

TikTok-Integrated Video Educational Resources on Basic Food Processing Techniques for Grade X Culinary Vocational High School Students

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ABSTRACT

This study aims to: (1) Develop a TikTok application-based video learning medium on the basic techniques of wet and dry heat processing for Class X Culinary students at SMK Negeri 1 Kalasan; (2) Evaluate the feasibility test results of the TikTok application-based video learning medium based on feedback from content experts, media experts, teachers, and students. The method used in this study is Research and Development (R&D), which includes four stages: define, design, develop, and disseminate. Data collection was conducted at SMK Negeri 1 Kalasan using a Likert scale questionnaire. The feasibility test of the learning media was analyzed descriptively. The research results indicate: (1) The development of the TikTok-based video learning media on food processing techniques for Class X at SMK Negeri 1 Kalasan was carried out through four stages (4D): define (analysis of curriculum, students, material, and learning objectives), design (storyboard creation, scriptwriting, video production), develop (expert validation, revision, testing), and disseminate (distribution on TikTok, Instagram, WhatsApp); (2) The feasibility assessment of the TikTok-based video media showed scores from content expert I (91%), content expert II (100%), media expert (98%), and students (87%), all categorized as very feasible. This media is considered highly suitable as an engaging alternative learning resource for Class X Culinary students in the digital era.

Keywords: Basic food processing techniques, TikTok application, video learning media

INTRODUCTION

The development of learning media has become an important focus in the educational world, especially with the rapid advancement of technology. Learning media not only serve as aids but also as interactive platforms that can integrate technology into education, making the learning process more effective and efficient while enhancing student motivation (Daryanto, 2020). 21st-century learning reflects the rapid development of science and technology, which is transforming educational paradigms, including curriculum, media, and technology. Science and technology continue to evolve and impact education, providing solutions to prepare generations for the industrial revolution 4.0, with the internet supporting learning through social media. Most people have at least one social media account, and often more than one (Vidyana & Atnan, 2022). A currently popular and spotlighted social media platform is TikTok. According to data from Indonesia, as of January 2024, the number of TikTok users in Indonesia was recorded at 126.83 million people (Rizaty, 2024).

TikTok is a highly popular social media platform, especially among the younger generation, offering engaging and challenging short video features. The TikTok app can be accessed to view video content without needing an account (Rahardaya & Irwansyah, 2021). TikTok is particularly popular with Generation Z, those born between 1997 and 2012, due to its quick, creative, and interactive content. Although TikTok is becoming increasingly popular as a social media platform, its use as a learning medium in schools is still rarely implemented, including in Vocational High Schools (SMK). TikTok learning media, with a kinesthetic learning style approach, tends to facilitate learning through real experiences and practical activities (Alexandro et al, 2022).

Researchers observed that teachers are not fully aware of TikTok's potential as an educational learning medium at SMK Negeri 1 Kalasan, such as for brief explanatory videos, challenges, or skill demonstrations. TikTok appeals to students, but teachers feel the duration is too short to convey complex concepts and are not accustomed to presenting dense material in a short time. Conventional education is often considered less engaging for students who are used to interactive and fast content. Educators need to adapt methods with more relevant media, such as TikTok. The use of social media platforms like TikTok as interactive learning media aligns with the learning styles of today's youth. This is supported by findings (Isnaini, 2021) that technology-based media can make students more motivated and active in the learning process.

Teaching basic food processing techniques in the culinary department of vocational schools is essential for shaping students' skills and competencies. Basic food processing techniques, such as wet and dry heat processing, are often difficult to explain theoretically without the aid of direct visualization. Processes like frying, sautéing, or boiling require direct demonstrations to ensure students understand the correct techniques. The limitations in delivering material verbally often make it difficult for students to understand the concepts being taught, leading to less accurate practice of techniques (Wahyuni, 2017). This material requires a visual and interactive approach, with media such as videos, animations, and digital simulations to help students understand abstract concepts and apply techniques in real situations. These techniques are fundamental as they form the basis for various culinary applications, whether for household, food industry, or restaurant scales.

The learning process consists of five components: teacher communication, learning materials, learning media, students, and learning objectives (Wiarso, 2016). One important component in supporting the teaching and learning process is learning media. The Class X Culinary teacher at SMK Negeri 1 Kalasan revealed that the use of learning media is still limited to PowerPoint, indicating a lack of variety and innovation that can affect the effectiveness of learning and student engagement. Although learning using direct objects has been implemented, students still struggle to connect theory with practice in processing techniques due to the lack of direct visualization or step-by-step guidance.

Students often find it difficult to understand basic food processing techniques, especially the differences between wet and dry heat techniques. The application of techniques in the kitchen is not optimal due to a lack of understanding of temperature, time, and ingredient characteristics. A lack of varied and interactive teaching materials also hinders students' understanding, making it difficult for them to apply theory in kitchen practice. Learning media based on process visualization, such as food processing techniques, can provide students with a more real and practical learning experience. For example, in learning basic food processing techniques, videos showing cooking steps directly can provide a clear picture of the application of cooking techniques, which are difficult to explain through text or still images alone (Malyn-Smith & Angelie, 2020).

Researchers conclude that the development of interactive, engaging, and easily understood learning media is crucial. Audiovisual content effectively supports cognitive processes by combining visual aids with explanatory narration, making complex topics easier for students to digest. Additionally, audiovisual media can break down abstract concepts into more easily understood segments, especially for subjects requiring

step-by-step demonstrations (Mayer, 2023). The use of varied media is expected to increase students' interest and enthusiasm in learning basic food processing techniques, both inside and outside the classroom. Moreover, audiovisual media like TikTok videos are needed to prevent students from becoming bored and to keep them focused on the presented material.

This research contributes to the field of educational technology by exploring the integration of TikTok as a learning medium for basic food processing techniques in vocational high schools, particularly for Class X Culinary students. This study addresses the gap in utilizing popular social media platforms, such as TikTok, as educational tools often overlooked in traditional educational settings. By developing TikTok-based educational resources, this research aims to provide a new approach to teaching culinary skills, making complex concepts more accessible and understandable for students.

PURPOSE OF STUDY

The objectives of this research are (1) to develop TikTok application-based video learning media for wet and dry heat processing techniques, aiming to create a more interactive and engaging learning experience for students. (2) Furthermore, to assess the feasibility of the TikTok application-based video learning media with wet and dry heat processing techniques through evaluations from content experts, media experts, teachers, and students to ensure that the media is effective and meets learning needs.

METHOD

The research method used in the development of media is Research and Development (R&D), which aims to create specific products and test the effectiveness of a product. Products resulting from Research and Development (R&D) can include models, media, modules, books, evaluation tools, and learning devices. The procedure for developing learning media in this study follows the 4D model (Four D), which consists of the stages of define, design, develop, and disseminate (Mulyatiningsih, 2011).

Subjects and Objects of the Research

The research subjects consist of two content experts and one media expert. Additionally, the video's feasibility was tested by 36 Class X Culinary students at SMK Negeri 1 Kalasan, in accordance with Mulyatiningsih's guidelines (2011), which suggest involving a small number of teachers and students (around 30-100) in the distribution and testing stages of the product.

Data Analysis Technique

This study employs descriptive analysis techniques. Descriptive analysis is conducted by describing or illustrating the collected data as it is, without drawing conclusions that apply generally (Sugiyono, 2016). The product's feasibility analysis is tested using a Likert scale assessment. The Likert scale is a psychometric scale commonly used in survey research. Respondents use a Likert scale from 1 to 4 to assess feasibility, where 4 indicates strongly agree, 3 agree, 2 somewhat agree, and 1 disagree (Mulyatiningsih, 2023). The feasibility assessment scores for the development of learning media can be seen in Table 1. The assessment scores are then calculated using the Formula 1.

$$P(\%) = \frac{\sum x}{\sum xi} \times 100\% \dots\dots\dots 1)$$

The explanation of the symbols used in Formula 1 is as follows: P(%) represents the percentage of the score obtained. The symbol $\sum x$ indicates the total number of respondents for all items, while $\sum xi$ represents the total ideal score for one item (Akdon & Riduwan, 2011).

Table 1. Feasibility Assessment Scores for Learning Media Development

Category	Value
Strongly Agree	4
Agree	3
Somewhat Agree	2
Disagree	1

Source: (Mulyatiningsih, 2023)

After calculating the assessment scores, the next step is to interpret the data with an interval scale. This data is then converted into an ordinal scale to determine the quality of the feasibility of the developed product. Interval scale data is converted to ordinal in Table 2.

Table 2. Interval Scale Data to Ordinal

Score Range	Category
>80%	Very Feasible
66%-80%	Feasible
56%-65%	Not Feasible
<56%	Very Not Feasible

Soucre: Mulyatiningsih (2011)

Using the feasibility categories, the validation results can be assessed based on the established categories. This guideline is used to determine the feasibility criteria for learning videos, which are considered feasible if respondents' assessments meet at least the "feasible" criteria.

FINDINGS

The development of the research product conducted at SMK Negeri 1 Kalasan for Class X Culinary students used the 4D model, which includes define, design, develop, and disseminate stages. The 4D stages begin with define (curriculum analysis, student characteristic analysis, material analysis, and learning objective analysis), design (storyboard, script, and video production), develop (expert validation, product revision, and product testing), and disseminate (distribution of learning media). The product developed is a TikTok application-based video learning medium on the basic techniques of wet and dry heat processing.

Define Stage

The definition stage involves gathering information about the product to be developed and identifying problems in learning culinary basics in Class X Culinary at SMK Negeri 1 Kalasan. During the learning process, students experienced difficulties in distinguishing between wet and dry heat processing techniques, particularly in aspects of time, temperature, and ingredient characteristics. Additionally, the currently available media do not facilitate direct demonstrations or repeated practice, which are crucial in teaching food processing techniques. Moreover, the use of TikTok as a learning medium in culinary basics has not been implemented.

Design Stage

The design stage involves creating a product design to be developed. The product design must be clear and detailed (Sugiyono, 2018). This stage involves designing the content of the learning video on basic wet and dry heat processing techniques. It includes creating a storyboard as a general framework or main outline of the learning video, which encompasses visualization, duration, and video description. The ideas presented are then validated to ensure coherence.

After creating the storyboard, the next step is to create a script, which is a detailed plan of the media to be produced. The script consists of scenes, shot types, visual narratives, and text to be added to the video. The script content is based on teaching modules to ensure that the resulting learning video aligns with the expected learning outcomes and objectives.

Video production then takes place, with filming and voice recording conducted according to the storyboard and script. Video production is done at the researcher's home using a mobile phone camera and additional equipment like a tripod and lighting to support the video shooting process, ensuring the desired angles and adequate lighting.

The production results are then edited using the CapCut application, as shown in Figure 1. The editing process includes setting the duration of each segment, adding supportive visual effects, and adjusting sound quality to ensure that the material explanation is clear and easy to understand. The production and editing process results in 12 learning videos, which not only cover the researcher's profile and learning outcomes and objectives but also present core material on basic wet and dry heat processing techniques.

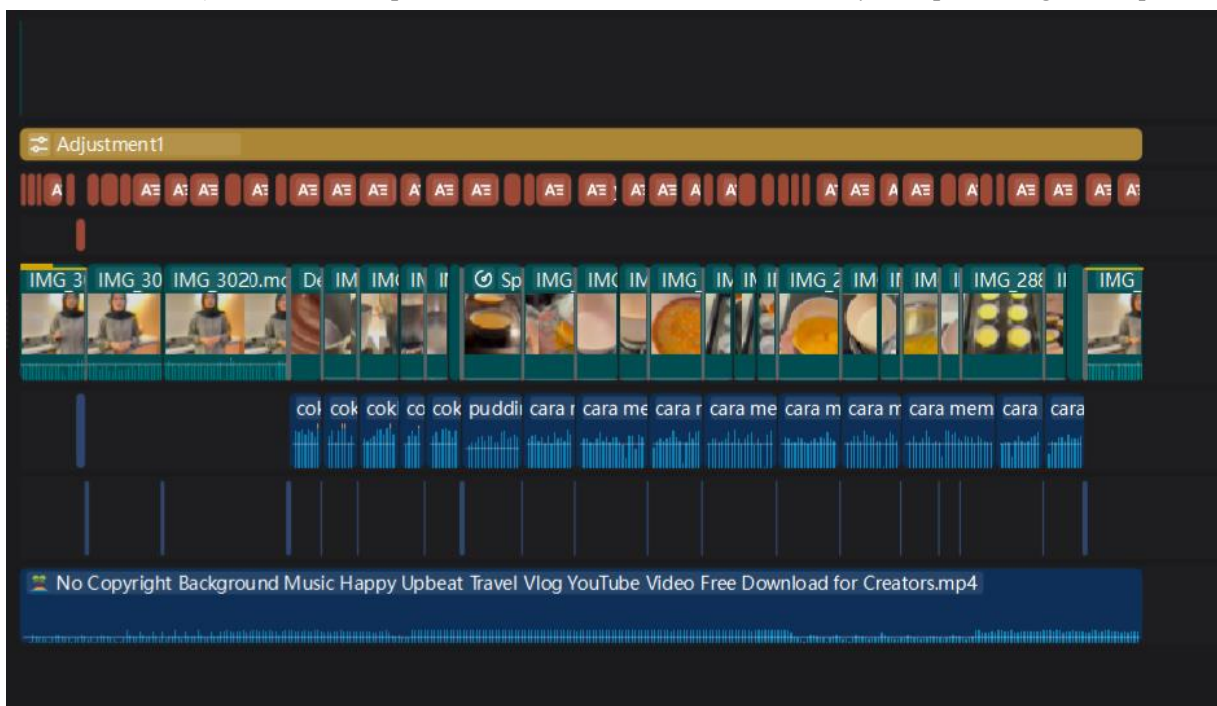


Figure 1. Video Editing Process Using CapCut Application

Development Stage

The development stage is the evaluation process conducted by content and media experts through validation, aiming to assess the feasibility of the developed product. The development stage, as outlined in the journal (Rohiman & Anggoro, 2019), serves as a crucial foundation for improving the developed learning media. In this stage, the researcher conducts validation from experts in the fields of content and media, which serves as a reference for revisions and improvements. Content expert validation I and II include assessing content quality and objectives, video quality, and learning quality. Meanwhile, media expert validation includes assessing media appearance, visuals, audio, and usability, as shown in Table 3.

The results show a score of 91% from Content Expert I, 100% from Content Expert II, and 98% from the Media Expert. Content experts suggested improvements, such as adding tools and materials used in processing techniques and additional examples of dishes for each technique. The media expert suggested paying more attention to the placement of explanatory text in the video. Proper text placement can enhance student focus on the core material without disrupting other visual elements, such as processing technique

demonstrations. The suggestions provided by content and media experts are used as a basis for revising the learning media to meet expectations.

Table 3. Validation Results from Content and Media Experts

Evaluation Aspect	Content Expert I	Content Expert II	Media Expert	Category
Content and Objectives Quality	83%	100%	-	Very Feasible
Video Quality	96%	100%	-	Very Feasible
Learning Quality	94%	100%	-	Very Feasible
Media Appearance	-	-	100%	Very Feasible
Visuals	-	-	100%	Very Feasible
Audio	-	-	92%	Very Feasible
Usability	-	-	100%	Very Feasible
Average	91%	100%	98%	Very Feasible

The validated learning media is then tested by 36 Class X Culinary students as users. The feasibility test evaluation is based on video quality, material suitability, and usefulness, as shown in Table 4. The total of these three evaluation aspects results in an average score of 87%, categorized as very feasible.

Table 4. Product Testing Results

Evaluation Aspect	Total Score	Max Score	Percentage (%)	Category
Video Quality	1012	1152	88%	Very Feasible
Material Suitability	365	432	84%	Very Feasible
Usefulness	634	720	88%	Very Feasible
Average	87%			Very Feasible

Students suggested enhancing the cover design and visual effects in each video. Adding more engaging visual elements can not only beautify the appearance but also attract students' attention from the start. This indicates that TikTok application-based video learning media is not only effective in delivering material but also capable of capturing students' attention and interest for further learning.

Dissemination Stage

The disseminate stage is the final step in the research and development of learning media, aiming to distribute 12 learning videos that have been deemed to meet the criteria as alternative learning resources for students and the general public through the TikTok application. The TikTok account link @dasarboga, containing the learning videos, is shared with teachers and can be accessed via the link https://www.tiktok.com/@dasarboga?_t=8p3ndHyypoW&_r=1, as shown in Figure 2. As of September 2024, the number of viewers for the learning videos on basic wet and dry heat processing techniques has reached 1,392 people/users with 182 likes. This figure indicates significant interest in the presented learning content, signifying that the media successfully captured users' attention.

The learning videos on basic wet and dry heat processing techniques are also disseminated through links uploaded on Instagram and WhatsApp platforms. Utilizing these two platforms is expected to broaden the video's reach and make it more accessible to students and other users. Instagram's attractive visual features allow for a more dynamic and engaging presentation of material. Additionally, the WhatsApp application facilitates direct sharing with friends and teachers. This dissemination strategy not only increases the visibility of the material but also encourages interaction and discussion among students, enriching the overall learning experience.



Figure 2. TikTok Account @dasarboga

DISCUSSIONS

The development of this learning media was conducted using the 4D model (define, design, develop, disseminate), which has proven effective in addressing challenges in the learning process for Class X Culinary students. The 4D model, developed by Thiagarajan and colleagues, consists of four main stages that provide a systematic framework for developing learning tools (Hariyanto et al., 2022; Ristanto, 2020). The problem identification process revealed that students had difficulty distinguishing between wet and dry heat processing techniques, highlighting the need to create learning media that is relevant and suited to student characteristics, especially in the context of Generation Z, who are very familiar with technology (Kul & Berber, 2022).

In the define stage, curriculum analysis and student characteristics provided a strong foundation for designing appropriate learning media. Students exposed to non-interactive methods that lack support for repeated practice require engaging and informative alternatives (Leslie, 2019). Therefore, introducing TikTok as a learning platform is an innovative step that leverages students' tendencies towards social media and visual content, which has been shown to increase student engagement in the learning process (Priyakanth et al., 2021).

In the design stage, using storyboards and scripts allowed for the development of clearly structured material. Source material from relevant culinary books ensures that the content delivered is not only engaging but also meets established curriculum standards (Sari, 2024). The scriptwriting process serves to detail each element of the video, enabling the information to be better understood by students (Eutsler, 2021).

In the develop stage, validation by content and media experts demonstrated that the product met high-quality standards. Validation results showing excellent scores from experts reflect the effectiveness of the video as a teaching aid (Huda et al., 2020). However, feedback to improve explanations related to tools and materials indicates that there is always room for improvement. This is important to ensure that learning media can continue to evolve and meet diverse student needs (Johnson et al., 2021).

Trials conducted by Class X Culinary students resulted in very positive feedback, with many students finding the material presented easy to understand. This indicates that the approach used in the video, including the use of simple and clear language, significantly enhances student comprehension (Darmawan, 2024). Suggestions to improve cover design and visual effects are important considerations that can enhance the video's visual appeal, making students more interested in watching and understanding the material presented. The results of the learning media assessment conducted by students align with (Sarip et al, 2022), showing that learning media that is easy to understand, has engaging material and design, and uses simple language tends to motivate students to revisit material they find challenging (Morris, 2018). This can increase students' interest in learning, as they find it easier and more engaging to repeatedly study the material.

The disseminate stage marks the final step in this development, where the distribution of learning videos through TikTok and other social media platforms opens opportunities to reach a wider audience. High viewer numbers and interactions indicate that this learning media is not only well-received but also successfully captures the attention of students and other users (Los et al., 2021). A dissemination strategy involving Instagram and WhatsApp provides easy access and enhances interaction between students and teachers, as well as among students themselves (Umar & Ameen, 2021).

The development of TikTok-based video learning media shows great potential in improving the quality of education at SMK Negeri 1 Kalasan. Digital generation students are more attracted to media that utilizes technology, allowing platforms like TikTok to enable students to learn independently, revisit material, and access information easily at any time (Scholz & Vyugina, 2019). The use of modern technology that aligns with student characteristics can create a more enjoyable and effective learning experience. Relevant media not only enhances student understanding but also makes the material more engaging and clear in its delivery (Fahrina et al, 2020). It is hoped that the results of this research can inspire the development of more innovative learning media in the future, thus meeting the ever-evolving educational needs.

Research Limitations

The limitation lies in the explanation of processing examples, as not all techniques can be practiced solely through video. Although videos can provide a clear visual representation of each step, some

techniques require direct experience and more in-depth guidance for optimal understanding. Users who do not have a TikTok account can only access learning videos through shared links, preventing them from exploring the full content available on the platform. To access all learning videos completely, users are required to create a TikTok account, which may be a barrier for some students who are reluctant or do not have the time to sign up. Images of tools such as pressure cookers, salamanders, and grills featured in the video were sourced from the internet, as the researcher had limitations in providing these tools physically. The use of internet images aims to ensure that students can still see and recognize these tools, even if they cannot be demonstrated directly in the learning video.

CONCLUSION

The development of learning media products for basic wet and dry heat processing techniques using the R&D method with the 4D model resulted in TikTok-based learning videos. The process began with curriculum analysis, student characteristics, and learning issues. In the design stage, storyboards and scripts were created for 12 informative and engaging videos. Validation from content expert I with a score of 91%, content expert II with a score of 100%, and media expert with a score of 98% indicated that the media is engaging and easy to understand, with suggestions for visual improvements. The dissemination of videos through TikTok, Instagram, and WhatsApp reached many students. The research results show that appropriate media can enhance student understanding and interest in learning, making TikTok an effective platform. The feasibility test showed a score of 87%, indicating that the media is very feasible as an attractive alternative learning resource in the digital era for Class X Culinary students. This research contributes to the development of social media-based educational resources, specifically TikTok, to facilitate the understanding of complex culinary concepts.

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