



Development Of Animation Video-Based Learning Media in Food Processing and Serving Competency

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ABSTRACT

This research aims to create and test the feasibility of animated video learning media on mother sauce and its derivatives. The method used in this research is research and development, this research refers to the 10 steps of research and development which were modified into 6 steps, namely potential and problems, data collection, product design, design validation, design revision, and product trial. The results of the feasibility test based on the material expert's assessment obtained a percentage of 84.2% which was included in the very feasible category, the media expert's assessment obtained a percentage of 81.6% which was included in the very feasible category, and the results of student responses showed a percentage of 88% which was included in the very feasible category. So, it is concluded that the animated video of the mother sauce and its derivatives is suitable for use in the learning process.

Keywords: *Learning Media, Animation, Hollandaise Sauce.*

1. INTRODUCTION

The learning process requires teachers to be more creative in designing learning instruments which are applicable in the learning process. Selecting the right media for learning can improve student's interest to participate in the learning process [1]. Based on Government Regulation Number 57 of 2021 article 12, the implementation of learning that is held in an interactive, inspiring, fun, and stimulating learning atmosphere can motivate students to be active and can provide space for students' creativity. In order to create such a learning atmosphere, support in the form of appropriate learning media is required.

The advantages of using media in the form of learning videos is that the learning concept can be presented through interesting text, images, and animations. In addition, learning videos allow flexibility in time and place of learning because they can be watched repeatedly and students' understanding of learning concepts can be maximized [2]. One form of learning videos that can be used is animated videos. Animation is a static illusion that is displayed sequentially and repetitively [3]. Animated video is a video that contains the movement of an image that changes position and changes in terms of shape and color [4].

The selection of animated video media is which determine the level of validity and practicality animation video media using the 4-D (Define, Design, Development, Disseminate) development research model. Based on the study, the results obtained specified

that the powtoon animation video media was considered to be valid to be used as a learning medium with a validity percentage of 88.35% and was confirmed to be practical to be used as a learning medium with a percentage of 86.87% and 90% [5].

The implemented research model was the ADDIE model with quantitative-qualitative data analysis methods. Based on this study, the percentage of media expert validation results was 100%, material experts validation was 89.58%, educational practitioner (84.61%) and students (81.91%) stated that the media was considered to be eligible for use [6].

Study on the development of learning video media about chiffon cake making in continental baking courses using the ADDIE development model. The results of this study indicated that the chiffon cake learning video media was considered to be eligible based on expert assessment with a percentage of 95% from material experts and 94.2% from material experts. Based on this study, the chiffon cake learning video media was confirmed to be eligible to be used as a chiffon cake learning medium in continental baking courses [7].

Based on these studies, animated video is one of the media that can be developed for learning process that has complexities such as practicum subjects.

There is a significant relationship between theoretical mastery and practical results in culinary learning [8]. KD 3.2 which contains material on analysis of basic sauce (mother sauce) and its derivatives is one of the practical materials that require good mastery of theory so that the practical learning process can be held

optimally; this is because mastery of the techniques required in making sauce is essential and can influence the resulting sauce [9].

The material for creating learning media in this study is limited to material on how to make basic sauce in the form of hollandaise sauce. The reason behind this selection of material is because hollandaise sauce has a high level of difficulty. This information is based on the results of interviews with subject teachers, so it is expected that the use of animated video media can help students understand learning material. The purpose of this study is to determine the design and to provide results of the eligibility assessment of animated video media according to material experts and material experts, as well as student responses.

2. LITERATURE REVIEW

2.1 Animation in Education

Animation has been widely recognized as an effective educational tool in various fields. In the context of food processing and serving competency, animated videos offer a dynamic and engaging way to convey complex concepts and techniques [10][11]

2.2 Multimedia Learning and Cognitive Load Theory

Understanding how multimedia elements, including animation, impact cognitive load is crucial for designing effective learning materials. Animation can be utilized to manage cognitive load and enhance information retention [12][13].

2.3 Technology Integration in Culinary Education

The integration of technology, particularly animation-based learning media, in culinary education has the potential to enhance the development of food processing and serving competencies [14][15]

2.4 User-Centered Design for Educational Multimedia:

Designing animation-based learning media should involve a user-centered approach to ensure that the material meets the specific needs and preferences of the learners [16][17]

3. RESEARCH METHOD

The approach applied in this study is Research and Development. The study refers to 10 steps of research and development which are modified into 6 steps according to research requirements. The six research steps that will be carried out are potentials and problems, data collection, product design, design

validation, design revision, and product trial, as shown in Figure 1 below [18].

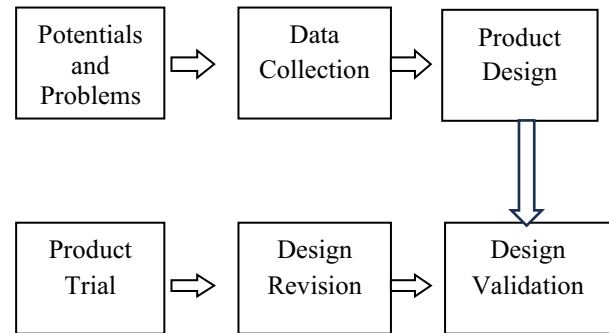


Figure 1. Research and Development Model.

Based on the aforementioned model, the development of mother sauce material animation media is conducted through the following research procedure.

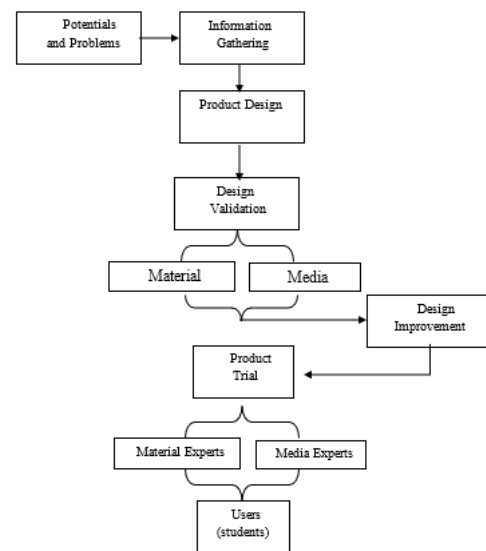


Figure 2. Flowchart of the research procedure for animated video learning media.

Design validation is the process of assessing the design results of a product rationally conducted by experts in that field [19]. At this stage an assessment is carried out by experts with the aim of getting improvements from the designs that have been created.

At the trial stage, the resulting data to be obtained are in the form of validation assessment results received from material experts including media quality aspects, and validation assessments by material experts including material quality aspects, in addition to responses from students as users.

The instruments employed in measuring eligibility are based on the assessment from material experts in the form of expert assessment guidelines and questionnaires for student responses.

Data analysis techniques in this study will be carried out using percentage descriptive analysis techniques. Based on the eligibility assessment and questionnaire

from material experts, material experts, and students, the total scores are obtained using the following [20]:

$$P = \frac{\sum n}{\sum N} \times 100\%$$

Descriptions:

- P : the eligibility percentage of assessed product
- $\sum n$: total score obtained based on expert assessment
- $\sum N$: sum of the maximum scores from expert assessment

Table 1. Scales of Eligibility Percentage.

Percentage (%)	Category
76 - 100 %	Very Eligible
51 - 75 %	Eligible
26 - 50 %	Less Eligible
0 - 25 %	Not Eligible

4. RESULT AND DISCUSSION

4.1 Potentials and Problems

At this stage a requirement analysis was commenced through initial observations on learning activities which were carried out when researchers engaged in PPL activities in October-November 2020. Initial observations were conducted during the learning process of PPL activities. The second observation was carried out in December 2020-January 2021. The class selected in this study was Class XI of Culinary Art. Based on the analysis it was identified that students had been experiencing problems in understanding the material for basic sauce (mother sauce) and its derivatives, especially in the material of hollandaise sauce. The use of media which was limited to visual media such as PowerPoint and other teaching materials made students experienced difficulties in understanding the Hollandaise Sauce material. The learning process was focused on visuals and became less interesting. Therefore, learning media that can explain learning materials in an audio-visual manner are desired, so that the learning process becomes interesting and easy to understand. Learning media that is suitable and selected for this study was animated video learning media.

4.2 Information Gathering

Reference sources for creating this media are:

- a. The Book of “Media Pembelajaran” by Azhar Arsyad
- b. The Book of “Pengembangan Media dan Sumber Belajar” by Ani Cahyadi
- c. The Book of “Pengolahan dan Penyajian Makanan” by Budiningsih
- d. The Book of “Restoran Jilid I” by Prihastuti Ekawatiningsih, dkk.

- e. Sisyllabus of SMK Widya Praja Ungaran
- f. Journal of Language, Literature, and Arts, by Effendi dan Sutrisno “Design of Meru 2D Animation Video to Introduce Lumajang’s Folk Story and The Region’s Spesial Culture”
- g. Journal of Gastronomy and Food Science, by Rognsa “Preparation Methods Influence Gastronomical Outcome of Hollandaise Sauce”

4.3 Product Design

The design of animated video learning media was designed and an assessment was done by material experts and material experts to find out the suitable animated video learning media designs. The designs made for this study were storyboards and scripts. Designs were required to optimize the resulting video.

4.4 Design Validation

Design validation was the process of evaluating design or product design made by material experts and material experts. The followings are the assessment results from the of material experts and material experts towards the animated video learning media design.

Table 2. Storyboard Validation and Revision by Material experts.

Material experts		
Validation	Comments	Revisions
<i>Scene 7</i>	Pada <i>scene 7</i> gambar saus dasar harus ditampilkan In <i>scene 7</i> the base sauce image should be displayed	Pada <i>scene 7</i> gambar saus ditampilkan In <i>scene 7</i> the sauce image is displayed
<i>Scene 14</i>	Pada <i>scene</i> setelah <i>scene 14</i> tambahkan video pemanfaatan saus <i>hollandaise</i> pada makanan After <i>scene 14</i> insert a video about the use of <i>hollandaise</i> sauce in food	Penambahan video pemanfaatan saus <i>hollandaise</i> pada makanan di <i>scene</i> setelah <i>scene 14</i> Adding a video about the use of <i>hollandaise</i> sauce in food after <i>scene 14</i> insert

Table 3. Storyboard Validation and Revision by Material experts.

Material experts		
Validation	Comments	Revisions
<i>Scene 1&2</i>	Duration of opening in the animated video can be shortened.	Duration of opening in the animated video is shortened to 3 seconds.
All <i>scene</i>	The music used in the animated video must be cited.	Citing the music used in the animated video.

Material experts		
Validation	Comments	Revisions
Scene 16	In scene 16 add a summary before the closing scene.	Adding a summary in scene 16 before the closing scene.
Last Scene	Credit title must be provided at the end of the video.	Providing credit title at the end of the video.

In addition to storyboards, the design of animated video learning media created was script. The followings are the result of the script revision by material experts and material experts.

Table 4. Script Validation and Revision by Material experts.

Material experts		
Validation	Comments	Revisions
Scene 12	The equipment used in the process is described through narration.	Describing the equipment used in the process through narration.

Table 5. Script Validation and Revision by Material experts.

Material experts		
Validation	Comments	Revisions
Scene 6	Narration in the animated videos can be shortened.	Shortening the narration in the animated videos.
Scene 16	Language used in the scripts can be simplified so that they can be more communicative.	Simplifying the language used in the scripts.

4.5 Design Improvement

After design validation was finalized by material experts and material experts, suggestions were obtained and follow-ups were carried out by refining the scripts which were then used as designs in the production of animated video learning media about mother sauce and its derivatives.

4.6 Eligibility Assessment Results According to Material experts

The assessment results were provided using the research instrument and were identified using a Likert scale with a score range of 1 to 5. After the eligibility assessment was carried out by the material experts, improvements were made according to the revised results as follows.

The assessment scores obtained from material experts were then accumulated using the formula $P = \frac{\sum n}{\sum N} \times 100\%$, resulting in the following eligibility percentages.

Table 6. Material experts Comments on Animation Video.

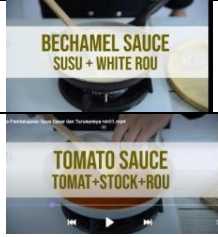

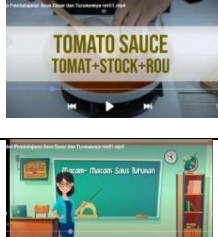
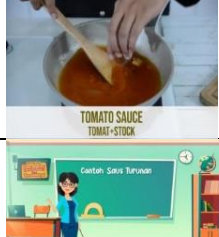




Material experts		
No	Comments	Follow-ups
1.		
2.		
3.		
4.		

Table 7. Percentage of Material experts Assessment Results.

	Total score	Percentage
Material expert 1	30	75%
Material expert 2	38	95%
Material expert 3	33	82%

Based on the calculations, it was identified that the average score of the eligibility percentage from material experts was 84.2% which fell under the very eligible category.

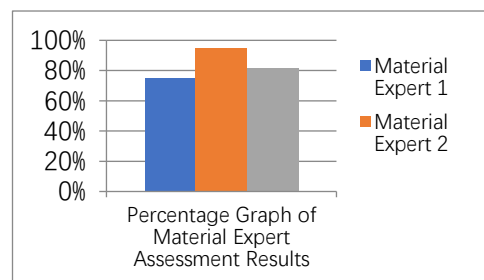




Figure 3. Percentage Graph of Material Expert Assessment Results.

4.7 Eligibility Assessment Results According to Material experts

The assessment results were provided using the research instrument and were identified using a Likert scale with a score range of 1 to 5. After the eligibility assessment was carried out by material experts, improvements were made according to the revised results as follows.

Table 8. Material experts Comments on Animation Video.

Material experts comment	
Comment	Follow-up
	

The assessment scores obtained from material experts were then accumulated using the formula $P = \frac{\sum n}{\sum N} \times 100\%$, resulting in the following eligibility percentages.

Table 9. Percentage of Material experts Assessment Results.

	Total score	Percentage
Media expert 1	30	80%
Media expert 2	38	83,3%

From the calculations, it was identified that the average score of eligibility percentage from media experts was 81.6% which fell under the very eligible category.

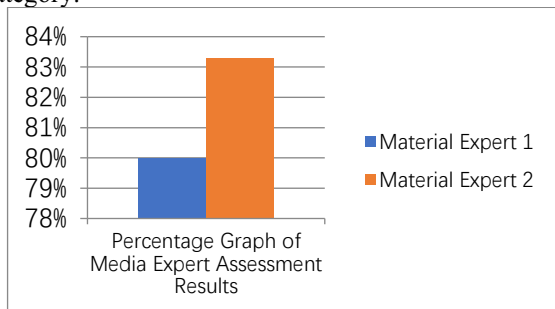


Figure 4. Percentage Graph of Media Expert Assessment Results.

4.8 Results of Student Responses to Animated Video Learning Media

The animated video learning media about basic sauce (mother sauce) and its derivatives was trialed to 33 students class XI of SMK Widya Praja Ungaran, to find out students' responses to the animated video learning media created. Based on this trial, quantitative data were obtained from each student who gave response related to the animated video learning media about basic sauce (mother sauce) and its derivatives, which can be seen in the following diagram.

Based on student responses after the trial, it can be concluded that animated video learning media can be categorized as eligible to be used as part of learning material about mother sauce and its derivatives, with a percentage of 88%.

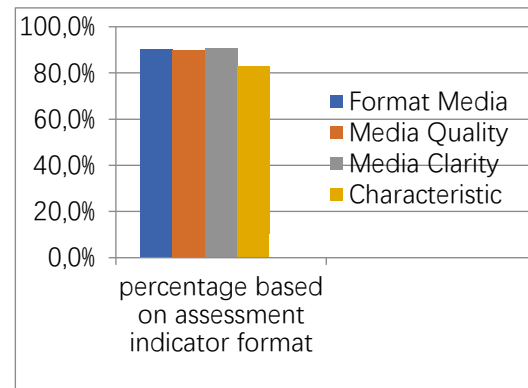


Figure 5. Results of Student Responses to the Media.

CONCLUSION

The production of animated video learning media on mother sauce and its derivatives at SMK Widya Praja Ungaran was carried out using the 6-step Sugiyono model consisting of potentials and problems, information gathering, product design, design validation, design improvement, and product trial. After completing these steps, an animated video learning media on basic sauce (mother sauce) and its derivatives was produced at SMK Widya Praja Ungaran. Based on the eligibility test results, the animated video learning media on mother sauce and its derivatives at SMK Widya Praja Ungaran obtained an assessment percentage from material experts of 84.2% which fell under very eligible category. The animated video learning media also obtained an assessment percentage from media experts of 81.6% which fell under very eligible category. The animated video learning media on mother sauce and its derivatives at SMK Widya Praja Ungaran received responses from students as users with a percentage of 88% which fell under very eligible category.

As for suggestions that can be conveyed by researchers from this study; there are several instruments on material aspects and media aspects that need to be improved. Instruments on material aspects should include material depth and information accuracy, while instruments on media aspects should consider suitability of the animations and they need to be simple and interesting. Suggestions for future researchers, this study can be used as a reference for further study in regards to the effect of using animated video learning media on student learning outcomes.

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