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# THE EFFECT OF THE USE OF AUDIO VISUAL MEDIA ON STUDENT LEARNING OUTCOMES IN CLASS X IPA VIRUSES IN SENIOR HIGH SCHOOL

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**Abstract**

*This study aims to determine the learning outcomes of students who are taught using audio-visual media in the biology subject of virus material at SMA Negeri 1 Meureubo, West Aceh Regency and to find out how students respond during learning using audio-visual media. This study used a randomized research design, subject to posttest only control group, where the research was a quasi experimental design. The experimental class was taught using audio-visual learning while the control class was taught using conventional methods without using audio-visual media. The results of this study indicate that the control class obtained an average value of learning outcomes of 71.750. Whereas in the experimental class, the average value of learning outcomes was 78.833. Thus the average value of student learning outcomes in the experimental group was higher than the average value of student learning outcomes in the control group. Data analysis using t-test obtained the value of t count> t table, namely 2.319> 1.713 with a significance of 0.05. The conclusion of this study is that there is a significant influence on student learning outcomes between the average learning outcomes of students using audio-visual media and the average learning outcomes of students who do not use audio-visual media in the learning process of grade X IPA students at SMA Negeri 1 Meureubo Regency. West Aceh.*

**Keywords:** *Media, Audio, Visual, Learning Outcomes, Shiva Response.*

## A. Introduction

In the teaching and learning process the teacher always expects students to achieve maximum results, because the learning outcomes achieved are a measure of student learning outcomes. According to Ruseffendi, (2010 : 8), many factors affect student success in learning, including the use of media used by teachers in learning . Because p enggunaaan lack of proper media will result in the achievement of learning outcomes becoming less than the maximum. Conversely, teachers who already know and can determine the media to be used, the learning outcomes will be as expected or maximally.

According Soendojo (2010: 19) a gar teaching objectives have been formulated able to achieve the efficient and effective, the teachers are required to have the ability to manage in general all of the components of teaching such that the intertwined relationship between the functions of teaching component in question. Because of that, teachers must master the learning media in addition to mastering the methods of teaching .

Biology learning is one of the important lessonsreally needed to instill the concept in students, so that students can apply it in everyday life. But in reality, students are less interested in biology lessons. Therefore, in teaching biology to students, teachers should prefer a variety of approaches, strategies, effective and efficient methods so that students have more interest and enjoy learning biology so that the planned learning objectives will be achieved.

The use of appropriate and good teaching media can be more effective in the teaching and learning process carried out by a teacher to

achieve the expected learning objectives. As in biology subjects which will use teaching media in accordance with the subject matter,especially on healthy environmental material here it would be better if we presented a series of pictures related to the material. Therefore, by using visual media, it is hoped that the teaching and learning process will be more conducive and effective so that learning objectives can be achieved especially to increase horiginal student learning on viral material class X IPA at SMA Negeri I Meurebo Aceh Barat.

Based on the explanation that has been stated above, the purpose of this research is to: know the effect of media use audio visual towards enhancement learning outcomes of virus material in class X IPA SMA Negeri I Meureubo.

## B. RESEARCH METHODS

### Approach and Type of Research

The approach used in this research is a quantitative approach. This type of research is a quasi experimental research. The quasi-experimental method is basically the same as the pure experiment, the difference is in controlling the variables. The control is only carried out on one variable, namely the variable that is considered the most dominant.

### Place and time of research

The research was conducted at SMA Negeri 1 Meureubo, West Aceh Regency. The class that will be used in the research is class X IPA. The reason the researcher chose this location as a research location is a strategic location and easy to reach. The research was conducted in semester 1 of the 2018/2019 academic year.

### Population and Sample

The population in this study were all class X IPA students of SMA Negeri 1 Meureubo Aceh Barat 2018/2019 academic year, totaling 48 people. The sample in this study consisted of two classes, namely class X IPA1 as an experimental class as many as 24 students, and class X IPA3 as a control class as many as 24 students at SMA Negeri 1 Meurebo Aceh Barat.

**Table 1** Experimental Research Design

| Group | Treatment ( *treatment* ) | Final Test ( *posstest* ) |
|---|---|---|
| E | XE | Y |
| K | XK | Y |

E : Experiment group

K : Control group

X E : Treatment using audio visual media

X K : Treatment using a conventional approach

Y : Same final test in both groups.

## C. RESULTS AND DISCUSSION

### 1. Research result

The research data were obtained from the results of students' science process skills. The use of audio-visual media from the research results was applied to class X IPA3 as many as 24 students as an experimental group and the scientific approach with lecture methods and assignments applied to the control group, namely class X IPA1 totaling 24 students.

The research data is in the form of student posttest scores taken after participating in learning activities. Two posttest scores of the control group and the experimental group were statistically analyzed using the t-test. The t-test was used to determine whether or not there was a significant difference between the value of the control group and the

value of the experimental group. The normality test is in the form of the Kolmogrov test and also the homogeneity test in the form of the Annova test.

At the time before doing the research, the researcher will first validate the learning tools and research instruments that will be used in this study to several experts to find out whether they are feasible or not suitable for use. The validator in this study was a lecturer from STKIP Bina Bangsa Meulaboh. The following are the results of the validation of the learning tools and research instruments:

**Table 2** Result of Validation Value Recap

| Validation | Ideal Score | Score | % | Ket. |
|---|---|---|---|---|
| RPP validation sheet | 100 | 80 | 80 | Good |
| Question Validation Sheet | 30 | 24 | 80 | Good |
| Average value | 65 | 52 | 80 | Good |

Source: Date Primer (Diolah, 2018)

Based on table 2 above, the validator's assessment of the learning implementation plan, question validation is in the good category, so that the validation sheets used by the researcher are suitable for use. The average percentage value for the overall value of the validation sheet in this study is 80% which means it is in the good category.

**Control Class Pretest Results**

The pretest measurement was carried out at the first meeting, namely Friday, October 05 2018 in class X MIA3 SMA Negeri 1 Meurebo Aceh Barat during the second lesson. Students work on test questions as many as 25 items, students who take the pretest total 24 students. The pretest values for the control group can be seen in the following table:

**Table 3** Data Classification Pretest Control Class

| No. | Classification | Score |
|---|---|---|
| 1. | Number of Students | 24 |

| | | |
|---|---|---|
| | (N) | |
| 2. | Mean | 61,333 |
| 3. | Median | 60,000 |
| 4. | Mode | 60.0 |
| 5. | Standard Deviation | 10.7892 |
| 6. | Minimum Value | 36.0 |
| 7. | Maximum Value | 80.0 |
| 8. | Total Value (Sum) | 1472.0 |

Source: Research Data for 2018

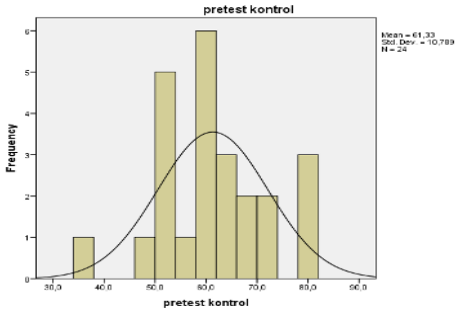
Based on the results of table 3 above, it can be explained that the pretest results in the control class mean ( mean ) 61,333, the middle value ( median ) is 60, the value that appears most (mode) is 60, the standard deviation is 10.7892 with a value minimum 36 and maximum value 80, with a total pretest (sum) score of 14772.0.

Table 4 Distribution of Control Class *Pretest* Results

| Nilai. | Frekuensi | Persentase (%) |
|---|---|---|
| 36,0 | 1 | 4,2 |
| 48,0 | 1 | 4,2 |
| 52,0 | 5 | 20,8 |
| 56,0 | 1 | 4,2 |
| 60,0 | 6 | 25,0 |
| 64,0 | 3 | 12,5 |
| 68,0 | 2 | 8,3 |
| 72,0 | 2 | 8,3 |
| 80,0 | 3 | 12,5 |
| Jumlah | 24 | 100% |

Source: Research Data for 2018

Based on the results of table 4, we can present a bar chart in the following figure:




**Graph 1** Graph of the Pretest Value of Learning Outcomes Control

Based on the table and graph above, it can be seen that the value of student learning outcomes in the control class who got the highest score (80) was 3 students, who got the lowest score (36) 1 student and those who got the score (60) were 6 students, who got the score ( 48) 1 student, the value of (52) 5 students, who got a score of (56) 1 student, the score (64) 3 students, the score (68) 2 students, who got the score (72) 2 students, while the student achievement value have achieved completeness, namely (KKN ≥70) in the control class there are 5 students.

**Pretest Results of Experimental Class**

The pretest measurement was carried out in class X MIA1 SMA Negeri 1 Meurebo West Aceh during the first lesson. The pretest results were obtained from the students' answer sheets. As for the questions that were done by the students, there were 25 items, where the problem score was 4 students who took the pretest totaling 24 students. Details can be seen in the following table:

**Table 5** Pretest Data Classification Experiment Class

| No. | Classification | Score |
|---|---|---|
| 1. | Number of Students (N) | 24 |
| 2. | Mean | 60,833 |
| 3. | Median | 60,000 |
| 4. | Mode | 60.0 |

| | | |
|---|---|---|
| 5. | Standard Deviation | 8.9037 |
| 6. | Minimum Value | 48.0 |
| 7. | Maximum Value | 80.0 |
| 8. | Total Value (Sum) | 1460.0 |

Source: Research Data for 2018

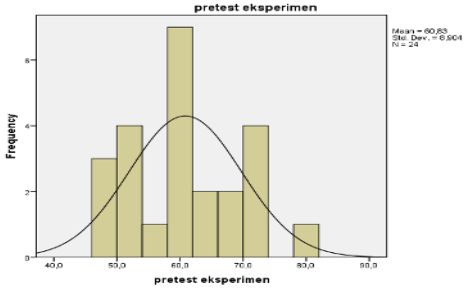
Based on the results of table 5 above, it can be explained that the pretest results in the experimental class mean value (mean) is 60.833, the middle value (median) is 60, the value that appears most (mode) is 60, the standard deviation is 8.9037 with The minimum score is 48 and the maximum / highest score is 80, with a total pretest (sum) score of 1460.0.

**Table 6** Distribution of Experimental Class Pretest Results

| Score. | Frequency | Percentage (%) |
|---|---|---|
| 48.0 | 3 | 12.5 |
| 52.0 | 4 | 16.7 |
| 56.0 | 1 | 4,2 |
| 60.0 | 7 | 29.2 |
| 64.0 | 2 | 8.3 |
| 68.0 | 2 | 8.3 |
| 72.0 | 4 | 16.7 |
| 80.0 | 1 | 4,2 |
| total | 24 | 100% |

Source: Research Data for 2018

Based on the results of table 4.3, we can present a bar chart in the following figure:



**Graph 2** Graph of the Pretest Value of Learning Outcomes Experiment Group

Based on the table and graph above, it can be seen that the value of student learning outcomes in the control class who got the highest score (80) was 1 student, who got the lowest score (48) 3 students and the one who got the score (60) was 7 students, who got the score ( 52) 4 students, with (56) 1 student, with (64) 2 students, whose score (68) 2 students, (72) 4 students, while the student's learning achievement score who had reached completeness was (KKN ≥70) in the experimental class there were 5 students.

**Comparison of pretest control class and experimental class**

The comparison of T-test results on the pretest value in the control class and experimental class can be seen in the following table:

**Table 7** Classification Data posttest Class Control

| No. | Value Classification | Control Class | Experiment Class |
|---|---|---|---|
| 1. | Mean | 61,333 | 60,833 |
| 2. | Median | 60,000 | 60,000 |
| 3. | Mode | 60.0 | 60.0 |
| 4. | Standard Deviation | 10.7892 | 8.9037 |
| 5. | Minimum | 36.0 | 48.0 |
| 6. | Maximum | 80.0 | 80.0 |

Source: Research Data for 2018

Table 7 above shows that the difference in average (mean) between values *pretest*the experimental pretest class was 60,833, the mean (median) 60, 000 standard deviation (standard deviation) was 10.7892. And for the control class pretest value the mean value (mean) 61,333, the mean value (Meidan) 60,000, the standard deviation 8.9037.

**Control Class Posttest Results**

The implementation of the final test or posttest data analysis was carried out after the control group was given learning material about the virus carried out in class X MIA3 SMA Negeri 1 Meurebo Aceh Barat. Students work on questions totaling 25 items from the virus material that has been delivered by students who take the posttest totaling 24 students. The posttest values of the control group can be seen in the following table:

**Table 8** Posttest Data Classification Control Class

| No. | Classification | Score |
|---|---|---|
| 1. | Number of Students (N) | 24 |
| 2. | Mean | 71,750 |
| 3. | Median | 72,000 |
| 4. | Mode | 72.0 |
| 5. | Standard Deviation | 11,5316 |
| 6. | Minimum Value | 48.0 |
| 7. | Maximum Value | 92.0 |
| 8. | Total Value (Sum) | 1722.0 |

Source: Research Data for 2018

Based on the results of the control class data, we can see that the posttest results can be explained that the mean value is 71,750, the median value is 72,000, the most frequent value (mode) is 72.0, the standard deviation is 11.5316 with The minimum score is 48.0 and the maximum / highest score is 92.0, with a total pretest (sum) score of 1722.0.

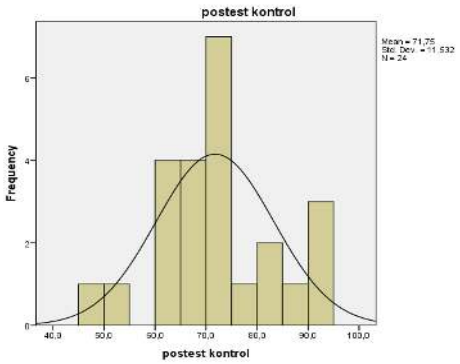
**Table 9** Distribution of Control Class Posttest Results

| Score. | Frequency | Percentage (%) |
|---|---|---|
| 48.0 | 1 | 4,2 |
| 54.0 | 1 | 4,2 |
| 60.0 | 3 | 12.5 |
| 64.0 | 1 | 4,2 |

| | | |
|---|---|---|
| 68.0 | 4 | 16.7 |
| 72.0 | 7 | 29.2 |
| 76.0 | 1 | 4,2 |
| 80.0 | 2 | 8.3 |
| 88.0 | 1 | 4,2 |
| 92.0 | 3 | 12.5 |
| total | 24 | 100% |

Source: Research Data for 2018

Based on the results of table 9, we can present a bar chart in the following figure:




**Graph 3** Postest Graph of Learning Outcomes Value Control Group

Based on the table and graph above, it can be seen that the value of student learning outcomes in the post-test control class who received the highest score (92.0) was 3 students, who got the lowest score (48.0) 1 student and the one who got the score (60) was 3 students , meanwhile, the learning achievement scores of students who have reached completeness (KKN ≥70) in the control class are 14 students.

**Posttest Results for Experiment Class**

**Table 10** Posttest Data Classification Experiment Class

| No. | Classification | Score |
|---|---|---|
| 1. | Number of Students (N) | 24 |
| 2. | Mean | 78,833 |
| 3. | Median | 76,000 |

| | | |
|---|---|---|
| 4. | Mode | 68.0 |
| 5. | Standard Deviation | 10.8414 |
| 6. | Minimum Value | 68.0 |
| 7. | Maximum Value | 100.0 |
| 8. | Total Value (Sum) | 1892.0 |

Source: Research Data for 2018

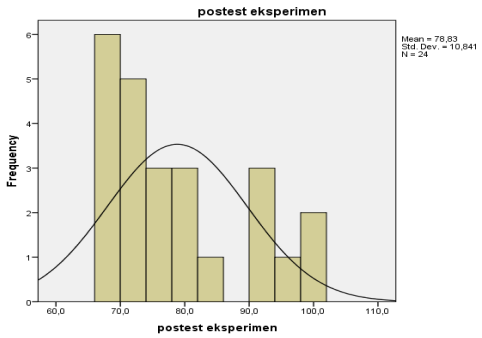
Based on the results of table 10 above, it can be explained that the posttest results in the experimental class mean value (mean) is 78.833, the middle value (median) is 76,000, the most appearing value (mode) is 68.0, standard deviation is 10, 8414 with a minimum score of 68.0 and a maximum / highest value of 100, with a total pretest (sum) score of 1892.0.

**Table 11** Distribution of Experimental Class Posttest Results

| Score. | Frequency | Percentage (%) |
|---|---|---|
| 68.0 | 6 | 25.0 |
| 72.0 | 5 | 20.8 |
| 76.0 | 3 | 12.5 |
| 80.0 | 3 | 12.5 |
| 84.0 | 1 | 4,2 |
| 92.0 | 3 | 12.5 |
| 96.0 | 1 | 4,2 |
| 100.0 | 2 | 8.3 |
| total | 24 | 100% |

Source: Research Data for 2018

Based on the results of table 4.9, we can present a bar chart in the following figure:




**Graph 4.** Postest Graph of Learning Outcomes Value Experiment Group

Based on the table and graph above, it can be seen that the value of student learning outcomes in the post-test control class who received the highest score (100) was 2 students, who got the lowest score (68.0) 6 students, while the student achievement scores who had reached completeness were ( KKN ≥70) in the experimental class there are 18 students.

**Posttest Comparison of Control Class and Experiment Class**

**Table 12** Comparison of Postest Classification Control Class and Experiment Class

| No. | Value Classification | Control Class | Experiment Class |
|---|---|---|---|
| 1. | Mean | 71,750 | 78,833 |
| 2. | Median | 72,000 | 76,000 |
| 3. | Mode | 72.0 | 68.0 |
| 4. | Standard Deviation | 11,5316 | 10.8414 |
| 5. | Minimum | 48.0 | 68.0 |
| 6. | Maximum | 92.0 | 100.0 |

Source: Research Data for 2018

**Results of Data Analysis**

1. Data Normality Test

The normality test is carried out to test whether all variables are normally distributed or not. The normality test uses the Kolmogorov-

Smirnov formula using the SPSS 2.0 program. Guidelines for decision making in the normality test according to Sugiono (2013: 129), namely if the probability 0.05, the research data is normally distributed. Conversely, if the probability <0.05, the research data are not normally distributed.

**Table 13** Data Normality Test

| One-Sample Kolmogorov-Smirnov Test | | | |
|---|---|---|---|
| | | Postest Experiment | Postest Control |
| N | | 24 | 24 |
| Normal Parametersa, b | Mean | 78,833 | 71,750 |
| | Std. Deviation | 10.8414 | 11,5316 |
| Most Extreme Differences | Absolute | , 194 | , 200 |
| | Positive | , 194 | , 200 |
| | Negative | -, 159 | -, 123 |
| Kolmogorov-Smirnov Z | | , 951 | , 978 |
| Asymp. Sig. (2-tailed) | | , 326 | , 294 |
| a. Test distribution is Normal. | | | |
| b. Calculated from data. | | | |

Based on the table above, it can be seen that the post-test data in the experimental class and control class is normally distributed. This is based on the results of the probability value (0.951 and 0.978) > 0.05, it is concluded that the groups and data are normally distributed.

2. Homogeneity Test

The homogeneity test was carried out to determine the level of variance between the two groups, namely the experimental group and the control group. Guidelines for decision making in the homogeneity test according to Sugiono (2013: 130), namely the probability > 0.05, the variance of the research data is homogeneous. Conversely, if the probability <0.05, the variance of the research data is not homogeneous.

The homogeneity of the data was tested using the SPSS 2.0 program. The results of the homogeneity test can be seen in the table below:

**Tabel 14** Uji Homogenitas

| Test of Homogeneity of Variances | | | |
|---|---|---|---|
| nilai postest | | | |
| Levene Statistic | df1 | df2 | Sig. |
| ,117 | 1 | 46 | ,734 |

Based on the table above, it can be seen that the post-test in the experimental class and control class is homogeneous. This is based on the results of the probability value (0, 734)> 0.05, it can be concluded that the data group is homogeneous.

3. T test

The results of the hypothesis test table show that the mean value of the final test obtained by the experimental class is equal to78,833 and control class 71,750. The results of the t-test calculation of student learning outcomes obtained tcount (2,319) > t table (1,713). So it can be concluded that Ha which reads "There is an influence of audio visual media on student learning outcomes on virus material" is accepted.

**2. Discussion**

According to Sardiman (2011: 20) that learning is in the form of changes in behavior or appearance with a series of activities, for example by reading, observing, listening, imitating and so on. According to Winkel (2010: 34) learning is a mental / psychic activity that takes place in active interaction with the environment that can produce changes in knowledge, skills and attitudes. Audiovisual media is a medium that is able and can stimulate the sense of sight and sense of hearing together, because this media has elements of sound and image elements (Djamarah, 2016: 124).

Marshall Meluhan (2013: 133) states that media is an extension of humans that allows it to influence other people who do not have direct contact with that person. According to Dale (2012: 90) that audio-visual media is a teaching and educational media that activates the eyes and ears of students during the teaching and learning process.

Learning media according to Rossi and Breidle (2010: 66) are all tools and materials that can be used for educational purposes, such as radio, television, books, newspapers, magazines, and so on. This learning media will help make it easier for students to digest the knowledge information conveyed. Learning media according to the characteristics of sensory stimulants can be in the form of Audio (sound), Visual (picture), or Audio Visual.

The use of instructional media in the form of audio-visual media in the learning process in the experimental class at the time of research, it is known that the learning process is more active. Where students are active in expressing opinions and are able to explain the viral material that has been delivered better. In contrast to the learning process in the control class which only uses the lecture method without any learning media in the form of audio-visual media.

In addition, students in the experimental class can understand the material presented more easily due to the use of learning media in the form of audio-visual media. In contrast to the conditions of the learning process in the control class using the lecture method, students find it difficult to understand the material presented by the teacher because they only use learning media in the form of textbooks. This is based on the results of the pretest and posttest in the experimental class which are better than the pretest and posttest results in the control class.

Based on the results of data analysis, this research shows that the post-test results of 24 students in the experimental group and 24 students of the control group, the experimental group shows that in the experimental class the highest score is 100 and the lowest score is 68, while in the control class the highest score is 92. and the lowest value is 48. The results of hypothesis testing obtained t count = 2.319 while the price of t table = 1.713 for a significant level of 5%. Thus it can be concluded that t count > t table this shows that there is a significant difference between the learning outcomes of the experimental class and the control class. These results are also based on the students' post-test mean ( mean ) scores . The average ( mean ) value of the experimental class that uses the media audio-visual namely 78.833 is greater than the value of the average ( mean ) control classes using lecture method is 71.750 .

**E. Conclusion**

Based on the research and data analysis that has been done, it can be concluded that the use of media audio visual on the material virus"It has a significant effect on learning outcomes in biology class X IPA students of SMA Negeri 1 Meureubo. The results of the data analysis were also strengthened by the results of the hypothesis testing. The data obtained tcount =2,319 while the value of ttable = 1,713 for a significant level of 5%. Thus tcount > ttable, this shows that there is a significant difference between the learning outcomes of the experimental class and the control class.

**Bibliography**

Arikunto, S. 2010. *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta: Rineka Cipta.

Dale. 2012. *Audio Visual Methods in teching*. New york : Holt Rinehart and Winston

Djamarah,. 2016. *Strategi Belajar Mengajar*. Jakarta: Rineka Cipta.

Marshall. 2013. *Strategi Belajar Mengajar*. Bandung: JICA Fakultas Pendidikan Universitas Pendidikan Indonesia

Rossi dan Breidle. *Metode Penelitian Untuk Skripsi*. Jakarta : PT. Raja Grafindo Persada.

Ruseffendi. 2010. *Pengantar Kepada Membantu Guru Mengembangkan Kompetensinya Dalam Pengajaran Matematika Untuk Meningkatkan CBSA*. Bandung: Tarsito.

Sardiman. 2011. *Evaluasi Hasil Belajar*. Yogyakarta : Pustaka Belajar

Soendojo. 2010. *Perencanaan Pengajaran*. Jakarta : Rineka Cipta

Sugiyono. 2013. *Metode Penelitian Pendidikan Pendekatan Kuantitatif Kualitatif, dan R & D. Bandung*: Alfabeta.

Winkel, 2010, *Psikologi Pengajaran*, Jakarta: Gramedia Pustaka Tama.