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Increasing Creative Thinking Ability Using Probem Based Learning (PBL) Model

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Abstract: The ability to think creatively can be developed by using the problem based learning. The purpose of this study is to determine: 1). The feasibility of supplementing tourism geography teaching materials with creative thinking, 2). The effectiveness of tourism geography teaching material supplements that think creatively, and 3) Students' understanding of creative-thinking tourism geography teaching materials supplements, 4) Student responses to the teaching material supplements that have been developed. This type of research is development research using the Dick & Carey model development procedure. The data from the field trials were then analyzed using descriptive statistics. This analysis is used to process data obtained from field trials either from a questionnaire instrument or from essay-shaped questions (measuring the ability to think creatively). The data from the questionnaire were processed using the Likert scale criterion score. The use of the Likert scale to process data on the frequency of student responses to the teaching material supplements that have been developed.The results showed that the assessment of the feasibility of tourism geography teaching material supplements from the four validators obtained a value of 80.6 (very feasible). Student responses to tourism geography teaching materials supplements obtained a value of 86.8 (very suitable). The effectiveness of tourism geography teaching materials supplements is very effective. Comprehension of the material measured using the essay test (fluency, flexibility, originality, and elaboration) obtained a score of 89.5 (very good). The conclusion is that the problem-based learning model used in learning tourism geography can improve creative thinking.

Keyword: *Creative Thinking, PBL*

Introduction

Learning is an activity that is planned, implemented and evaluated systematically in order to achieve learning goals effectively and efficiently. These learning outcomes can be carried out by teachers by increasing their creative thinking skills.

The importance of students who can think creatively, among others, is able to solve problems quickly and accurately, and be able to face various challenges in life. According to Peter (2012) "students who are able to think creatively are able to solve problems effectively". To be able to compete in the world of work and personal life, students must have the ability to solve problems and be able to think creatively. Therefore, it is important to develop creative thinking skills in every lesson.

Currently, learning about tourism geography is still carried out through conventional, not directed at creative thinking. Lecturers are still the dominant source of learning, they have not made use of various learning resources. Learning is still centered on listening, memorizing, giving assignments, but is less directed at active and constructive learning.

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Creative thinking in learning geography and tourism geography always involves competence to create ideas. Ideas must be useful for himself and others, for example ideas for effective learning. Examples of creative thinking exercises are giving problems to find different solutions and giving different reading to get used to through debate or discussion (Sternberg, 1999).

One learning model that can be applied to improve creative thinking skills is Problem Based Learning (PBL). PBL is learning that is carried out by dealing with real problems in everyday life, so that students can compile their own knowledge in solving problems and seek various kinds of solutions, which encourage students to think creatively. PBL was chosen because in its implementation it can invite students to use creative thinking skills. Students are encouraged to express various ideas and provide opportunities to interpret phenomena, this activity can accommodate aspects of creative thinking skills, namely fluency and flexibility.

The purpose of this study was to determine the feasibility and effectiveness of tourism geography teaching materials supplements with creative thinking. Students' understanding and responses related to tourism geography teaching materials supplements that think creatively

Letaracy

Learning development requires planning, implementation and assessment which are one unit (Sumarmi, 2012). One of the activities in learning planning is preparing teaching materials or learning materials that are easily understood by students. The teacher or lecturer is the most appropriate person to prepare teaching materials. Preparation of teaching materials can be through development.

Creative thinking is the use of basic thinking processes to develop or find ideas to explain with the thinker's original perspective. Parkin (1995) argues that creative thinking is a thinking activity to produce something creative and original. There are four indicators of creative thinking, namely (1) fluency, namely the ability to generate many ideas, (2) flexibility, namely the ability to generate various ideas, (3) originality, namely the ability to generate new ideas, and (4) elaboration, namely the ability to develop ideas in detail (Baer, 1993). The statement of creative thinking can be described as follows.

Gambar 1. Indikator Berpikir Kreatif
Sumber: Adopsi dari Baer (1993)

Several ways of thinking creatively according to Marzano (1988), namely (1) preparing the material well, (2) discussing material that causes controversy, (3) raising problems that cause cognitive conflict, (4) assigning and finding varied views of the problem, (5) assigning writing articles to be published in a journal, (6) analyzing articles from various sources to find ideas, (7) giving problems to find solutions, (8) providing different readings to discuss, and (9) inviting people who has a controversial view.

PBL is a learning that uses contextual problems that occur in the environment, with PBL being able to explore critical thinking and problem solving skills, as well as to obtain essential knowledge and concepts from course material, train higher-order thinking including learning how to learn (metacognitive) and train become independent and self-regulated learning (Anita, 2013).

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Arends (2007: 43) states that in essence PBL provides a variety of authentic and meaningful problem situations for students, which can serve as a stepping stone for investigation and investigation. PBL is designed to help develop thinking skills to solve problems and learn adult roles. Arends & Kilcher (2010: 328) states that investigation in problem-based learning requires critical thinking skills and open-ended situations which can lead to creative thinking skills.

Trianto (2010: 94-95) states that the goal of PBL is to help develop thinking skills and solve problems and learn independently. The purpose of PBL according to Rusman (2010: 238) is the mastery of learning content from the heuristic discipline and the development of problem-solving skills. PBL also deals with learning about the broader life (lifewide learning), interpreting information skills, collaboration and team learning, and reflective and evaluative thinking skills. In line with this opinion, problem solving is a teaching strategy that helps solve problems through hands-on learning experiences (Jacobsen et al, 2009: 249).

Method

This type of research was developed using the Dick & Carey procedure. Teaching materials have been validated by linguists, materials and designs and presentations. Teaching material products have been tested with a small group of 10 people and a large group of 37 people (2016 class A). Primary data obtained from students in the form of answers to essay questions to measure creative thinking.

The instrument used was a questionnaire for material, language, design and presentation experts. Questionnaire for students to find out product acceptance; instrument in the form of essays and instruments to find out student responses. The data analysis technique was used to determine the feasibility by using a scoring which was then categorized as very inadequate, unfit, feasible and very feasible. In processing data, it is done by means of a percentage. The percentage of each subject's answer uses the following formula;

Percentage = ∑ (overall questionnaire answer score) x 100% (n = number of questions)
n x highest weight x number of students

The answer to each development instrument item has been categorized as ineffective, ineffective, moderately effective, effective and very effective. To get the results of the student's level of understanding test the following formula is used; Na = ∑B x n.max
Smi

Information

na = final score, ∑B = correct number (scores that can be achieved by students)
SMi = maximum ideal score (highest score if all questions are correct)
n.max = the maximum value used is 100.

After knowing the level of understanding of each student, the mean level of understanding of the students in one class is calculated. The level of understanding of the class mean can be calculated as follows, mean = =x / n

Info. ∑x = total value of the total; n = number of students

The ability to think creatively is divided into five criteria, namely: 81-100 (very good), 61-80 (good), 41-60 (sufficient), 21-40 (less), and 0-20 (very poor) (Arikunto 2007) .

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Result and Discuss

The assessment of the feasibility of supplementing tourism geography teaching materials from content, language, presentation and design experts can be seen in the following table

Table 1. Instrument Validation Results from the Expert Team

Instrument		Criteria	Sum of Component	Bobot nilai	Sum of Value	Total Value	Final Criteria
Content		feasible	5	3	15		
		Very feasible	1	4	4	79,2	Very feasible
Language		feasible	4	3	12	75,0	Layak
Presentation		feasible	3	3	9	85,0	
		Very feasible	2	4	8		Very feasible
Design		Layak	4	3	12	83,3	
		Very feasible	2	4	8		Very feasible

Sumber: data primer yang diolah, 2019.

From the overall assessment that came from four experts, it was obtained an average value of 80.6 (very feasible), meaning that the supplementary development results were very suitable for use as a learning resource in the Tourism Geography course. The feasibility of supplementing tourism geography teaching materials is one of the keys to success in learning in tourism geography courses. This is because the existence of proper teaching materials will make it easier for students and lecturers to learn and teach.

The results of student responses to tourism geography teaching materials supplements can be seen in the following table.

Table 2. Recap of Student Response Results

No. Instrument	uncertain(3)	Agree (4)	Very agree (5)	Total Value
1.	5	9	21	156
2.	2	20	13	151
3.	9	8	18	149
4.	2	10	23	171
5.	7	15	13	146
6.	8	18	9	141
7.	10	13	12	142
8.	2	4	29	167
9.	4	20	11	147
10.	2	12	21	159
Jumlah	51	129	170	1519
Total Nilai	153	516	850	1519

Sumber: data primer yang diolah, tahun 2019

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In the table above, you can see the distribution of the results of the responses from students according to the five criteria, but the criteria strongly disagree and disagree, no one chooses them. The total student answers obtained were 1519 from a maximum total of 1750 with an average of 86.8. The value of 86.8 is included in the very effective category with unrevised information.

Van den Akker (1999: 10) states: "Effectiveness refers to the extent that the experiences and outcomes with the intervention are consistent with the intended aims". Opinion Reigeluth (2009: 77) states "effectiveness refers to the appropriate learning indicators to measure learning outcomes". So it can be said that effectiveness is a measure that states how far the targets have been achieved by students in learning.

Understanding of teaching material supplement material is measured using four aspects of creative thinking, namely fluency, flexibility, originality and elaboration. The results of students' understanding of tourism geography supplementary materials can be seen in the following table.

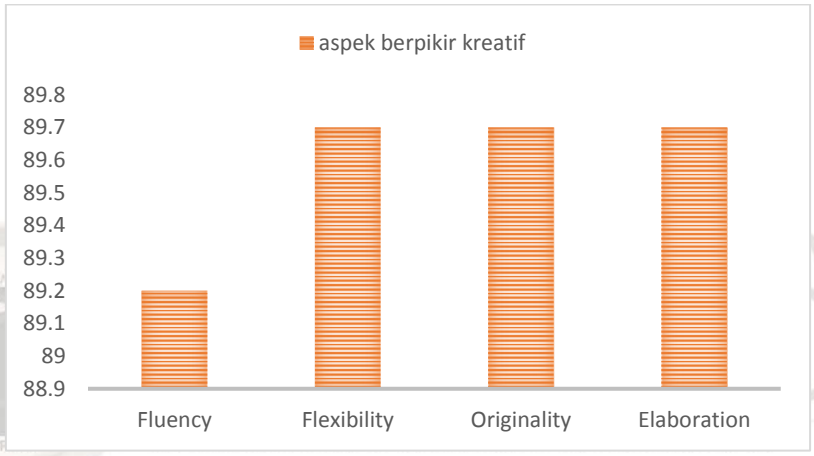

Figure 2: The Result of Value for Creative Thinking Aspects

The average student understanding of tourism geography teaching materials supplement material was 89.5. The value of 89.5 has exceeded the minimum limit of 75 so it is said to be very good.

The creative thinking ability score of 89 is considered to be able to solve problems quickly and precisely, and to be able to face various challenges in life. Peter (2012) is "student who are able to think creatively are able to solve problem effectively ". Students are cognitively at the stage of formal operational thinking. The formal operational period begins when children are 11 years old and over (Piaget, 2001).

In Bloom's taxonomy which has been revised, students' thinking abilities are included in stages C5-C6, namely analyzing-creating / developing (Anderson, 2001). Someone who thinks creatively and critically will always be sensitive to problems in the environment and be able to provide appropriate solutions (Utaya et al, 2016)

To be able to think creatively requires a continuous practice. Some examples of creative thinking exercises in learning include giving problems to find different solutions and providing different readings for discussion (Sternberg, 1999). As in the essay test questions from several journal articles from different sources.

The supplement for tourism geography teaching materials is sourced from the Wonorejo mangrove ecotourism. The ecotourism area provides a contextual environment for learning to

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think creatively. Creative thinking must be trained continuously so that students become accustomed to it.

The educational paradigm demands that human resources have high-level thinking skills that involve logical, systematic, critical, careful, and creative reasoning skills in solving problems in order to be able to face the challenges of a dynamic, developing and increasingly advanced era. Ghufron & Rini (2014: 101) argues that the ability to think creatively has an important role in life because creativity is a source of reliable human resources to drive human progress in terms of search, development, and new discoveries in the fields of science and technology as well as in all areas of human endeavor.

The ability to think creatively is needed to develop human beings and solve problems faced in everyday life. Without the ability to think creatively, a person will not find answers to solve their problems so that it is possible that there will never be progress in life. The ability to think creatively can improve understanding and sharpen the parts of the brain that are associated with pure cognitive.

Conclusion

1. Supplement for tourism geography teaching materials is included in the very feasible category with a value of 86

2. Student responses to tourism geography teaching materials supplements are very good with a score of 86.8

3. Students' understanding of the material measured using four aspects of creative thinking is very good with a score of 89

4. Tourism geography teaching material supplements have a very effective rating above the minimum of 75

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