



Implementation of Reading Guide Strategy in Global Climate Change Material for Enhancement of Student Learning Outcome

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Abstract

The hierarchy of climate change learning concepts needs to be studied in schools. In the last four to five years, the issue of climate change has gained wider attention in the development of long-term government policy and programming so that it is necessary to integrate programs and action into learning materials in schools to mitigate the impact Global climate change. One of the learning strategies for integrating climate change into school materials through a reading guide. Reading guide is part of the application of active learning approach emphasizes the participation of higher learners so as to create a conducive learning atmosphere. Reading Guide aims to help students be more focused and easy to understand lessons delivered by teachers. The research objectives are; 1). How to study climate change material before using learning guide reading 2). What is the result of studying climate change materials after using learning guide reading. The research method is done by comparing the learning result of the students before and after using the learning of reading guide. As a testing group are students of class X IPS 2 in SMA Al-Islam 1 Surakarta a number of 36 students. The instrument used is a test, used to determine the effectiveness of learning reading guide consisting of 25 items. The result of this research is the result of study of climate change material before using the average reading guide learning is 41,22. After studying climate change materials using learning guide guidance, there is an increase of learning result to an average of 53.11. The conclusions obtained from this study indicate that learning using the reading guide is affective

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INTRODUCTION

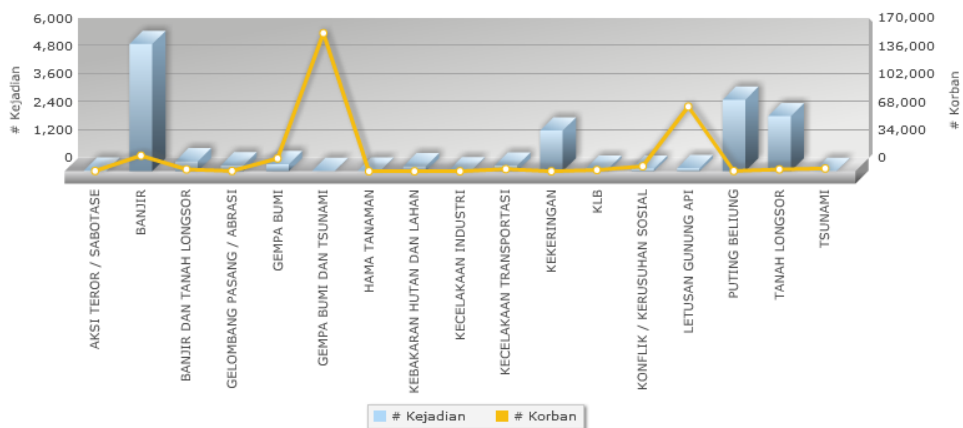
Humans seek to develop her skills and spatial intelligence in the community, nation and state, one of them by studying geography. Geography Learning seeks to realize learning about humans and their relation to nature / ecosystem.

Education on geography is applied by providing students with understanding of physical and human studies in spatial contexts. Geography advantages as learning about the room is to combine the ecosystem and human relationships as a resident on the earth's surface. Learning geography provides an explanation of how the natural environment subsystem organized at the surface of the earth, and how humans spread across the earth's surface in relation to the natural phenomena and with other human beings. Encouragement learning achievement geography optimum been included in the curriculum with the approach scientific, application of the approach contained in the national curriculum which seeks to apply some of the concepts of learning innovative and based spatial intelligence in understanding the phenomena of nature and the human face of the earth so manifest human resources quality and competitiveness the good one.

The application of curriculum to the learning of geography demands changes in learning in the school, the national curriculum provides an active, creative and independent learning space and process. Teaching materials play an important role in the learning process in applying the national curriculum Permendikbud No. 65 of 2013 on the standard of the process of giving the learning picture must be interactive And are self-reliant. Interactive Learning can also use teaching materials based on technological developments and independence that provide opportunities for students to learn independently where places with various learning sources according to a growing curriculum.

A very important study in the study of geography in the 21st century is the study of global climate change, Global climate change has become unbalanced human relations with the environment, causing a variety of potential natural disasters occur diverse, as contained in the mukodimah framework of action Risk Reduction Becana Sendai 2015 -2020, states that climate change is one of the disaster risk drivers. Therefore, in the context of understanding disaster risk due to climate change, it is necessary knowledge and practice to adapt to the changes that occur including designing geographic learning materials related to human relations with the atmosphere and its impact on human life in the applicable curriculum.

Climate change impacts that occur in Indonesia by 80% are Hydrometeorological (Flood, Drought, Tornado, Landslide and Forest Fires) due to Climate change. Data BNPB (National Disaster Management Agency) noted since 1815-2014 there are many victims of disaster, Data recorded in graph 1 Graph of disaster victims and disaster types, this data provides an analysis of community knowledge on disaster preparedness and very low disaster mitigation measures.



Graph 1. Data on Disaster and Victim Dissemination Distribution by Disaster Attack Type 1815-2014 (Source: Dibi.BNPB, 2014)

Some research studies on global warming provide an important study of how climate change learning needs to be emphasized. A number of scientific studies show that Indonesia's condition will experience a gradual rise in temperature, a study conducted by Boer and Faqih in Fabby Tumiwa (2010) estimates the temperature rise of 0.2 C to 0.3 C per decade. The national climate change council (DNPI) has conducted a study of Indonesia GHGs Abatement Cost Cure to identify various opportunities and mitigation action options to reduce Indonesia's GHGs.

Hierarchy The concept of Climate Change learning needs to be studied in school. In the last four to five years, the issue of climate change has gained wider attention in the formulation of long-term government policy and development programs. It is necessary to integrate programs and actions into school learning materials to be able to Pressured global climate change impact.

The development of the existing Global Climate Change learning materials was developed by Royal Geographical Society and Royal Meteorological Society, UK, this material was developed from Climate4Classroom (C4C). There are two parts of C4C teaching materials in Indonesia. First, online material, compiled by the British Council, and two institutions in the UK and accessible at <http://www.climate4classrooms.org/> or <http://www.climate4classrooms.org.id/>. Second, drawn up by the British Council with trainers and kindergarten teachers up to secondary schools under the auspices of the Ministry of National Education.

Observation results at one high school (SMA) AL Islam 1 Surakarta, Based on interviews with high school geography teacher AL ISLAM 1 method of learning used in understanding new climate change materials lectures, questions and answers, presentations and methods that are still conventional.

Learning is a process trip that is controlled by the teacher to make the student in a learning situation so as to acquire and process his knowledge, skills, and attitudes. Reading Guide is one of the strategies that takes students to follow the guidelines prepared by the teacher with the content of the material that has been determined and consider the allocation of time. In the reading guide, the teacher asks questions relating to the learning materials so that students can read and follow according to the guidelines the teacher compiled.

Reading guide learning is part of the application of active learning approach emphasizes the participation of higher learners so as to create a conducive learning atmosphere. Reading Guide aims to help students be more focused and easy to understand lessons delivered by teachers. One of the internal factors that influence learning outcomes is how the students' attention level in learning. The Reading Guide serves to focus students' attention so as to concentrate fully and easily understand the lessons conveyed by the teacher. The concentration in question is to focus attention on the learning situation designed duru so that all the mental resources to learn. This is the real learning. Reading guide can improve the concentration so that the more effective the learning to achieve the increasing learning result.

Based on the background of the problem obtained the identification of the problem as follows;

1. What is the result of studying climate change materials before using learning guide reading?
2. What is the result of studying climate change materials after using learning guide reading?

METHODS

The study was conducted by comparing the learning outcomes of students before and after using learning guide reading. As a testing group are students of class X IPS 2 in SMA Al-Islam 1 Surakarta a number of 36 students.

The instrument used is a test, used to determine the effectiveness of learning reading guide consisting of 25 items. The test is used to determine the learning outcomes collected through pretest and posttest. The difficulty level of the test instrument used to accommodate problems with the category Easy, Medium, or Difficult. The learning process is supported by a learning guide (reading guide) which consists of text, images, and diagrams. Guidance is prepared by considering the interaction of students with the material as well as experience and knowledge coming from the environment.

RESULTS AND DISCUSSION

The results show that the average learning outcome of climate change learning materials before using Reading Guide is between 24 to 60 with a data range of 36. The average value is 41.22 where the middle number is 44. The results of each student are presented in Table 1.

Table 1. Student Learning Outcomes of Climate Change Materials before Reading Guide Learning

Student	Score	Student	Score
1.	36.00	19.	24.00
2.	24.00	20.	28.00
3.	48.00	21.	52.00
4.	40.00	22.	48.00
5.	32.00	23.	44.00
6.	28.00	24.	60.00
7.	52.00	25.	56.00
8.	32.00	26.	48.00
9.	44.00	27.	60.00
10.	52.00	28.	56.00
11.	48.00	29.	44.00
12.	28.00	30.	36.00
13.	40.00	31.	48.00
14.	32.00	32.	44.00
15.	40.00	33.	48.00
16.	44.00	34.	40.00
17.	24.00	35.	44.00
18.	28.00	36.	32.00

Source: Primary

After learning by using reading guide got the value of student learning outcomes with learning outcomes between 28 to 76 with a range of data 48. Average post-test value is 53.11 where the middle number is 52. The learning outcome of each student who became Participants of this climate change learning material, after following the learning guide reading, presented as in Table 2.

Table 2. Student Learning Outcomes of Climate Change Materials before Reading Guide Learning

Student	Score	Student	Score
1.	52.00	19.	56.00
2.	52.00	20.	72.00
3.	60.00	21.	44.00
4.	48.00	22.	32.00
5.	28.00	23.	60.00
6.	48.00	24.	40.00
7.	64.00	25.	52.00
8.	60.00	26.	64.00
9.	60.00	27.	48.00
10.	60.00	28.	56.00
11.	48.00	29.	60.00
12.	44.00	30.	68.00
13.	56.00	31.	44.00

14.	44.00	32.	44.00
15.	48.00	33.	60.00
16.	68.00	34.	76.00
17.	64.00	35.	44.00
18.	36.00	36.	52.00

Sourcer: Primary

The test prepared for the students' learning outcomes consists of 25 questions with varying difficulty levels, easy, medium, and difficult. The diverse level of questions used in this test is classified as Table 3.

Table 3. Classification of Difficulty Level of the Problem

The number of Students Correctly Answer	Category
0 – 30%	Hard
31- 70%	Medium
70 – 90%	Easy

Of the 25 problems that exist, there are three problems (12%) are categorized Easy, that is the number 1, 5, and 19. While the problem is categorized difficulties There are 16 problems (64%). The problem in question is number 2, 3, 4, 6, 7, 8, 9, 12, 13, 14, 15, 16, 17, 20, and 22. The problem is diacritical There are seven problems (24%) , Which is the number 10, 11, 18, 21, 23, 24, and 25.

This indicates that the compiled test has accommodated the composition of the problem of varying degrees of difficulty and is dominated by problems categorized by Medium difficulty levels. Description of the diffusion of problem level is presented in Table 4. The instruments used during the pre-test and post-test are the same.

Table 4. Distribution of Problems' Level of Difficulties of Climate Change Materials with Reading Guide Learning

Problem's Number	Category	Problem's Number	Category
1.	Easy	14.	Medium
2.	Medium	15.	Medium
3.	Medium	16.	Medium
4.	Medium	17.	Medium
5.	Easy	18.	Hard
6.	Medium	19.	Easy
7.	Medium	20.	Medium
8.	Medium	21.	Medium
9.	Medium	22.	Medium
10.	Hard	23.	Hard
11.	Hard	24.	Hard
12.	Medium	25.	Hard
13.	Medium		

Source: Primary

According to psychological understanding, learning is a process of change aitu behavior change as a result of interaction with the environment in fulfilling the needs of his life. These changes will be evident in all aspects of behavior (Slameto, 1995: 2).

According to Tabrani Rusyan, et al (1994: 8) states that:

"Learning is a process of behavior change expressed in the form of mastery, use, and assessment of or concerning attitudes and values, basic knowledge and skills found in various fields of study or more broadly in various aspects of organized life or experience".

The learning of guidance reading shows that there is a change in the students' learning achievement. An increase in pre-test value from 41.22 to 53.11. The effectiveness of this strategy is also shown from the increase in the value of almost every individual student. 25 students from 36 students who attended the learning showed upgraded learning outcomes and 4 others had a fixed learning outcome, ie the pre-test and post-test values were the same. This indicates that there is a process in learning that is conducted using a reading guide on climate change materials.

The process here in the sense of interaction between individuals with an attitude, values or habits, knowledge, and skills in relation to his world so that the individual is changed. Changes in a good sense, namely in the form of mastery, use, or assessment of or about attitudes, values, habits, knowledge, or skills acquired which is the addition or improvement of a behavior. The mastery seems to be the lowest or the easiest change. The next level of change is usage. What has been mastered is in the form of addition and improvement for later use in the life of the individual. The use of these attitudes, values, knowledge, and skills is sometimes easy and self-perpetuating, but sometimes difficult and even unusable.

The limits of learning according to some experts quoted by Sri Rumini, et al (2006: 59) are as follows:

1. Morgan, in short, says that learning is any relatively settled change in behavior that occurs as a result of practice or experience.
2. Moh. Surya said that learning is a process of business conducted individu to obtain a whole new behavior change, as a result of individual experience itself in interaction with the environment
3. Dimiyati Mahmud states that learning is a change of behavior, whether observed or not observed directly and occurs within a person because of experience.

From the three opinions it can be concluded that learning is a process of effort by an individual to obtain a relatively settled behavior change, either observable or not directly observable that occurs as a result of exercise or experience in interaction with the environment.

Teaching materials used in this learning not only in the form of text but also accompanied by pictures and diagrams. This is to increase student interaction with the material expected to accumulate student experience and knowledge.

One of the pictures presented as a guide in the reading guide is related to evidence of climate change in the world. The evidence of climate change is presented in a compelling picture that helps to facilitate student interaction with the experience and knowledge derived from the environment. The intended picture is as shown in Figure 1.

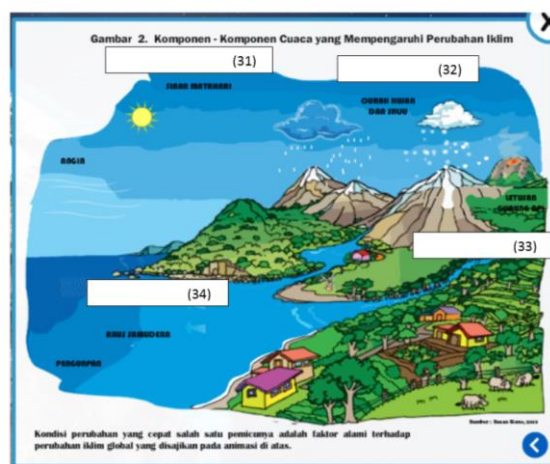


Figure 1. Example of Reading Guide Learning in the form of Picture

Increased learning outcomes due to the interaction of students with the material shows the learning process in climate change material is running as it should. This is in accordance with the identifiable learning characteristics of the learning boundaries as follows

1. In learning there are changes in behavior, both observable behavior and behavior that can not be observed directly.
2. In learning, behavioral changes include cognitive, affective, psychomotor and mixed behaviors.
3. In learning, change takes place through experience or practice. So behavioral changes that occur because of miracles, hypnosis, occult, growth, maturity, disease or physical damage, are not regarded as learning outcomes.
4. In learning, behavioral change becomes something relatively sedentary. When a person with learning becomes able to read, then the ability to read it will still be owned.
5. Learning is a business process, which means learning takes place in the period long enough. Behavioral learning results can sometimes be observed, but the learning process itself can not be observed directly.
6. Learning occurs because there is interaction with the environment

CONCLUSIONS

The conclusions obtained from this study indicate that learning using a reading guide is affective as the results of the following research.

1. The result of learning climate change material before using the average reading guide learning is 41,22.
2. After studying climate change materials using learning guide guidance, there is an increase of learning result to an average of 53.11.

Suggestions for educational practitioners are to be able to apply learning guide reading on the learning process in school. The next suggestion is for the next researchers to be able to study the possibility of learning using a reading guide combined with other strategies.

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