



The Development of Science Learning Media Ethno-Vlog Fermentation Cencaluk in Riau

Raudhah Awal^{1*}, Minda Azhar², Yohandri²

¹Biology Education Study Program, Faculty of Teacher Training and Education, Universitas Lancang Kuning, Pekanbaru, Indonesia.

²Science Education Study Program, FMIPA, Universitas Negeri Padang, Sumatra, Indonesia

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Abstract: Ethno-Vlog is one of the innovations of learning media to convey material to students. The purpose of this study was to develop a product in the form of learning media and to know the quality of its development seen from its validity and practicality in science learning. This research is development research referring to the ADDIE development model, namely Design, development, implementation, and Evaluation. The media is validated by validators, namely media experts and material experts. The data obtained will be analyzed by descriptive percentage. Furthermore, a practical test was conducted on the validated ethno-vlog media, to educators and students as media users. Based on the questionnaire given, the average value of media validation is 86.6% and material validation is 91.6% which is included in the very good category. Furthermore, the practicality test obtained from the responses of educators and students obtained an average score of 85.6% and 87% with a very satisfied category. It can be concluded that the product resulting from this research in the form of ethnoscience integrated cencaluk fermentation ethnolog media is suitable for use in science learning.

Keywords Ethnoscience; Science Learning; Etnovlog; Fermentation

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Introduction

The development of information technology is currently growing so rapidly, this has an impact on the mindset and behavior of humans. The impact of technological developments in the field of education can be seen in the dynamics of the teaching and learning process. Currently, we have found many IT-based learning innovations which we know as E-Learning, namely internet-based learning.

At present, we have encountered many, schools have used internet facilities that can be accessed smoothly by educators and students as a support in the learning process. This should be able to encourage educators to be able to innovate and be creative in developing learning media that can increase the learning motivation of students, including millennials. The innovation that can be done is to create a blog-based learning media that is currently developing into

a Vlog or video blog. A video blog is a blog that contains content in the form of videos that will be uploaded through a social media channel, namely YouTube. Previously, Information The term vlog was known as video blogging. Video blogging is now familiar as a form of entertainment in the millennial generation (Sanchez-Cortes, et al., 2015). Entertainment fields such as music, gaming, comedy, tutorials, and podcasts.

Not only that, vlogs have even begun to be used in the world of education and are starting to be used as learning media. The use of vlogs as learning media has been carried out by several researchers, namely Priyana (2017), (Yatmi 2018), Sulamianti (2018), Susanti (2019), Triputra (2019), Ananda (2020), Annas (2020), Nurhasanah (2020), (Latifah, et al., 2021), Febrianti (2021). In addition, according to Kasim and Wahyuni (2018) the use of technology as a learning medium can

*Email: raudhah_awal@unilak.ac.id

increase students' motivation in participating in learning.

Learning media are everything that can be used to channel messages, stimulate students' thoughts, feelings, concerns, and abilities that encourage the learning process. Currently, learning media innovations have varied, including in the form of posters, assisted by Instagram and even YouTube as was done by Yusri et al. (2018). However, there are still weaknesses from the media that have not linked it to the real experiences that exist in the environment around students. Real experience cannot be separated from the cultural knowledge possessed by students. As mandated in the 2013 curriculum, education should be rooted in the involvement of the nation's culture and local wisdom. But so far, the learning process in schools is still oriented to western nations, namely America and Europe, so that the science material or science learning that is taught to students is not experienced by students directly, but only imagines it. This is what makes students artificially intelligent in studying science, namely only memorizing science concepts without understanding science learning in a meaningful way.

It is very important for educators to be responsive and innovative to the development of learning materials in accordance with the mandate of the 2013 curriculum. Therefore, it is very necessary to make an innovation in learning media by combining vlog media with the culture around students which is packaged in the form of ethnosience. Currently, Indonesia is the country with the first rank to promote vlogs and ethnosience as learning media (Lestari et al., 2021). In addition, ethnosience is one of the future research trends recommended in the Scopus database (Wati et al., 2021).

Ethnosience comes from the Greek language consisting of the word *ethnos* from meaning "nation" and the word *Scientia* from Latin meaning "knowledge". Ethnosience means knowledge possessed by a nation or more precisely a certain ethnic group or social group (Sudarmin, 2014). Ethnosience is also defined as knowledge to recognize the community's knowledge system about the surrounding environment. Humans, environment, and culture are three factors that are interrelated internally (Febrianto, 2016). The form of ethnosience will be more easily observed through an educational process about everyday life developed by the cultural community, in terms of processes, methods, methods, and contents.

Ethnosience learning is in accordance with the philosophical foundation of the 2013 curriculum. The form of ethnosience education in learning is in the form of cultural knowledge such as fairy tales, songs, games, traditional houses, traditional rituals, special foods, local production and natural use (Yuliana, 2017). The implementation of ethnosience in learning has

several objectives, including 1) getting to know the natural, social and cultural environment more closely; 2) Provide basic skills and knowledge about the area that is useful for himself, the environment and the surrounding community in the present and future; 3) preserve their ancestral culture; 4) play a role in shaping the character of the nation and students; 5) equip attitudes and behaviors that are in line with the rules and norms that apply in the area. The ethnosience approach to science learning is done by linking the learning material with the contextual surrounding culture.

Cencaluk is a typical Malay food, an ethnosience originating from Bengkalis district, Riau province. Cencaluk is a fermented product of small fresh prawns, which the local people know as Geragau prawns. Geragau is a shrimp that comes from the genus *Acetes*. Fermentation is a way of preserving foodstuffs through the decomposition of complex substances into simpler substances. Fermented products will have different properties from their original properties due to the addition of other ingredients in the process. The cencaluk fermentation process is carried out by the local community traditionally by adding salt and sugar. Fermentation is done by mixing small shrimp or fresh fish, salt, and sugar (Nofiani and Puji, 2018). The addition of salt and sugar to fermented products aims to slow down the spoilage of the ingredients. This is in accordance with the explanation of Dyastuti et al., (2013) that salt added to fermented foods aims to inhibit the activity of proteolytic enzymes and inhibit the growth of spoilage bacteria. Cencaluk fermentation is one of the conventional biotechnology applications that can be used as a discussion of science learning in basic competencies (3.7.) Applying the concept of biotechnology and its role in human life and indicators of making food products using conventional biotechnology.

Based on the description above, it is necessary to develop a science learning media in the form of an ethnosience integrated Vlog known as Etnovlog. This study aims to analyze the validity and practicality of learning media Ethnovlog fermented cencaluk typical of Riau.

Method

This research is development research with ADDIE model. The stages of development are analysis, design, development, implementation, evaluation. The development of Etnovlog learning media is carried out to the implementation stage on a small scale.

In the analyze stage, an analysis of the problems faced in science learning includes analysis of material, needs, and characteristics. At the Design Stage, the ethnovlog media design was carried out by

determining the content in the form of fermented material and ethnoscience content, namely cencaluk typical of Riau, then arrange the instrument used as a means of collecting data on the feasibility and effectiveness of the product in the form of expert validation and the response of educators and students to product quality. The development stage is media development with validation carried out by media expert validators and material experts. Expert validation and practicality are carried out to produce valid and practical ethnoscience integrated vlog media so that they can be used in science learning. Next, revisions are made to the vlog according to suggestions from the validator. After the revision, a Product Trial was conducted to determine the level of practicality of the Etnovlog media produced.

The data collection technique was carried out by giving Likert scale questionnaires to media experts and material experts as well as educators and students. The Likert scale questionnaire score was given the highest weight, namely 5, and the lowest 1 (Yuberti, 2017). The equation to calculate the percentage of respondents' answers is used equation 1.

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

Description:

P : Percentage

$\sum x$: Number of respondents' answers in one item

$\sum xi$: The number of ideal values in the item

The results of the percentage of validation questionnaires that have been distributed are then interpreted through the criteria in Table 1.

Table 1. Interpretation scale of media expert and material expert validation criteria

Interval (%)	Criteria
0 -20	Low
21-40	Pretty Good
41-60	Good Enough
61-80	Good
81-100	Very Good

(Riduwan, 2011)

After being validated by media experts and material experts, the product practicality test was then carried out with educators and students as respondents. Furthermore, the values obtained are interpreted using the criteria in Table 2.

Table 2. Interpretation Scale of Practicality Criteria

Interval (%)	Criteria
0 -20	Not satisfied
21-40	Less satisfied
41-60	Quite satisfied
61-80	Satisfied
81-100	Very satisfied

(Riduwan, 2011)

Result and Discussion

The design of the development of Riau's typical cencaluk fermented ethnovlog media as a science learning media begins with the preparation of materials according to basic competencies, then the design of the Ethnoscience-based learning vlog scenario in the form of storyboards, taking vlogs according to the scenario made at a predetermined location, then finishing the vlog using the Adobe Premiere application. Pro, then the process of uploading to YouTube <https://www.youtube.com/watch?v=QSzidFrgTaY>.

In the following, documentation is presented that describes the sequence of ethnological media for the fermentation process of shrimp into cencaluk, as shown in Figure 1.

Media Eligibility

The feasibility of the media is carried out by media validation and material validation and practicality. The validity test aims to determine the validity of the media and learning materials for cencaluk fermentation ethnovlog that are being developed. The validity of the media was carried out by media experts, namely the lecturers of the University of Muhammadiyah Riau, and the validity of the material was carried out by material experts, namely the lecturers of the Lancang Kuning University. The percentage results based on the validity aspect of the Etnovlog learning media can be seen in Figure 2.

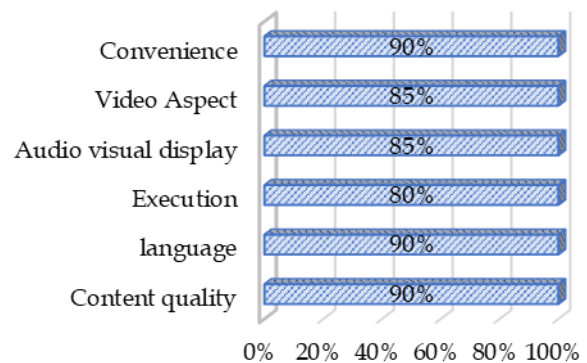


Figure 2. Media Validity Analysis

Based on the validation values from media experts, the results obtained with very good criteria, seen from the quality of the content by 90%, linguistic aspects 90%, implementation aspects 80%, audio-visual display aspects 85%, video aspects 85%, and ease of use 90%. Obtained an average of 86.6% in the very good category. This means that the cencaluk ethnovlog media can be used as a medium for learning science, especially on fermentation material.

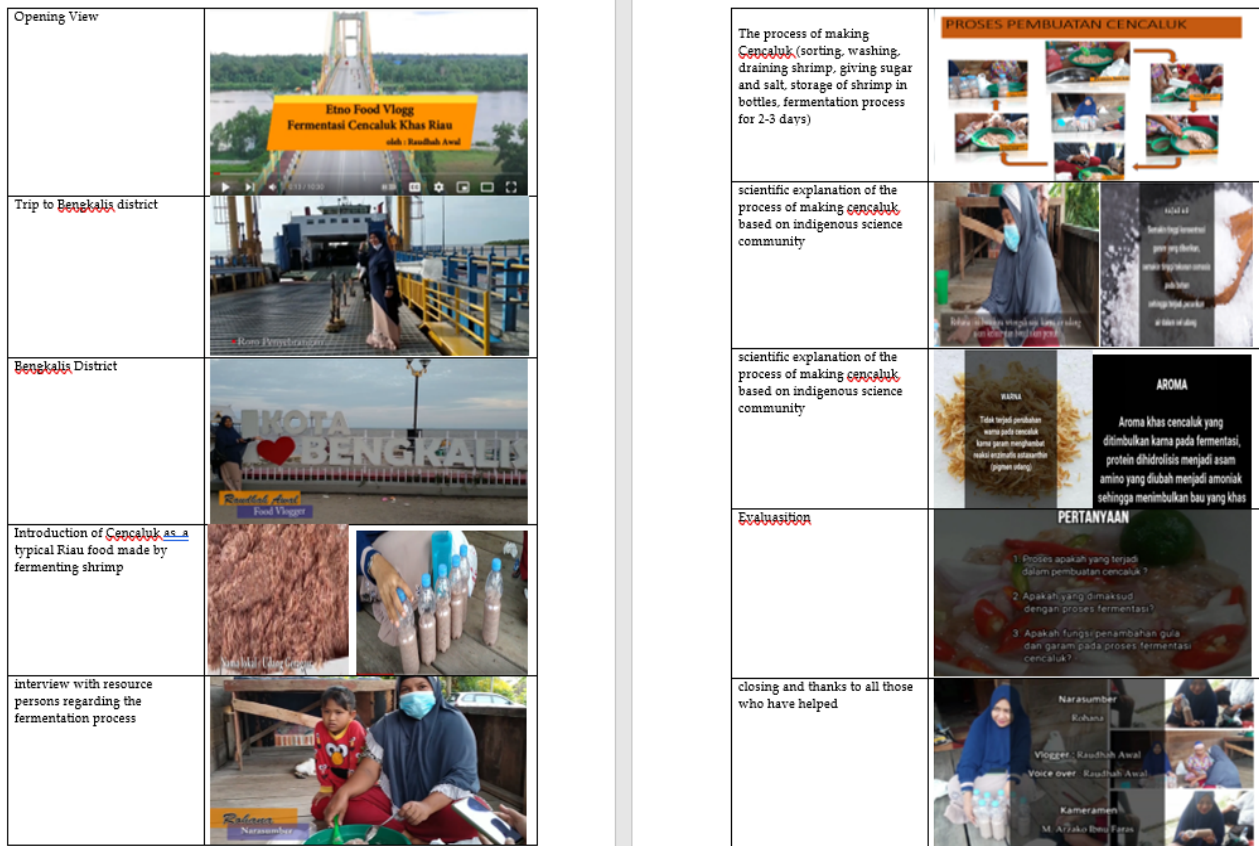


Figure 1. Documentation describing the order of ethnovlog media

In addition to the validation carried out by learning media experts, validation was also carried out by material experts as shown in Figure 3.

cencaluk presented in the ethnovlog can be used as reference material for science learning materials.

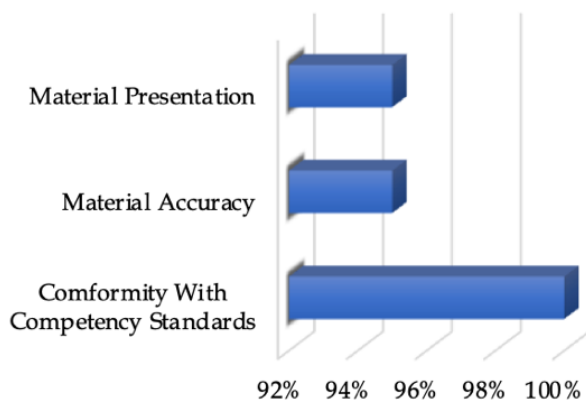


Figure 3. Percentage of Material Validity Analysis of Each Aspect

Aspects assessed by material experts consist of 3 aspects, namely compliance with competency standards, the score is 100%, the accuracy of the material is 90%, and the presentation of the material is 85%. The overall percentage of the assessment with an average of 91.6% is included in the very good criteria, meaning that the material for fermenting shrimp into

Practicality

The practicality test begins with the distribution of the YouTube vlog link, then respondents are asked to watch and fill out a response questionnaire to the ethnovlog media. From the results of the practicality questionnaire given to educators and students, scores are obtained as shown in Figure 4.

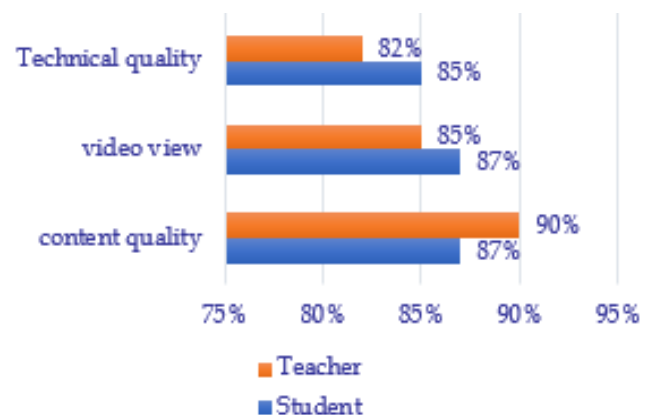


Figure 4. Analysis of Practicality Indicators from Teachers and Students

Based on the results obtained from practicality questionnaires filled out by educators and students, the percentage results in the quality aspect of the content of the ethnovlog media obtained 90% from student assessments and 87% from student assessments. In the aspect of video display, 85% of educators and 87% of students assess the assessment. In the aspect of technical quality, the assessment of educators is 82% and students are 85%. The total of all aspects of the assessment is then averaged. The practicality value based on the teacher's assessment obtained an average of 85.6% included in the category of very satisfied. Aspects of the assessment of students obtained an average of 86.3% included in the category of very satisfied. This means that the typical Riau cencaluk fermented ethnovlog which is designed is suitable for use as a science learning medium. This can be seen from the average practicality questionnaire that has been assessed by educators and students showing a very satisfied category.

The media development carried out has adapted to the habits of students with the current developments, where students prefer to try using new applications that are spread on the internet. One of the applications in question is vlog. This is in accordance with what Susanti, et al., (2020) stated in their research that vlog is one of the learning media that is developed based on the adjustment of the character and needs of students in a learning material.

However, as educators, we should be able to integrate other aspects besides technology that is developing rapidly today into a learning process. According to Hikmawati, et al., (2020) Ethnoscience-based learning design can be used to develop students' caring attitudes towards the local culture around them. Besides that, it is also stated that a good learning resource is used as a learning medium, one of which is culture.

Media has an important role in the learning process. Wahyu, et al., (2020) added that the use of science media in the learning process is very useful for explaining and instilling concepts that are difficult for students to understand.

Learning activities with an ethnoscience approach can not only develop students' awareness of the culture in the surrounding environment but can also improve students' science process skills. The same thing was expressed (Atmojo, 2012) that the integration of ethnoscience in science learning which is packaged in learning activities in the form of observation, discussion, presentation and practicum on local culture can improve students' science process skills. Critical thinking skills are also honed through an ethnoscience approach (Risianto, et al. 2020)

Integrating vlog media with ethnoscience is one of the right ways for teachers to do. Through learning

media, ethnovlog can make teachers more innovative and make students feel happy to follow the learning process (Karamina, et al., 2020). With the feeling of pleasure in students when participating in the learning process, it will certainly improve student learning outcomes.

Conclusion

Based on the research that has been carried out, it can be concluded that the learning media of Ethnovlog Cencaluk typical of Riau is feasible to be used as a learning medium in science subjects, especially in Basic Competence 3.7. Applying the concept of biotechnology and its role in human life, in the fermentation sub-material. From the validity data of media experts and material experts, an average value was obtained with each category being very good. While the practicality test obtained an average value with a very satisfied category. However, further testing needs to be done on the effectiveness of using this media on learning outcomes or student motivation.

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