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**INCREASING HIGHER ORDER THINKING SKILLS IN ELEMENTARY SCHOOL STUDENTS THROUGH VIDEO BASED ON ENVIRONMENTAL POLLUTION CASE**

**(Study at Elementary School, Danau Teluk Subdistrict, Jambi City)**

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**Abstrak**

The research was carried out on the science learning process on environmental material is one of the important topic. Students at the elementary school level have an important role play a role in protecting the environment around them. This research is carried out with the aim of improving Higher Order Thinking Skills (HOTS) students in learning science on environmental materials. as for The research method used in this study uses Classroom Action Research with details of 3 cycles. The research was conducted during September-0ktober 2021 at SDN 054/IV and SDN 048/IV . The number of samples taken is 76 students. this research the treatment given is to play case-based learning videos in class.The results showed that there was an increase in students' HOTS in science subjects learning using case-based videos. The conclusion of this study is that case-based learning video can increase the HOTS of SDN students in the Teluk Teluk Subdistrict, Jambi City.

**Kata Kunci:** HOTS, Case-based Learning Video, Environmental learning

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Education is an effortconsciously and planned in realizinglearning that delivers studentshave religious power, personality,intelligence, noble character, and skills thatuseful for himself and the environment. This matter in line with the mandate of Law No. 20 of 2003 concerning National Education System. Education is not only to educate students but also strengthens character and care to solve problems that arise surrounding. Educational success demands teacher as the spearhead to be creative in choose or use even createlearning strategies can lead to successlearning. It is important for teachers to understandmaterial characteristics, student differences, andlearning methods in the learning processespecially related to the selection of modern learning models. Therefore the learning process will be more varied, innovativeand constructive in reconstructing insight knowledge and creativity of students.

Students at the elementary school level are students who are experiencing a period of development. They are interested in learning things around the environment in which they live. Students are interested in studying the environment because it is related to their daily lives (Dono, Webb, & Richardson, 2010; Meyer, 2016). Students must learn things around their environment. Students who do not have a good understanding of their environment will find it difficult to understand the various problems that occur in their environment. This makes an understanding of the environment very important for students at various school levels (Nesmith et al., 2016; Truelove & Gillis, 2018).

Environmental problems must be found solutions by the community. Students are one part of the community that has a role in protecting the environment. One of the solutions to the environment can be done by criticizing existing environmental phenomena. The process of criticizing something is included in the 21st century skills, namely Higher Order Thinking Skills (HOTS). Students who have high HOTS will be able to understand and criticize various problems that exist in their environment (Afflerbach, Cho, & Kim, 2015; Yee et al., 2015). The problem is that the HOTS of students at the elementary school level is still not too high. This makes learning in schools still tend to prioritize memorization skills rather than higher abilities.

In the learning process at school, teachers usually only teach the material according to the conventional. Meanwhile, 21st century learning does not only require students to understand the content of the material but rather leads to HOTS (Kivunja, 2014; Motallebzadeh, Ahmadi, & Hosseinnia, 2018). This makes research on HOTS important because of the low HOTS of students at the elementary school level. This problem has actually been around for a long time, but has only started to become the focus of teachers and researchers since the implementation of the 2013 curriculum and national exams with a large composition of HOTS questions. The purpose of this research is of course to find solutions to increase the low HOTS of elementary school students. Video learning is a medium which are often used by teachers. Various types of learning videos are usually displayed by teachers in teaching science in elementary schools. This becomes interesting, because not all types of videos can spur an increase in HOTS. Videos that are thought to increase HOTS are problem or case-based, because students will be stimulated to think higher, not just memorizing (Lindfors & Hilmola, 2016; Sadiqin, Sholahuddin, & Santoso, 2017).

**RESEARCH METHODS**

This research was conducted using classroom action research method using 3 cycles. Each cycle contains stages (1) Planning (2) Implementation (3) Observation and (4) Reflection. The research was carried out in September-October 2021 at SDN 054/IV and SDN 048/IV in Danau Teluk District. The sample used in this study were 76 grade VI students. enforcement activities by providing environmental-based learning video shows.

The HOTS activity process is measured using 3 different instruments in each cycle. The measured HOTS were adjusted according to Anderson's taxonomy, namely analyzing, evaluating, and creating (Anderson et al., 2001). In cycle 1, the material discussed is about water pollution. In cycle 2, it focuses more on air pollution. Meanwhile, in cycle 3, the discussion focused more on efforts to tackle environmental pollution. Analysis of the data used to measure the increase in HOTS using a gain score. The formula for calculating the gain score according to Fauziyah & Jailani (2014) can be seen below.

Gain score = average score each cycle 2 – the average score of each cycle 1

100 - the average score of each cycle 1

Once calculated, the gain score will be categorized. This categorization is based on what was stated by Puspitorini, Prodjosantoso, Subali, & Jumadi (2014). More details can be seen in table 1 below.

 Table. 1 Criteria Gain Score

|  |  |
| --- | --- |
| Gain Score | Criteria |
| g ≥ 0,7  | High |
| 0,7 ≥ g ≥ 0,3  | Currently |
| g < 0, 3 | low |

**FINDING AND DISCUSSION**

Based on the results of classroom action research, where the data taken shows increase in each cycle. Average The biggest student score is in the cycle 3. Details of the average score can be seen in table 2 below

Table 2

Average of each cycle

|  |  |
| --- | --- |
| **Step** | **average** |
| Cycle 1 | 58, 16  |
| Cycle 2 | 65, 40 |
| Cycle 3 | 76, 00 |

The average score obtained is then measured using the gain score formula and interpreted into criteria thatavailable. Based on the calculation results Obtaned the gain score criteria obtained namely low and medium. The details can be seen in table 3 below.

Table 3

|  |  |  |
| --- | --- | --- |
| **Step** | **Gain score** | **Criteria** |
| Cycle 1- Cycle 2  | 0, 18  | low |
| Cycle 2- Cycle 3 | 0, 31 | Currently |
| Cycle 3 – Cyle 1  | 0, 46  | Currently |

At the planning process stage in each cycle, it has been designed in such a way that the learning design carried out also contains elements that support the improvement of HOTS. In general, the implementation stage went smoothly and well. the process of playing videos in class also did not experience significant disturbances. At the time of observation, the teacher pays attention and makes observations. While in the final stage, teachers and students evaluate the deficiencies in the media and learning used in the cycle. The media that are still experiencing shortages are increased in number, so that students' understanding increases (Merry, Skinsley, Mitchell, & Orsmond, 2015; Zureick, Burk-Rafel, Purkiss, & Hortsch, 2018)

The process of improving students' HOTS is influenced by the use of case-based learning videos. These learning videos can affect students' HOTS because the learning media stimulates students' curiosity in learning science on environmental materials (Garcia, 2015; Khoiriyah & Husamah, 2018). Students who watch a program about the facts presented around their environment will make them more critical. This is the cause.

In addition, students should be asked to directly engage in practices related to the environment so that their learning is more meaningful (Hacieminoglu, 2016; Ichsan & Mulyani, 2018), this is also stated by Ihsana (2017: 1) learning is the result of interaction Among stimulus and response. A person is considered to have learned something if he or she can show a change in their behavior. According to this theory in learning what is important is the input in the form of a stimulus and the output in the form of a response. Therefore, Learning can be concluded as a conscious effort made by individuals in changing their behavior both through practice and good experience concerning cognitive, affective and psychomotor aspects to obtain goals certain.

The HOTS method approach for elementary school students can basically be improved with various learning media, such as learning videos, e-books, websites and other learning media. The rapid development of technology encourages more and more available information. This information can be accessed by students anywhere and anytime (Ballatore & Natale, 2016; Reyna, Hanham, & Meier, 2018). This makes learning in the modern era not only limited to the classroom. Learning can be done anywhere. Even learning can be done remotely (Jiang et al., 2017). The use of case-based learning videos is also a form of effort in using modern learning media in the classroom (Cheung & Slavin, 2013; Ichsan, Rusdi, & Sartono, 2017).

As for creative solutions, it is creativity in solve problems that occur. On the learning planning process prepared by the teacher in each KD problems have been prepared is around related to the material that studied to require students to have Sensitivity to solve problems surrounding. The research data shows creative solutions are good too, it shows HOTS learning using environment-based videos yet can foster student creativity in solving problems with pour creative ideas and growconcern for environmental problems.Should make posters such as anti-smoking campaigns or the impact of littering is creativity that gives separate experience for students in solve problems that occur.

The HOTS approach learning skills that must be possessed by students include analyzing, evaluating, and creating can actually be grown from an early age. In the ability to analyze, for example, teachers can use learning models or learning media that stimulate students' analytical power. Especially for environmental problems, it is relatively easy because a damaged environment can be criticized. The direction of learning in the 21st century is not only asking students to understand the content of the material, but more importantly encouraging students' critical and analytical skills. This can be improved by applying scientific approach-based learning (Djamahar, Ristanto, Sartono, Ichsan, & Muhlisin, 2018; Vieira & Tenreiro - Vieira, 2016; Vincent - Ruz & Schunn, 2017)

The ability to evaluate is also a component of the HOTS approach that must be trained from an early age. After students are able to analyze environmental problems assisted by case-based video learning media by adding poster making media, students are expected to be able to provide assessments and make statements to comment on a particular case about environmental pollution. Students at the elementary level are considered ready to learn to give critical statements, at least for the environment around where they live. This is because the environmental theme is one of the topics that is easy to criticize because the environment is currently experiencing a decline in quality (Austgulen, 2016; Haws, Winterich, & Naylor, 2014; Lekakos, Vlachos, & Koritos, 2014)

At the highest ability of HOTS, namely creating, elementary school students were asked to make a simple tool design to solve the problem of environmental pollution. In addition, they were asked to make a picture containing an invitation to protect the environment. The images they make don't have to be good, as long as they look neat and attractive. The stimulus to make something starting from the design first can help increase HOTS (Aisyah, Salehuddin, Aman, Yasin, & Mimiko, 2018; Garcia, 2015)

**CONCLUSION**

Based on the results of the study, it can be concluded that the use of environmental case-based learning videos has not been able to increase the HOTS of elementary school students on environmental pollution material. This increase was obtained because the video helped stimulate students' critical thinking by adding poster making media. In addition, the environmental problems raised also make it easier for students to analyze because they see these problems around their environment. So it is recommended for SDN teachers in Teluk Teluk Subdistrict, Jambi City to use problem-based videos in learning by applying poster-making media**.**

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