The developing hairpiece module of the students at vocational secondary schools

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Abstract. This study aims to analyze the validity and effectiveness of the hairpiece module. The research method used is development or known as the Research and Development method. The stages in the research process are the analysis, design, development, implementation, and testing stages. Tests carried out in the form of validation were carried out by expert judgments or media and material experts, then the media was tested by students. The results of this study get the assessment of media experts in the very feasible category and material experts in the very feasible category. The results of student trials in small group trials were in the good category and large group trials were included in the good category. The analysis of the pre-test and post-test results showed a gain of 0.53 in the experimental group with moderate criteria and a gain of 0.42.

1. Introduction

Preliminary research results found that the available hairpiece modules are still limited and in the form of printed modules which are less practical in today's technological era, even though hair piece material is considered very useful in the community. The e-module media is not only to make it easier, but also to provide opportunities for students to study the material independently, both material. The hairpiece teaching module used at this time is a collection of the results of teacher training materials that are combined without being recorded, technically the module is only held by the teacher, the material contained in the existing module is incomplete, only includes learning objectives, material descriptions, summaries, formative assignments and sheets work. The module held by the teacher only contains the competence of doing work preparation, wigs and its development and washing the hairpiece, so it is not in accordance with the SMK syllabus, namely hairpiece care, hairpiece styling, and bun arrangement. The pictures in the teacher's module are also less clear and less interesting, the writing in the module is also not in accordance with the rules of writing (interviews with Hairdressing teachers and observation of existing modules). Students in implementing the hairpiece material practice that are less than optimal include students who have not been able to part hair, tease their hair, form a bun. Starting from this, it is possible that the development of a hairpiece module into an e-module can make the communication process in learning more meaningful, attract students' interest and make it easier to understand the material. The writing procedure in the module is also not in accordance with the rules of writing (interviews with the Hairdressing teacher and observation of the existing module). Students in implementing the hairpiece material practice that are less than optimal include students who have not been able to part hair, tease their
hair, form a bun. Starting from this, it is possible that the development of a hairpiece module into an e-module can make the communication process in learning more meaningful, attract students' interest and make it easier to understand the material. The writing procedure in the module is also not in accordance with the rules of writing (interviews with the Hairdressing teacher and observation of the existing module). Students in implementing the hairpiece material practice that are less than optimal include students who have not been able to part hair, tease their hair, form a bun. Starting from this, it is possible that the development of a hairpiece module into an e-module can make the communication process in learning more meaningful, attract students' interest and make it easier to understand the material.

2. Methods

The research design used is research and development research[1], namely the research method used to produce certain products and test the effectiveness of these products[2]. This study aims to produce a product, namely developing student practice assessment instruments. The research location chosen by the researcher was SMK Negeri 6 Semarang as the experimental group which is located at Jl. West Sidodadi No. 8, Karangturi, East Semarang, while for the control class the class X TKR Vocational High School or generally called SMK (Sekolah Menengah Kejuruan) N 1 Salatiga is used which is located at Jln. Nakula Sadewa 1/3 Salatiga City, dukuh Sidomukti, City of Salatiga.

The data obtained through testing activities are classified into two types, namely quantitative data and qualitative data. Qualitative data is in the form of observations during the Main Field Test. Quantitative data in the form of questionnaire results were analyzed using descriptive statistics in the form of statements of strongly agree, agree, disagree, strongly disagree. The statement was converted into qualitative data on a scale of four, namely by scoring from numbers one to four, so that the values obtained: Strongly Disagree (1), Disagree (2), Agree (3), Strongly Agree (4).

The steps in the data analysis are: a) collecting rough data, b) giving a score, c) the score obtained is then converted. According to Sukardjo in Ghea [3], for quantitative data the average is calculated and then converted into a qualitative value on a scale of 4 on a Likert scale.

3. Results and Discussion

3.1. Media Expert Validation

The module validation was carried out by three media experts [4]. The media design being assessed is about the media (module cover, format, illustrations). Assessment is carried out by filling out a questionnaire by giving ratings ranging from very feasible to very unworthy, and providing suggestions for improvements. The results of the analysis of the results of expert validation can be concluded that in terms of the aspect of assessment with an average result of 82.33 on very feasible criteria, thus, this hairpiece module is very good and feasible to be used as a learning medium.

3.2. Material Expert Validation

The module validation was also carried out by three material experts. Assessment is carried out by filling out a questionnaire by providing an assessment ranging from very inappropriate, not feasible, feasible, very feasible and providing suggestions for improvements if the material is not suitable. Material expert validation includes aspects of learning and material assessment. The results of the material expert analysis can be concluded that in terms of the aspect of assessment with an average result of 83.67 on very feasible criteria, thus, this hairpiece module is very good and feasible to be used as a learning medium.
3.3. Small Group Trial
Small group trials totaling 10 students small group trials were carried out after going through material and media validation tests by experts. The results of the hairpiece module legibility trial were used to determine the level of readability of the students against the hairpiece module. The small group trial was used to determine the level of understanding of the hairpiece module before it was tested in the large group trial. Based on the conversion formula of Sukardjo in Ghea. While the overall average assessment score can be seen in the following table.

The results of the calculation analysis on the five aspects above can be concluded that based on the self-instructional aspect, the average score is 3.3, which is in the good category, in the self-contained aspect, the average score is 3.1, which is in the good category. the stand alone aspect gets an average rating score at 3.25 which is in the good category, on the adaptive aspect gets an average rating score at 2.8 which is in the enough category and in the user friendly aspect gets an average rating score at 3.05 namely in the good category, and the overall average of the five aspects got an average rating score at 3.09, namely in the category

Based on small group trials, it can be concluded that this module is suitable for use as a learning medium for vocational competency subjects on the subject matter of the hairpiece.

3.4. Large Group Trials
The large group trial involved students in 1 class, namely 30 students of class X TKR SMK Negeri 6 Semarang. Based on large group trials, it can be concluded that this module is suitable for use as a learning medium for vocational competency subjects on the subject matter of the hairpiece. For the average student assessment from the results of small group trials and large group trials can be seen in the following Table 1.

Table 1. Student Assessment of Trial Results Small Group And Large Group

| Respondents       | Assessment | Category |
|-------------------|------------|----------|
| small group trials| 3.09       | Well     |
| large group trials| 3.28       | Well     |
| Total Average     | 3.18       | Well     |

Based on these data, it can be seen that the student's assessment of the results of small group trials and large group trials obtained a total average of 3.18 in the good category, so it can be concluded that this module is declared good or suitable for use as a learning medium. The assessment of the feasibility of the module is based on the material expert which is in the very good or very feasible category, the media expert is in the very good or very feasible category and the trials on students are in the good or feasible category.

3.5. Early Stage Analysis (Pre Test)
Pre-test In this study, it was used to determine the initial ability of the control group (the group that was given learning as usual) and the experimental group (the group that was given learning using modules). After the pre-test data were obtained, the t-test was carried out to determine the differences in the initial abilities of the two groups (Table 2).

Table 2. Description of Result Data Pre-Test

| Group    | N  | Min | Mak | Mean  | Std. Deviation |
|----------|----|-----|-----|-------|---------------|
| Experiment | 30 | 37  | 80  | 55.23 | 8.66          |
| Control   | 30 | 37  | 70  | 52.00 | 9.48          |
The Table 2 shows that before the usual learning activities were carried out in the control group and learning using modules in the experimental group, while the control group had an average of 52.00 with the highest score of 70 and the lowest 37. Based on these results indicate that the learning outcomes of the control group and the experimental group before the t-test of learning variations were relatively the same. This shows that both the control group and the experimental group have the same initial ability or both groups before the treatment departed from the same starting point.

3.6. T Test Pre Test Value
Based on the post-test learning outcomes in the control group and the experimental group, the following results were obtained (Table 3).

Table 3. Results of the Average Value Difference Test Pre-Test

| Group   | Average | included | t table | Criteria     |
|---------|---------|----------|---------|--------------|
| Experiment | 55.23   | 1.38     | 1.67    | No different |
| Control   | 52.00   |          |         |              |

Based on the results of the t-test on the pre-test data in table 4.7, it is obtained tcount = 1.38, t table = 1.67 at $a = 5\%$ or 0.05 with $dk = 58$. Because $t_1 - \frac{1}{2} \alpha <tcount <t_1 - 1/2 \alpha$, then Ho is accepted. From these results it can be concluded that prior to the study, the two groups had the same initial abilities. These results can be used as a reference that the differences in the post-test results are purely from the results of the treatment and not due to the different initial conditions of the students.

3.7. Final Result Data (Post Test)
Post-test in this study used to determine the results after being given treatment to the experimental group. For that we need a test to retrieve data on student learning outcomes. The test was carried out after the experimental group was given learning treatment using modules and the control group was given learning treatment as usual. The post-test data is then analyzed and compared to find out which result is better, whether the control group or the experimental group. Based on the post-test learning outcomes in the control group and the experimental group, the following results were obtained:

Table 4. Description of Result Data Post-Test

| Group   | N  | Min | Mak | Mean  | Std.Deviation |
|---------|----|-----|-----|-------|---------------|
| Experiment | 30 | 60  | 93  | 79.03 | 8.63          |
| Control   | 30 | 60  | 87  | 72.33 | 7.33          |

The Table 4 shows that in the experimental group after learning using modules obtained an average learning outcome of 79.03 with the highest score of 93, the lowest score of 60 and a standard deviation of 8.63, while the control group after learning as usual obtained an average learning outcome. amounted to 72.33 with the highest value 87, the lowest value 60 and a standard deviation of 7.33. Based on these results, it shows that the learning outcomes in the experimental group who get learning using modules are higher than the control group with learning as usual.

3.8. T Test Post Test Value
The results of data analysis can be concluded that the experimental group and the control group have relatively the same starting point. Even after the experimental class and the control class, when the normality and homogeneity tests were carried out, both were normal and homogeneous. The t-test was conducted to determine the difference in the final score between the experimental class and the control class (Table 5).
Based on the calculation, it is obtained $t_{\text{count}} = 3.24$, while $t_{\text{table}} = 1.67$, at the significant level of 5% or 0.05, because $t > t_{1\alpha}$, then $H_0$ is rejected. Thus it can be concluded that there is a significant increase in the post-test results between the experimental group and the control group.

3.9. Gain

The average increase test (gain) was conducted to determine the increase in learning outcomes of the experimental group who received learning using modules and the control group who did not get learning using modules. The test was carried out in two stages, namely pre-test (pre-test before learning was carried out in both groups) and post-test (final test after learning variations in the two groups). The pre-test and post-test were conducted on class X TKR students of SMK Negeri 6 Semarang. The analysis of differences in student learning outcomes was carried out to determine whether there was a strengthening of student learning outcomes using module learning media (experimental group) and learning as usual (control group) (Table 6).

| Group   | The pre-test mean value | Post test mean score | N-Gain | Criteria |
|---------|-------------------------|----------------------|--------|----------|
| Experiment | 79.03                  | 55.23                | 0.53   | Moderate |
| Control   | 52.00                  | 72.33                | 0.42   | Moderate |

Based on the data above, it can be seen that there is an increase in learning outcomes before and after using learning media. The analysis of the pre-test and post-test results showed a gain of 0.53 in the experimental group with moderate criteria and a gain of 0.42 in the control group with moderate criteria.

The preliminary stage analysis (Pre-Test) in this study was used to determine the initial abilities of the control group (the group that was given learning as usual) and the experimental group (the group that was given learning using modules). After the pre-test data were obtained, the $t$-test was carried out to determine the differences in the initial abilities of the two groups.

The results of the $t$-test on the pre-test data in table 8 obtained a null hypothesis, so it can be decided that before the learning process, the two groups had the same initial ability. These results can be used as a reference that the differences in the post-test results are purely from the results of the treatment and not due to the different initial conditions of the students. Assessment of the completeness and suitability of the material with the media, validation of learning media is carried out by experts or experts, namely 3 material experts and 3 media experts.

Learning media in vocational competency subjects developed by researchers is one of the learning media that functions as an intermediary in the learning process so that it can expedite and improve student learning outcomes. In accordance with the definition of learning media put forward by Hamalik [5] suggests that instructional media are tools, methods and techniques used in order to make communication and interaction between teachers and students more effective in the learning process. In other words, the module has the ability to convey information with the capacity to be more lively, designed to be studied independently by learning participants. This is also in line with his opinion in Quality Technical, Vocational Education and Training: A Tool for Self Reliance that for the implementation of effective learning, facilities are needed, one of which is learning media (modules). Zwick [6] in the results of his research entitled Training effectiveness - Differences between younger and older employees show that
independent learning and more effective training can improve work quality and career opportunities. Robinson's research [7] suggests that learning modules contain in-depth educational theory that students learn independently with the aim of influencing student behavior (student learning outcomes). Rufii's research [8] reveals that in using modules, teachers act as facilitators of student learning because module learning is student-centered learning. The learning module aims to develop student independence and performance (35-44) suggests that the learning module contains in-depth educational theory that students learn independently with the aim of influencing student behavior (student learning outcomes). The learning module aims to develop student independence and performance. This is the same as the author's research plan which carried out module development in order for students to be able to study independently and practice a lot at home.

4. Conclusion

Based on the results of research and discussion, it can be concluded as follows: The hairpiece module developed is declared valid and feasible according to the assessment of media experts and material experts so that this module can be used for learning. The hairpiece module developed is effective, so that it can improve student learning outcomes in the subject of vocational competence in the subject matter of the hairpiece.

Acknowledgment

Based on the results of research on the development of the hairpiece module, the proposed suggestions are as follows. The hairpiece module developed is declared valid and feasible according to the assessment of media experts, small group test material experts so that this module can be used for learning. The hairpiece module developed is effective, so that it can improve student learning outcomes in the subject of vocational competence in the subject matter of the hairpiece. Development of a teacher competency test module on the subject matter of the hairpiece. Development of student competency test modules on the subject matter of the hairpiece.

5. References

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