Think-Pair-Share Model: Improving Activeness and Communication Skills of Prospective Elementary School Teachers

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Abstract. The study aimed to improve the activeness and communication skills of students through the think-pair-share model. The study was designed using a classroom action research conducted in two cycles consisting of three meetings in each cycle. The study subjects were 43 students of elementary teacher education (ETE) program at one university in Yogyakarta, Indonesia. The data were analyzed using the qualitative descriptive analysis. The instruments used were observation sheets and questionnaires. The results show that the implementation of the think-pair-share model significantly increased student activeness and communication skills.

Keywords: Think-pair-share model; Activeness; Communication skills.

1. Introduction

The development of science, technology, and information encourages changes in many aspects, including the 21st-century education. Its objective is to realize the ideals of the nation [1] and develop superior and competitive generation in the global competition. Higher education is one educational institution that drives the transformation in the dynamics of change today [2]. Therefore, the university graduates must have broad scientific insight, character, technology mastery [3], and be able to compete locally and globally.

Elementary teacher education (ETE) is a college study program that prepares and develops prospective elementary school teachers. Graduates of the ETE program who later become teachers will play an essential role in the education process. In addition to teaching science [4], teachers are also tasked with educating and shaping students’ behavior [5]. Therefore, a teacher candidate should have four competencies as stated in Law No. 14 of 2005 namely pedagogical competence, personality competence, social competence, and professional competence. Intellectual ability is considered as a professional competence which includes mastery of scientific substance related to the field of study [6], which is a teacher's fundamental teaching ability. In the ETE study program, there are several compulsory courses, one of which is the basic science concept that students learn in the second semester of lectures.

The activeness of students in the learning process should be considered by the lecturers to develop graduates with all the required competencies. Active learning process will achieve quality and better learning outcomes if it involves the students' personal experience, not just listening to what is conveyed by the lecturer. ETE students must have the ability to teach their students and be able to communicate effectively. The communication skill is one essential aspect that should be developed in the 21st-century education system [7], [8]. Communication is art and process [9] in delivering meaningful messages that can be understood by the recipient of the message [10].

Trilling and Fadel [11] state that students who have completed tertiary education are still less competent in terms of communication both orally and in writing. This is in line with the facts found in the UST class 2E of ETE program in UST (Universitas Sarjanawiyata Tamansiswa), where in the basic
science concept subject, students have not yet competent in communicating information verbally. This is evident in the students’ activities, where they have difficulties expressing their opinions and answering the given questions. Only a small number of students can actively communicate their ideas and opinions. As the ETE students are prospective teachers in elementary schools, they must have good communication skills in delivering the lesson, answering and asking questions, as well as clarifying information. Some of the ETE students come from Social Science Class in high schools, where they only learned a limited amount of natural science concept. This influences the ability to understand the basic concepts of science, which affects their activeness during the learning process.

One alternative solution is by implementing Think-Pair-Share (TPS) learning models in the Basic Science Concept subject. Huda [12] states that with the TPS model, students can work with other people while also being able to provide more opportunities for each student to show their participation in the learning process. The implementation of this model begins with thinking regarding the solution to a problem. Then students are asked to pair up and discuss their thoughts with their partners. After the discussion, each pair is asked to share what they have gained with other pairs. At the pairing and sharing stages, students will convey their ideas and opinions. In this stages, the communication ability is essential for the message to be conveyed well and can be understood by others. Effective communication can create a communicative climate where students are actively involved in learning activities. Student activeness can also be observed in group discussions, where students take part in learning by actively asking questions and listening to explanations from lecturers and friends. Then, at the sharing stage, students convey their ideas and respect the opinions of others. The implementation of this model is expected to improve students' communication skills and activeness in the basic concepts of science subject.

Based on the previous explanation, the study conducted a classroom action research that aimed to increase student activeness and communication skills. The study objective in this study was developed from the following statement: "Can the implementation of the think-pair-share model increase the activeness and communication skills of the students in the 2E class of ETE Program at Universitas Sarjanawiyata Tamansiswa?"

The rest of this paper is organized as follow: Section 2 describes the proposed research method. Section 3 presents the obtained results and following by discussion. Finally Section 4 concludes this work.

2. Research Method

The study used a classroom action research (CAR), which is a method that is conducted in the classroom in the form of actions or treatment that aims to improve the quality of learning practices and making them more rational, productive and sustainable [13]. The study was done from March to May 2018 on the basic science concept subject. The study subjects were the students of the 2E class of ETE program at the Faculty of Teaching and Education, Universitas Sarjanawiyata Tamansiswa in the 2017/2018 academic year. The number of students involved in this study was 43.

The research design used the Kemmis and Mc Taggart research model which consists of four stages, namely: a) planning; b) action; c) observation; and d) reflection on each cycle.

a. In the planning stage, the learning plan was developed including determining the method and creating a learning scenario that contains the steps to be taken, preparing observation guidelines and teaching materials, and providing an explanation of think-pair-share learning model.

b. In the action stage, the learning scenario was implemented in accordance with the predetermined planning. The implementation was carried out in two cycles consisting of three meetings in each cycle.

c. In the observation stage, student activities were observed during the learning process.

d. In the reflection stage, all activities that had been done were evaluated, the observation results were discussed to find out feedback observations, the obstacles and constraints experienced were analyzed, and improvements and plans for future implementation were discussed.
Data were collected using observation sheets and questionnaires to obtain data of student activeness and communication skills. The data were analyzed using the descriptive analysis techniques with percentages that were based on the reflection of each action cycle. The analysis was used to prepare plans to improve the learning process in the next cycle. Data from observations of student activities in the form of activeness and communication skills were analyzed by calculating the acquisition of each indicator and dividing it by maximum gain. Calculation of the percentage of student activeness and communication skills used the following equation.

\[ P = \frac{f}{N} \times 100\% \]  

Where:
- \( P \) = percentage
- \( f \) = frequency
- \( N \) = the number of individuals

The implementation of the action was considered successful if it met the following criteria: a) the implementation of the learning process followed the developed plan; b) the number of students with the level of activeness and communication skills with good quality.

3. Results and Discussion
The activities in this study developed from the Kemmis and Mc Taggart's research design, which can be described as follows:

a. Planning
   In the planning stage, the lecture activities were planned including redesigning the SLP (Semester Learning Plan), making the LPU (Lecture Program Unit) for meetings in cycles I and II, and preparing observation sheets.

b. Action
   In the action stage, the action at each meeting was implemented according to the developed learning plan, namely learning using the think-pair-share model on the topics of the digestive and circulatory systems, the proliferation of living things, living things and the environment, substances and their form, the solar system, and natural resources and technology.

c. Observation
   In the observation stage, the results provide information of the activeness and communication skills of students in cycles I and II. The data obtained through observation sheets were used to notice the process and development of student activeness and communication skills during the learning process.
   1) The observation results of the students’ activeness
      After the learning process in cycle I was done, the results show that each indicator of student activeness reached 44.62% while the percentage in cycle II reached 66.47%. The results of the average score of student activeness using the think-pair-share model for each indicator are presented in Figure 1.
Figure 1. The results of students’ activeness indicators

In the first cycle, in the student activeness indicator of paying attention to the lecturers’ explanation, the percentage reached 58.91%. Meanwhile, the activeness of answering and asking questions, giving opinions, and group discussion reached 36.66%, 24.80%, and 58.13%, respectively. In the second cycle, in the student activeness indicator of paying attention to the lecturers’ explanation, the percentage rose to 86.04%. Meanwhile, the activeness of answering and asking questions, giving opinions, and group discussion increased to 56.58%, 38.75%, and 84.49%, respectively.

Based on observations of student activeness from cycle I and cycle II, the results show that there was an increase in the average for each indicator, with the indicator of paying attention to the lecturers’ explanation, the activeness of answering and asking questions, giving opinions, and group discussion increased by 27.13%, 19.92%, 13.95%, and 26.36%, respectively. In the second cycle, students actively participated in the learning process, as could be seen during the paired discussion, where all members provide answers and explanations of the issues discussed.

2) The observation results of the students’ communication skills

After the learning process in cycle I was done, the results show that each indicator of student communication skills reached 42.73% while the percentage in cycle II reached 74.41%. The results of the average score of student communication skills using the think-pair-share model for each indicator are presented in Figure 2.

Figure 2. The results of students’ communication skills indicators

In the first cycle, in the student communication skills indicator of having a clear voice, the percentage reached 44.25%. Meanwhile, the communication skills indicators of using a proper language, seeing the other person, and understanding of the delivered message reached 40.30%, 44.80%, and 41.88%, respectively. In the second cycle, in the student communication skills indicator of having a clear voice, the percentage rose to 68.98%. Meanwhile, the communication skills indicators of using a proper
language, seeing the other person, and understanding of the delivered message increased to 72.86%, 84.49%, and 71.31%, respectively.

Based on observations of student communication skills from cycle I and cycle II, the results show that there was an increase in the average for each indicator, with the indicators of having a clear voice, using a proper language, seeing the other person, and understanding of the delivered message increased by 24.75%, 32.56%, 39.69%, and 26.36%, respectively. The results indicate that there was a desire for students to communicate well with the lecturers and between students.

d. Reflection

Based on observations on student activeness in the first cycle learning process, more than 40% of the students were less active during the learning process. However, the percentage was decreased in the second cycle to reach a percentage that was lower than 40%. In student communication skills, in the first cycle, more than 40% of the students have a lack of communication skills. However, in the second cycle, the percentage was decreased to be lower than 30%.

Increased student activeness and communication skills caused by the opportunities given to students who were inactive during the learning process to communicate actively in class alternately. In addition, with the students divided into small groups in the learning process, it makes students more active and able to work together in solving problems and tasks given [15]. The think-pair-share model involves all students in the discussion and sharing stages. This is in line with the opinion of Karge, Phillips, Jessee, & McCabe [16], which state that the think-pair-share model not only improves student learning but also involves students who may be more reserved and less likely to want to share in class so that all students can be involved in the discussion. Students can discuss with their friends in pairs to provide a deeper understanding of the topics they are studying, and it can indirectly improve students' communication skills.

4. Conclusion

The implementation of the think-pair-share model in the basic science concept subject was successful as it improved student activeness and communication skills. The results show that there was an increased percentage of each indicator.

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