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Development of Geography Learning Media in the Form of Digital Magazines with Hydrosphere Dynamics Material

Ferawati Po'u
Universitas Negeri Gorontalo
ferawatipou43@gmail.com
Fitryane Lihawa
Universitas Negeri Gorontalo
ferawatipou43@gmail.com
Daud Yusuf
Universitas Negeri Gorontalo
ferawatipou43@gmail.com

Corresponding Email: ferawatipou43@gmail.com

Abstract

This research is learning media development research. The purpose of this research is to produce digital magazine-based learning media on hydrosphere dynamics material. This research uses the development method with the ADDIE model as an approach to developing learning media. In this research there are 5 (five) stages, namely the analysis stage, design stage, development stage, implementation stage, and evaluation stage. The assessment given to each statement, from the media expert validation, stated that it was valid with a rating of 78.18%, the material / content expert stated that it was very valid with a rating of 90%, and the learning expert stated that it was very valid with a rating of 86%. The limited scale trial research conducted by researchers at SMA Negeri 1 Bukal received a good response to the learning media with a result of 79.77%. The results of the general scale trial research conducted at SMA Negeri 1 Momunu received a very good response, student responses from the results of the general scale trial in class X IPS^{1} received a score of 82.33% in the valid category, and class X IPS^{2} with an average score of 94.02% in the very valid category. The conclusion of this study is that the digital magazine-based learning media developed by researchers is declared feasible to use in the learning process.

Keywords**:** *Canva, Majalah, Hidrosfer, ADDIE*

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Introduction

Education is very important for every generation, more specifically the younger generation, in advancing good education and increasing the knowledge of human resources in a country, especially the Unitary Republic of Indonesia. Currently, technology is very advanced and sophisticated, every teacher and student is encouraged to understand technology as an effort to improve the quality of education (Garris Pelangi, 2020).

In the learning process, one of the teaching methods that is good, effective, and follows technological developments is the existence of learning media as a reference for teaching and learning. With the existence of learning media as a tool in the teaching and learning process, it makes teachers as well as students apply learning by mastering new skills, creating something in the application of learning media (Garris Pelangi, 2020). In addition, this can make the learning process more interesting, avoid boredom, and allow students to understand the material taught by the teacher (Pratama, 2022).

In today's modern era, it is very appropriate if media is developed as learning media, this is an effort to improve student learning outcomes. Because the current generation is more comfortable using digital equipment. Video is one of the digital-based learning media that is quite popular in today's generation (Sadiman, 2010).

The results of research and observations of researchers at SMA N 1 Bukal and SMA N 1 Momunu, in teaching and learning activities have not used media as a tool during the learning process. Other media used by teachers in the classroom are printed books and blackboards, so that students are less motivated to learn. The use of monotonous media without variation causes stagnation in the classroom.

One way to convey material about the hydrosphere through learning in education easily is to use media in the form of digital magazines, with this media students can learn anywhere and anytime according to their respective learning interests without depending on the teacher. Interactive learning media will help students to be active and motivated in following the learning process. interactive learning media development can be done in various ways (Sadiman, 2010). Utilization of existing school facilities is an alternative support in developing learning media that can be used by teachers. School facilities or infrastructure are realized by the existence of theory rooms, practical rooms, libraries, computer laboratories, practical equipment, learning media and so on (Wibawa et al., 2021). Based on the facilities

that already exist in schools, interactive learning media can be developed with computer-based. "Computer-based media is the use of computers in delivering teaching materials to students so that students are able to provide feedback. Computer-based media can take the form of tutorials, drills and practice, simulations and games" (Wibawa et al., 2021).

The development of digital magazines is strongly influenced by the development of information technology which becomes a device or tool to access the digital magazine. Information media technology that continues to emerge with various types of brands and types makes digital magazines develop (Pangaribuan & Irwansyah, 2019). For example, electronic media such as laptops and cellphones that appear with various types and are still growing make digital magazines try to create and update their application systems so that they can be used on various types of digital media. Key performance indicators (KPIs) for media in this era are not only determined by the quality of journalistic products, but also precision measures about the number of users, the number of shares, and how much traffic each article has generated (Pangaribuan & Irwansyah, 2019).

Efforts to overcome these various obstacles are the need to develop learning media (Nina Sulvia Ayuna Sari et al., 2021). One media that can be developed needs to be developed is learning media in the form of digital magazines to make it easier for students to understand the material being taught (Wahyuni, 2018).

Research Method

The method used in this research is development research with the ADDIE model which consists of the stages of Analysis, Design, Development, Implementation, and Evaluation (Branch, 2010). Each stage is carried out effectively and systematically with the aim of producing quality products and detailed explanations (Pratama & Maryati, 2021).

The instruments used are questionnaires, interviews and observations, where the questionnaire instrument used to determine the response of media users, namely students of SMA 1 Momunu and SMA 1 Bukal. Interviews were conducted with teachers and students to find out the media used in the school. This interview will be followed up with direct observation to the class and school that will be tested (Dewi & Warso, 2014).

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The total number of students in this study amounted to 69 students. Where students came from class X SMA Negeri 1 Bukal totaling 24 students and class X SMA Negeri 1 Momunu with a total of 45 students. The samples used in this study are listed in table 1.

Table 1. Research Sample

No	School and Grade	Total	Description
	SMA N 1 Bukal		Limited-scale test
1	Grade X IPS 1	24	
	SMA N 1 Momunu		General scale test
1	Grade X IPS 1	21	
2	Grade X IPS 2	24	
	Total	69	

In this study using two types of data, namely: Qualitative and Quantitative Data. The media utilization media validation sheet will be filled in by the validator, the assessment consists of 5 score assessments (Kumalasari et al., 2015), namely:

5 = Very good

4 = Good

3 = Good enough

2 = Not good

1 = None

To determine the percentage of the data results, the percentage formula can be used (Arikunto, 2003), which is as follows:

$$P = \frac{\sum x}{\sum x^1} \text{ x } 100\%$$

Note:

P = Percentage

$\sum$ x = Total number of validator answer scores (real value)

$\sum$ x1 = Total number of highest answer scores (expected value)

100 = Constant number

After obtaining the results of the percentage calculation, it can be determined the level of product feasibility of the development results. Providing the level of product feasibility will use qualifications that have criteria that can be seen in table 2:

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Table 2. Feasibility Level Qualification (Subali, et al, 2010)

Percentage	Qualification	Eligibility Criteria
84% < score ≤ 100%	Very valid	No revision
68% < score ≤ 84%	Valid	No revision
52% < score ≤ 68%	Quite valid	Need revision
36% < score ≤ 52%	Less valid	Revision
20% < score ≤ 36%	Very less valid	Revision

Result and Discussion

Research This research uses the ADDIE development model, which has the following development stages as follows: a) analysis stage; b) design stage; c) development stage; d) implementation stage; e) evaluation stage. The following is an explanation of each stage conducted in this development research:

Stage Analysis

Process Geography learning in class X IPS at SMA Negeri 1 Bukal and SMA Negeri 1 Momunu is conducted twice a week. Momunu is conducted twice a week. The total number of students X social studies class in SMA Negeri 1 Bukal is 110 students divided into 4 classes and X social studies class in SMA Negeri 1 Momunu is 65 students divided into 4 classes. and X social studies students at SMA Negeri 1 Momunu are 65 students who are divided into 3 classes. During the teaching and learning process the teacher endeavors to conduct learning based on lesson plan guidelines that include opening, core, and closing. Before the learning process begins, the teacher motivates the students and asks about the previous material that has been learned. ask about the previous material that has been learned (Sulistianingsih & Mukminan, 2019). & Mukminan, 2019). However, when entering the core part, However, when entering the core part, Geography learning is still dominant with teacher-centered learning and geography textbooks. Teacher-centered learning makes students do not play an active role in the learning process. (Sulistianingsih & Mukminan, 2019).

Therefore, there is a need for learning media learning media that can support students in learning and achieving learning goals and can foster students' enthusiasm in learning and receiving. learning goals and can foster student enthusiasm in learning and receiving. From the results of observations made by researchers at SMA Negeri 1 Bukal and SMA Negeri 1

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Momunu, the availability of learning facilities that can support students in learning and achieving learning goals. Negeri 1 Momunu, the availability of learning facilities at school is quite adequate, such as the availability of geography print books, LCDs, and computers. The process of teaching and learning process in this school is still using printed books because of the limited number of LCDs so that to use them, teachers have to take turns with other teachers. use it must take turns with other teachers.

Planning Stage

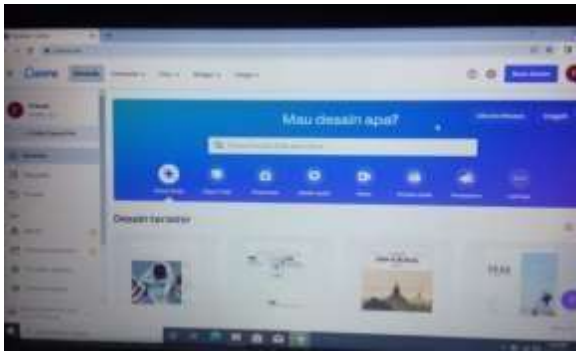
Table 3. Media planning stage

No	Overall aspect of the media	Description
1.	Template	Contains images contained in Canva app
2.	Media Content	The media content contains material and evaluation which amounted to 15 numbers.
3.	Video	The video in the media in the form of a digital magazine contains an explanation of the material, namely the dynamics of the Hydrosphere

Development Stage

Learning media that has been created and designed based on existing stages, so that it can produce a product such as digital magazine-based learning media using the Canva application on hydrosphere dynamics material (Herman et al., 2021).

Figure 1 and 2. Template selection



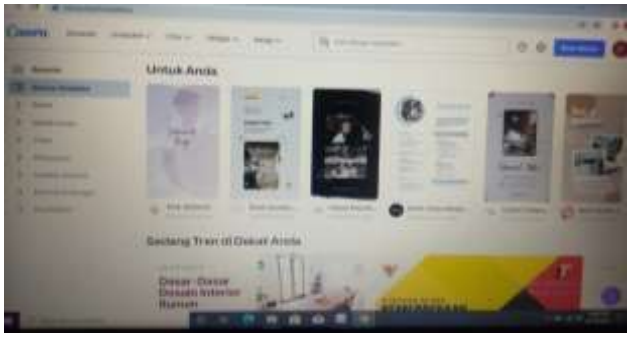


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Figure 3 Front view of the digital magazine

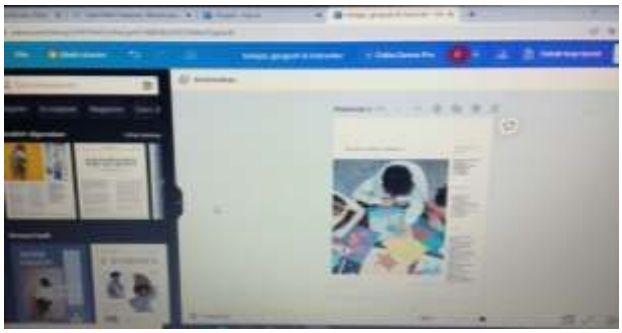

Figure 4 Material content in the digital magazine

Implementation Stage

The implementation stage is carried out by validating learning media on material experts and media experts. Validation of learning media is done on geography teachers

Media Expert Validation

Tabel 4. Media Expert Validation Assessment

Criteria	∑x	∑x¹	P (%)	Level of Validity	Description
Proportional layout (Text and image layout)	4	5	80	Valid	No revision
Background selection suitability	4	5	80	Valid	No revision
Appropriateness of color proportion	4	5	80	Valid	No revision
Suitability of typeface selection	3	5	70	Valid	No revision
Appropriateness of font size selection	4	5	80	Valid	No revision
Content arrangement Lesson	4	5	80	Valid	No revision
Ease of use of media magazine learning digital magazine	4	5	80	Valid	No revision
Ease of choosing program menu	4	5	80	Valid	No revision
Freedom to choose	4	5	80	Valid	No revision

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material learn					
Ease of interaction with program	4	5	80	Valid	No revision
Ease of exit of the program	4	5	80	Valid	No revision
	43	55	78,18%	Valid	No revision

From the table of media expert validation results, the results are 78, 18% which shows that all criteria have met the requirements for use as learning media. all criteria fall into the valid category so there is no need for further revisions to the media that have been made.

Material Expert Validation

Digital magazine-based learning media on hydrosphere dynamics material before conducting trials of course first validated by material experts, material expert validation aims to find out information, criticism and suggestions for the media that we will develop can be a quality product in the learning process.

Table 5. Material Expert Validation Assessment

Criteria	∑x	∑x¹	P (%)	Level of Validity	Description
Coverage (breadth and depth) of material content	4	5	80	Valid	No revision
The suitability of the material with the competency standards and basic competencies, indicators and learning objectives	4	5	80	Valid	No revision
The material presented can be easily understood	5	5	100	Very valid	No revision
Clarity of material content	5	5	100	Very valid	No revision
The description of the material presented in the learning media is clear and appropriate.	5	5	100	Very valid	No revision
The images presented in the learning media are in accordance with the material	4	5	80	Valid	No revision
The correctness of the content of the material	5	5	100	Very valid	No revision

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presented					
Exercise questions on learning media already suitable with the material	5	5	100	Very valid	No revision
Clarity of language used	5	5	100	Very valid	No revision
The attractiveness of images on Digital magazine media	4	5	80	Valid	No revision
Ease of choice Program menu	4	5	80	Valid	No revision
Clarity of information from Image illustration	4	5	80	Valid	No revision
	54	60	90%	Very valid	No revision

The results of the material expert validation obtained a score of 90% which stated that the material used in the media was in accordance with the curriculum or material in the syllabus or at school. Some criteria have even met the very valid category so that overall, the material is declared very valid.

Learning Expert Validation

The development products submitted to geography learning experts are in the form of interactive multimedia learning media based on digital magazines. The assessment of geography learning experts can include several aspects that can be shown through a questionnaire method with instruments so that it can generate data.

Table 6. Assessment by Learning Experts

Criteria	∑x	∑x¹	P (%)	Level of Validity	Description
The suitability of the material presented with the development of digital magazine-based learning media	4	5	80	Valid	No revision
The suitability of the material with indicators and learning objectives	5	5	100	Very valid	No revision
Digital magazine media is	5	5	100	Very valid	No revision

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easy to use in teaching geography					
The material presented is clear and easy to understand	4	5	80	Valid	No revision
The suitability of the material with pictures and videos	4	5	80	Valid	No revision
Exercise questions given in accordance with the content of the material	5	5	100	Very valid	No revision
The language used in digital magazine media is clear and easy to understand	4	5	80	Valid	No revision
Effectiveness of using digital magazine learning media in increasing students' interest in learning	4	5	80	Valid	No revision
Digital magazine learning media makes students active in learning	4	5	80	Valid	No revision
The learning media used is in accordance with the characteristics of students	4	5	80	Valid	No revision
	43	50	86%	Very valid	No revision

The learning expert validation gives a score of 86% or a very valid category and does not require further revision. From several criteria, it shows that the media is in accordance with technological developments and is able to provide a new look for a learning media.

Table 7. Results of Limited Scale Test Learner Response

Criteria	Percentage
Ease of understanding hydrosphere dynamics material in digital magazine learning media	73,33%
The balance of text in digital magazine learning media can be read clearly	68,33%
The attractiveness of the use of images	70,83%
The use of sentences and grammar to support understanding of the media	64,16%
Ease of media in the learning process	72,5%

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The attractiveness of the design	71,66%
The use of digital magazine media can provide enthusiasm in learning	63,33%
The use of sentences that can facilitate students in understanding	71,66%
Interest in learning material using digital magazine media	64,16%
Interest in learning geography lessons after using digital magazine media	70,83%
The use of digital magazine learning media helps younger siblings learn independently without the help of others	72,5%

Table 8. Learner Response Results General Scale Trial

Criteria	Percentage
Understanding of hydrosphere dynamics material in digital magazine learning media	73,33%
Balance of text in learning media digital magazine can be read clearly	63,33%
The attractiveness of the use of images	70,33%
Use of sentences and grammar to support understanding of the media	64,16%
Ease of media in the learning process	72,5%
The attractiveness of the design	71,66%
The use of digital magazine media can give enthusiasm in learning	63,33%
The use of sentences that can facilitate students in understanding	71,66%
Interest in learning material with using digital magazine media	64,16%
Interest in learning geography lessons after using digital magazine media	70,83%
The use of digital magazine learning media helps younger siblings learn independently without the help of others	72,5%

Students as test subjects gave varied assessments ranging from a score of 63.3% to the highest score of 72.5%. From this data, it shows that the media provides a positive response because it is the first time it is used, it can be received well by students.

Conclusion

Based on the results of the study, learning media in the form of digital magazines on hydrosphere dynamics material in high school, has been declared eligible for use. The value

of validation by learning experts gets a percentage of 86% seen from the level of validity included in the very valid category, then the validation value of media experts who get a percentage value of 78.18 is included in the valid category, and the validation value by material experts has a percentage value of 90% seen from the type of category included in the very valid category. So it can be concluded that the development of media in the form of digital magazines is feasible to use in the learning process.

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