

Understanding an active learning of Pre-service Teachers in Southern of Thailand

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Abstract: The aim of this study was to enhance pre-service teachers understand about active learning. There were thirty one pre-service teachers from Yala Rajabhat University to be participants in this study. The beginning of collecting data starts from providing the pre-service teachers did the activity of teaching activity in active learning by watching the video of teaching active learning in science class. Then let them do the worksheet, twelve item of teaching and learning activity. After worksheet, we provided pre-service teachers did mine-mapping to give the meaning and characteristics of active learning. Data from worksheet was descriptive statistics and data from mine-mapping were analysed by interpretation method, which there are grouped and coded then categorizing and interpretation. The results of thirty one pre-service teachers did the worksheet by selecting the teaching active learning or passive learning found that most of them understand about active learning. There were shown the percentage of pre-service teachers' correct answer about 100 %, 96.774 %, 93.548 % and 83.871 %. However, there were some pre-service teachers confused some of the teaching and learning that were active learning or passive learning. There were 6.452 %, 3.226 %, 6.462 % and 16.129 % of pre-service teachers wrong the answer in items 2, 3, 5 and 8, respectively. The results from the investigation the mine-mapping of pre-service teachers presented the meaning of active learning found that most of pre-service teachers understand the active learning completely. They presented the meaning of active learning corresponding with characteristics of active learning.

Keywords: Understanding, Active learning, Pre-service teachers

1. Introduction

Developing the process of pre-service teacher training in teaching science is an issue for educational research. They must receive the knowledge and a way of teaching and learning in class. When the pre-service teacher knew the processes of teaching and learning in class. It makes them as a good teaching. In a good teaching, teacher needs to see students working in small group and listen to the students' comments during small group to determine how students are applying science concepts. This teaching style is a part of characteristics of active learning. Since active learning is the learning process that encourage students to participate in doing an activity and provide them to think about what they are learning (Bonwell & Eison, 1991; Moustafa, 2013). Furthermore, the active learning, teacher needs to provide students to collaborate in doing an activity and learning and provide students to interact with classmate and their teachers in the class (Bonwell & Eison, 1991; Michael, 2006; Akinoglu & Tandogan, 2007 and Vickery, 2014). In addition, the characteristics of active learning that most of researcher use in teaching active learning consisting of;

- Students are involved in more than listening.
- Less emphasis is placed on transmitting information and more on development of students' skills.
- Students are involved in higher order thinking
- Students are engaged in activities.
- Greater emphasis is placed on students' exploration of their attitudes and values.

Although, the active learning plays an important role for teachers need to use in science teaching. Actually, there are many pre-service teachers still perform as teacher center and teach students with lecture instruction. The lecture is the teaching style that teachers transfer the knowledge to put the students' memory (Prince M 2004). Moreover, these teachings prompt the students' lack of active learning in science class. In Thailand, pre-service science teachers, who are the teacher students, they have studied four-years of coursework and spend a year for practicum to gain field experience in school. They cannot improve the lesson plan, teaching techniques, student learning processes and instructional material (Faikhamta, Jantarakantee & Roadrangka, 2011). Moreover, many pre-service teachers still used traditional teaching such as lecture and inability to create scientific activity. This teaching prompts the students learn as passive learning. The reason that teachers are unable to create their own learning management is caused by many factors. One of them may be from the teacher does not understand the active learning, what is active learning?. The above mentioned a cause of active learning shown that the active learning is an important that pre-service teachers need to receive an understanding of active learning because they are teacher students and become to teachers in the future. In addition, in real situations of practicing in the school, they have some problem in creating active learning in teaching science. As well as the pre-service teacher from southern of Thailand, Yala Rajabhat, University, where live in the three provinces of Thailand.

The background of pre-service teachers in Yala Rajabhat University focused on using media internationals to teach students in the school. All of them a little used the teaching activity that provides students to learn with active learning. Most of them are difficulty in creating active learning in teaching activity when they practicum in school. From the real survey of their teaching found that most of them used cookbook and read the information from textbooks, which they lack of creating active learning in teaching science. Consequently, in this study, we want to enhance pre-service teachers understand about active learning in teaching science in order to develop pre-service teachers' teaching in the future.

2. Methodology

Thirty one pre-service teachers from Yala Rajabhat University, who teaches students studying in the five years of study and practicing in the school for one year. The study we employed a mix method to research design from Creswell, 2003. In the preparation of pre-service teachers' practicum year in the school, they need to learn about teaching and learning management before they practicing in the school. Therefore, in this study pre-service teachers were trained in active learning workshop. To provide them to understand about active learning in teaching science. In the workshop, there were two activities to provide pre-service teachers to learn active learning including; 1) workshop of teaching activity in active learning and 2) workshop of the meaning and characteristics of active learning. Each of the activity let the pre-service teachers discuss, share idea, comment and present in teaching and learning what they get in the workshop.

2.1 Data collation

The beginning of collating the data starts from providing the pre-service teachers did the activity of teaching activity in active learning by watching the video of teaching active learning in science class. Then, we let them do the worksheet, twelve item of teaching and learning activity, by selecting teaching activity are groups of active learning or passive learning, as shown in table 1.

Table 1

The worksheet of teaching and learning activities in science class

Teaching and learning activities	Active learning	Passive learning
1. Teachers have students work in groups and have students discuss and conclude together.		
2. Teachers teach the student by reading content and having students read along together in class.		

Table 1 (Cont.)
The worksheet of teaching and learning activities in science class

Teaching and learning activities	Active learning	Passive learning
3. Teachers teach students by writing the content on the blackboard and have students write it down.		
4. Teachers have students perform an experiments and activities by themselves.		
5. The teacher taught the experiment by demonstration.		
6. Teachers have students to present the results of the experiment or what they have learned to classmate.		
7. Teachers have students do innovations by self-learning.		
8. Teachers teach students by using videos as teaching and learning materials to students listening.		
9. The end of study, teachers and students summarize the knowledge.		
10. Teachers explain and summarize the experiment results to students.		
11. Teachers have students to perform experiments in accordance with the manual.		
12. Students receive learning by reading, writing, and analyzing the problems.		

The second of collecting data, we provided pre-service teachers to do the activity of giving the meaning of active learning and characteristics of active learning. This activity, we let pre-service teachers do mine-mapping by themselves.

2.2 Data analysis

The worksheet of pre-service teachers selected about teaching and learning activities in science class were analyzed with descriptive statistics. The data from mine-mapping were analysed by interpretation method, which there are grouped and coded then categorizing and interpretation based on characteristics of active learning from Bonwell & Eison, 1991 as shown in table 2.

Table 2
The characteristics of active learning criteria

Characteristics of active learning	Codes of active learning
- Students are involved in more than listening.	- Interaction, collaboration
- Less emphasis is placed on transmitting information and more on development of students' skills.	- Practicing
- Students are involved in higher order thinking.	- Analysis and Creating
- Students are engaged in activities.	- Writing, discussing, observing, brainstorming
- Greater emphasis is placed on students' exploration of their attitudes and values.	- Presentation

(Ref. Bonwell & Eison, 1991)

3. Results and discussion

Results from thirty one pre-service teachers did the worksheet by selecting the teaching activity of active learning or passive learning and did the mine-mapping of providing the meaning of active learning. There were the results from there as follow;

3.1 *Selecting the teaching activity in active learning and passive learning*

The activity of selecting the teaching activity in active learning and passive learning there was twelve item of teaching and learning activity. The pre-service teacher need to select the groups of active learning or passive learning. The result of selecting the teaching and learning activity in active learning and passive learning as shown in the below as follow;

- Item 1: - Teachers have students work in groups and have students discuss and conclude together. This teaching activity was active learning, there were 100 % of pre-service teachers correct the selecting.
- Item 2: - Teachers teach student by reading content and having students read along together in class. This teaching activity was passive learning, there were 93.548 % of pre-service teachers' correct answer and 6.452 % of them wrong answer.
- Item 3: - Teachers teach students by writing the content on blackboard and have students write it down. This teaching activity was passive learning, there were 96.774 % of pre-service teachers' correct answer and 3.226 % of them wrong answer.
- Item 4: - Teachers have students perform an experiments and activities by themselves. This teaching activity was active learning, there were 100 % of pre-service teachers correct the selecting.
- Item 5: - The teacher taught the experiment by demonstration. This teaching activity was passive learning, there were 93.548 % of pre-service teachers' correct answer and 6.452 % of them wrong answer.
- Item 6: - Teachers have students to present the results of the experiment or what they have learned to classmate. This teaching activity was active learning, there were 100 % of pre-service teachers correct the selecting.
- Item 7: - Teachers have students do innovations by self-learning. This teaching activity was active learning, there were 100 % of pre-service teachers correct the selecting.
- Item 8: - Teachers teach students by using videos as teaching and learning materials to students listening. This teaching and learning activity was passive learning, there were 83.871 % of pre-service teachers' correct answer and 16.129 % of them wrong answer.
- Item 9: - The end of study, teachers and students summarize the knowledge. This teaching activity was active learning, there were 100 % of pre-service teachers correct the selecting.
- Item 10: - Teachers explain and summarize the experiment results to students. This teaching activity was passive learning, there were 100 % of pre-service teachers correct the selecting.
- Item 11: - Teachers have students to perform experiments in accordance with the manual. This teaching activity was passive learning, there were 100 % of pre-service teachers correct the selecting.
- Item 12: - Students receive learning by reading, writing, and analyzing the problems. This teaching activity was active learning, there were 100 % of pre-service teachers correct the selecting.

The results of thirty one pre-service teachers selected of teaching and learning activity as active learning or passive learning found that some of pre-service teachers still confused about teaching and learning activities as active learning or passive learning. Some teachers given the answer wrong in items of; item 2: teachers teach student by reading content and having students read along together in class, item 3: teachers teach students by writing the content on blackboard and have students write it down, item 5: the teacher taught the experiment by demonstration and item 8: teachers teach students by using videos as teaching and learning materials to students listening. All of

the results were shown in the figure 1, graph of pre-service teachers select types of active learning and passive learning in teaching activities.

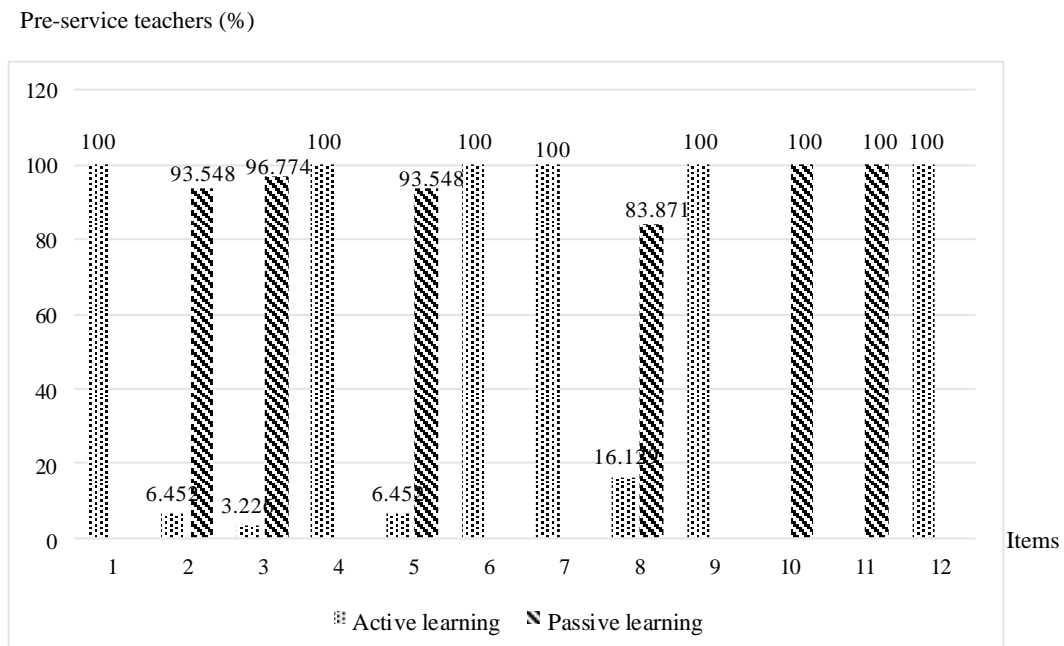


Figure 1. Graph of pre-service teachers select types of active learning and passive learning in teaching activities

From the graph in figure 1 shown that most of pre-service teachers could correct the answer. They understood about active learning in teaching science, as shown the percentage of pre-service teachers' correct answer about 100 %, 96.774 %, 93.548 % and 83.871 %. However, there were some pre-service teachers confused some of teaching and learning activities that were active learning or passive learning. The items of some pre-service teachers the wrong answer consisting of; the item 2, 3, 5, 8, which there were pre-service teachers wrong answer about 6.452 %, 3.226 %, 6.462 % and 16.129 %, respectively.

3.2 The meaning and characteristics of active learning

Results from investigation the mine-mapping of pre-service teachers presented the meaning of active learning found that most of pre-service teachers understand the active learning completely. They presented the meaning of active learning corresponding with characteristics of active learning from Bonwell and Eilson (1991). There were four groups that giving the meaning of active learning as shown in table 3 as follows;

Table 3
The meaning and characteristics of active learning

Groups of pre-service teachers	The meaning and characteristics of active learning
Group 1	- They give the meaning of active learning was; "the active learning is a student participant in doing activities and learning by own self such as observing, discussion, collaboration, brainstorming, analysis and presentation. The active learning activity is teacher teach students by providing students to learn by themselves and do the activity together in a group, which make the students interact with their friends".

Table 3 (Cont.)
The meaning and characteristics of active learning

Groups of pre-service teachers	The meaning and characteristics of active learning
Group 2	- They give the meaning of active learning was; “the teaching and learning that support students learn by themselves, such as students can discuss, observe, share idea, comment, help doing work and talk with teachers, which prompt the students interact and participate in the learning”.
Group 3:	- They give the meaning of active learning was; “the active learning is a learning that support students discuss, observe, present, comment, collaborate in doing an activity, interact in the learning, create something by themselves, help think together or share idea and analyse the problem to solve the problem”.
Group 4:	- They give the meaning of active learning was; “the active learning is the learning to provide students do activities with the group and help learning together. The students can discuss, observe and do experiments. The students can learn activity by themselves and interact in the learning”.

The results from table 3 found that, there were five of all pre-service teachers in groups 4 does not raise some part of characteristics of active learning, including; the characteristics of students are involved in higher order thinking and students and students’ exploration of their attitudes and values.

In addition, the result of three pre-service teachers were interviewed found that they understood about teaching and learning in active learning. The active learning were: students interact and participant in the learning and students collaborate in doing activities. Since students learn with a group and do an activity by themselves. Furthermore, students have more participation in the learning such as observing, discussion, brainstorming, analysis and presentation.

4. Conclusion

Thirty one pre-service teachers did the worksheet by selecting the teaching activity of active learning or passive learning found that most of them understand about active learning. There were shown the percentage of pre-service teachers’ correct answer about 100 %, 96.774 %, 93.548 % and 83.871 % of all of them. However, there were some pre-service teachers confused some of teaching and learning activities that were active learning or passive learning. The items of some pre-service teachers the wrong answer consisting of; the item 2, 3, 5, 8, which there were pre-service teachers wrong answer about 6.452 %, 3.226 %, 6.462 % and 16.129 %, respectively. The items of some pre-service teachers did wrong answer consisting of; the item 2: teachers teach student by reading content and having students read along together in class, item 3: teachers teach students by writing the content on blackboard and have students write it down, item 5: the teacher taught the experiment by demonstration and item 8: teachers teach students by using videos as teaching and learning materials to students listening.

The results from the investigation the mine-mapping of pre-service teachers presented the meaning of active learning found that most of pre-service teachers understand the active learning completely. They presented the meaning of active learning corresponding with characteristics of active learning from Bonwell and Eilson (1991). In addition, there were five of all pre-service teachers in groups 4 does not raise some part of characteristics of active learning, including; the characteristics of students are involved in higher order thinking and students and students’ exploration of their attitudes and values. In addition, the result of three pre-service teachers were interviewed found that they understood about teaching and learning in active learning. The active learning were: students interact and participant in the learning and students collaborate in doing activities. Since students learn with a group and do an activity by themselves. Furthermore, students have more participation in the learning such as observing, discussion, brainstorming, analysis and presentation.

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