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Validity and practicality of ethnovlog media on the production of typical Riau smoked fish (*salai*) as a science learning media

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ABSTRACT

Scientific studies on vlogs, ethnosciences, and social media literacy are current studies. A study on the development of ethno-vlog that raises local character and can be used as a learning medium is crucial. This study aims to develop a valid and practical ethno-vlog on the production of typical Riau smoked fish (*salai fish*) as a science learning media, especially in food preservation studies. The research is development research using a 4D development model (define, design, develop, disseminate). The ethno-vlog validity is carried out by disseminating questionnaires to 5 validators from three universities, namely Universitas Lancang Kuning, Universitas Negeri Padang, and Universitas Negeri Semarang, whereas the ethno-vlog practicality was conducted by three lecturers and 27 students of prospective Biology teachers at Universitas Lancang Kuning, Indonesia. The feasibility test results in that the ethno-vlog of food preservation in the production of typical Riau *salai fish* is valid and practical to be used as a learning media of food preservation for students of prospective Biology teachers at Universitas Lancang Kuning, Indonesia.

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INTRODUCTION

The era of "Industrial Revolution 4.0 has brought a significant impact on every aspect (Sutrisno, 2018). Fundamentally, the revolution has changed the way humans think, live, and relate to each other (Prasetyo & Trisyanti, 2019). The way of life and to relate to each other is closely related to the role of technology. The development of digital technology in this era has changed and affected various aspects of human life, including education (Putrawangsa & Hasanah, 2018). One of the most dominant changes in digital technology in education is in the teaching and learning process (Dito & Pujiastuti, 2021). The COVID-19 pandemic that occurred for months forced the government to create a policy to close schools, colleges, and universities to suppress the spread of the coronavirus. Closing schools did not mean stopping the learning process. Technology was required to ensure the continuation of the learning process and students received knowledge according to the government curriculum (Romadlon, 2020).

"Online learning was considered to answer all issues faced by education institutions during the Covid-19 pandemic. Information technology is one of the solutions for online learning implementation (Suni, 2020). The learning system was carried out through a computer (PC/laptop) or Android cell phone that was connected to the Internet. However, online learning would not run without a medium to facilitate it (Sadikin & Hamidah, 2020). The existence of learning media as a tool in the learning process is an undeniable fact (Irwandani et al., 2019). Therefore, media are needed to facilitate study for students and deliver learning materials for teachers. Moreover, the media should motivate students to continue learning during online learning (Halijah et al., 2021). Learning media plays a crucial role in creating effective and efficient learning activities (Jauhari, 2018). One of the effective media in online learning is video blogging or vlog (Halijah et al., 2021). The use of vlogs as a learning tool has a good effect on students' understanding and learning interests (Widyaningsih, 2019). Through vlog, students can directly face a real situation related to the presented materials (Priana, 2017).

Research on Vlog is interesting since it has become a trend among young and adult people (Ananda & Mardiah, 2020; David et al., 2017; Priana, 2017; Widyaningsih, 2019). Moreover, new accounts continue have continued to emerge on YouTube lately. People become Vloggers (Vlog creators) by sharing content in specific themes, such as comedy, traveling, tutorial, style, tips and tricks, and non-education. However, a large number of dangerous contents with millions of viewers indicates that people are still not wise in using social media. Social media literacy is important to suppress dangerous content with educational content (Julita & Salsabila, 2021). In education, social media application in learning is increasing and is recognized as an essential skill for teachers (Forbes, 2017). Through social media, teachers can share, discuss, and collaborate in teaching (Rahman et al., 2023).

With the development of vlog and social media literacy in the era of Industrial Revolution 4.0, culture, customs, and local wisdom, which are the nation's characteristics, are diminishing. Cultural science is less implemented in learning; thus, many students overlook their culture (Sumarni et al., 2020). Nation's local wisdom has not disappeared; vlogs must be presented with ethnosciences. Ethnosciences can be integrated into learning at schools with various learning themes. Ethnoscience learning is not only preserving local culture but is assumed to be able to increase student's education quality and character (Sukesti et al., 2020). Sudarmin et al. (2019) also found that the learning model of natural cultures and creativity can be creative, innovative, diligent, and with national cultural character. Therefore, studies on vlogs, ethnosciences, and social media literacy become an interesting topic among researchers. These topics become a trend in the public and researchers. Since 2016, the topics have characterized web search engines that can be freely accessed to look for complete texts of research articles for the last five years (Ananda & Mardiah, 2020; David et al., 2017; Julita & Salsabila, 2021; Priana, 2017; Rahman et al., 2023).

Scientific study on vlog, ethnoscience, and social media literacy is novel with less detailed information. Hence, it is imperative to study the development of an ethno-vlog that highlights the unique charactersistics of a region that can be used as a learning medium. The current research aims to develop a valid and practical ethno-vlog on the production of typical Riau smoked fish (*salai fish*) as a science learning media, especially in food preservation studies.

The validity of the developed learning media is a measurement of the feasibility of use. Learning media validity also determines the quality of the teaching media (Perbawa, 2020; Yulia, 2021). The level of value of a teaching medium is measured with various metrics and calculations. In addition, practicality is also a measure of the feasibility or quality of a learning media developed. Practicality is an additional measure for learning media feasibility. The practicality of a teaching medium determines

the easiness and usefulness of the teaching medium for practical problems. A very practical teaching medium that can also be used in different times and places can still produce a not significantly different result. Therefore, practicality is a required indicator to measure teaching media feasibility (Lestari & Hartati, 2017).

METHODS

Research Design

This research was research of the development of ethnoscience-integrated video-blog learning media that was limited up to the validity and practicality test stage for the developed media. The research method used was development research to produce a certain product and test the product's effectiveness (Sugiyono, 2013). The research employed a development method by adopting the 4D development model theory that consisted of define, design, develop, and disseminate stages (Thiagarajan et al., 1974). It was limited to the development stage excluding the dissemination stage. The development stage aimed to produce a valid and practical ethnoscience-integrated vlog media to be used in the learning process. The stages included (a) a validity test to uncover the validity levels of the developed ethno-vlog media; (b) revision was carried out to improve the ethno-vlog media according to the validators' suggestions; and (c) a product trial to identify the practicality level of the produced ethno-vlog media.

Participants

The validity was carried out by 5 (five) validators from Universitas Lancang Kuning and Universitas Negeri Padang who are competent in the production of science learning media. The practicality test of the ethno-vlog media was conducted by observing responses of the practicality of three lecturers and 27 prospective biology teachers at the Faculty of Education and Vocation, Universitas Lancang Kuning, Indonesia.

Instruments

The instruments used consisted of validity and practicality questionnaires. The validity comprised content, language, and media validities. The content validity consisted of four assessment aspects, namely the suitability of the content with KD, content accuracy, up-to-date, and encouraging curiosity. The language validity included five assessment aspects, namely straightforward, communicative, dialogical, and interactive, suitability with student development, and suitability with language rules. The media validity consisted of several aspects in ease of use, software, consistency, and graphics. Table 1 presents the validity questionnaire grids.

Table 1.
Validity Questionnaire Grids

Criteria	Indicator	Questionnaire Question Item
Content validity	A. Suitability with KD	1, 2, 3
	B. Content accuracy	4, 5, 6, 7, 8
	C. Up-to-date content	9, 10
	D. Encouraging curiosity	11, 12
language validity	A. Straightforward	1, 2, 3
	B. communicative	4
	C. dialogical and interactive	5
	D. suitability with student development	6, 7
	E. suitability with language rules	8, 9
Media validity	A. ease of use	1, 2, 3
	B. software	4, 5
	C. consistency	6, 7, 8, 9
	D. graphic	10, 11, 12, 13, 14, 15, 16, 17, 18

The practicality instrument provided to lecturers and students was a questionnaire that consisted of four aspects, namely interest, time efficiency, benefits, and ease of use as presented in Table 2.

Table 2.
Practicality questionnaire grids

Indicator	Questionnaire Question Item
A. Interest	4, 8
B. Time efficiency	2, 7
C. Benefits	3, 5, 6, 9
D. Ease of use	1, 10

Procedure

The development procedure consisted of four development stages, namely define (defining stage), design (designing stage), develop (development stage), and disseminate (dissemination stage). The research was limited to only cover up to the development stage and excluded the dissemination stage. The developed etno-vlog media was tested for its validity and practicality through questionnaire distribution. The results of validity assessment by validators would be use as a reference for improvement for the ethno-vlog media. The development procedure is illustrated in Figure 1.

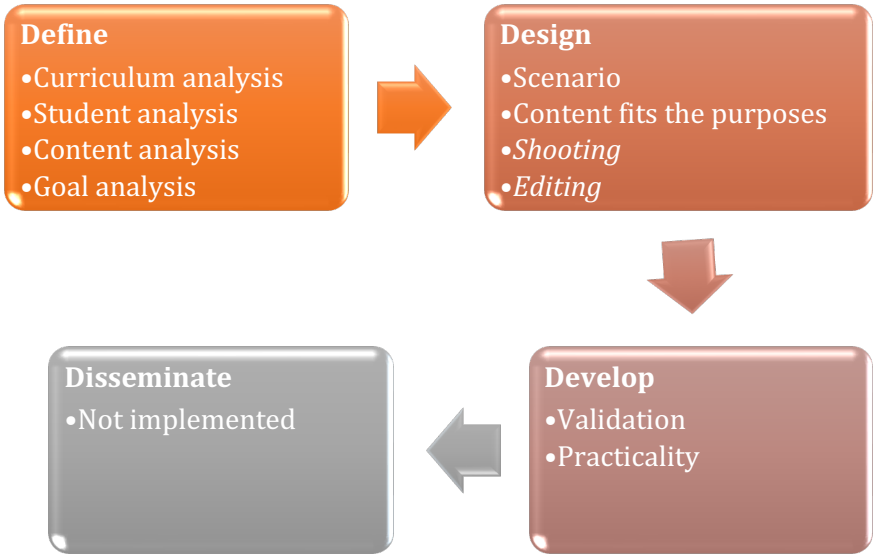

Figure 1. The procedure of the Etno-vlog Media Development

Data Analysis Technique

Data generated were analyzed using the Kappa Cohen formula as follows.

$$\text{Kappa Moment (K)} = \frac{\rho_o - \rho_e}{1 - \rho_e} \quad (1)$$

K = Kappa moment indicating the validity and practicality levels of the product

ρ_o = Realized proportion calculated from scores given by validators/respondents divided by maximum score.

ρ_e = Unrealized proportion calculated from the result of substracting the maximum score from the total score given by the validators/respondents and divided by the maximum score.

Categories for validity and practicality decisions based on the Kappa moment interval referred to Boslaugh (2008) with intervals 0.00 - 1.00. The interval of 0.81 - 1.00 was categorized as a very high validity and practicality, 0.61-0.80 was a high category, 0.41 – 0.60 was a fair category, 0.21 - 0.40 was a low category, 0.01 - 0.20 was a very low category, and less than 0.00 was categorized as invalid /impractical.

RESULTS AND DISCUSSION

Define (Defining Stage)

The defining stage is a stage of analysis and identification of problems to gain information related to the developed product. Based on the existing problems, the researchers carried out two stages in the need analysis. The first stage is class observation during the teaching and learning process in Class 5.1 of the Biology Education study program, Faculty of Education and Vocation, Universitas Lancang Kuning, Indonesia. The observation identified that the prospective teacher students were mostly passive and often received information from the lecturer's oral presentation. Most of the lecturer's teaching and learning assignments used the discussion method with PowerPoint. Therefore, a learning medium is needed that could enhance the activity of prospective teacher students. This research was thus carried out to develop an ethno-vlog medium to meet learning achievement. The second stage was interviews with lecturers and several prospective teacher students in the Food Microbiology course to identify the basis of media determination that met the needs. Based on the interviews, content to be presented in the ethno-vlog learning media development and taught in class was also determined to enhance prospective teacher understanding and knowledge by refereing to the applicable syllabus. The developed content was determined according to the uniqueness of Riau Province thus it was more contextual.

Design (Designing Stage)

Designing of ethno-vlog media was started by creating a scenario to facilitate video production. The scenario contained a description of the content that was expressed in the form of scenes, sequence of places, circumstances, and dialogue, which were arranged to become a reference in the video production process (Figure 2).

SKENARIO PEMBUATAN VLOG UNTUK MEDIA PEMBELAJARAN MIKROBIOLOGI PANGAN PADA MATERI PENGAWETAN BAHAN PANGAN HEWANI

MATA KULIAH	MIKROBIOLOGI PANGAN
MATERI	PENGAWETAN BAHAN PANGAN HEWANI
CPMK	Menganalisis sistem pengolahan makanan awetan dari bahan pangan hewani dan pengemasan berdasarkan daya dukung yang dimiliki oleh daerah setempat
TUJUAN PEMBELAJARAN	Setelah mengikuti tayangan dan melaksanakan sejumlah kegiatan pembelajaran mahasiswa dapat memahami proses pengawetan bahan pangan hewani dengan cara pengasapan (salai)
SEMESTER / JURUSAN	6 / Pendidikan Biologi
PENULIS NASKAH	Ermina Sari

(a)

NO	VISUAL / GAMBAR	AUDIO/SUARA
1	LOGO UNILAK	MUSIK : INSTRUMENTALIA (lagu Lancang Kuning) Pantun : Jalan-jalan ke Pekanbaru Jangan lupa membeli makan Jika singgah ke Pekanbaru Jangan lupa membawa buah tangan
2	Pasar Bawah	INSTRUMENTAL // Assalamu'alaikum wr.wb. hai semua saya Ermina. rasanya tidak lengkap kalau ke Pekanbaru kita tidak berkunjung ke pasar bawah. hari ini saya akan mengajak kalian semua melihat sentra oleh-oleh khas Pekanbaru ini. / Yuk ikutin saya. //

(b)

Figure 2. Ethno-vlog Scenario (a) Etno-vlog identity (b) Sequence of scenes and dialogues

The designing of ethno-vlog media consisted of various components, namely introduction, introduction to local *salai* entrepreneurs, explanation of the *salai fish* production process, scientific explanation of food preservation in the *salai fish* production, and evaluation. The component of the ethno-vlog media is illustrated in Figure 3.

(a)

(b)

Figure 3. Display of the Ethno-vlog media (a) Opening page of the Ethno-vlog; (b) *Salai fish* production process

Develop (Development Stage)

In the development stage, textbook prototyping was conducted by trial to find out the feasibility of the teaching materials measured through validity and practicality. The validity of the teaching material produced was measured using a teaching material validation sheet with indicators of completeness and book presentation techniques, content feasibility, and language based on the indicators of BNSP 2010.

A. Validity

The validity test aimed to uncover the validity level of the ethnosciences-integrated vlog media developed. The content validity was carried out by five validators from three Universities, namely Universitas Lancang Kuning, Universitas Negeri Padang, and Universitas Negeri Semarang. The validity of the ethno-vlog media developed can be determined through the results of data analysis on validation sheets. The calculation of the Kappa Moment of the content validator is presented in Table 3.

Table 3.
Results of Content Validity Analysis

No	Aspect Assessed	Score (K)	Category
1	Suitability with KD	0.92	Very high
2	Content accuracy	0.99	Very high
3	Up-to-date content	0.95	Very high
4	Encouraging curiosity	0.94	Very high
	Average	**0.95**	Very high

The results of validity carried out by content experts and construction indicated the scores of Kappa Moment (K) in the aspect of suitability with KD of 0,92, which is a very high category. The same results were also indicated in the score of content accuracy aspect of 0.99, up-to-date content aspect of 0.95, and encouraging curiosity of 0.94, which were all in a very high category. Data analysis from the validity questionnaires of ethnosciences-integrated vlog media content by lecturers was based on the four components (aspects). The data analysis results indicated that the ethnoscience-integrated vlog media had an average validity score of 0.95 with a very high category. Based on the component of content feasibility, the media was valid, which means that the developed ethno-vlog media is suitable for the applicable curriculum. Depdiknas (2008) stated that teaching materials developed should follow the curriculum demand. The linguist validation aimed to perform a feasibility test on the ethno-vlog media based on the language aspect. Five language aspects were assessed. The results of the language validity analysis by validators are presented in Table 4.

Table 4.
Results of Language Validity Analysis

No	Aspect Assessed	Score (K)	Category
1	Straightforward	0.96	Very High
2	Communicative	1.00	Very High
3	Dialogical and interactive	1.00	Very High
4	Suitability with student development	1.00	Very High
5	Suitability with language rules	1.00	Very High
	Average	**0.99**	**Very High**

Based on the results of validity carried out by linguists, the score of Kappa Moment (K) in the straightforward aspect was 0.96, which was very high. Similar results were also indicated by the aspects of communicative, dialogical, and interactive, suitability with student development, and suitability with language rules where all gained a score of 1,00 and in a very high category. The data suggested the average of language validity was 0.99 with a very high category.

According to the language component, the ethno-vlog media was valid with a score of 0.99. This result indicated that the language used followed Indonesian language rules properly and correctly thus it is easy to understand by its users. One of the categories of good media is user-friendly, which is easy to understand and communicative. Media expert validation aims to provide information as well as evaluate and give suggestions on the results of the developed ethno-vlog media. The analysis results of

media expert validators are presented in Table 5.

Table 5.
Results of Media Validation Analysis

No	Aspect Assessed	Score (K)	Category
1	Ease of use	0,96	Very High
2	Software	0,99	Very High
3	Consistency	1,00	Very High
4	Graphic	0,99	Very High
	Average	**0,99**	**Very High**

Based on the results of validity carried out by media experts, the Kappa moment scores (K) in all aspects were in a very high category. The ease-of-use aspect had a score of 0.96, whereas the software, consistency, and graphic aspects were 0.99, 1.00, and 0.99, respectively. The data also showed the average media validity was 0.99 with a very high category. Referring to the media feasibility, the ethno-vlog was valid with a score of 0.99. It suggested that the developed media had met the criteria of a suitable presentation technique to be applied in learning, The ethno-vlog was developed with ethnoscience-integrated content, which was based on local wisdom from the native culture of society. The validity of the media experts was in a very high category. It indicates that the ethno-vlog had an interesting design. Attractiveness is a part of quality media (Daryanto dan Dwicahyono, 2014). High attractiveness can increase students' enthusiasm for learning.

B. Practicality

The practicality of the developed ethno-vlog was observed from the product relevance based on field trials that include the practicality and easiness of the developed product. Practicality data were obtained from the analysis results of the response questionnaire from three lecturers and 27 students of the Biology Education Study Program, Universitas Lancang Kuning, Indonesia. Results of the data analysis of student practicality questionnaires are presented in Table 6.

Table 6.
Results of Student Assessment Practicality Analysis

No	Aspect Assessed	Score (K)	Practicality Category
1	Interest	0,87	Very High
2	Time efficiency	0,86	Very High
3	Benefits	0,80	Very High
4	Ease of use	0,86	Very High
	Average	**0,84**	**Very High**

Table 6 indicates that the practicality score (K) of student assessment on the interest aspect was 0.87, which was a very high category. Other aspects also received a very high category with the following score: time efficiency of 0.86, benefits of 0.80, and ease of use of 0.86. The average score was 0.84 with a very high category.

Table 7.
Results of Lecturer Assessment Practicality Analysis

No	Aspect Assessed	Score (K)	Practicality Category
1	Interest	0,91	Very High
2	Time efficiency	1,00	Very High
3	Benefits	0,87	Very High
4	Ease of use	1,00	Very High
	Average	**0,93**	**Very High**

Table 7 indicates a practicality score (K) of lecturers' assessment in the interest aspect was 0,91 or in a very high category. The same results of a very high category also indicated in other aspects, namely efficiency with a score of 1.00, benefits with a score of 0,87, and ease of use with a score of 1.00; therefore, it resulted in an average score of 0.93, which was also in a very high category.

Aspects assessed in the ethno-vlog practicality consist of attractiveness, ease of use, and time efficiency (Daryanto & Dwicahyono, 2014) and benefits. It can be seen that the attractiveness aspect generated a Kappa Moment of 0.91 from the lecturers' response and 0.87 from the student response with a very high practicality level. The results indicate that the developed ethno-vlog attracts students' interest. The use of interesting videos, images, and design could increase students' motivation (Ariyana et al., 2018; Sari dan Seprianto, 2018). Regarding the time efficiency aspect, the developed ethno-vlog also received a very high practicality level; the research results suggested that the developed ethno-vlog can save learning time. It supports the research of Harden, et al., (2011) stating that learning using the developed media can create a more efficient learning process.

The benefit aspect of the developed ethno-vlog received a very high practicality level indicating the benefits of the ethno-vlog for users. In terms of ease-of-use aspect, the developed ethno-vlog had a kappa moment score of 0.86 from student response and 1.00 from lecturer response. The scores suggest that the ease-of-use aspect received a very high practicality level. The research results indicated that the developed ethno-vlog is easy to use which is in line with the statement from Perdana, et al., (2017) and Sherwin (2020) that features from a module comprise user-friendly, which is one of the characteristics of good media.

CONCLUSION

Based on the research results, a conclusion can be drawn that the ethnoscience-integrated vlog media produced was valid and practical to be used in a study of food preservation at Universitas Lancang Kuning. This can be seen from the validity categories of the content, language, and media experts that are within a very high category with average Kappa Moment of 0.95, 0.99, and 0.99, respectively. Whereas the average kappa moment scores for practicality based on both the student response questionnaire and lecturer response questionnaire were 0.84 and 0.93, respectively with a very high category.

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