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Training Students to Ask Questions through Situation-Based Learning

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ABSTRACT--*Elementary school students have a high curiosity. This curiosity needs to be facilitated so that it can develop. However, what happens in the classroom is just the opposite, when elementary school students get older, the more reluctant they are asking. This results in the lack of courage to ask questions. This study aims at providing a clear picture and alternative to how to train and develop students' skills in asking questions through Situation-Based Learning (SBL). This study employs the ADDIE method (Analyzing, Designing, Developing, Implementing, and Evaluating) that aims at illustrating how the SBL learning model can help training elementary students' abilities and skills in asking questions. The subjects in this study were in 5th grade elementary school students ranging in age from 10 to 12 years. The results showed that the example of learning materials should be designed based on the characteristics SBL learning, and how the students' response in asking questions. Therefore, it can be concluded that the students' skills in asking questions were still relatively low, but could still be improved because the ability can to be trained and developed continuously through SBL learning with customized teaching materials. It is expected that the students have adequate asking skills, hence, they will be able to follow the trends of information and communication in this 4.0 era.*

Keywords--*Elementary Students, Asking Questions, Problem Posing, Situation-Based Learning.*

I INTRODUCTION

The rapid movement of the Industrial Revolution 4.0 on all life components greatly affects the acceleration of information and communication [1], [2], [3], [4]. The rapid flow of information and communication must be accompanied by human readiness. People must be balanced with a high curiosity about the information so that the incoming news flow can be well absorbed and not taken for granted, as hoaxes are becoming more widespread. This can be achieved if the recipient of the information has a high analytical power of news/information.

Situation-Based Learning (SBL) offers the importance of learning not only by solving problems, but also actually learning to be observant and see a problem [5], [6], [7], [8], [37]. With this learning, students learn to observe and investigate each situation [6], [9], [38]. The emphasizes that a situation is the condition for the learning to occur. This way of learning can train students to explore information and have a high curiosity [6], [9].

Generally, elementary school children are at the age where they have a high curiosity. Children often ask about something repeatedly. However, the questioning process does not occur because they know nothing at all, but to convince themselves of what they already know. Children need help from adults to ensure that what they

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already believe is correct. This high curiosity can continue to develop if facilitated in the student's learning process. However, in reality, when elementary school students get older, they become more reluctant to ask questions [6], [9]. This results in the lack of courage to ask questions.

The elementary school students' ability to propose problems is still relatively low [5], [10]. Basically, the curiosity of elementary school students is very high. However, for various reasons, many factors affect the students' reluctance to ask questions. Some of the reasons are: shyness, fear of been mocked by friends, concern about being considered incapable (stupid), confusion about what to ask, or possibly a lack of focus on the material being studied [9].

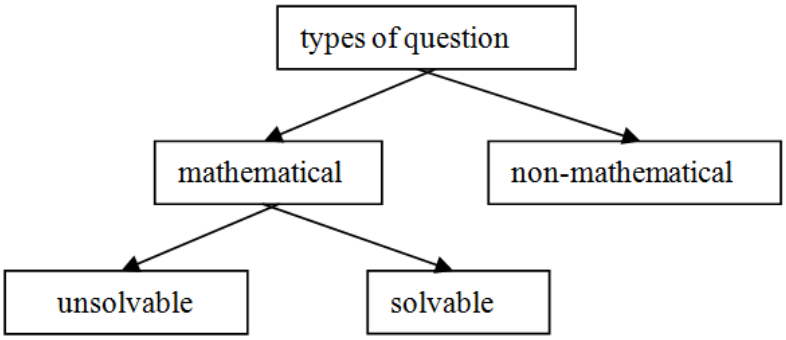

Figure 1: Types of Students' Question

Current learning methods used in the classroom emphasize the students to learn to answer, rather than to ask questions (presenting problems). As a result, the students' awareness of the problems is under developed [5], [6], [7], [8], [10], thus their willingness to ask questions is low. They do not learn how to present problems, how to ask questions, and what to ask so that their awareness of the problem itself becomes lesser.

Students actually will have ideas, asking if they have a sense of interest and curiosity. The interest and curiosity can grow when students have carried out investigations or observations [11], [12], [13], [14], [15], [16]. In this process of observation, teaching materials based on the situation in the initial stage of SBL learning will be very helpful.

SBL learning consists of four stages, namely: 1) creating the situation; 2) problem posing; 3) problem solving; and 4) applying the concept. The following figure shows the SBL learning model design stages [6], [7], [8], [17], [18], [19], [20], [21], [22].

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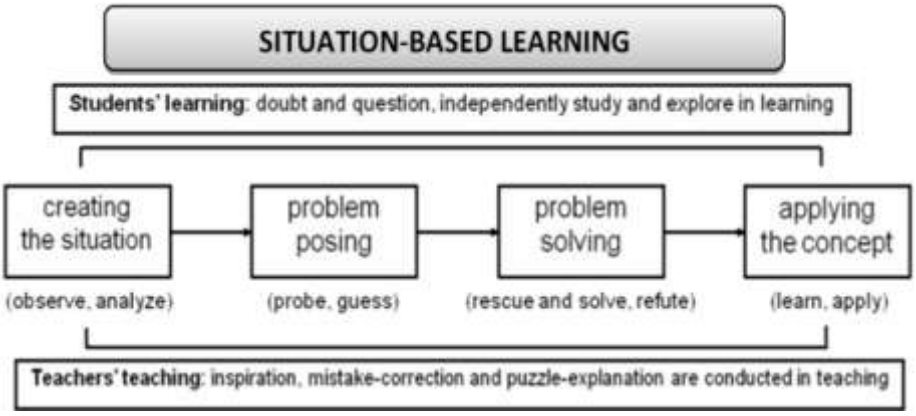

Figure 2: Situation-Based Learning

The creating-the-situation stage is a prerequisite for SBL learning to work [38]. The teacher creates the situation in the form of teaching materials that students will use in learning [39], [40]. Problem posing is the core stage of SBL learning in which the students are expected to develop several questions from the situation presented in the teaching material given earlier. Problem solving is the goal and the learning directs students to solve the questions that they have asked in the previous stage. It is hoped that in the problem solving process, the students can rediscover the concepts of the material being studied. The stage of applying the concept is where the students apply the ideas that have found to new situations/problems, both related to the learnt material or in the their daily lives [6], [7], [8], [17], [18], [19], [20], [21], [22], [41].In general, teachers still find it difficult to bring students to observe. This will be a different story if the teacher has created the situation in the form of teaching materials before the observation stage. After the teaching material is ready, the teacher can continue to invite students to the observation stage, which is observing the situation that was developed earlier. This teaching material can facilitate students in the stage of asking questions by following the directions of the problem posing stages. Next, the learning continues to the stages of problem solving, and applying the concept.

Therefore, the purpose of this study is to understand how to apply SBL learning as an effort to train and facilitate elementary students' skills in asking questions.

II METHOD

This study employs an ADDIE method (Analyzing, Designing, Developing, Implementing, and Evaluating) that aims at illustrating how the SBL learning model can train elementary students' skills in asking questions. Analyzing is to explain the definition of students' ability to ask questions. Designing is the study of the form of teaching materials that must be developed. Developing is an illustration of the design of teaching materials based on SBL learning that can facilitate/train students to ask questions. Implementing is how the students' respond to the teaching materials in the training. Lastly, evaluating is the qualitative analysis of students' ability to ask questions [6], [7], [10].

The subjects in this study were elementary school students in Sumedang Regency, West Java, Indonesia, and aged 10 to 12 years old. The topics chosen were the integrative lesson on Rectangle and Natural Events in the 5th grade.

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III RESULTS AND DISCUSSION

Analyzing

The skills to ask questions in this study are the students' skills as part of problem posing abilities, at the level of challenging abilities and on the aspect of reconstructing problems [23], [24], [25], [26], [27], [28]. Asking questions and curiosity are very important to instill from elementary school. Asking questions can be interpreted as asking for information or explanation or asking to be told about something [29], [30], [31], [32]. In other words, asking questions is students' utterance to ask for a response, answer, or explanation from someone who knows better, in this case the teacher or other students [29], [30], [31], [32].

Designing

In training the students to ask questions, the teacher must first invite the students to conduct an observation. From this observing activity, it is hoped that the students find something interesting, tickling, and curious, so they are motivated to ask questions [33], [34], [35], [36]. They should ask questions about something interesting that they have not understood or certain about.

All this time, teachers have difficulty in the learning process, particularly in designing the instruction sentences. The instructions for the students to observe and eventually to be willing to ask questions can be developed in accordance with the existing stages of SBL learning. At the stage of creating the situation, teachers can design teaching materials and interesting situations. With the interesting things and the right instructions, it is hoped that students will want to observe. From the observation activities and with the guidance of the teacher, then the students are directed to write or ask a few questions.

Developing

The following figure is an example of teaching materials designed by teachers, as a product of the process of creating the situation [7].

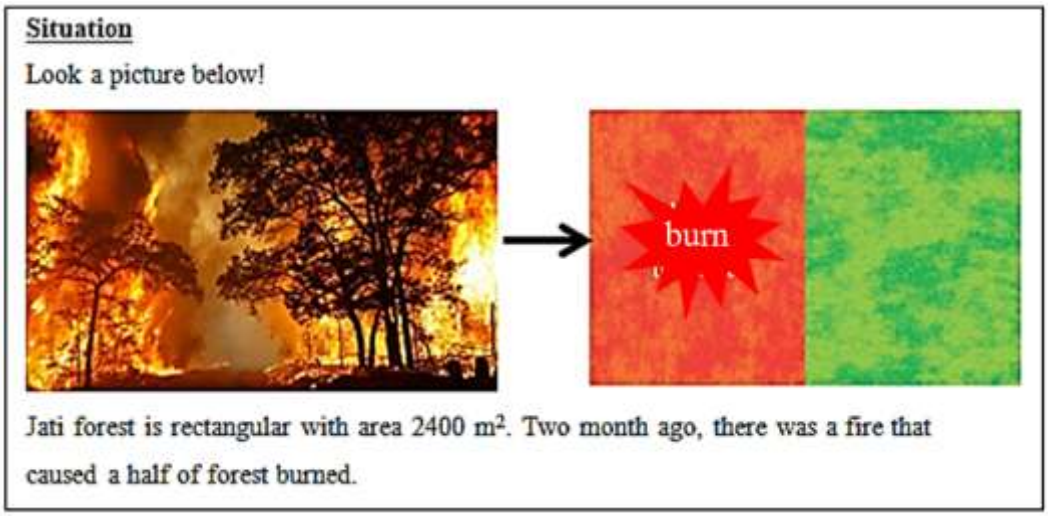
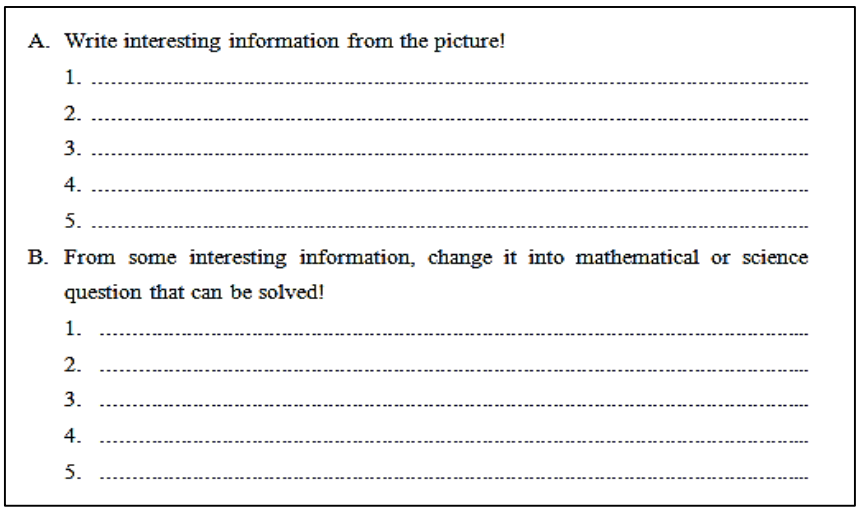


Figure 3: Situation for Integrated Material of Rectangle and Forest Fire


A. Write interesting information from the picture!

1. .....
2. .....
3. .....
4. .....
5. .....

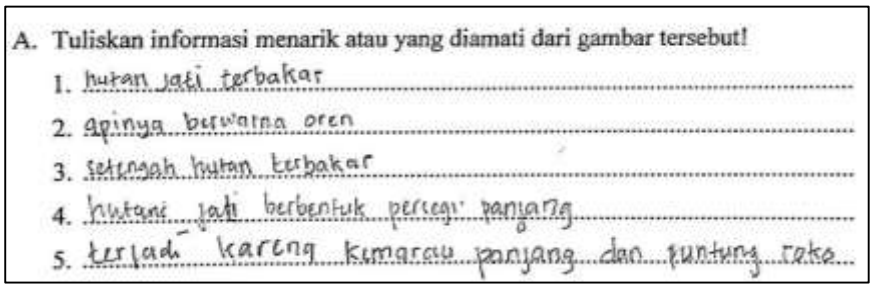
B. From some interesting information, change it into mathematical or science question that can be solved!

1. .....
2. .....
3. .....
4. .....
5. .....

Figure 4: Instruction for Students in Observing and Asking Instructions

Implementing

An example of the students' response to the teaching materials is as follows:


A. Tuliskan informasi menarik atau yang diamati dari gambar tersebut!

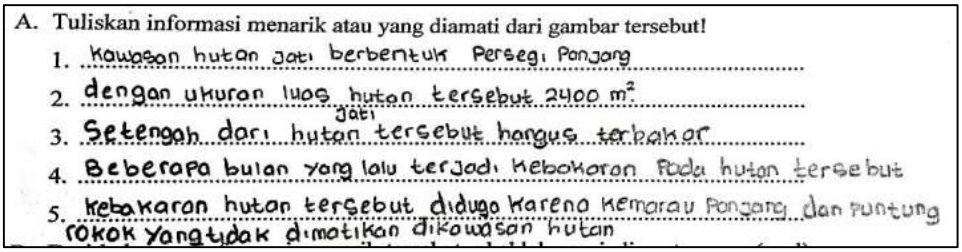
1. hutan jati terbakar
2. apinya berwarna oren
3. setengah hutan terbakar
4. hutan jati berbentuk persegi panjang
5. terjadi karena kemarau panjang dan puntung rokok

Figure 5: Results from Group 1

Translation:

A.Write interesting information from the picture!

1. The teak forest is on fire.
2. The fire has orange color.
3. Half of the forest is on fire.
4. The forest has a rectangular shape.
5. It happens because of a long drought and a cigarette butt.


A. Tuliskan informasi menarik atau yang diamati dari gambar tersebut!

1. kawasan hutan jati berbentuk Persegi Panjang
2. dengan ukuran luas hutan tersebut 2400 m^2
3. Setengah dari hutan tersebut hangus terbakar
4. Beberapa bulan yang lalu terjadi kebakaran pada hutan tersebut
5. kebakaran hutan tersebut diduga karena kemarau Panjang dan puntung rokok yang tidak dimatikan dikawasan hutan

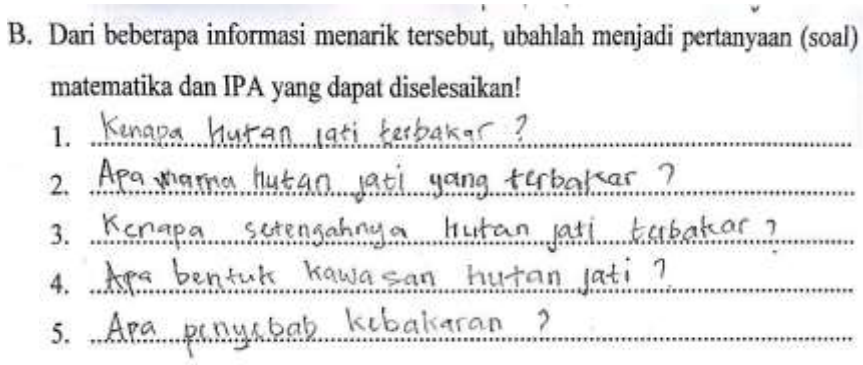
Figure 6: Results from Group 2

Translation:

A. Write interesting information from the picture!

1. The teak forest is rectangular.
2. The size of the forest area is 2400 m^2.
3. Half of the teak forest is burnt by the fire.
4. A few months ago, there was a fire in the forest.
5. The forest fire might be caused by a long drought and cigarette not put out in the forest area.

The interesting information was then changed into a number of questions by the students as follows is presented in Figure 7.


B. Dari beberapa informasi menarik tersebut, ubahlah menjadi pertanyaan (soal) matematika dan IPA yang dapat diselesaikan!

1. Kenapa hutan jati terbakar ?
2. Apa warna hutan jati yang terbakar ?
3. Kenapa setengahnya hutan jati terbakar ?
4. Apa bentuk kawasan hutan jati ?
5. Apa penyebab kebakaran ?

Figure 7: Results from Group1

Translation:

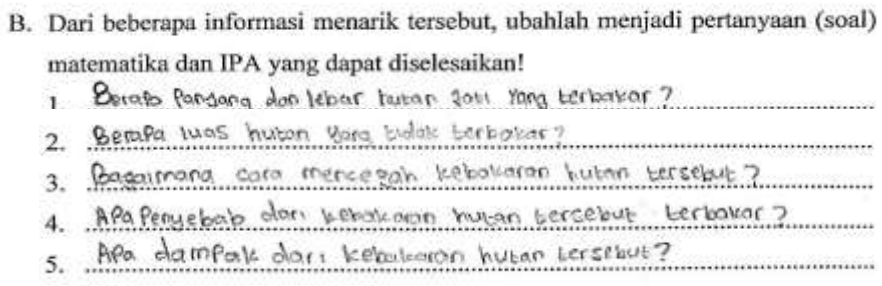
B. From some interesting information, change it into mathematical or science question that can be solved!

1. Why is the teak forest on fire?
2. What is the color of the burnt teak forest?
3. Why is half of the teak forest on fire?
4. What is the shape of the teak forest area?
5. What causes the fire?

Evaluating

The questions formulated by group 1 were still not perfect and did not lead to the expected learning goals. The questions related to the material of natural events appeared, but were incomplete. In addition, there were no mathematical questions that are appropriate to the learning objectives.

However, several groups understood how to make question sentences, and the questions also led to the expected learning objectives.


B. Dari beberapa informasi menarik tersebut, ubahlah menjadi pertanyaan (soal) matematika dan IPA yang dapat diselesaikan!

1. Berapa panjang dan lebar hutan jati yang terbakar?
2. Berapa luas hutan yang tidak terbakar?
3. Bagaimana cara mencegah kebakaran hutan tersebut?
4. Apa penyebab dari kebakaran hutan tersebut terbakar?
5. Apa dampak dari kebakaran hutan tersebut?

Figure 8: Observation Results of Group 2

Translation:

B. From some interesting information, change it into mathematical or science question that can be solved!

1. What are the length and width of the teak forest on fire?
2. How much of the forest area that are not on fire?
3. How do we prevent a forest fire?
4. What is the cause of the fire in the forest on fire?
5. What are the effects of the forest fire?

From the problem formulated by group 2, it appears that group 2 has already understood how to make question sentences. Even so, the sentence in question number 4 is still ineffective. The students wrote:

"Apa penyebab dari kebakaran hutan tersebut terbakar?"

(What is the cause of the forest fire on fire?)

The students used the word *terbakar* (on fire) even though the sentence was good enough without it. The use of the word *terbakar* made the sentence less effective. The question sentence should have been written as:

"Apa penyebab *dari kebakaran hutan tersebut?"*

(What is the cause of the forest fire?)

From the questions that were formulated by group 2, the questions that corresponded to the topics of the rectangle and the causes and impacts of forest fire are number 1, 4, and 5. After the students finished formulating the questions, the next stage was choosing which questions to solve and guided by the teacher.

IV CONCLUSION

The students' skills in asking questions were still relatively low. However, it does not mean that they cannot be improved, because the students' ability to ask questions can be trained and developed with SBL learning. The problem is posed phase could facilitate students to practice asking questions with the help of the teaching media made in the creating the situation stage conducted by the teacher.

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