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Development of the open educational rajabhat university students resources using service learning to enhance public consciousness and creative problem solving

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Abstract

Technologies have been crucial in education in terms of transmitting both academic knowledge and local wisdom to society. The study aimed to develop and study the effects of the open educational resources of which goals focused on enhancing public consciousness creative problem solving of the students through social service activities. The procedures of the open educational resources were as follows; phase I: field study investigating the information about local food; phase II: design and development of the media regarding the local food as well as its implementation and evaluation; phase III: publicizing and appreciating his or her piece of work.

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1. Introduction

Thailand Qualifications Framework for Higher Education has the main mission to develop the Bachelor’s degree students who are able to work and complete with interpersonal skills, system thinking, critical thinking in terms of analysis and synthesis, problem solving, creative thinking, responsibilities for oneself and public society as well as public morality and ethics (Sinlarat, 2010). For the teacher students to become the professional instructor, the preparation for their profession is necessarily considered because they are able to comprehend and know what the world is up to along with realization of the importance of their social development.

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Faculty of Education, Thepsatri Rajabhat University is the educational institution which produce the new generation of teacher who have the knowledge and morality, including create the knowledge base and conserve native culture, also publish in worldwide to response the main objective. Inducing the concept Open Educational Resource (OER) is to open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaption by a community of users for non-commercial purposes (UNESCO, 2002), also offer opportunity to others accessing to share, use and reuse that knowledge (Smith & Casserly, 2006) to be responsible for public. Moreover the students could be supported by using open educational resources with the emphasis on service learning could support capability of the application and development of educational innovations and technologies for learning management and the creation of learning community (Basic Education Commission, 2010).

The integration of both concept of service learning concerning the enhancement of public consciousness and creative problem solving was taken into consideration because the service learning is integrated with what the students have learned to solve any problems with their initiative thinking. Whenever the students are endowed with the problem solving skills towards any troubles caused in their community with public mind, the awareness of being a good citizen of society will be emerged (kraft, 1996).

2. Objectives

1) To develop the open educational resources with service learning to enhance the Rajabhat University students’ public consciousness and creative problem solving
2) To study the effect of the OER development to students’ public consciousness and creative problem solving

3. Methodology

Step 1: Analyzed and synthesized the documents or related researches on the followings; the open educational resources, service learning and creative problem solving. Investigated the Rajabhat University students’ needs in using the open educational resources according to the content analysis model.
Step 2: Develop the open educational resources by using Moodle for E-learning website so that the students could be participated in activities provided for this study
Step 3: Evaluate the open educational resources and investigate the satisfaction of the students with the resources by using the test of creative problem solving and the test of public consciousness of which questions were designed in the form of situational dialogue.
Step 4: Ask for the verification and approval of the open educational resources from the experts.

4. Sampling group

The 75 students programming in early childhood education, studying the Educational Innovation course in the second semester of the academic year 2013 at Thepsatri Rajabhat University, were sampling to this research by a purposive technique. The samplings were grouped to fifteen, for each is five students and take part in any activities provided in the study and create the media about the local food for public relations.
5. The Open Educational Rajabhat University Students Resources Using Service Learning Model

![The Open Educational Rajabhat University Students Resources Using Service Learning Model](image)

Fig. 1. (a) The Open Educational Rajabhat University Students Resources Using Service Learning Model

The explanation of the figure “The Open Educational Rajabhat University Students Resources Using Service Learning Model.” There are three phases of the research procedure with their steps as follows:

**Phase I: Field study investigating the information about local food**

This phase is the beginning of public consciousness model in order that the students perceive and realize by emphasized on the preparation and comprehension of the learning including planning, identifying and barnstorming the activities for the students’ community, so that the public consciousness was introduced and gradually instilled in them.

The steps in the first phase were as follows;

*Step 1: Explaining how to implement the resources, analyzing and identifying the points to study*

The learning introduction, syllabus, objectives and contents were informed by the researcher. The lists of the local food which should be preserved were presented to the students to choose according to their interest so that they were assigned to create the media of that food in order to publicize afterward.

*Step 2: Organizing and planning before the field study*

Each student in a group consisted of five students presented the information of each local food he or she preferred. Then, only one local food from each group was selected with the reasons why the group chose it. After that, the members of each group must plan how to collect the information and data about the local food in their community, and even discuss the method or instruments they used for data collection (e.g. interviewing, investigating the local people, taking a photo, voice or video recording, etc.)

*Step 3: Field study and information collection*

The aforementioned step referred to the survey and gaining the information of the local food not only its recipe such as its ingredients, directions and nutrition, but the relationship between local food and various aspects of the community such as its geography, folkways, customs and ways of life. Along this step, the opportunity to study...
the media used for local food public relations was provided for the students. The students themselves were assigned to ask for the local people’s opinion who directly gave them the information about the local food as well as types of media used for public relations.

**Step 4: Thought reflecting on the field study**

The students reflected their thought towards the experiences gained from the field study where they could learn from the actual context, local wisdom and the causes why the local people had been keeping cooking and preserving the local food. Moreover, the type of media used for local food public relations was revealed in this step.

**Phase II: The design and development of the media regarding the local food as well as its implementation and evaluation**

After investigating, Phase II is the enhancement of public consciousness in students was provoked by giving the morality through learning sessions, critical thinking, implementation and the activities dedicated to public society. In this phase, there are three steps as follows;

**Step 5: Designing and developing the new public media about the local food**

The fifth step looked complicated because it was subcategorized into three steps as followings;

**Step 5.1 Media Analysis before its design:** There are six sub-steps as follows;

- **5.1.1 Fact finding (Perceiving of the states of media used at present time):** The media used for the local food public relations were studied by each group as followings; printed materials, audio-visual media, social network media, electronic media, etc. Each group must identify the information about the media used for local food public relations in terms of its sources, objectives, and the analysis of the details such as pros and cons of the media type selected.

5.1.2 Identifying the problems: The problems in details of each media type were revealed and identified by the students. Furthermore, they must identify the principles they used to categorize the problems.

5.1.3 Prioritizing the problems: The students must identify the most important problem to be dealt with first after they had put in order. The summary of the problem each group would deal with was elaborated with the reasons.

5.1.4 Identifying the solutions: The problem solving skill was emerged in each student when he or she identified a variety of solutions for each problem together with a reasonable reason and possible solution into practice, that comprises of fluency, flexibility and originality.

5.1.5 Choosing the best solution: Each group provided themselves the better solutions along with its pros and cons and the reasons why that solution was selected with their consideration of the evaluation and equivalence of the context, decreasing of the expenses, worthiness and time consuming as a criterion to determine.

5.1.6 Identifying the methods of the solution: The plans and the procedure for the implementation were produced including their outcomes.

**Step 5.2 The Media design:** The information collected in the step of media analysis was used and shown in the form of a flowchart in order to design the media about the local food of which image is different from any other and much more interesting. In the flowchart, the students must identify the things would be contained in the media such as its photos, text, graphics, video clip, etc.

**Step 5.3 The development of the media:** Each group developed the media as they had planned and designed. The communication on the form of synchronous (office hour of the researcher or chat on the online media) and asynchronous (such as a blog or web board) were provided once the students need helps.

**Step 6: Implementing the media**

The developed medium about the local food was verified and tested before the application, so that it became accurate and appropriate to publicize.

**Step 7: Evaluating the media and determining the solution for adjustment**

The medium was revised and checked once the comments or suggestions were identified. The publication of the medium was allowed to do when it was approved.

**Phase III: The publication and appreciation of the media created**

Phase III of the model focus on the appreciative reflection of students in practicing and media publicizing. The steps in the final phase were as follows;
Step 8: asking for the certificate or license to publish the media;

The legal license called “Creative Commons”, a nonprofit organization that works to increase the amount of creativity available in the body of work that is available to the public for free and legal sharing, use, repurposing, and remixing, was generated once the medium on the purpose of local food broadcasting was considered complete. The license which was applied on top of copyright can be modify the students, as a generator and creator of the medium, the terms to best suit their needs.

Step 9: Using the medium and publicizing

The medium produced for local food publication was accessed by anyone on the Internet.

Step 10: Evaluating the developed open educational resources

The medium was evaluated by the user of the Internet who was publicized by the local food advertisement in order that the students could make use of some mistakes found in it, the comments or suggestions in the medium improvement. The users can be varied such as from anyone who felt interested in to a person who was the expert in local food, a gourmet, a tourist, or even an organization such as Tourism Authority of Thailand, etc.

Step 11: Appreciating the significance of his or her media.

After the medium had publicized on the online media, the awareness of an inspiration to the advantages of the published medium were perceived by the students once they were encouraged to review their medium. The medium of the students will be beneficial to the public society in terms of the preservation of the local wisdom regarding local food, knowledge sharing to anybody in the world via the online media and, last but not least, the appreciation of the significance in the medium that they generated by themselves.

6. Results

6.1 Result of Public Consciousness sampling

The results show that the average of overall public consciousness ability of sampling students is in very good level (103.28). As analyzing the point range, the public consciousness ability of 65.33 percent of all students (49 students) is in very good level (point range from 102 to 120). 32 percent of all students (24 students) and 2.67 percent of all students (2 students) are in good level (point range from 84 to 101) and fair level (point range from 66 to 83) respectively, analyzed by questionnaire situation 30 multiple choice questions. Each choice is the point level from 1 to 4.

6.2 Result of Creative Problem Solving Sampling

The results show that the average of overall creative problem solving ability of the sampling students is 3.47 which is in good level. As analyzing the point range, 64 percent of all students (48 students) is in very good level (point range from 3.51 to 4.00). 36 percent of all students (27 students) is in good level (point range 2.51- 3.50), analyzed by Test of Creative Problem Solving Ability, provided by questionnaire situation 8 questions (written answer). Each choice is the point level from 0 to 4, the criteria is 5-point rubric.

7. Discussions

7.1 According to the results of the study, the well-organized and planned design of the open educational resources aiming at service learning resulted in very good level of the students’ public consciousness. Almost 2 of 3 in sampling students is in very good level. For the rest students, the less level is directly variable with the number of them. It was because the students could understand and realize the importance of service learning that included the students’ good opportunity to do field study investigating the information about food which interests them, and that related to local wisdom and the life style of people in the community. Additionally, the aforementioned design provided the students the opportunity to consider the method to present the public their developed medium. The good procedure of design affected satisfying results as mentioned in the study of Berle (2006) stating that the positive public awareness could be enhanced in student since what they had made different in learning and had applied knowledge in real world situation were what they preferred to do.

Moreover, the procedure of which participant had collaborated to achieve the goal could improve public relations and relation with strategic partners according to the results gained from the well publicized OER project (Hodgkinson-Williams, 2010). Furthermore, the open educational resources provided the students how to make use of technology for communication, and let them participate in the creative activities writing and posting of the
Internet, mixing and constructing multimedia and developing their own content (Lenhart and Madden, 2005). All in all, the students become very proud of and realized the beneficial knowledge bank gained from the community because of the procedures of the media design. That is, the medium was developed after students had assisted and taken part in, had done the field study including had publicized to public

7.2 According to the results of the study, almost 2 of 3 in sampling students is in very good level, the overall creative problem solving in student enhanced at a good level on accounting of the open educational resources that supported the students to develop the medium using for public relations. The medium of which design and procedure of its development leading to creative problem solving was come up with differently from those used and seen generally. Its procedures consisted of the analysis of the states of media used at present time, prioritizing the problems and eventually finding as well as selecting the best solutions to design, develop, implement and evaluate the medium. The results of this study was equivalent to the studies of Parnes (1967) mentioning the steps of creative problem solving which comprised objective finding, find out the fact, find out the problem, find out the idea, find out the solution and acceptance finding.

The results of the development of the open educational resource based on web-based system was similar to the study of Minamino and Kinoshita (2010) studied about group idea generation where the students were able to exchange an idea to one another and compete with others in finding good points of evaluated member idea based on web-based system. The system enhanced those students in creative problem solving.

Additionally, the open educational resources system developed into online system could support the students the development of thinking, and then they could exchange it so that its conclusions were made at anytime and anywhere. Furthermore, it could store and record the activities completed by learners in the format of both individual and group. The aforementioned system was equivalent to the design of web-based creative problem solving system using knowledge-based management that enhanced the students’ creative problem solving according to the study of Lin and Hsien-Sheng (2004). In addition, the service learning in students led to creative problem solving as mentioned in the study of Wei and Jianjun (2012) focusing on how to enhance the students’ higher-order skills through community service learning using scaffolding for creative problem solving. According to the study of Wei and Jianjun (2012), their instruments used could enhance the students’ creative problem solving, learning efficiency, and reflection of learning experiences to the African American student’s future careers.

8. Recommendations

8.1 The students should be prepared and got ready for skills in using the open educational resources by the instructor in order that they were acknowledged the steps and process of its implication. Therefore, the students could follow them and be facilitated by the instructor once the assistance or suggestions were needed.

8.2 Public consciousness in the students could be instilled when it was inserted into each activities provided in the open educational resources which encourage and inspire them to realize the value of the develop medium and ability to create it for society.

8.3 The instructor’s roles are to encourage the students to enhance the creative problem solving by expressing opinions to find out various solutions. The instructor should precisely design the activities of which objectives or goals are concerned with.

References


