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Collaborative Learning Through Flipped Classroom to Promote Pre-Service Teachers' Ability to Develop Local Curricula

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ABSTRACT

The objectives of this study were to 1) develop learning using Co-operative Based Learning with the concept of a flipped classroom to enhance the ability of local curriculum development for teacher students at the Faculty of Education, Silpakorn University, and 2) study the effectiveness of learning using Co-operative Based Learning with the concept of a flipped classroom in terms of 2.1) learning outcomes on the local curriculum development, 2.2) ability to develop a local curriculum, 2.3) ability of curriculum implementation, and 2.4) students' opinions towards the learning. The samples used in this study were selected group of undergraduate students in the Faculty of Education in academic year 2015. The instruments included a -30item test on learning, an assessment form to assess the ability of local curriculum development, an assessment form to assess the curriculum implementation and questionnaires for students' opinions. The statistics used in the study were mean, standard deviation, and content analysis. The research revealed that 1) the learning development using Co-operative Based Learning with the concept of a flipped classroom called "A-TCIAPE" had the following steps: Step 1-Ask and Answer, Step 2-Topic Selection, Step 3-Cooperative Planning, Step 4-Implementation, Step 5-Analysis and Synthesis, Step 6-Presentation of Final Report, and Step 7-Evaluation, and 2) the effectiveness of the learning using Co-operative Based Learning with the concept of a flipped classroom were 2.1) learning outcomes of students on the topic of the local curriculum development were at a high level, 2.2) the ability of the students on the local curriculum development was at the highest level as a whole, 2.3) the ability of students to use the local curriculum was at the highest level, and 2.4) students' opinions towards the learning based on "A-TCIAPE" was appropriate at a high level.

Keywords :Learning Development, Co-operative Based Learning, Flipped Classroom

Introduction

The promulgation of The National Education Act (NEA) of 1999 on 20 August 1999 contributes to learning reform that aims at maximising learners' benefits, which is the heart of educational reform. (Office of Education Council, 2005) For ten years since the introduction of the learner-centered approach introduced by NEA has caused changes on education policy, instructions, learning assessment and evaluation, quality assurance in teachers and human resources management, as well as the participation from all stakeholders and parties to reflect the aim of the educational reform. In order to achieve the desirable values and the "good, smart, and happy" characteristics, the learning must be reformed in the way that wisdom and morality are concurred.

Education administration and managements are indicated in Chapter 4, Section 22-26, 29-30 of the National Education Act (Ministry of Education, 2003). In accord with Section

22, the principle that education will be based on is that all learners are capable of learning and self-development and are regarded as being most important. The teaching and learning aim to enable learners to spontaneously develop their own potential. As mandated by Section 23, education through formal, non-formal, and informal approaches shall give emphases to knowledge, morality, learning process, and integration of the following, depending on the appropriateness of each level of education. Under Section 30, educational institutions shall develop effective learning processes. In so doing, they shall also encourage instructors to carry out research for developing suitable learning for learners at different levels of education as reflection to the requirements of Chapter 5, Section 31, and 37-40.

Graduate level study is a pathway and source of knowledge that can lead to academic advancement. Not only is this the tool for human resource development, but also a crucial factor of country's development. The purposes of undergraduate study are to develop and equip an individual with knowledge and skills that are necessary for their future career. Motivation in learning new things, drive for self-development, critical thinking, analytical skills and evaluation, creativity, application of knowledge and innovation, management skills, and being a good team member are mandatory for an undergraduate level study apart from communication competency, skills in using technology as a tool, and morality.

Faculty of Education of Silpakorn University is designed for students who seek to pursue their career as a teacher. Students will be equipped with the mandatory requirements of teaching career including knowledge, learning approaches that are suitable for different subjects, and the codes of ethics (Sithsungnoen, C.,2014:58-59). Moreover, knowledge in curricula is the key for a teacher of any subject, especially that of basic education in which the teacher must be able to develop local curricula.

A teacher must be trained to be proficient in their profession where they are required to be able to develop new techniques of teaching, use teaching tools and materials effectively, be up to date, and be able to adjust among changes of the society. Apart from those skills, the main proficiency that a teacher must possess is teaching skills. There are a number of learner-centered methods available for teachers to apply and develop for their teaching, Co-operative approach is one of those that encourage learners to contribute to team objectives and earn mutual success. This approach does not focus on writing a report, making a model, discussing, experimenting and the whole learning then summarized by a teacher, instead, learners will be motivated and supported by a teacher to come up with their own concept of that learning (Techakupt, P., 2001:73-76). Co-operative approach requires a teacher to find the most appropriate technique for learners where they will be motivated to work as a team and be responsible for their tasks. They will also need to be made aware that to achieve the goal, teamwork is the key, and this is the reflection on the success of co-operative approach. Apart from using teaching techniques, the technology of the 21st century "3R7C (C=Computer)" where online information on the Internet can be of use. This idea is called Flipped Classroom, a learning method where learners can study at home and do their homework at school. This method is well adopted by schools in the US, and has started to adopt the idea of Flipped Classroom to use in primary level and secondary level schools. What learners used to do at school will be done at home and vice versa. Teachers will be the last resource that learners will seek as they will learn by themselves online or other sources of information. This is so called a truly Chile-Center Education (Manawanitcharoen, W., 2016).

The approaches of both Co-operative Based Learning and the idea of Flipped Classroom, if being applied to a classroom instruction, can effectively develop understanding and skills of any subject taught. As the author of this research and being a teacher of Curriculum and Supervision Department teaching Curriculum Development 462 201 as part of a Bachelor Degree of Teaching at Silpakorn University, focusing on enhancing teacher

students' skills to develop local curricula and test it at an actual educational institute. This way of learning is expected to bring benefits to the individual and the society as a whole; therefore, the author is interested in using Co-operative Based Learning and Flipped Classroom approaches to cultivate knowledge and proficiency for teacher students of the Faculty of Education of Silpakorn University.

Objectives of the Study

1. To use Co-operative Based Learning and Flipped Classroom concept to develop the local curricula development courses for teacher students who study Curriculum Development 462 201 at the faculty of Education of Silpakorn University.
2. To study the effectiveness of Co-operative Based Learning and Flipped Classroom approaches in terms of: 2.1) learning outcomes on the local curriculum development, 2.2) ability to develop a local curriculum, 2.3) ability of curriculum implementation, and 2.4) students' opinions towards the learning.

Research Questions

1. What are Co-operative Based Learning and Flipped Classroom approaches?
2. Effectiveness of Co-operative Based Learning and Flipped Classroom approaches in the following aspects:
 - 2.1 What are the learning outcomes of the local curricula development?
 - 2.2 What is the level a teacher student's ability to develop a local curriculum?
 - 2.3 What is the level of a teacher student's ability to apply the developed curriculum?

Scope of Study

Population and Samples. The population included 4 sections of 68 undergraduate students who study Curriculum Development 462 201 during the last semester of academic year 2015 at the Faculty of Education of Silpakorn University.

The samples consisted of a section of 31 undergraduate students majoring Early Childhood Education who study Curriculum Development 462 201 during the last semester of academic year 2015 at the Faculty of Education of Silpakorn University.

Variables. Independent variables are Co-operative Based Learning and Flipped Classroom concept. Dependent variables are; learning outcomes of the local curricula development, ability to develop a curriculum, ability to use the developed curriculum, and learners' attitudes.

1. Contents of the Curriculum Development 462 201 of the Faculty of Education at Silpakorn University.
2. The timeframe of six weeks of this study began during the last semester of academic year 2015 which started from March – April 2016. The developed curricula were used at education institutes in the third week of May 2016.

Methods

The methods used for this research included the following steps: Research (R1) was the analysis of Co-operative Based learning approach and Flipped Classroom concept that is to be used by undergraduate teacher students of Curriculum Development 462 201. The analysis included: 1.1) a research on documents or studies in the field of learning and instructions as well as that of graduate level study, 1.2) an analysis of the contents of Curriculum Development 462 201, an analysis of Co-operative Based learning approach and Flipped Classroom concept. Development (D1) was the development of Co-operative Based

learning approach and Flipped Classroom concept for undergraduate teacher students of Curriculum Development 462 201. Instruments and methods used for this process included:

1. Used the analysed result of R1 to develop a new method of instruction.
2. Developed tools for data gathering which included:
 - 30 items of multiple-choice test on the learning outcomes of Curriculum Development 462 201
 - 1-5 rating scale assessment forms curriculum development ability including 12 aspects: vision, objectives, structure, course syllabus, learning outcomes, learning units, contents, learning activities, learning materials, learning resources, projects, and assessment
3. 1-5 rating scale assessment forms on ability to apply the developed local curriculum for the following 4 aspects including teachers, contents, learning activities, and assessments 1-5 rating scale questionnaires on students' attitudes towards Co-operative Based learning approach and Flipped Classroom concept on 4 aspects including 1) learning activities, 2) learning materials, 3) classroom atmosphere, and 4) assessment.
4. All developed tools were submitted to 5 professionals for quality check and accuracy of the contents using the index of IOC between 0.80-1.00. Feedbacks and comments from the professionals were obtained and used for further improvements.
5. Research (R2) was the implementation of Co-operative Based learning approach and Flipped Classroom concept, using the instruments from D1, with the sampled group of 31 undergraduate students majoring Early Childhood Education who study Curriculum Development 462 201 during the last semester of academic year 2015 at the Faculty of Education of Silpakorn University. The timeframe of this implementation was 6 weeks starting from March-April 2016. At this stage, the researcher and the students have set up a Facebook Page called "Curriculum Development 462 201" where learning resources or videos were shared. Following that, 30 items of multiple-choice test on the learning outcomes were given to the students whom then were assigned to develop a local curriculum for their subjects during April time. The researcher had assessed the assignments submitted by the students and coordinated with Tetsaban 2 School (Wat Sa-neha) requesting the curricula to be implemented there during the third week of May 2016. Assessment on the implementation was completed and questionnaires were given to the students.
6. Development (D2) assessed the implementation of Co-operative Based learning approach and Flipped Classroom concept on the aspects of: 1) learning outcomes, 2) ability on local curricula development, 3) assessment on the ability to use the local curricula, 4) students' attitudes after the implementation of Co-operative Based learning approach and Flipped Classroom concept.

Results

1. The implementation of Co-operative Based learning approach and Flipped Classroom concept as additional skills for teacher students at the Faculty of Education of Silpakorn University to develop local curricula has revealed the following 7 steps of instructions called A-TCIAPE. Step 1: "Ask and Answer" this was when the students had a discussion about the video they had watched. Step 2: "Topic Selection", students were divided into groups of 4-5 people to work on an assignment. Step 3:

Students performed “Cooperative Planning” to develop a local curriculum as part of selected assignment. Step 4: The “Implementation” of the plan began at this stage. Students had gathered information from several sources of information as well as websites. The lecture also provided support and advice during this stage. Step 5: “Analysis and Synthesis” of the local curricula developed by students using the information and the plan created in step 3. Lecturer and classmates were to provide feedbacks and comments during their presentations. Step 6: Students gave a “Presentation and Final Report” of the implementation of their developed local curricula at the cooperative school that had been coordinated by the lecturer who assessed the curricula along with the teacher at that school. Step 7: “Evaluation”. The lecturer and the students evaluate the implementation of the local curricula. Feedbacks and comments were shared among groups of students.

2. A-TCIAPE revealed that 2.1) learning outcomes of students on the Curriculum Development course were at good level, 2.2) students’ abilities to develop curricula were at high level, 2.3) students’ abilities to implement the developed local curricula were at high level, 2.4) students’ opinions towards the learning based on "A-TCIAPE" was appropriate at a high level.

Discussion

The results of the implementation of Co-operative Based learning approach and Flipped Classroom concept as additional skills for teacher students at the Faculty of Education of Silpakorn University to develop local curricula were discussed on the following aspects:

1. The development of Co-operative Based learning approach and Flipped Classroom concept as additional skills for teacher students at the Faculty of Education of Silpakorn University to develop local curricula using the 7 steps of “A-TCIAPE”; 1) Ask and Answer, 2) Topic Selection, 3) Cooperative Planning, 4) Implementation,
2. 5) Analysis and Synthesis, 6) Presentation of Final Report, and 7) Evaluation, have been developed based on the Co-operative Based Learning. A number of academics have identified the Co-operative Based Learning as the approach where different knowledge and skills are shared to complete tasks and achieve mutual goals (Jaitiang, A., 2007). This is similar to the definition given by Slavin Robert in 1995, which stated that Co-operative Based Learning is the approach where a small group of 4 students who possess different knowledge and skills work together on given tasks and support each other to achieve mutual goals. The researcher has also studied on a very popular instruction method called Flipped Classroom concept that has been considered as skills of the 21st century. “Study at home and do homework at school” is the slogan of Flipped Classroom concept that obviously illustrates how this concept can be applied. Students watch an online video of a lesson as homework and apply the knowledge on their assignments. Teachers and friends will still provide supports if required (Panit, W., 2013). Thai teachers are required to adopt the Child-Centered approach focusing on the integration of subjects where teachers facilitate learning materials and prepare a variety of learning activities to encourage learners’ curiosity regardless of time or places (Office of the Education Council, 2013), (Techakupt, P., 2514). This approach encourages learners to seek their own pace of understanding and development which matches with the study of The Instruction Design Flipped Classroom Model by Using WebQuest Activities to Develop Learning Skills in The 21st Century for Students in Higher Education (Jirangsuwan, P and N., 2015)

3. The effectiveness of the implementation of Co-operative Based learning approach and Flipped Classroom concept as additional skills for teacher students at the Faculty of Education of Silpakorn University to develop local curricula were discussed and revealed that; 2.1) learning outcomes of students on the Curriculum Development course were at good level as a result of learning activities that the researcher had developed to meet the learning requirements of the students. The A-TCIAPE allowed students to work in groups and use appropriate technology to gather, share, and discuss the information among groups. Using technology as a tool for learning gives students their own pace to learn the video of lessons and build their own understanding prior to sharing and discussing with classmates (Bergmann Jonathan and Aron Sams, 2012), 2.2) high level of students' abilities to develop curricula can reflect the effectiveness of previous studies database that students have access to which could help them developed their own local curricula. Flipped Classroom concept is an innovation of education that allows learners to do the "Mastery Learning" and escalates the values of teaching to the next level by using technology as tools in learning (Pahe, S., 2013), 2.3) students' abilities to implement the developed local curricula were at high level, especially the abilities to prepare learning materials and activities as well as learning atmosphere. The researcher has observed the implementation of the local curricula developed by the teacher students and found that the learning atmosphere was delightful and fun because learning materials such as songs, or games were used in the classroom. Co-operative Based Learning encourage every member of a group to contribute by giving roles and responsibilities while supporting each other to enhance team confidence to achieve mutual goals, 2.4) students' opinions towards the learning based on "A-TCIAPE" was appropriate at a high level for the reason that students were able to work mainly on their own by interacting and discussing knowledge among their groups.

Suggestions

Suggestions for implementation

- a. To effectively implement the A-TCIAPE, videos or learning materials should be suitable for each learning unit. This requires teachers' skills on researching for suitable videos from a variety of resources to let students study prior to attending classes.
- b. Conditions, learning plan, learning objectives, and criteria of assessment must be informed since the first hour of lecture.

Suggestions for implementation

1. Conduct more research on the implementation of Co-operative Based learning approach and Flipped Classroom concept on other subjects.
2. Flipped Classroom concept can be implemented with other teaching techniques or the research can be only for the purpose of self-learning.

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