

UTILIZATION OF BLACK AND WHITE PHOTO MEDIA TO IMPROVE STUDENT ANALYSIS ABILITY

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Abstract— human resources in Indonesia, especially among students and students are expected to have qualifications and competencies are qualified for his own future, one of which is the student is able to solve various problems that occur in his life. For that, in the process of solving a problem required high analysis power in taking a decision and the right solution. But in reality, based on data obtained that Indonesian students who have analytical skills only as much as only 5%, because mostly only on the ability to know or the ability to understand (C2). The revelation was reinforced based on the results of a preliminary study conducted at SMPN 2 Nagrak. Therefore various ways are used to improve the analytical skills, one of which is using various media that can optimize the learning process. Black and white photo media is one medium that can be used as a medium of learning, with the effort to improve students' analytical skills. This article therefore sours from a study conducted from October 2017 to January 2018 at SMPN 2 Nagrak Sukabumi on the use of black and white photo media to improve analytical skills, involving 64 students consisting of two classes as an experimental class and control class. Based on the research conducted, obtained the data that the total gain value and gain value per aspect that counted in the experimental class higher than the control class, that is the basis that the black and white photo learning media more effectively improve the ability of student analysis compared with the media power point bebasis text on Social Science subject (IPS) at SMPN 2 Nagrak Sukabumi District.

Keywords: *Media, Black and White Photo, Analytical skills*

I. INTRODUCTION

The development of education since ancient times until now has happened so rapidly, starting in 2001 became the beginning of the development of 21st century education, with the development of 21st century education became the starting point of changes in education in Indonesia from conventional education to modern education, which was characterized by optimizing the use of technology in activities learning in school.

However, if we look at the conditions, various efforts to develop education in Indonesia have not yet yielded optimal results, even what happened is the opposite. The increasingly widespread fights between students in the past few years have become one of the worst moments in the history of education in Indonesia.

Based on the results of an interview with Asep Slamet in September, who is one of Nagrak 2 Public High School teachers, stated that education in Indonesia is indeed considered as something

important. But in the learning process, there are still less effective teaching and learning activities. Because to see the effectiveness of the learning process can be seen by observing students in analyzing and solving problems that exist in schools and in the environment where they live.

Then conducted interviews with several students at Nagrak 2 Public High School who gave an explanation that teachers rarely use interesting learning media, there are only one or two teachers who use media such as powerpoint and that is just ordinary writings.

One of the cases that occurred was Mckinsey Indonesian's Today, in FR Jauhariyyah and Suwono, (2013) that students' analytical skills in Indonesia were still relatively low, giving an explanation that only 5% of Indonesian students had analytical skills. because most are only in the ability to know or the ability to understand (C2) in the cognitive domain according to Bloom.

The ideal and optimal learning process is when there is a good interaction between educators and students who are in a learning environment to utilize learning resources. Thus the learning process can be said as a process of communication, because in it occurs the process of transferring information in the form of science from communicators to communicants in the form of individuals and groups.

Research conducted by Rahayu& Tatalia, (2016) provides an initial description that in his research stated that photo media has a strong influence in improving learning outcomes, especially in improving the ability to write persuasive paragraphs. The most basic and most commonly used media is visual media, namely the media for delivering messages through images or images. A good picture is of course taken with good techniques that we often use with photography.

The success of the learning process can be measured and seen from the learning outcomes obtained, because learning outcomes are important things that can be used as a benchmark for the learning process and the success of teachers in teaching Rohwati (2012). Because with the results of learning can see the competencies of students who want to be achieved. Bloom classifies learning outcomes into three domains called The Taxonomy of Educational Objectives. Learning outcomes that have been classified by Bloom in Rusman, (2012, p. 125) are divided into three domains, namely the cognitive,

affective and psychomotor domains. This analytical ability is one of the cognitive domains, namely C4.

The analytical skills possessed by students will be the capital in resolving any problems that arise as well as in decision making. The ability of analysis according to Anderson & Krathwohl (2010) is divided into three processes carried out, namely distinguishing that is sorting and selecting information that is deemed in accordance with reality and importance of a part of knowledge, organizing is a process that involves identifying an element of communication, conditions, and recognize the way these elements are structured and form an integrated information structure, and attribute is the process of building / redesigning information after determining the main purpose of an information / lesson given by the teacher.

Efforts can be made in order to improve the ability of the analysis is by using media in the learning process because the media have benefits according to Ely in Mahnun, (2012) namely (a) Improving the quality of education by accelerating the learning process; (b) Providing a more individualized educational process in its application; (c) Providing the basis of teaching more easily and scientifically; (d) Teaching conducted by teachers is carried out effectively; (e) Facilitate students in the process and; (f) Providing a broader and more comprehensive presentation of educational material.

The type of media used in this study for the experimental class is the photo media that enters the still image media in the first group while the powerpoint media used for the control class includes slide media or frame film in the second group of silent projection media.

The creation of a monochromatic image is called black and white photography. These color combinations coupled with the presence of lines, textures, shapes, patterns and bright dark games provide perfect detail in the delivery of information in the form of messages and feelings to those who enjoy it. Psychic colors have two colors including warm color and cool color. But between the two colors there is a neutral color. This neutral color consists of black, white and gray. Black-and-white photography is considered more artistic according to Volaric, Pibernik, & Dolic (2010) because black and white photography shows a different world from humans seeing it, black and white photography is suitable for more artistic results, and both black and white or color techniques become very interesting according to the views of each individual.

While Power point is a program designed to make it easier for someone to present, this program was developed by Microsoft together with other programs such as word, excel, access, and there are still several other programs.

II. RESEARCH METHODS

The research method chosen for this study was a quantitative approach with the Quasi Experimental (Quasi Experiment) method. The variables raised in the study consist of two variables, namely the independent variable (not bound) and the dependent variable (bound). Then the independent variable (X) in this study is the use of black and white photo media. Whereas for the dependent variable is the ability of students to analyze aspects of distinguishing, organizing, and attributing. This study uses the research design Nonequivalent Control Group Design because to see the comparison of the results of a treatment without the need for truly the same group. Nonequivalent Control Group Design consists of two groups namely the experimental and control groups.

The population in this study were all eighth grade students of 2 Nagrak State Middle Schools which numbered 208 and consisted of 6 classes. The subjects chosen as the discussion in the study are Social Sciences, with the subject of Social Conflict. The choice of material is intended so that students can analyze the influence of social interactions in different spaces on socio-cultural life and the development of national life. Then the sampling technique used in this study uses the purposive sampling category, meaning that the study groups in the study were not randomly drawn because the school and the teacher had given recommendations on study groups that could be used as samples of the research to be carried out. For the sample of this study, researchers collaborated with two classes, namely class VIII E, which amounted to 31 students and class VIII B which amounted to 33 students. The following is one example of black and white photo media used by researchers:



Picture 1.1 Example of Black and White Photo Media

Based on the results of the calculation of the validity test that has been done with the help of the Microsoft Office Excel 2016 results, the results of the trial are valid with sufficient correlation relationships.

Based on the results of the calculation of reliability tests that have been carried out with the help of Microsoft Office Excel 2016 and compared to the reliability criteria obtained the results of the instruments used are reliable with a high level of reliability.

After data analysis, normality testing is then carried out. Based on the results of the normality test in the experimental class, the data obtained on the total gain, gain differentiating aspects, gain organizing aspects, and gain attributing the experimental class group to the population that is normally distributed.

Based on the results of the normality test on the control class, the acquisition data on the total gain, the difference gain aspect, the organizing aspect gain, and the gain attributed the control class group came from the normally distributed population.

After it was known that the research data were normally distributed, followed by a homogeneity test. Based on homogeneity testing, the results obtained from the experimental class and the control class came from populations that have the same variance (homogeneous).

Based on the calculation of homogeneity test per aspect, the results obtained from the experimental class and the control class on the distinguishing aspects came from populations that have the same variance (homogeneous).

Based on the calculation of the homogeneity test per aspect, the results of the data from the experimental class and the control class on the organizing aspect come from populations that have the same variance (homogeneous).

Based on the calculation of the homogeneity test, the results of the data from the experimental class and the control class on the attribute aspects came from populations that had the same variance (homogeneous).

Next is hypothesis testing, which consists of general hypothesis testing and special hypothesis testing on predetermined aspects.

In general hypothesis testing, it can be stated that black and white photo learning media is more effective in improving students' analytical skills compared to text-based power point media.

In testing the first special hypothesis, it can be stated that black and white photo learning media is more effective in improving students' analytical skills compared to text-based power point media on the distinguishing aspect.

In testing the second specific hypothesis, it can be stated that black and white photo learning media is more effective in improving students' analytical skills compared to text-based power point media in the aspect of organizing.

In testing the third specific hypothesis, it can be stated that black and white photo learning media is more effective in improving students' analytical skills

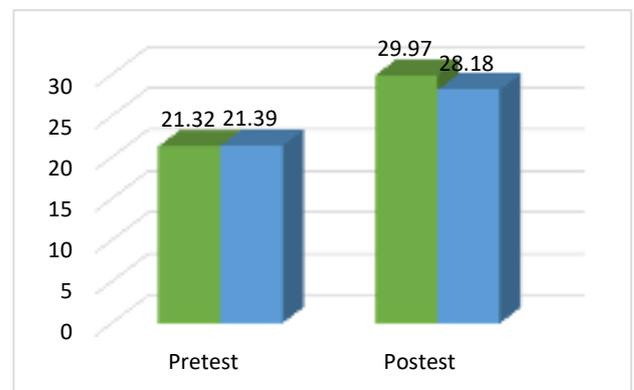
compared to text-based power point media on the attribute aspect.

III. RESULTS AND DISCUSSION

After processing the data, pretest data were obtained from the experimental class and the control class. The pretest score on the experimental class which totaled 31 students got a total score of 661. With this score the average score in the experimental class was 21.32 with the highest score of 26 and the lowest score of 17. While the pretest score in the control class amounted to 33 students got total score of 706. With the total score the average score in the control class is 21.39 with the highest score of 24 and the lowest score of 17.

Then the results of posttest data processing obtained from the experimental class and control class obtained the following data. Posttest scores in the experimental class which totaled 31 students got a total score of 929. With this score the average score in the experimental class was 29.97 with the highest score of 35 and the lowest score of 26. While the posttest score in the control class amounted to 33 students got total score of 931. With the total score the average score in the control class is 28.21 with the highest score of 33 and the lowest score of 24.

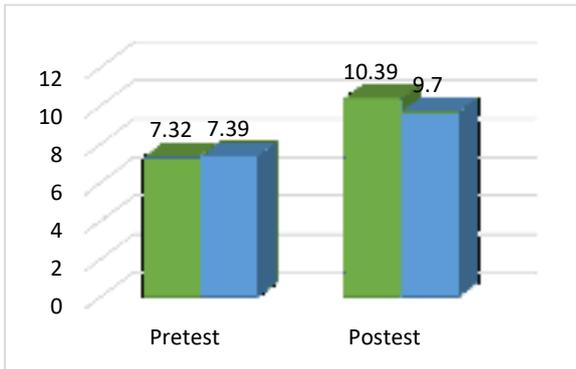
Graph 1
Comparison of Average Pretest and Posttest Scores of Experimental Classes and Control Classes



Based on graph 1, it can be concluded that the average score of the pretest in the control class is higher than the experimental class, but in the end the average score of the posttest in the experimental class is higher than the average of the control class.

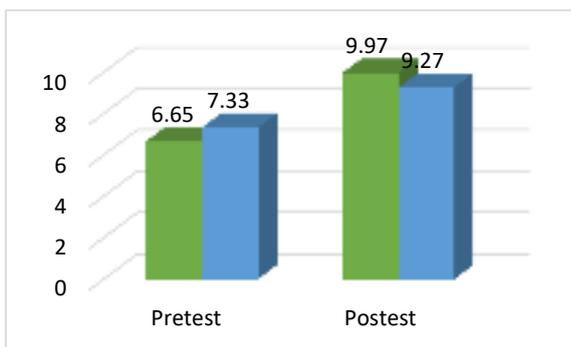
The description of the research was specifically developed based on aspects of the analytical skills measured. Based on the first aspect obtained data processing results that there is an increase in analytical skills of students who use black and white photo media is higher than students who use power point media in Social Sciences subjects. It can be seen from the average score of the post-test students' analytical skills that the aspects differentiate higher than the average score of the pre-test.

Graph 2
Comparison of the average pretest and posttest scores distinguishing aspects



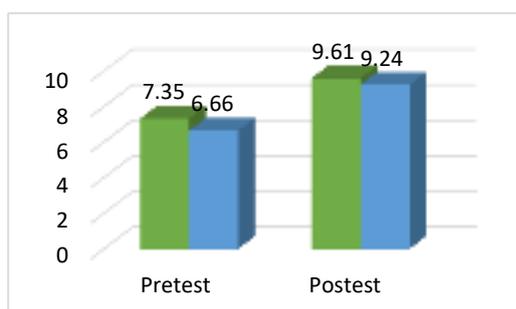
Based on the second aspect, the data obtained from the processing results show that there is an increase in the analytical ability of students who use higher black and white photo media than students who use power point media in Social Sciences subjects. It can be seen from the average score of the post-test students' analytical skills the organizing aspect is higher than the average score of the pre-test.

Graph 3
Comparison of the average pretest and posttest scores organizing aspect



Based on the third aspect, the data obtained from the processing results show that there is an increase in the analytical skills of students who use black and white photo media higher than students who use power point media in Social Sciences subjects. Can be seen from the average score of the post-test students' analytical skills attributing aspects is higher than the average score of the pre-test.

Graph 4
Comparison of the average pretest and posttest scores attribute aspects



With this, it can be seen that the average posttest of the experimental class is higher than the control class, so it can be concluded that the use of black and white photo media is more effective to improve students' analytical skills. Based on the results of data processing that has been carried out, it provides evidence that black and white photo learning media is more effective to improve students' analytical skills compared to power point media. One of them is because black and white photo media provide simplicity in the message to be delivered, and color also has a psychological effect on taste. Without any other disturbing color elements, the photo makes the message that you want to convey feels stronger in Ricky (2015). Certain colors are also a symbol of something, one of which symbolizes purity white, black symbolizes moodiness and the core of black and white is a color that shows simplicity. Looking at black and white photos sometimes creates a different impression, which is more exotic, mystical, religial, dramatic, and gives a more meaningful and profound statement on an event. Therefore, Ansel Adam, a photography artist of the century, gave the statement that "Forget what it looks like. How does it feel?" Being an important point and not excessive for black and white photos in Prayitno, (2010).

Then the results of the overall posttest average from the aspect of distinguishing higher than the overall average pretest score. The data is the basis that is used to conclude that black and white photo media are effective towards improving the ability to analyze the distinguishing aspects. The ability to distinguish aspects of analysis is the process of sorting out the relevant parts of a structure Anderson, L, & Krathwohl, D.R (2010 p. 121). Distinguishing aspects of the analytical skills can be seen from students who are able to categorize the importance or not and relevant or not the information obtained. Thus students will prioritize information that is important and relevant in accordance with their needs, the result of which is the information obtained becomes new and reliable information.

Once the importance of analytical skills for the lives of every human being cannot be denied, because analyzing information is the biggest factor that influences the decision making it is right or not right. Likewise the ability of analysis on distinguishing aspects, which are useful in sorting and selecting information, meaning that the ability to distinguish each information available and obtained can be selected according to needs. Therefore individuals who have good distinguishing abilities make human life more efficient in many ways, especially in the learning process which is taking education. Starting from the time it takes is not too long to get information and literature that can be accounted for credibility, indirectly even faster in obtaining a much more useful source of information, and the most important for each individual is not to fall into fundamentalist ideology or radicalism that can disturbing society.

The fact shows that students' ability to differentiate is still not evenly distributed, it can be seen when students are asked to sort out the information needed to complete the task takes a long time. Through black and white photo media used in learning can bring students to be able to explore an event / event that is associated with the material being studied, so that every knowledge obtained can be selected and processed so that it becomes new knowledge that can be described abstractly in the mind of each student. This illustrates that photo media is one of the learning media that can be used to optimize the teaching and learning process. As learning media is an important component in learning, according to Sanjaya (2013, p.204) the components of learning are 1) purpose; 2) content or subject matter; 3) learning methods; 4) learning media; and 5) evaluation. In addition, Susilana and Riyana (2008, p. 15) reveal that "the advantage of image media is that it is more concrete than graphics, can show the right comparison of the actual object, and its manufacture is easy and inexpensive".

Then the results of the average overall posttest from the organizing aspect were higher than the overall average pretest score. The data is the basis that is used to conclude that black and white photo media are effective towards improving the organizing aspect analysis capabilities. The ability to organize is a process that involves identifying an element of communication, conditions, and recognizing how these elements are structured and form an integrated information structure. In this process, it can produce integrated and integrated linkages / relationships from each information element. The ability to organize can build a systematic relationship between parts of separate information then reunited so that it becomes coherent and relevant information. Likewise in organizing sebulan learning material, students are required to build systematic relationships of information so that knowledge becomes whole.

Organizing activities are often also referred to as structuring, integrating, finding coherence, outlining, describing roles, and what we often do with is classification based on criteria. These classifiers are assumed to be classifiers who understand the purpose of organizing information, namely for the retrieval process Rahmah (2012).

The facts show that the ability of students to organize information is still low, it can be seen when students are asked to classify the factors that cause conflicts that occur in the environment around their homes. Therefore through the medium of black and white photos used in learning can bring students to more detail in identifying and processing information by calcifying it first according to the criteria of the material being studied. So that every knowledge obtained can be connected into one unit according to the criteria and become a strong source. Black and white photo media is one of the benefits of

technological advances, students can learn anywhere and anytime by utilizing technological results. With the media, making learning more effective and efficient Rusman, (2017). But not all black and white photo media can be used as learning media, because the photo media must meet several conditions in advance which are explained according to Rinanto in Indrianingrum & Suwarna (2015), there are four conditions that need to be considered in making photos as educational media namely: (1) images must be authentic, (2) images must be simple, (3) images must carry messages, (4) images must be dynamic. The four conditions are the basis for selecting images used in the learning process with efforts to improve students' analytical skills.

Then the results can be seen based on the results of the description and the results of data processing that have been described previously that with the use of effective black and white photo media to improve students' analytical skills in the organizing aspect, it can be concluded that using black and white photo media can improve the organizing aspect of analysis compared to before using black and white photos

Then the results of the overall posttest average of the attribute aspects were higher than the overall average pretest score. Although indeed when viewed from the gain value obtained, the difference is not too far from the experimental class with the control class. However, the data is the basis used to conclude that black and white photo media are effective towards improving the attribute analysis aspects of attributing. The ability to attribute is the process of building / redesigning information after determining the main purpose of an information / lesson given by the teacher. Distributing is the highest analysis activity, because someone can be said to be able to master the ability to contribute when it can provide views or opinions that are in accordance with the information obtained. In other words, the contribution consists of the ability to understand and confuse.

The ability to attribute or is often referred to as the ability to deduce important in everyday life because each individual gets so much information, one of them through reading. Because every reading we read should be able to conclude its contents or the essence of the reading. But the facts show that very few students have the ability to contribute, because they do not understand the material they are learning. Therefore, through black and white photo media used in learning, students are required to look carefully and detail the images given to be able to provide a personal perspective on the message conveyed from the picture. Because to draw conclusions from the black and white photo media can be seen from well-illustrated expression factors. This is reinforced by the opinion of Sadiman, Raharjo, & Haryono in Indrianingrum & Suwarna, (2015) about the advantages of photo media as learning media as follows: (1) concrete, (2) can overcome space and time, (3) can limit visual

limitations, (4) can clarify a problem, (5) be cheap and easy to obtain.

Based on the results of the description that has been described previously that the use of black and white photo media is effective to improve students' analytical skills on the attribute aspects, so that it can be inferred down by using black and white photo media to improve the attribute of analyzing aspects attributable when compared to using black and white photos.

IV. CONCLUSION

The general conclusion is that the black and white photo learning media is effective for improving the analytical skills of students in Social Sciences (IPS) subjects at the Junior High School level.

The conclusions specifically for this study include the following:

- 1) Effective black and white photo media are used to improve students' analytical skills in distinguishing aspects in Social Sciences (IPS) subjects at the Junior High School level.
- 2) Effective black and white photo media are used to improve students' analytical skills in aspects of organizing in Social Sciences (IPS) subjects at the Junior High School level.
- 3) Effective black and white photo media are used to improve students' analytical skills on the attribute aspects in Social Sciences (IPS) subjects at the Junior High School level.

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