, and individual differences of idea. Liu, D. & others (2009: 226) designed of multi-strategic learning environment based on constructivism that learning environment on network was the key for success to quality education via network system.

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