Development of learning media video clip making mother sauce in continental food

A A Cahyani¹, R Febriana², Mariani³

¹Faculty of Engineering Jakarta State University, Indonesia
²Faculty of Engineering Jakarta State University, Indonesia
³Faculty of Engineering Jakarta State University, Indonesia

E-mail: rinafebriana@unj.ac.id

Abstract. This study aims to develop learning media video clip making mother sauce. Type of research used Research and Development (R & D) with Bergman and Moore development model consisting of 6 stages, 1) Analysis, 2) Design, 3) Development, 4) Production, 5) Merger and 6) Validation. Validation had done by two lecturers of media expert and one lecturer of a material expert. The trial had done three times the treatment. Percentage achieved by media experts of 88% and 90% can say that learning media video clip making mother sauce have very excellent quality. Rate achieved by material experts is 98% can interpret that the material making of mother sauce has the super condition. Percentage on the individual test result that is 86%, the rate of small group experiment result is 86,3%, and percentage of field trial result is 95,2%, the effect shows that learning media of video clip making Mother Sauce have excellent quality. The result of the portion of experts and students shows that the learning media of video clip making mother sauce have an excellent class, so these instructional media deserve to used as learning media in continental food.

1. Introduction

In the learning process, media has an important role. Sadiman (2014) argued that the press is an intermediary that can be used to provide information or messages to the recipient so that there is excellent communication between the sender and the recipient. According to Dale (Asyhar, 2011), the use of real-object media is effective in achieving learning objectives. Practicing Mother Sauce processing or applying Mother Sauce directly into continental food can be categorized as hands-on experience and this method is an effective method for achieving learning objectives. Learning media that have used in the real mother sauce still use a handout. But not all types of Mother Sauce can be practiced by students, as students are more focused to apply it directly to continental food and the time it takes to drill every type of limited sauce.

The solution to the above problems is to make the learning media efficient in time and delivery, but easy to understand and absorbed by the students is by developing video clip learning media about mother sauce. Research Suyitno (2016) states that the use of learning media has a positive effect on student learning outcomes and also there is an increase in student achievement after using interactive learning media.

Iqnas (2016) concluded that the use of e_learning media does not show any significant difference in learning motivation between pretest and posttest but can be used as one of the solutions to achieve maximum learning process especially in overcoming the limitations of space and time. In another study,
Suyitno et al. (2018) concluded that the use of Stand Trainer media showed differences in the influence of media use in improving student learning outcomes in Automotive Motor courses. Daryanto (2016) suggests that learning media is anything that can be used to channel the message (learning materials), so it can stimulate students' attention, interest, though, and feelings in learning activities to achieve the learning goals. Can be concluded information and Technology based media can facilitate the students’ learning better (Suryanto & Kusumawati, 2017; Arief & Umniati, 2012)

2. Method

This research uses Research and Development (R & D) method, that is research and development method which produce the specific product and test the effectiveness of the product (Sugiyono: 2013). This development research aims to provide a product in the form of video learning.

2.1. Bergman and Moore Models

The Bergman & Moore model (in Gustafson & Barch, 2002) to use as a guide and production management of video and interactive multimedia products. Although this model is specifically a reference in developing video and interactive multimedia, this model can generally to use for one or more other interactive learning products such as online learning.

2.2. Development Procedures

The research and development stage of the learning media to base on the development model of Bergman and Moore, i.e., the analysis phase, the design phase, the development stage, the production stage, the merger stage and the last validation stage. Can be seen in Figure 2 stages of Bergman and Moore Model:
2.2.1. Analysis. In the analysis phase, four areas of analysis are problem analysis, target analysis, task analysis, and environmental analysis.

2.2.2. Design. The output obtained in the analysis phase can use as input at the design stage, which is developing learning media in the form of the video clip. At this design, the scene is the group in two levels, namely general design and details design.

2.2.3. Development. The development stage is to prepare documents for the production phase. Documents that need to prepared are Media Content Outline (GBIM), material description (JM), video script and storyboard based on mother sauce indicator in Continental Food Processing course (Dahlia & Artanti; 2012).

2.2.4. Production. The production stage is to translate the output in the development stage of paper documents is GBIM, JM, Script, and, Storyboard

2.2.5. Collecting. Tahap penggabungan merupakan tahap menggabungkan video, audio dan grafis menggunakan software Final Cut Pro. Kemudian lajur pada tiga sub aktivitas yaitu pengkodean, pengujian dan penyetelan

2.2.6. Validation. This final stage is the stage of comparing the product with the target. Revision after validation as an ingredient to improve product effectiveness. Bergman and Moore suggest three steps
for validation activities: First, validation is done to the media expert, secondly validating by filling in a questionnaire or instrument, and third judging the validation result, conducted by two media experts

3. Data Analysis

The feasibility study of learning media development is conducted to know the assessment of the display and video material. Evaluation has done by using scoring criteria that are very good, good, good enough, less good and not good. The feasibility test divided into three: one to one trial, small group trial, and field test. This research and development use questionnaire in collecting data. The survey used in this research and development is a structured questionnaire using a rating scale.

The data analysis technique used in this research and development is descriptive analysis technique by changing the data of the average score scoring interval. The scoring criteria for product feasibility used in this study is a criterion according to Sudaryono, Gaguk, and Wardani (2013).

Quantitative data obtained from the results of the assessment sheet then converted into qualitative data with an average score of answers on each item assessed. Criteria for evaluating media feasibility based on criteria for interpretation of scores according to Riduwan (2013).

| Scoring Scale | Category       | Percentage (%) |
|---------------|----------------|----------------|
| 5             | Very Good      | 81% - 100%     |
| 4             | Good           | 61% - 80%      |
| 3             | Pretty Good    | 41% - 60%      |
| 2             | Not Good       | 21% - 40%      |
| 1             | Not Very Good  | 0% - 20%       |

Source: Riduwan (2013)

The results of media trials with two experts have described as follows.

| No | Assessment Aspect                | Assessment Indicator                     | Media Expert Score 1 | Media Expert Score 2 |
|----|----------------------------------|------------------------------------------|----------------------|----------------------|
| 1. | The effectiveness of screen design | Font size                                | 4                    | 5                    |
|    |                                  | Shape / typeface                         | 4                    | 4                    |
|    |                                  | Font color                               | 4                    | 4                    |
|    |                                  | Image quality                            |                       |                      |
|    |                                  | The color composition of the background color |                    |                      |
|    |                                  | Clarity of narration                      | 5                    | 4                    |
|    |                                  | Image effectivenessr                     | 5                    | 5                    |
| 2. | Audio or sound                   | Music companion                          | 5                    | 4                    |
|    |                                  | Narrator's voice                         | 4                    | 4                    |
| 3. | Smooth operation of program      | Program easy to operate/use              | 5                    | 5                    |
|    |                                  | Systematic presentation                 | 4                    | 4                    |
| 4. | Konsistensi                      | The Consistency of words, terms of sentences | 4                    | 5                    |
|    |                                  | Consistency of rippling / groove          | 4                    | 5                    |
From the formula above, the assessment of the two media experts got the following scores:

Media Expert 1

\[ P = \frac{\text{Total number of scores} \times 100}{\text{Number of items}} = \frac{66 \times 100}{5} = 88\% \]

Product Quality = Very Good

Media Expert 2

\[ P = \frac{\text{Total number of scores} \times 100}{\text{Number of items}} = \frac{67 \times 100}{5} = 90\% \]

Product Quality = Very Good

The results of calculations from both media experts are in an outstanding category. The percentage value of the first media expert was 88% and the second media expert was 90%. The results of these calculations show that the learning media video clip for making the basic continental sauce (mother sauce) has excellent quality so that it used as a learning medium.

**Tabel 3. Material Expert Trial**

| No | Assessment Indocator | Score |
|----|----------------------|-------|
| 1. | The accuracy of topic selection for multimedia | 5     |
| 2. | Clarity in the formulation of instructional objectives | 5     |
| 3. | Target clarity | 5     |
| 4. | Consistency in content with instructional activities | 5     |
| 5. | Clarity of description/explanation of material | 5     |
| 6. | Clarity of the example given | 5     |
| 7. | Use of logic | 5     |
| 8. | Quality of learning interaction | 5     |
| 9. | Personalization and individualization | 5     |
| 10. | Revocation /sequence /schema | 4     |

**Overall value**

49

**Average value**

4,9

Ahli Media 2

\[ P = \frac{\text{Total number of scores} \times 100}{\text{Number of items}} = \frac{67 \times 100}{5} = 90\% \]

Product Quality = Very Good
The calculation results of the above percentage are in an outstanding category, the rate of material experts is 98%. According to the interest, calculation results show that the learning media for the mother sauce making video has excellent quality so that it used as a learning medium.

**Product Quality = Very Good**

Tabel 4. Individual Trial Results

| No. | Assessment Aspect                                      | Score | Average Score |
|-----|--------------------------------------------------------|-------|---------------|
| 1.  | The instructions for using the program are clear      | 12    | 4             |
| 2.  | The displayed image is of high quality                | 15    | 5             |
| 3.  | Color composition matches the background               | 13    | 4.3           |
| 4.  | The sound has to hear clearly                          | 9     | 3             |
| 5.  | The carrying capacity of the music (experience) is interesting | 13 | 4.3 |
| 6.  | The text has to read clearly                           | 15    | 5             |
| 7.  | Clear learning objectives                              | 14    | 4.7           |
| 8.  | The sentence in the text/writing is easy to understand | 13    | 4.3           |
| 9.  | Description/content of the material is easy to understand | 13 | 4.3 |
| 10. | The example given is clear                             | 14    | 4.7           |
| 11. | Learning interaction on video is good                  | 12    | 4             |
| 12. | The order of presentation is appropriate               | 12    | 4             |

**Overall value** 155 51.6

**Overall average value** 4.3

P = Total number of scores X 100
Number of items

\[
P = \frac{155 \times 100}{5} = 31,000\%
\]

P = 86%

Product Quality = Very Good

This trial gave a small group of three students. The trial results get a score of 86% with top categories.

Tabel 5. Small Group Test Results

| No. | Assessment Aspect                                      | Score | Average Score |
|-----|--------------------------------------------------------|-------|---------------|
| 1.  | The instructions for using the program are clear      | 43    | 4.3           |
| 2.  | The displayed image is of high quality                | 46    | 4.6           |
| 3.  | Color composition matches the background               | 46    | 4.6           |
| 4.  | The sound has to hear clearly                          | 30    | 3             |
| 5.  | The carrying capacity of the music (experience) is interesting | 38 | 3.8 |
| 6.  | The text has to read clearly                           | 47    | 4.7           |
| 7.  | Clear learning objectives                              | 47    | 4.7           |
| 8.  | The sentence in the text/writing is easy to understand | 45    | 4.5           |
| 9.  | Description/content of the material is easy to understand | 41 | 4.1 |
| 10. | The example given is clear                             | 47    | 4.7           |
11. Learning interaction on video is good  
12. The order of presentation is appropriate  

**Overall value**  

| Assessment Aspect                                      | Score | Average Score |
|--------------------------------------------------------|-------|---------------|
| 1. The displayed image is of high quality              | 149   | 5             |
| 2. Color composition matches the background             | 142   | 4.7           |
| 3. The Sound has to hear clearly                        | 144   | 4.8           |
| 4. The carrying capacity of the music (experience) is interesting | 141   | 4.7           |
| 5. Text has to read clearly                            | 141   | 4.7           |
| 6. The video program is easy to use                     | 147   | 4.9           |
| 7. The instructions for using the program are clear     | 138   | 4.6           |
| 8. Clear learning objectives                           | 145   | 4.8           |
| 9. Material content is by the learning objectives       | 142   | 4.8           |
| 10. The sentence in the text/writing is easy to understand | 144   | 4.8           |
| 11. Description/content of the material is easy to understand | 143   | 4.8           |
| 12. The example given is clear                          | 146   | 4.9           |
| 13. Learner interaction on the video is good            | 135   | 4.5           |
| 14. The order of presentation is appropriate             | 141   | 4.7           |

**Overall average value**  

\[
P = \frac{\text{Total number of scores} \times 100}{\text{Number of items}} = \frac{518}{5} \times 100 = 86.3\% 
\]

Product Quality = Very Good

Small group trials had conducted on ten students who were randomly selected, consisting of female and male gender, different levels of intelligence and age differences that were not too far away. The calculation results above, the percentage obtained is 86.3% which means that Video clip has excellent quality.

**Table 6. Field Trial Results**

| No  | Assessment Aspect                                      | Score | Average Score |
|-----|--------------------------------------------------------|-------|---------------|
| 1.  | The displayed image is of high quality                 | 149   | 5             |
| 2.  | Color composition matches the background                | 142   | 4.7           |
| 3.  | The Sound has to hear clearly                           | 144   | 4.8           |
| 4.  | The carrying capacity of the music (experience) is interesting | 141   | 4.7           |
| 5.  | Text has to read clearly                                | 141   | 4.7           |
| 6.  | The video program is easy to use                        | 147   | 4.9           |
| 7.  | The instructions for using the program are clear        | 138   | 4.6           |
| 8.  | Clear learning objectives                               | 145   | 4.8           |
| 9.  | Material content is by the learning objectives          | 142   | 4.8           |
| 10. | The sentence in the text/writing is easy to understand  | 144   | 4.8           |
| 11. | Description/content of the material is easy to understand | 143   | 4.8           |
| 12. | The example given is clear                              | 146   | 4.9           |
| 13. | Learner interaction on the video is good                | 135   | 4.5           |
| 14. | The order of presentation is appropriate                | 141   | 4.7           |

**Overall value**  

\[
P = \frac{1.999}{(14 \times 30)} \times 100 = 95.2\% 
\]

Product Quality = Very Good

Field trials have conducted on 30 students with different characteristics. These characteristics consist of varying levels of intelligence, gender, age, and knowledge. The results of the calculation of the above trials, the percentage obtained is 95.2% which means the quality of the product is excellent.
The conclusion of the data above is that the video clip of making Mother Sauce is suitable to be used as a learning media in the course of Continental Food Processing so that students can make Mother Sauce correctly and adequately.

4. Conclusions

Based on the results of the research and development carried out, the learning media for the mother sauce making video clip was considered very good and suitable for the learning process of vocational students and culinary arts in the material sauce. This video clip was used as an alternative learning tool by students and teaching tools by lecturers.

The trial was conducted on UNJ vocational education and culinary arts students. The experiments used in this study include individual trials (one to one) conducted for three students, small group trials held for ten students and field trials (field tests) conducted by 30 students.

According to the results of the research on the development of instructional media for making the mother sauce video shows that: 1) the video clip applies the development of learning media using the Bergman and Moore development model which consists of 6 stages of analysis, design, development, production, merging and validation. 2) Validation was carried out by two media experts with results, the first media expert 88% product categories had excellent quality and second media experts 90% product categories had excellent quality. 3) Assessment by one material expert with 98% results, the material category has the superb condition. 4) Individual trials of 3 students of vocational education and culinary arts at UNJ, the percentage obtained is 86% of the product category is excellent. 5) The small group trial of 10 students resulted in 86.3% outstanding product category. 6) Field trials of 30 students, the percentage results obtained were 95.2% first product categories. 7) The results of the test showed that the video clip for the making of mother sauce could have used as one of the learning media for vocational students and culinary arts in learning the material of mother sauce.

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