Design of video-based extension media concerning the utilization of rice bran as functional food

N Fadhilah, C Fahmiati, P A Utami, R S Febriansyah, Y Afifah, Y Anggraini and E Rusdiyana

Universitas Sebelas Maret, Ir.Sutami Street 36 A, Kentingan, Jebres, Solo, Central Java, Indonesia
*E-mail: eksarusdiyana@staff.uns.ac.id

Abstract. The objectives of the program were to produce video-based extension media design, (2) to produce a credible agricultural extension media in helping community service, particularly in relation to the processing of rice bran (rice sifting) into functional food in dasawisma (ten house) groups. Data was analyzed using triangulation technique. The result of research showed that the video-based extension design concerning the processing of rice bran into a variety of functional food used combined text (letter), image, sound, colour, and animation, constituting the advantages (strengths) of video media compared with other media. Revised extension media is well accepted by the public and considered effective in absorbing the material delivered up to 90% with an assessment score 9,5.

1. Introduction

Plosorejo villagers are mostly livelihoods in the agricultural sector with the main agricultural commodity namely rice. The process of milling rice produces rice about 60-65% and rice bran (bran) about 8-12% [1]. The waste by-product of rice milling is usually only utilized by the community as animal feed and fertilizer crops without any further processing. Therefore, society needs innovations in the utilization of rice milling waste that is rice bran to be used as a processed food product of high nutritional value.

Rice bran is the outermost layer of rice that is detached during the process of milling grain (rice) or by-products of rice milling consisting of layers of aleurone, endosperm, and germ. Rice bran contains nutrients such as protein 13.11 – 17.19 %, fat 2.52 – 5.05 %, carbohydrates 67.58 – 72.74 %, and coarse fiber 370.91 -387.3 calories and rich in vitamin B, especially vitamin B1 (thiamin) which makes it potentially a functional food [1,2]. Based on several studies, Rice bran (bran) has functionality for health such as inhibiting diabetes, preventing Alzheimer’s, preventing heart disease, lowering the risk of bowel cancer, maintaining tissue growth and neuro function [3,4,5]. Even so, many people of Plosorejo Village have not realized the potential of rice bran to be used as a functional food.

The abundant rice production potential supports the establishment of the rice milling industry in Plosorejo as much as 25 milling with an estimated 10 tons/day of rice is milled and is estimated to produce 0.5 tons/day of the capillary. On other conditions, there are non-productive community groups namely Dasawisma Dahlia Putih group whose activities have been limited to gathering only. Whereas almost all of the members of the Dasa Wisma group are economically non-productive housewives who have free time. Dasawisma group member profiles can be viewed in Table 1.
Table 1. Profile of members of the group dasawisma dahlia putih village plosorejo

| No. | Name             | Age (years) | Last Education    | Job                  | Husband's Job          |
|-----|------------------|-------------|-------------------|----------------------|------------------------|
| 1.  | Sri Padmini      | 40          | Senior high school| Housewives           | Civil Servants         |
| 2.  | Sri Suhartini    | 45          | Senior high school| Housewives           | Self-employed          |
| 3.  | Luki Wiji Pertami| 37          | Senior high school| Housewives           | Self-employed          |
| 4.  | Resta Anjaswati  | 32          | Junior high school| Housewives           | Private                |
| 5.  | Wiji Lestari     | 35          | Junior high school| Housewives           | Farmer                 |
| 6.  | Panti            | 50          | Senior high school| Self-employed       | Self-employed          |
| 7.  | Nanik            | 38          | Junior high school| Housewives           | Private                |
| 8.  | Dyah Astuti      | 30          | Junior high school| Housewives           | Private                |
| 9.  | Fitri Sulaikah   | 36          | Senior high school| Housewives           | Private                |
| 10. | Endang Setyaningsih | 42     | Senior high school| Housewives           | Private                |

It is estimated that market demand for functional food will double in the next five years [6]. High market demand for functional food, making rice bran (bran) one of the alternatives to meet the demand or needs of functional food through various manufacture of food products such as rice bran (bran) porridge, cookies, and various other pastries.

Pandemic conditions make community service activities can not be done optimally because they must keep their distance and avoid direct physical contact to prevent the spread of the covid-19 virus. So researchers tried to provide an alternative in helping community service programs in socializing the utilization of rice bran (bran) into functional food to the dasawisma group using video-based counseling media. Video media is considered able to solve problems during pandemics not to conduct counseling directly face-to-face and can help limited counseling time so that watershed groups can access information that is not limited by time, place, and region. Another advantage of video media is that it has audiovisuals that can make it easier for the audience to understand the information they want to convey. Based on the background, there needs to be research aimed at creating a video media-based counseling media design for Dasa Wisma Dahlia Putih group in Plosorejo Village, Matesih District, Karanganyar Regency.

2. Material and Methods
This research was conducted in Plosorejo Village, Matesih District, Karanganyar Regency in September 2020 with the research object namely DasaWisma Dahlia Putih group. Methods used in research include interviews, literacy studies, and procedural model development research. The data from the study will be analyzed using triangulation techniques.

The method of research and development of procedural models is a descriptive model that describes the procedural flow that must be followed to produce a particular product. This study also carried out an assessment process to test the feasibility of products that have been produced [7]. The following are the stages in the research of the development of procedural models:
1) The initial stage includes analysis and identification of problems, design of media design according to instructional purposes, as well as the determination of media validation methods used in assessing media design was assessed by three validators.
2) The stage of creation (development) is the stage at which researchers conduct the process of media creation, assess or test media using triangulation techniques, as well as revise media products.
3) The implementation stage is the stage at which the researcher shows the results of the design of the video media that has been made to the dasawisma group as aextension media.
4) The evaluation stage is a video media assessment to know the level of understanding of the DasaWisma group in understanding the information provided by providing assessment questionnaires.
3. Result and Discussion
The design of the video media that has been designed in the form of animated videos using a combination of text (letters), images, sounds, and colors containing information processing rice bran (bran) into functional food supported by explanation directly through the zoom application. Completed video-based counseling media is then assessed by three validators. The validation process in the trial was conducted using the source triangulation technique which is to compare the answers between three validators against the media that has been created. The assessment of the media aspect can be seen in Table 2.

Table 2. Media aspect triangulation results

| No. | Statement                                                                 | V. I | V. II | V. III | Triangulation results                                      |
|-----|---------------------------------------------------------------------------|------|-------|--------|------------------------------------------------------------|
| 1.  | The type and font size used in video media is good                        | ☑    | ☑    | ☑      | No revisions, because the type and font size is right      |
| 2.  | Text on video media is legible and uses good language                    | ☑    | ☑    | ☑      | No revisions, the combination of text color used is very good |
| 3.  | The combination of text color with the background used by video media is good | ☑    | ☑    | ☑      | No revisions, the combination of text color used is very good |
| 4.  | The images shown on the video media can be visible and interesting       | X    | ☑    | ☑      | Revision of some images in the rice bran processing section |
| 5.  | The size and quality of the images used are good                         | ☑    | ☑    | ☑      | No revisions because the quality of images is high         |
| 6.  | The harmony between text and images is good                              | ☑    | ☑    | ☑      | No revisions, between text and images is appropriate       |
| 7.  | The compatibility of the image with the background is good and correct   | ☑    | X    | ☑      | Revise the image to match the background                    |
| 8.  | The combination of text, images, and animations is good                  | ☑    | ☑    | ☑      | No revisions because the combination is appropriate        |
| 9.  | Interesting animations and simulations used                               | ☑    | ☑    | ☑      | No revisions, the animation and simulations used is good and clear |
| 10. | The narrator's voice can be heard clearly                                 | ☑    | ☑    | X      | Perform a re-recording                                    |

Information: V.I = Validator I, V.II = Validator II, and V.III = Validator III

Based on Table 2, please note that improvements are needed to some text, images, and combinations of images with backgrounds to match. Besides, the narrator's voice recording is necessary because some parts sound less clear.

The assessment of material aspect validation by a team of media experts can be seen in Table 3. the following:

Table 3. Material triangulation results

| No. | Statements                                                                 | V. I | V. II | V. III | Triangulations Result                                      |
|-----|---------------------------------------------------------------------------|------|-------|--------|------------------------------------------------------------|
| 1.  | The material provided in the video media corresponds to the problem      | ☑    | ☑    | ☑      | No revisions                                               |
| 2.  | The language used can be easily understood by the DasaWisma group         | ☑    | ☑    | X      | Revisions to some language use                             |
3. The image used in the video media is following the counseling material ✓ ✓ ✓ No revisions
4. Animation and simulation on the video media is following the counseling material ✓ ✓ ✓ No revisions
5. Animation in video media can attract interest and make it easier for Dasa Wisma groups to learn ✓ ✓ ✓ Untested

Based on the validation results in Table 3, it can be noted that there needs to be improvements in some language used to be easier to understand by the DasaWisma group and there needs to be further testing to find out the interest of the DasaWisma group in learning.

Video-based counseling media that has been finished and revised then tested its effectiveness to the participants of 10 counseling participants namely members of the Dasa Wisma group. Data analysis conducted using quantitative descriptive analysis in the form of class interval values. Based on the results of the trial, a score of 9.5 means that video-based counseling media is effective for use. This shows that video media can attract an audience and make it easier to understand the content of the given material. The results are also following the opinion that if the learning media is made with an interesting design and involves elements of graphics, video, audio, and interactivity can certainly increase the effectiveness of material absorption 80% to 90% [8].

4. Conclusion
Animated video-based extension media with an extensive design on the processing of rice bran into functional food that has been revised is well accepted by the public and considered effective in absorbing the material delivered up to 90% with an assessment score 9,5.

5. References
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