THE EFFECT OF RADEC MODEL AND EXPOSITORIAL MODEL ON CREATIVE THINKING ABILITY IN ELEMENTARY SCHOOL STUDENTS IN SURALAYA

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Abstract: This study aims to examine differences in the level of creative thinking of students who follow the learning with RADEC and Expository learning model. The population in this study were all elementary students in Pagerageung sub-district and Sukaresik sub-district of Suryalaya district, West Java province. The sample of the study was 120 students who were taught by eight teachers who had attended the RADEC learning workshop and applied it in school. Data collection techniques used in this study consisted of observation, and documentation. Data analysis techniques used are different test or t-test. The results showed that learning by RADEC model statistically significant effect on the increasing ability of student creative thinking. This is evidenced from the significance of Sig. (2-tailed) in Equal variances not assumed shows a value of 0.007 and this value is smaller than $\alpha = 0.05$. Therefore, it can be concluded that H0 is rejected and H1 is accepted. That is, the hypothesis that there is a significant difference in the creative thinking ability of students who follow the learning with RADEC and Expository learning model is acceptable.

Keywords: Creative Thinking, RADEC, Expository

1. Introduction

Indonesian Education generally tends to strengthen the power of the left brain (intellect). Meanwhile in the otherside the development of the right brain (creativity) is still lacking. The impact of the current paradigm is the lack of creativity possessed by educated people (Indra, 2006:129). This statement is strengthened based on the ranking of Indonesia's creativity in Creativity and Prosperity: the Global Creativity Index in 2010, published by the Martin Prosperity Institute (MPI), that Indonesia is ranked 81st out of 82 countries (MPI, 2011: 41). The problem is thought to be caused by high-level thinking skills including creative thinking rarely trained, because the learning process usually includes tasks that must be sought by one correct answer or convergent thinking (Munandar, 2009: 7). Though the ability to think creatively is one of the important competencies of life skills. Creative thinking is one of Indonesia's national education goals which is explicitly stated in the Law of the Republic of Indonesia Number 20 of 2003 (Article 3) concerning the National Education System. The ability to think creatively is seen as important because it makes students have many ways to solve various problems with different perceptions and concepts (Awang and Ramly 2008: 19). The Read-Answer-Discuss-Explain-and Create (RADEC) learning model was developed to overcome the problem of the low quality of the process and student learning outcomes (Sopandi, D iswara, 2017). The RADEC learning model was first introduced at an international conference in Kuala Lumpur, Malaysia which became an alternative learning model that was suitable for the conditions in Indonesia (Sopandi, 2017). The RADEC model has many advantages in its application. RADEC syntax requires students to study independently, so that it is likely to increase students' creative thinking. So this study intends to examine the effect of applying the RADEC model in learning to the level of students' creative thinking. The influence of the application of the RADEC model will be compared with the effect of the application of other learning models, namely the expository model. This expository model was chosen as a comparison because according to interviews with teachers in the Pagerageung sub-district of Suralaya Regency on April 13-14 2018, it was found that teachers often used the expository model

2. Literature Review

a. Creative Thinking

Santrock (2011: 357) states that creative thinking is how to manipulating or managing and transforming information in memory. Thinking is often done to conceptualize, reason and think critically, make decisions, think creatively, and solve problems. With other words are activities to process the knowledge that has gained through the senses and context for the responses and responses needed.

Creative thinking is an activity that begins because there is a problem that requires someone to overcome the problem quickly and accurately with original ideas. This is consistent with the opinion of La Moma (2012: 507) that creative thinking is the ability to think which starts from the situation we have to face that this situation must be identified as a problem that we must finish . There is something original that can come to mind that relates to what is identified.

In the other words, creative thinking is a mental activity that is used to build, generate new ideas or ideas. Creative humans always try to give meaning to the learning process. One that encourages people to learn is to include creative qualities in themselves and a desire to move forward, not to fear, mistakes and failures in satisfying performance. According to UNESCO, creative thinking is defined as something that allows students to apply ideas, questions and hypotheses, to experiment with alternatives, and to express their own ideas and their partners, products and the end of the processes.

The National Education Association (NEA) has published three indicators of creative thinking: (a) using various ideas-making techniques, (b) creating new and valuable ideas (both incremental and radical concepts), (c) elaboration, refinement, analysis, and evaluation of original ideas to enhance and maximize creative efforts; Working Creative with Others: (a) developing, implementing, and communicating new ideas effectively to others, (b) being open and responsive to new and diverse

perspectives; combining group input and feedback into work, (c) showing originality and creativity in work and understanding real-world boundaries for adopting new ideas, (d) seeing failure as an opportunity for learning; understand that creativity and innovation are part of the long-term cyclical process of small successes and frequent mistakes; Implementing Innovations: (a) Acting on creative ideas to make real and useful contributions to the field in which innovation will occur

b. Expository

Expository learning method is a learning method that emphasizes the process of delivering material verbally from a teacher to a group of students with the intention that students can master the subject matter optimally. In this method, the subject matter is delivered directly by the teacher. Students are not required to find the material. Study material seems to have been made. Because the expository method emphasizes the speaking process, it is often called the "chalk and talk" strategy (Abdul Majid, 2013: 216).

According to Hamdani (2011: 183-184) Exposition (expository), meaning that the teacher only provides information in the form of theory, generalization, law or argument along with supporting evidence. Students only receive information provided by the teacher. Teaching has been processed by the teacher so that it is ready to be delivered to students, and students are expected to learn from the information they receive. Expository method learning has almost no discovery element. According to Suyitno (2004), the expository method is the way of delivering lessons from a teacher to students in class by speaking at the beginning of learning, explaining the material, giving examples of questions with questions and answers and students just listening and making notes. The expository method is one of the learning methods that allows students to learn optimally to solve problems. Therefore, expository learning methods emphasize the verbal delivery process from the teacher to students with the aim that students master the subject matter optimally (Sanjaya, 2006).

Meanwhile, according to Roy Killen, quoted by Suyadi (2013: 145) suggests that the expository method is a learning method that emphasizes the process of delivering material verbally by the teacher to students. Based on this understanding Roy Killen called this expository method as direct learning. Other names for this method are lectures, dictation, dialogue, and the like. Therefore, this method is often likened to the lecture method.

The expository method is the same as the lecture method in terms of the centralization of activities in the teacher as a provider of information (lesson material). But in the expository method, domination of the teacher is much reduced compared to the lecture method, because he does not continue to teach directly. He spoke at the beginning of the lesson, namely when explaining the material and the example of the problem, as well as at the necessary times. So that in this way students also play an active role in learning. In the expository method, students learn more actively than the lecture method. Students not only hear and make notes but also make practice questions and ask if they do not understand. Students do the exercises themselves, maybe they do it with their friends, or are asked to work on the writing board. In addition, the teacher can examine the work of the students individually, then the students understand the learning material.

From the above explanation it can be concluded that what is meant by the expository method here is a teacher-centered learning method but the teacher has only a certain time limit so that students also play an active role in the ongoing learning process.

3. RADEC Learning Model

RADEC stands for Read, Answer, Discuss, Explain, and Create. The model name is adjusted to the learning syntax so that it is easy to remember the order of its implementation. The sequence of learning steps are as follows: Reading or Read (R) Phase, At this stage students dig up information from various sources, including books, other printed information sources and other information sources such as the internet. In order to be guided in exploring the information students are provided with pre-learning questions that are in accordance with the material being studied. What is meant by pre-learning questions are questions whose answers are essential cognitive aspects that students must master after learning a subject matter. The level of thinking required in the question should vary from

low level thinking (LOT) to high level thinking (HOT). From just memorizing information to formulating examples of productive questions, formulating problems, and project plans that can be made that are in accordance with the material being studied.

This pre-learning question is given before the classroom learning meeting. Information gathering activities in order to answer this question are carried out independently by students outside the classroom. This is based on the idea that some information can be explored by students without the help of others. Information that cannot be mastered by students only by reading can be asked to other students (peer tutors) or explained by the teacher during meetings in class. In this way learning in the classroom can be more focused on developing other aspects (especially social characters) whose development requires interaction with others. By giving students independent learning assignments before learning in class also encourages classroom learning to focus more on the part of the subject matter that is considered difficult by all students.

Answering or Answer (A) At this stage students answer pre-learning questions based on knowledge obtained in the Read (R) stage. Pre-learning questions are arranged in the form of Student Activity Sheets (LKS). In this way it is possible for students to independently see where they have difficulty learning a material. In addition, students themselves can assess whether he is a lazy person or is diligent in reading, easy or difficult to understand the contents of reading, dislike or dislike of reading the text of the lesson, and so on. The teacher also looked at the students' work assignments on the Student Worksheet and a few questions for each student to know about all the conditions of the students. Based on these data the teacher can provide appropriate assistance for each student. Most likely the teacher will find out about the needs of students who are different from each other.

Discuss or Discuss Stage (D) At this stage students discuss in groups the answers to questions or the results of the work they have done outside the classroom or at home independently before the class meeting is held. The teacher motivates students who are successful in doing certain tasks from LKS to give guidance to their friends who have not mastered it. Students who have not mastered it are motivated by the teacher to want to ask friends. This stage can also be filled with activities to discuss the results of his work with the results of the work of other friends in one group. Thus, at this stage the teacher is tasked with ensuring that communication occurs between students in order to obtain the right answer or work. By looking at the activities of the whole group of teachers it can also determine which groups or who have mastered the concepts being studied. In this way the teacher can know which group or who has creative ideas as a form of application of the concepts he has mastered. Based on the results of this observation, the teacher can determine who can be used as the resource person at the next stage.

Stage Explain or Explain (E) At this stage, classical presentation activities are carried out. The material presented covered all indicators of learning the cognitive aspects that had been formulated in the learning objectives. The sequence of presentations is adjusted to the order of the formulation of these indicators in the learning plan. At this stage the students' representatives were asked to explain the essential concepts they had mastered in front of the class. Even in this activity, the teacher ensures that what the students explain is scientifically correct and all students understand the explanation. In this activity the teacher also encouraged other students to ask questions, refute, or add to what had been presented by their friends from the other groups. At this stage it can also be used as an opportunity for teachers to explain the essential concepts that cannot be mastered by all students based on observations at the discussion stage (D). When explaining the part the teacher might give an explanation in the form of lectures, demonstrations or other things that are expected to overcome the difficulties of all students.

Create or Create Stage (C). At this stage the teacher inspires students to learn to use the knowledge they have mastered to spark creative ideas or thoughts. Creative thinking can be in the form of productive questions, problems in the surrounding environment that require solutions, or thoughts to make other works. As previously explained, the task of creating creative ideas or thoughts is already listed in the pre-learning question. So at this stage just discuss it classically. Because students have previously been assigned to work on it independently and also have discussed it. If the teacher finds that all students have difficulty creating creative ideas, the teacher needs to inspire

students. The source of inspiration provided by the teacher can be in the form of examples of research, problem solving or other work that has been done by people. Furthermore, classically students discuss other creative ideas that can be made while planning and realizing them.)

4. Material & Methodology

a. Data

The population in this study were all elementary students in Pagerageung sub-district and Sukaresik sub-district in Suryalaya district, West Java province. The sampling technique used in this study is purposive sampling. The research sample was 120 students from eight teachers who had attended the RADEC learning workshop and applied the RADEC model at school.

Data collection techniques used in this study consisted of observation, and documentation. Creative thinking of students will appear on students' natural attitudes / actions during the learning process. Therefore, data about students' creative thinking abilities are taken by observing students during the learning process based on the observation sheets prepared earlier. Observation sheet is a sheet used to observe the existence of an object or the appearance of observed attitude aspects. This observation sheet is in the form of a table containing statements and a check list column (check) that is filled in according to the conditions that appear. The observation sheet is based on aspects of creative thinking from the National Education Association (NEA).

The second data collection technique is documentation, Suharsimi Arikunto (2010: 231) states that, "..., the method of documentation is to find data about things or variables in the form of notes, transcripts, books, newspapers, magazines, inscriptions, minutes of meetings , legger, agenda and so on ". This documentation technique is used to find out the important things needed for research related to the research subject

b. Method

The type of this research is quasi experimental research. Pseudo research is said because researchers cannot limit external factors that can influence the research variables. With these limitations researchers assume that the two groups are the same in all aspects and only differ in the treatment of the learning model. The experimental group and the control group were the same group but applied to 2 different models at different times. The experimental group uses the RADEC learning model, while the control group uses an expository learning model.

c. Table and Figure

Table of Content the Creative Thinking by School Students

Sekolah	Kelas	Ekspositori	RADEC
SDN Surialaya	V	75	87,5
SDN Puteran II	IV	75	87,5
SDN Pondoksari	V	62,5	87,5
SDN Surialaya	IV	75	87,5
SDN Surialaya	III	50	75
SDN Puteran I	V	37,5	75
MIS Al Hidayah	V	50	75
SDN Anggabuana	IV	37,5	62,5

Based on the presentation in the table above, values can be obtained from class IV Anggabuana Elementary School either through the Expository Model with 37.5 achievements and the RADEC model with 62.5 achievements. The highest score was obtained by the Class V of Surialaya Elementary School through the Expository Model with 75 achievements and the RADEC model with 87.5 achievements. Nevertheless, the entire population has different results with different learning models given. This means that there are various mean posttest achievements between the control class and the experimental class. The following are the results of research in the form of creative image achievement per school

Furthermore, to find out the difference in influence between the control class and the experimental class, a t-test was carried out.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Skor_Kreatif	Equal variances assumed	5,600	,033	3,300	14	,005	21,875	6,629	7,657	36,093
	Equal variances not assumed			3,300	11,129	,007	21,875	6,629	7,305	36,445

5. Results and Discussion

d. Result

Based on the data on the t test, it can be obtained and this value is smaller than $\alpha = 0.05$. Therefore, it can be concluded that H0 is rejected and H1 is accepted. That is, the hypothesis which states that there is a significant difference in the creativity of students who follow expository learning models with students who take lessons with the RADEC model can be accepted. Thus, it can be interpreted that the application of the RADEC learning model has a significant positive influence on creative thinking of elementary school students . However, it cannot be generalized that the RADEC model is better than Expository, given the limitations of this study.

e. Discussion

A more in-depth study of the performance per indicator of aspects of creative thinking in the observation sheet, namely on the 8th indicator and at the same time the third aspect of the observation sheet, which is about implementing innovation as the highest form of creativity, cannot be achieved in all classes throughout the school. control and experiment. This can be made possible through various influencing things, which may be one of them is the habit of learning activities.

6. Conclusion

a. Through different tests about the achievement of students' creative thinking proved to be control class and experimental class there are significant differences. Thus, it can be interpreted that the application of the RADEC learning model has a significant positive influence on elementary school students' creative thinking. However, it cannot be generalized that the RADEC model is better than Expository, given the limitations of this study.

b. The benefit of this research is become the basis for conducting subsequent research related to creativity

c. Researchers suggest further research on both creative thinking variables and RADEC learning model variables. This is because it is possible to have other variables that affect that cannot be reached through this research

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