The Effectiveness of Visual Media in Increasing Learning Outcome of Textile Subject in SMK N 1 Jambu

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ABSTRACT

This study was carried out to determine the effectivity of visual media on textile subjects of grade X students in SMKN 1 Jambu. This experimental research was executed with pre-test and post-test design. In this research, the used population was all students of grade X boutique fashion of 68 students. Sample was taken through random sampling. Data was collected using test, documentation, and observation methods, followed by t-test analysis. Examining hypothesis, it was found that tc 24.54> ttable 2.035, revealed that media visual was effective to determine learning outcome of textile subject. The gain test achieved 0.62 or 62%, indicated the improvement of learning outcome using media visual reached medium category.

Keywords: Effectiveness, Visual Media, Learning Outcomes, Boutique Fashion.

1. INTRODUCTION

Quality of human resources could be improved in various ways including through education. Through education, students' characters and competence could be enhanced and adjusted to be beneficial to people's lives [1].

All educational activities, both in the form of guidance, teaching and training are directed to achieve educational goals. It is indicated by the improvement and development of learning outcomes which could be achieved through learning activities. Learning is an interaction process between students with educators and learning resources in a learning environment. Learning generates a relatively permanent change in behaviour or behaviour potential as a result of reinforced experience or practice. A successful learning is indicated by behaviour change [2].

Education system in vocational school is one form of formal education unit that organizes vocational education at the secondary level as an extension of Junior High School. SMK Negeri 1 Jambu is one of the Vocational High Schools in Semarang Regency. SMK Negeri 1 Jambu has 5 study programs, i.e., Automotive Engineering, Mechanical Engineering, Fashion (Boutique Fashion), Body Repair, and Culinary Education.

The curriculum applied in SMK N 1 Jambu is curriculum 2013. Curriculum 2013 especially emphasizes in building students' characters, developing relevant skills based on students' interests and needs, and developing a thematic approach that beneficial for students' cognitive abilities [3]. This curriculum gives priority to understanding, skills, and character education, where students are required to understand the material, be active in the process of discussion and presentation as well as having manners and high discipline [4-5].

Initial observations revealed that learning process in SMK Negeri 1 Jambu in Textile Subject given using talk method, questions and answers, and assignments. The learning media used was whiteboards and job sheet. Learning by talk method was carried out by explaining to all students in the classroom and students paying attention by understanding what is conveyed by the teacher. The use of talk method is very difficult to find out whether the whole students truly understand the materials. Most students learn passively, not even ask questions once given opportunity.

Students are a unit of individuals who are different from each other. That difference can affect a student's level of memory and ability. In the application of lecture

method, each student has different limits of ability to understand and remember what is delivered by the teacher. The difference between individuals has a big influence on activities and learning success. Initial observations revealed that the achievement of students' Minimum Completeness Criteria (MCC) have not been 100%. The MCC score used was 74 while for students in grade X of 50 students in odd semester, it was shown that only 30 students achieved MCC with scores of 75 to 100, while other 20 students only reached scores of 60 to 73.

Among the efforts to increase students' learning interest could be done by enhancing students' interest in learning. Teachers should optimize the use of learning media to increase students' interest. The selection of right media is of important to increase the ability of reaching MCC scores. Media must be suitable with students' needs because the ability of students to understand the material varies, there would be students who have visual types, auditory types, and kinaesthetic types. Visual Media with Adobe Flash CS6 Software is one of the media that can fulfil the needs of students, thus creating an interesting learning situation. Because students can pay attention to the material that is presented and is required to actively do the activities requested in the program. If the student is less clear then it can be played back with the navigation buttons which available in the program. So it will make it easier for teachers to add more explanations because it is controlled by a computer (laptop), then between teachers and students is still possible to interact when this media is aired.

Based on the exposure above, as behind the researchers to create a learning media that is expected to provide convenience in the learning process, so that students understand the delivered material. Efforts to use learning media in Textile Subject with main discussion textile fibre classification will be discussed in thesis research entitled: "Effectiveness of The Use of Visual Media To Improve Learning Outcomes in Textile Subjects at SMK Negeri 1 Jambu", then with the formulation of the proposed problem that is : How is the effectiveness from the use of visual media to improve learning outcomes in Textile Subjects in SMK Negeri 1 Jambu, and How big is the effectiveness from the use of visual media to improve learning outcomes in Textile Subjects in SMK Negeri 1 Jambu.

The purpose of the formulation of the problem is to determine the effectiveness of the use of Visual Media in textile subjects in SMK N 1 Jambu.

2. METHOD

This research uses the Pre-Experimental Design method with the research design used is the One-Group Pre-test - Post test. This research was conducted on at SMK N 1 Jambu, in X grade students of boutique fashion class, in the section of textile-to-textile fiber classification.

The population used is all X grade students of boutique fashion class as many of 68 students, while sampling techniques using the Simple Random Sampling technique. In this technique, sampling members from the population are done randomly. The sample in this study was randomly selecting one of the grade X and the result went for 1 class, i.e., X BB2 with student number of 34.

The variables used in this study were dependent variables and independent variables. The dependent variable in this study was the learning result of textile subject with the fiber classification subject as main discussion and the independent variable in this study was the use of Visual Media.

Data collection methods used in this study were test, observation, and documentation methods. Test validity test of the instrument using the product moment formula and the reliability of the instrument using the K-R20 formula. The data analysis method used t-tests that previously performed prerequisite tests of normality and homogeneity. The prerequisite test of normality using Chi-Squared. The formula used is as follows [6]:

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i} \quad (1)$$

$\chi2$ = Chi squared
O_i = Frequency of observations
E_i = Expected amount
k = Number of sample classes

Homogeneity test was used to test whether a group has the same basic abilities. The technique of testing the similarity of these two variances used the formula [7]:

$$F = \frac{Biggest\ Varians}{Smallest\ Varians} \quad (2)$$

With hypothesis:
Ho : Homogeneous variance ($\sigma_1^2 = \sigma_2^2$)
H1 : Non-homogeneous variance ($\sigma_1^2 \neq \sigma_2^2$)

The criteria test accepts Ho if Fcalculates $\leq$ Ftable which means Ho is accepted or the data comes from the same variance or homogeneous. Hypothesis tests used the t-test, i.e. [8]:

$$t = \frac{Md}{\sqrt{\frac{\Sigma_x\ _{2d}}{N(N-1)}}} \quad (3)$$

Md = Mean of deviation (d) between posttest and pre-test

With:

$$Md = \frac{\Sum d}{N} \qquad (4)$$

Notes:

Md = mean of the difference between pretest and post test

xd = deviation of each subject (d-Md)

$\Sum X^2 d$ = number of squares of deviation

N = subject on the sample

d.b = specified by N – 1

How big the effectiveness was analyzed with a gain score test. Formula gain score test [9]:

$$G = \frac{S\,pos - S\,pre}{100 - S\,pre} \qquad (5)$$

Note:

G = normalized gain score

S pre = pretest score

S pos = post test score

3. RESULT AND DISCUSSION

The results of the data obtained at the time of the study were made recapitulation of the research results. This makes it easy to know the results obtained from the research on the Effectiveness of Visual Media Use. This recapitulation results of material feasibility tests and learning media conducted by validators, in addition there is a recapitulation of grade X Fashion Boutique Learning Results on pre-test and post-test results during the learning process.

Visual media used in this study was in the form of media that has been validated. The media experts involved in this research are representatives of media expert lecturers, materials expert lecturers, and textile materials subject to textile fiber classification expert teachers. Based on the media validation that has been done, the effectiveness of Visual Media results with an average of 75.7 with good criteria.

The obtained data results during the experimental time could be used to determine the effectiveness of Visual Media in improving the learning outcomes of grade X Fashion Boutique class. The pre-test and post-test results is described in Table 1.

Table 1. Pre-Test and Post-Test Data Results

Statistical Data	Pre test	Post test
Amount	1762	2780
Average	51.84	81.76
Variance	32.69	22.54
Deviation Standard	5.718	4.749
Maximum score	67.50	90.00
Minimum score	45.00	75.00

The results from table I shows that the average learning outcome before and after using visual media in students of grade X BB2 was 51.84 with a highest score of 67.50 and a lowest score of 45.00. The average after using visual media in grade X BB2 class was 81.76 with a highest score of 90.00 and a lowest score of 75.00. This data shows that after learning is done, the condition of the class itself has reached on average minimum completion criteria (KKM) which is 74.

3.1 Hypothesis Test

This hypothesis test was carried out to determine the difference in the learning outcome of textile fiber classification before and after using visual media. The hypothesis is tested with the t-test. The learning outcomes of textile fiber classification are known to whether increase or not. Ho is rejected if the score of $t_{count} > t_{table}$ of t-test calculation results can be seen in table 2.

Table 2. Results of t-test Calculation

Statistical Data	N	t_{count}	t_{table}	Criteria
Pretest Posttest	34	24.54	2.035	Significant

Table 2 shows the t-test calculation obtained $t_{count} = 24.54$ with a negation rate of 5% and db = 33 obtained $t_{table} = 2,035$. The data above shows that the $t_{count} > t_{table}$, 24.54 > 2.035 so it can be concluded that there is effectiveness in the use of visual media in the learning outcomes of Textile Subjects in SMK N 1 Jambu.

3.2 Gain Score Test

The effectiveness analysis in this study was done using a gain score test. Gain score was obtained from the difference in scores before and after treatments. Learning outcomes are the results obtained by students after using visual media, so that the effectiveness of the use of visual media can be known through the calculation of gain score. The results of the gain score calculation can be seen in table 3.

Table 3. Gain Calculation Results

Statistical Data	Gain Score Test Result
Average	0.62
Percentage	62%
Criteria	Medium

The results of the analysis showed the score of pre-test and post-test in the research class obtained a gain score of 0.62. this score is interpreted into the criteria of gain score, obtained effectiveness the use of visual media

that belongs to the medium criteria, while if calculated in the form of percentage obtained a result of 62%.

The results showed that learning outcomes using visual media on textile subjects in grade X BB2 class students were effective based on the t-test calculation, obtained $t_{count} = 24.54$, while $t_{table} = 2.035$. This shows that $t_{count} > t_{table}$ means that the average ability of students in textile subjects using visual media is greater than the average ability of previous students before using visual media. This finding was supported by the finding of previous researches about the enhancement of learning outcomes by the application of visual media [10-13].

The results of research on teaching and learning activities using Visual Media proved to be able to attract students' attention to focus on the material aired, this is because visual media used in the learning process is not only in the form of text, but also accompanied by images and exercises in textile subjects with main discussion textile fabric classification. The advantage of Visual Media itself is that it can relieve the boredom of students because the media used is more varied and students have a diverse experience from all media. Visual Media is able to present images, and animations that allow students to more easily understand and get interested in following the learning process. This finding is inline with the previous study of Fuady and Mutalib [14]. It was found that learning goals would be well achieved with the aid of proper audio-visual learning media.

The use of Visual Media used for this research has been validated first by experts including validation tests by media experts, and material experts. The average analysis of the results of assessment calculations by media experts obtained an average of 75.7 with good criteria.

The results of research after the implementation of Visual Media there is effectiveness, this is indicated by an improvement in learning outcomes and increased student learning activities in the classroom. Students' learning motivation and critical thinking abilities could be enhanced through the use of audio-visual learning materials based on the Contextual Teaching-Learning (CTL) Approach [15].

The magnitude of the effectiveness of Visual Media to improve learning outcomes is indicated by the analysis of gain tests with average pre-test and post-test results improving student learning outcomes is 0.62 or 62% with medium criteria. Because there are still some components and factors that have not been fulfilled. for example, in the research class there are 34 students, this causes the learning process is less maximal because of the number of students who are too many to be included in one class.

4. CONCLUSION

The conclusions of this study are: (1) Visual Media is effective for improving the learning outcomes of textile subjects with main discussion of Textile Fiber Classification in students of grade X in SMKN 1 Jambu, (2) The magnitude of the effectiveness of Visual Media to improve learning outcomes in the textile subjects of textile fiber classification is with a result of 0.62 or 62% in the medium criteria

Based on the conclusions obtained above, the researchers give suggestion in this study which are (1) The utilization of learning media in this study is still less satisfying for students, so there must be additional sound or video effects to make learning even more interesting and interactive. (2) The use of language, font type, font size, and supporting images of the material used must be appropriate, so that when learning media is used it can be read clearly.

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