



Development of Audiovisual Educational Media Based on Animated Videos about Food Sanitation Hygiene for Catering Food Handlers

Dita Ayu Safitri, Karpin, Rita Patriasih*

Universitas Pendidikan Indonesia, Indonesia

Correspondence: E-mail: ditaayusafitri@upi.edu

ABSTRACTS

Food safety refers to the safe handling, processing and distribution of food ingredients to prevent food borne illness. One aspect related to food safety is food sanitation hygiene. So that the handler's food needs to have knowledge related to food sanitation hygiene. Food sanitation hygiene is an effort to control factors that cause disease through food. Thus, it is important to educate food handlers about food sanitation hygiene, one of which is through the media. Media that can be used in education include animated videos. The aim of this research is to develop audiovisual educational media based on animated videos about food sanitation hygiene for food handlers in catering. Research and Development level 1 is used as a research method in developing this media. This research was conducted to produce animated videos that went through the stages of media design, media development, and validation through three aspects, namely media aspects, material aspects, and language aspects. The results of this research are in the form of an animated food sanitation hygiene video which has been validated by experts who stated that the media developed is suitable and can be used for catering food handlers. Recommendations for future researchers are that food sanitation hygiene animation media can be tested on food handlers in catering.

ARTICLE INFO

Article History:

Received 10 Mei 2023

Revised 13 Jul 2023

Accepted 28 Aug 2023

Available online 01 Nov 2023

Keyword:

*Animation media,
Food handlers catering,
Food sanitation hygiene*

1. INTRODUCTION

Foodborne diseases are illnesses caused by the consumption of food contaminated with pathogenic microbes or bacteria (Mustika, 2019). In Indonesia, data from 2022 reported 3,515 cases of food poisoning outbreaks, with most incidents attributed to ready-to-eat processed foods, catering services, and other food service sectors (Arlinta, 2023). Food itself ranks second as the cause of food poisoning, accounting for 18.7% of cases, or 657 reported incidents. Poor hygiene practices during food processing significantly elevate the risk of foodborne disease transmission (Siyam & Cahyani, 2018; Yusuf et al., 2022).

Many food poisoning cases are linked to the lack of knowledge and attention among food handlers regarding safe and hygienic food preparation practices (Marsanti & Widiarini, 2018). In the catering industry, a deficiency in food sanitation hygiene awareness is a common issue among food handlers. According to the Regulation of the Minister of Health of the Republic of Indonesia No. 1096/2011, Food Sanitation Hygiene (HSM) refers to health efforts to control factors in food, people, places, and equipment that can cause diseases or poisoning. Food handlers, particularly in catering services, are defined as individuals directly involved in the preparation, cleaning, processing, transporting, and serving of food (Public Health, 2023).

Efforts to increase food handlers' knowledge about food sanitation and hygiene are essential in minimizing foodborne disease risks. Educational interventions are recognized as effective strategies, where both direct education and media-based socialization have proven impactful (Nildawati et al., 2020). Audio-visual media, particularly animation, is a powerful tool for delivering health education messages, combining imagery and sound to create a more engaging and memorable learning experience (Prasetya, 2016; Setyowati & Prabowo, 2022). Research by Febriani et al. (2019) also supports that the use of animated media can enhance the public's reception of health messages, making educational processes more dynamic and effective.

In the digital era, social media platforms have become critical channels for disseminating health information to broader audiences. Platforms such as YouTube are particularly effective due to their accessibility, widespread usage, and ability to present educational content in an easily digestible format (Fitriani, 2017; Rahmadani & Widodo, 2021). According to Milo (2022), YouTube offers a strategic medium for sharing animated educational videos, allowing content to reach and educate diverse communities efficiently, regardless of time and geographic boundaries. Thus, leveraging animated videos disseminated through YouTube presents a promising innovation for improving food sanitation hygiene awareness among catering food handlers, contributing to a significant reduction in foodborne disease incidence.

2. METHODOLOGY

The research used in this research is the lowest type of research and development (level 1) where this research is carried out to produce a design but is not followed by conducting field testing. In this case, the research carried out only produces product designs, and these designs are validated internally (expert and practitioner opinions) but are not produced or tested externally (field testing). Participants in this research consisted of three experts, namely media experts, material experts and language experts. Data analysis in this research used two validation sheets as instruments, namely the animation media storyboard validation sheet and the animation media validation sheet to validate

whether or not the animation media storyboard and animation media created are appropriate. The procedures carried out in this research are as follows:

1) Potential and Problems

The potential and problem in this research is that there are many cases of poisoning in Indonesia which are caused by a lack of knowledge about food hygiene and sanitation among food handlers.

2) Information Collection

The information gathering stage in this research was carried out by conducting a literature review regarding food hygiene and sanitation to study the theoretical basis that was the basis for the development of the media created.

3) Making Food Sanitation Hygiene Animation Media Design

Making an animated media design in the form of a storyboard includes a summary of the story line accompanied by visual, audio, material and language images that will be displayed in an animated food hygiene video and also uses a flowchart as a reference.

4) Design Validation of Animation Media Design Food Sanitation Hygiene

Design validation in the form of a storyboard is carried out by media experts, material experts and language experts to assess whether the design/storyboard about food sanitation hygiene for food handlers is suitable or not. If the design created is not suitable, revisions will be made until the design is suitable and can be continued to the animation media creation stage.

5) Making Food Sanitation Hygiene Animation Media

The stage of making an animated video about food sanitation hygiene for food handlers referring to a storyboard that has been validated. The stages of production include making picture illustrations, making recordings that are used as narration in the video, adding background music and combining everything as a whole until it becomes an animated video.

6) Validation of Food Sanitation Hygiene Animation Media

Validation of food hygiene and sanitation animation media was carried out by media experts, material experts and language experts. At this stage, validators are asked to validate and suggest improvements to the animation media. If the media created is still not suitable, revisions will be made according to the input and suggestions given until the media developed is suitable.

3. RESULT AND DISCUSSION

The development of sanitation hygiene animation media in this research went through several stages, namely animation media design, animation media development and validation of food sanitation hygiene animation media:

3.1. Food Sanitation Hygiene Animation Media Design

3.1.1. Create Flowcharts

The flowchart in this research describes the flow or process that will guide the creation of the storyboard. The flowchart of this food sanitation hygiene animation media flowchart includes the opening, namely the introduction of animated characters, the introduction, namely the introduction of the problem of food poisoning, the content, namely material about food sanitation hygiene, and the closing, namely containing thanks.

3.1.2. Create Storyboards

The storyboard in this research contains visual descriptions and audio explanations of the flow in the flowchart. One column in the storyboard represents one view on the monitor screen. The storyboard for this food sanitation hygiene animation video contains: 1) a sketch or picture of the screen, page or frame, 2) color, placement and size of graphics, 3) page text, 4) color, size, and font type, 5) narration, 6) animation, 7) audio, and 8) duration. This animated video storyboard consists of 4 main frames, namely the opening, introduction, content and closing. The opening section displays animated characters or characters. The introduction section contains an introduction to food poisoning and cases of food poisoning that will occur in Indonesia in 2022. The content section contains an explanation of the meaning of food sanitation hygiene, the purpose of food sanitation hygiene, the principles of food sanitation hygiene which are divided into six, namely the selection and acceptance of food ingredients, food storage, food processing, finished food storage, food transportation and food serving. The closing section contains a thank you note.

STORYBOARD VIDEO ANIMASI
“HIGIENE SANITASI DALAM PENANGANAN MAKANAN”

Naskah : Dita Ayu Safitri
Durasi : 7 menit 37 detik
Backsound: Lagu Ten Tower “Time on your side” versi instrumental


No	Deskripsi	Visual	Audio	Durasi
1	<u>Pembukaan</u> (opening slide) <u>perkenalan</u> <u>karakter</u> <u>menampilkan</u> logo UPI	<u>Tulisan</u> : <u>Higiene Sanitasi Dalam Penanganan Makanan</u> (font <u>concerone</u> , size 47, font color <u>hitam</u>) <u>Keterangan</u> : <u>Animation</u> : pop center <u>Action</u> <u>karakter</u> : standing and talking <u>Ilustrasi</u> : 	<u>Voice over</u> : “Assalamualaikum <u>hai</u> semuanya! Perkenalkan nama saya <u>Chef Rara</u> . Pada video kali ini saya akan membahas <u>higiene sanitasi dalam penanganan makanan</u> . <u>selamat menonton!</u> ”	12 <u>detik</u>

Figure 1. Food Sanitation Hygiene Animation Video Storyboard

3.1.3. Storyboard Validation

The animated video storyboard that is created late will then be validated by experts regarding its suitability to the indicators that have been created. The validation process was carried out by three experts, namely media experts, material experts and language experts using design validation sheets/storyboards. The expert who validated the animated video storyboard was Mrs. Dr. Ai Mahmudatussa'adah, M. Si as a media expert as a lecturer in Culinary Education, Mrs. Dra. Sudewi Yogha, M.Si. as a material expert as a lecturer in Culinary Education, and Mr. UU Sudana, SS, M.Hum as a linguist as a lecturer in Indonesian Language Education and Literature, Indonesian Education University. When carrying out validation there were several inputs and suggestions that needed to be improved from the media aspect, material aspect and language aspect. After correcting the validation results of the three experts on the storyboard, the overall results were suitable and could be continued with making an animated video.

3.2. Development of Food Sanitation Hygiene Animation Media

3.2.1. Search for Image Sources

This research uses two types of sources, namely image sources created by the researcher himself and image sources obtained from free image provider sites. The stage is to look for illustrative images that match the food hygiene and sanitation animation content. Illustrative images function to clarify the purpose and meaning of a text. With illustrations, writing or text becomes easier to understand, that is what is called picture illustration.

3.2.2. Application of Images and Provision of Animation

The application of images and animation in this research is by inserting images, applying letters and backgrounds according to the storyboard that has been created. The application of images and animation is also intended to make it easier to depict material, attract the attention of the target, and beautify the appearance of the animated video.

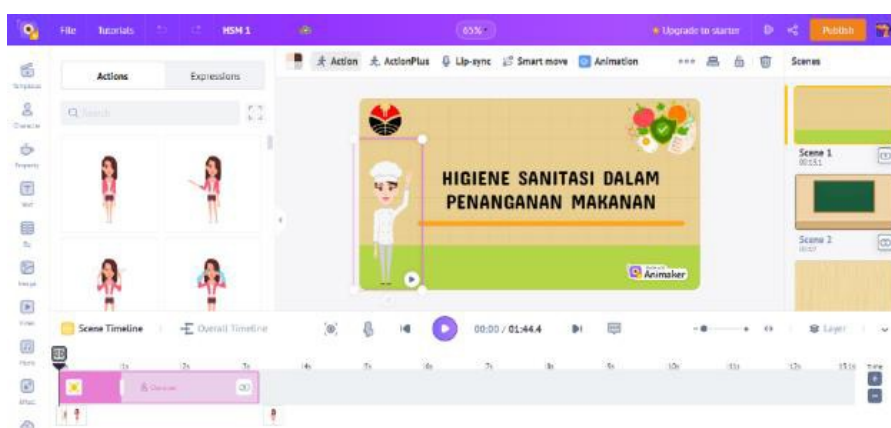


Figure 2. Implementation and Delivery of Animation

3.2.3. Enter Voice Over and Backsound Music

The audio voice over in this animation media uses the original voice of the researcher, while the background sound used in this media uses an instrumental song from ten towers with the title time on your side. The function of voice over is that it can provide an audio description of the text in the animation media so that it can clarify the material being conveyed and can also provide additional information to the audience that is not revealed through visual images, while the background music functions to evoke the atmosphere of the story and as a visual support in animated videos.

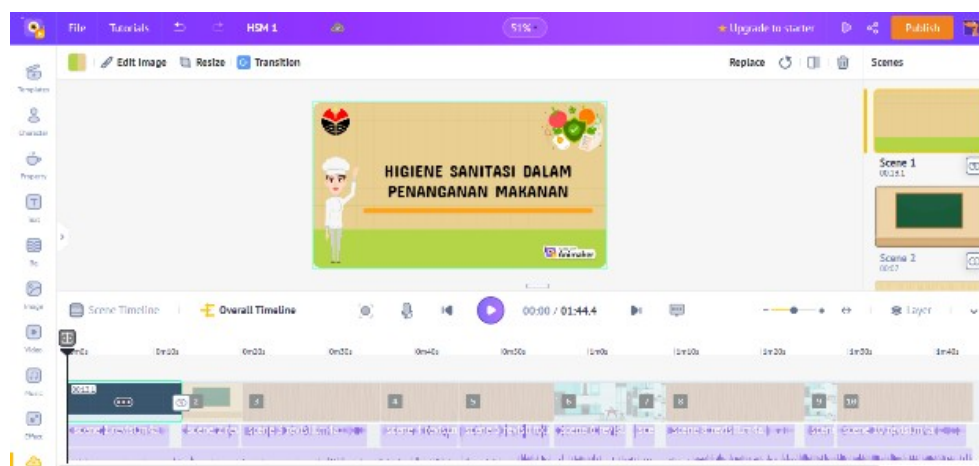
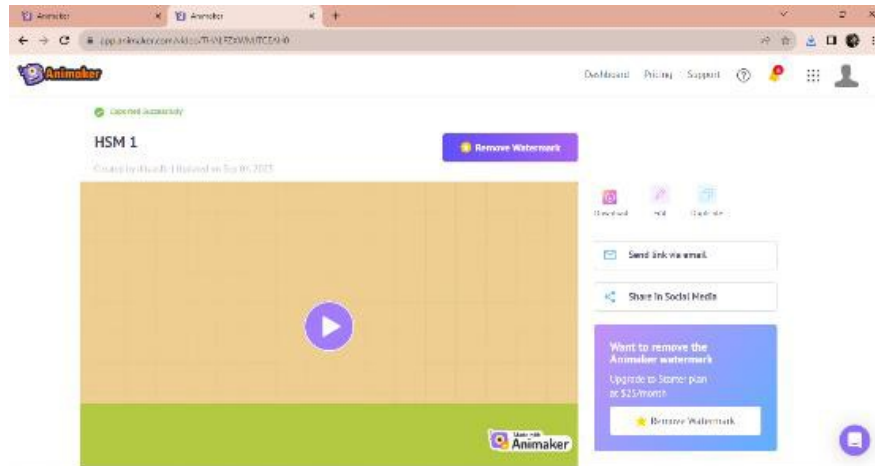


Figure 3. Entering Voice Over and Backsound Music**3.2.4. Export files to MP4**

At this stage the animated media that has been created will be exported into an animated video using the Animaker application. Animaker is an application that can be used as an alternative for learning media, because it can create movements complete with sounds and transitions, thus giving the impression of learning material that is more interesting.

**Figure 4.** Export Animaker file to MP4**3.2.5. Uploading Animated Videos**

Stage of uploading the animated video, after the video has been exported in mp4 format with full HD resolution, the animated video is uploaded to the YouTube application and can be accessed via the following link <https://www.youtube.com/watch?v=Gp-kzMIs6RA>.

**Figure 5.** Uploading to the YouTube Channel**3.3. Validation of Food Sanitation Hygiene Animation Media**

The validation process for the animated video educational media was divided into three main aspects, namely the media aspect, material aspect, and language aspect, and was conducted by three expert validators: a media expert, a material expert, and a language expert. Validation was carried out using a validation sheet applying the Guttman scale, which offers two definitive response options: "appropriate" and "not appropriate." To determine the overall quality of the media, a three-level evaluation criterion was used: TS (Not Suitable)

indicating the media requires major revisions; KS (Minor Revisions Needed) indicating minor improvements are necessary; and SS (Suitable) indicating the media can be used without further revision (Sutopo et al., 2021).

Media validation was assessed across three dimensions: media technical quality, visual/display design, and audio quality. Material validation focused on three key areas: material relevance, content depth, and content usefulness to the target audience. Language validation was evaluated based on five indicators: accuracy of language, clarity of language comprehension, communicativeness, compliance with standard language rules, and appropriateness of terminology (Sari & Puspitasari, 2022). The results of the validation process showed that the developed animated audiovisual educational media on food hygiene and sanitation was categorized as “suitable” and thus ready for implementation in educational activities.

These findings are consistent with previous research emphasizing that systematic validation by experts is essential for ensuring the quality, clarity, and effectiveness of educational media before it is deployed for learning purposes (Hidayat et al., 2022; Amalia & Setyaningsih, 2023). Expert validation ensures that the media meets pedagogical, technical, and linguistic standards and is appropriate for the target audience, thereby increasing its impact on knowledge improvement and behavioral change among users.

4. CONCLUSION

The development of audiovisual media based on animated videos about hygiene, sanitation and food hygiene went through three stages, namely the design stage, development stage, and animation media validation stage. The design stage of developing audiovisual educational media based on animated videos about food hygiene and sanitation by carrying out activities, namely making flowcharts and storyboards which are validated by experts. The development stage of food sanitation hygiene animation media in this research involves several activities that must be carried out. The first activity is to find relevant image sources to use in animation. After that, the images are applied and animated. Next, the third step is carried out, namely inserting voice over and background music to provide further explanation in the animation using the Animaker application. After all development stages are complete, the animation media is exported as an MP4 file. The final step in this process is uploading the resulting animated video to the YouTube platform. Food sanitation hygiene animation media validation is carried out to produce animation media that has been validated by experts. Experts who validate this media are media experts, material experts and language experts. The validation results show that the audiovisual educational media based on animated videos about food sanitation hygiene that was developed is in accordance with existing indicators and can be used.

5. REFERENCES

Amalia, R., & Setyaningsih, R. (2023). Validation of animated video media for food safety education among vocational school students. *Journal of Educational Multimedia and Hypermedia*, 32(1), 98–110. <https://doi.org/10.4018/JEMH.20230101>

- Arlinta, D. (2023). The incidence of food poisoning outbreaks and prevention strategies in Indonesia. *Journal of Public Health Research and Community Health Development*, 7(2), 112–119. <https://doi.org/10.24252/jphrc.v7i2.2023>
- Fitriani, N. (2017). Utilization of social media in health communication. *Communication Journal*, 9(1), 45–55. <https://doi.org/10.31101/komunikasi.v9i1.553>
- Hidayat, R., Kurniawan, D. A., & Fauziah, N. (2022). Development and validation of audiovisual-based learning media for hygiene and sanitation education. *International Journal of Interactive Mobile Technologies (IJIM)*, 16(10), 112–124. <https://doi.org/10.3991/ijim.v16i10.32039>
- Marsanti, R., & Widiarini, N. (2018). Factors affecting hygiene practices among food handlers in catering services. *Indonesian Journal of Nutrition and Dietetics*, 6(2), 74–81.
- Milo, D. (2022). YouTube as a health communication platform: Opportunities and challenges. *Journal of Digital Media and Policy*, 13(1), 65–79. https://doi.org/10.1386/jdmp_00085_1
- Mustika, R. (2019). Microbial food safety and its public health impact. *Indonesian Journal of Public Health*, 14(2), 101–108.
- Nildawati, A., Pratama, F., & Lestari, D. (2020). Health education through multimedia to improve food hygiene practices. *Indonesian Journal of Community Health Nursing*, 5(1), 23–30. <https://doi.org/10.20473/ijchn.v5i1.2020.23-30>
- Public Health. (2023). Definition and scope of food handlers in catering industries. *Journal of Public Health and Nutrition*, 8(1), 22–30.
- Rahmadani, I., & Widodo, H. (2021). The effectiveness of YouTube-based health education media on knowledge improvement. *Journal of Health Education*, 6(3), 207–216. <https://doi.org/10.15294/jhe.v6i3.47315>
- Sari, D. P., & Puspitasari, D. (2022). Language aspects in developing animated health education media: A validation study. *Indonesian Journal of Applied Linguistics*, 12(1), 34–44. <https://doi.org/10.17509/ijal.v12i1.47561>
- Setyowati, R., & Prabowo, A. R. (2022). The effectiveness of animated videos in increasing public knowledge about food safety. *Journal of Health Promotion and Behavior*, 7(1), 32–40. <https://doi.org/10.15294/jhpb.v7i1.56679>
- Siyam, R. A., & Cahyani, E. (2018). Hygiene practices and microbial contamination among catering food handlers. *Journal of Food Safety and Health*, 4(1), 51–59.
- Sutopo, H. B., Fauzi, A., & Arifin, R. (2021). Validation models for digital learning media: Ensuring instructional quality through expert judgment. *International Journal of Emerging Technologies in Learning (IJET)*, 16(19), 45–58. <https://doi.org/10.3991/ijet.v16i19.26087>
- Yusuf, M., Rahman, F., & Susanti, E. (2022). Assessment of food handlers' knowledge and hygiene practices in preventing foodborne illnesses. *Global Journal of Health Science*, 14(5), 98–106. <https://doi.org/10.5539/gjhs.v14n5p98>