1st BICONE (Bhinneka Conference)
Empowering Society 5.0: Education, Technology, and Social Transformation
Vol 1 No 1 , 2025

Development of Interactive Learning Media Using the Genially Website in Informatics Subject for Grade X at SMA Terpadu Sunan Ampel in the 2024/2025 Academic Year

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***Abstract*—This study aims to develop interactive learning media using the Genially website for Grade X Informatics subjects at SMA Terpadu Sunan Ampel in the 2024/2025 academic year. The background of this research is based on the need for more engaging, interactive learning aligned with technological advancements, considering the limitations of textbooks and the dominance of traditional teaching methods. The research method used is Research and Development (R&D) with the ADDIE model, which includes five stages: Analysis, Design, Development, Implementation, and Evaluation. The subjects of this study were Grade X students, involving data collection through observation, interviews, and questionnaires. The developed media was validated by experts and tested on students. Validation results show that the media expert provided a score of 95%, the material expert gave 99.2%, and user trials yielded 91.7% in the small group and 94.4% in the large group, with an overall average of 95%. These results indicate that the interactive learning media is in the "very feasible" category for classroom use. Therefore, the media developed by the researcher is highly suitable for use in interactive learning, especially in Informatics for Grade X students at SMA Terpadu Sunan Ampel.**

Keywords: learning media, Genially, interactive, informatics, development

I. INTRODUCTION

Education is essential for all humans to develop attitudes and shape behavior within society. To keep up with the times, a long and continuous learning process is required. In this era of globalization, education and technology go hand in hand. One of the technological advancements in the field of education is the use of learning media through websites or applications. However, the implementation of technology in the field of education in Indonesia still often faces challenges, especially [1].

Several schools still rely on traditional teaching methods, which tend to be monotonous. Therefore, the use of more dynamic and interactive technology—such as web-based platforms—is highly necessary to address this issue. Based on observations conducted by the researcher at SMA Terpadu Sunan Ampel, the teaching of Informatics in Grade X often faces challenges in delivering complex material in an engaging and easily understandable way, especially since not all students have textbooks. There are two subjects with a shortage of textbooks, namely Informatics and Mathematics. Hence, interactive learning media using the Genially website was developed to support the learning process at school.

The product developed was first tested by media experts and subject matter experts before being implemented to users. The users in this study were Grade X students of SMA Terpadu Sunan Ampel. This was done to assess the validity of the product so that it meets the needs of the students at SMA Terpadu Sunan Ampel when used.

II. RESEARCH METHOD

A. Type of Research

The interactive learning media using Genially was developed through a Research and Development (R&D) approach. The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) was used due to its specificity in developing instructional products that can be implemented effectively and its systematic stages [2]. According to [3], the ADDIE model is suitable for developing learning media using websites. The diagram below provides a more detailed explanation of the ADDIE model development flow.

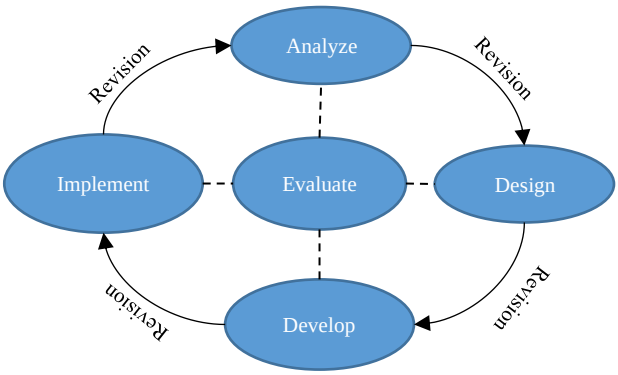


Figure I. ADDIE Model Flow [2]

B. Instrument

The instruments used in this research included an initial needs interview, a validation questionnaire for experts, and a feasibility questionnaire for users. The interview was

conducted with the Informatics teacher to find out the characteristics of the students.

The validation questionnaire consists of two types: one for media experts and one for subject matter experts. Its purpose is to collect data on the validity of the developed media. The feasibility questionnaire for users aims to gather data on whether the developed product is suitable for use or not.

C. Research Procedure

The research procedure was carried out through several stages: analysis, design, and development. The analysis stage was done through school observation and interviews with the Informatics teacher [12]. The purpose of this stage was to find out the characteristics of the students and to understand the material to be used. Next was the design stage, which involved creating a draft of the product to be developed [13]. This stage represents the creation of a conceptual design that serves as the foundation for the next development process. The needs analysis done earlier served as the basis for designing a product that matches the concept and goals of the learning media development. Then comes the development stage, where the designed product is ready to be implemented to users [14].].

The product went through a thorough evaluation to determine whether it was ready to be used and to ensure that all components worked properly. Before being applied to users, the product was reviewed by several experts. These included media experts and subject matter experts. The developed media was assessed for its validity by the experts. Their suggestions were used as references to evaluate and improve the product until it was considered ready for implementation. Next, the implementation stage was carried out. The product was implemented in a classroom during the learning process. It was tested on Grade X students of SMA Terpadu Sunan Ampel in the Informatics subject. After that, students were given a questionnaire to assess the feasibility level of the learning media when used [15]

D. Analysis

- **Needs Analysis**

  Needs analysis is an analysis that aims to analyze the needs required in operating the developed interactive learning media. It includes the devices needed to access the media.

Table I. Minimum Device Specifications Required

Processor	Intel core i gen4
RAM	4GB
HDD	500GB
Operating System	Windows 10

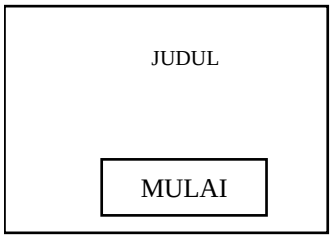
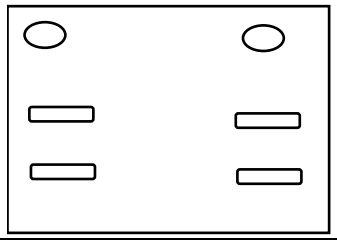
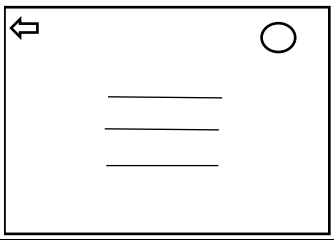
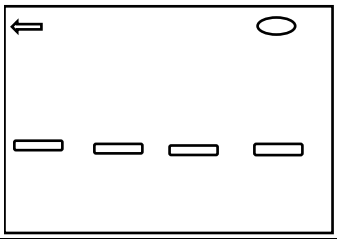
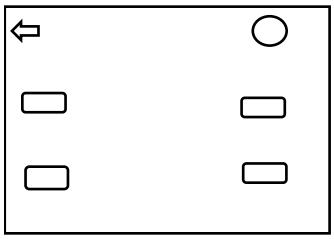
- **Curriculum Analysis**

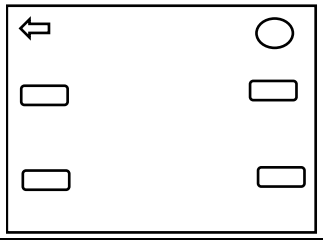
Curriculum analysis was carried out by reviewing the curriculum used at SMA Terpadu Sunan Ampel. The curriculum implemented at SMA Terpadu Sunan Ampel is the Merdeka Curriculum.

E. Design Stage

In the design stage, the researcher designed the learning media based on the previous analysis and the learning competencies [11]. The media was designed to present the material optimally, be easy for students to understand, and include a tutorial on how to use it [4].

Table II. Storyboard Table

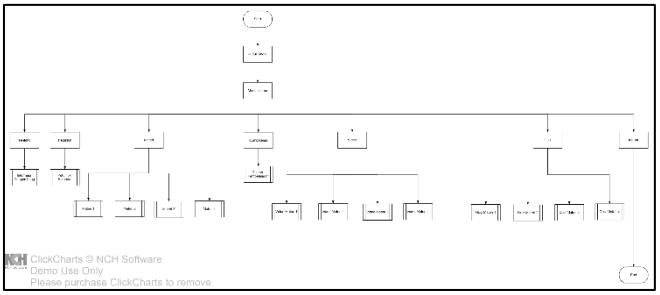
No	Image	Page	Description
1.		Home Page	The home page displays the title of the material and a start button that directs to the main page.
2.		Main Page	The main page contains several navigation buttons.
3.		Competency Page	The competency page displays the competencies related to the material.
4.		Material Page	The material page contains several material options.
5.		Video Page	The video page displays a selection of material videos.

No	Image	Page	Description
6.		Quiz Page	This page displays quiz options based on the learning materials available in the media.

F. Development Stage

In this development stage, the initial product design is turned into a complete product according to the design that was previously created, with the help of a flowchart [9]. Next, the design is transformed into learning media that is ready to be used by students.

Figure II. Flowchart Diagram



G. Implementation Stage

At the implementation stage, the product that had previously been tested by experts [10] was applied, including a media expert from Universitas Bhinneka PGRI Tulungagung and a subject matter expert who is a teacher at SMA Terpadu Sunan Ampel.

The assessment used questionnaires to determine validity from the experts and feasibility from the users. The results of this testing were used to evaluate the product in case it was found to be lacking or unsuitable [5].

H. Evaluation Stage

The evaluation stage is conducted at the end of each phase. If evaluation is not needed at a certain phase, it can be skipped or proceed directly to the next stage [2]. If there is a need for evaluation at the end of a phase, it must be completed first before moving on to the next stage. All feedback and suggestions are used to improve and refine the product.

I. Data Collection Stage

In the data collection stage, this research used statement questionnaires. There were three types of questionnaires: for media experts, subject matter experts, and users. The assessment used a four-point scale to eliminate the possibility of respondents choosing a neutral value. The scoring for each questionnaire was calculated using the following formula [6].

$$P=\frac{F}{N}X100$$

Description:

P= Percentage

F= Total Score

N= Maximum Score

After obtaining the percentage of feasibility data, the final stage involves converting the percentage data into feasibility ratings for users and validity ratings for media and subject matter experts. These ratings indicate the quality of the product produced, based on the rating scale measurements or the criteria stated in the table below.

Table III. Feasibility Criteria Table [6]

No	Percentage	Criteria
1.	<25%	Not Feasible
2.	26%-50%	Less Feasible
3.	51%75%	Feasible
4.	76%-100%	Very Feasible

Table IV. Validity Criteria [7]

No	Percentage	Criteria
1.	Less than 60%	Not Valid
2.	60%-69%	Less Valid
3.	70%-79%	Quite Valid
4.	80%-89%	Valid
5.	90-100%	Very Valid

III. RESULTS AND ANALYSIS

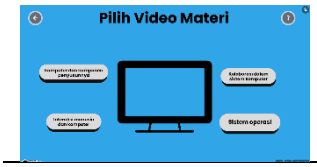
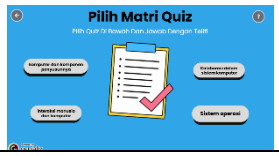
This section contains the research results and analysis related to those results. The research findings can be presented using images, graphs, tables, or other forms to help readers better understand the research outcomes. The Results and Analysis section can consist of several subsections. Below is an overview of the media that has been developed.

A. System Evaluation

This stage is the final step in developing a media design, which is a system evaluation to ensure that the developed learning media is appropriate and has met quality standards [8]. At this stage, the media is published and distributed to respondents in the form of a link.

Table V Interactive Learning Media Table

Figure	Description
	Initial Page of the Interactive Learning Media
	The main menu contains 4 buttons: • Competencies • Materials • Video • Evaluation • Developer

Figure	Description
	Sub-Material Selection Page. Menu options are available according to the material.
	Video Selection Page. Displays video options that align with the material.
	Quiz Selection Page. Displays quiz options that align with the material.

B. Testing

- **Media Expert 1**

Table VI Media Expert 1

Score Obtained	Maximum Score
63,75	64
Percentage	99,6%
Criteria	Very Valid

$$\text{Percentage} = \frac{f}{n} X100$$

$$\text{Percentage} = \frac{63,75}{64} X100 = 99,6\%$$

The first media expert validation conducted by the researcher obtained a score of 99.6%. Based on this score, the media is categorized as very valid. The percentage score was given by Mr. Fahrur Rozi, M.Kom, as Media Expert 1 and also a lecturer at Universitas Bhinneka PGRI..

- **Media Expert 2**

Table I Media Expert 2

Score Obtained	Maximum Score
58	64
Percentage	90,6%
Criteria	Very Valid

$$\text{Percentage} = \frac{f}{n} X100$$

$$\text{Percentage} = \frac{58}{64} X100 = 90,6\%$$

The second media expert validation conducted by the researcher obtained a score of 90.6%. Based on this score, the media is categorized as very valid. The percentage score was given by Dr. Abdul Haris Indrakusuma, M.Pd, as Media Expert 2 and also a lecturer at Universitas Bhinneka PGRI.

- **Material Expert**

Table II Material Expert

Score Obtained	Maximum Score
67,5	68
Percentage	99,2%
Criteria	Very Valid

$$\text{Percentage} = \frac{f}{n} X100$$

$$\text{Percentage} = \frac{67,5}{68} X100 = 99,2\%$$

The material expert validation conducted by the researcher obtained a score of 99.2%. Based on this score, the media is categorized as very valid. The percentage score was given by Mr. Mohamad Shodik, S.Kom, as the Material Expert and also as the Informatics subject teacher for Grade X at SMA Terpadu Sunan Ampel.

- **Product Testing Results**

Table III Small Group Trial Results

Score Obtained	Maximum Score
106,4	116
Percentage	91,7%
Criteria	Very Feasible

$$\text{Percentage} = \frac{f}{n} X100$$

$$\text{Percentage} = \frac{106,4}{116} X100 = 91,7\%$$

The small group trial conducted by the researcher with 5 students obtained a percentage score of 91.7%. Based on this score, the media is categorized as very feasible..

Table IV Large Group Trial Results

Score Obtained	Maximum Score
109,6	116
Percentage	94,4%
Criteria	Very Feasible

$$\text{Percentage} = \frac{f}{n} X100$$

$$\text{Percentage} = \frac{109,6}{116} X100 = 94,4\%$$

The large group trial conducted by the researcher with 15 students obtained a percentage score of 94.4%. Based on this score, the media is categorized as very feasible.

From the results of Media Expert 1, Media Expert 2, the Material Expert, the Small Group Trial, and the Large Group Trial, an average percentage score of 95% was obtained. Referring to the feasibility criteria table, this score falls under the "Very Feasible" category..

Based on these results, the development of interactive learning media using the Genially website for the Grade X Informatics subject at SMA Terpadu Sunan Ampel is considered very feasible for use in the learning process.

IV. CONCLUSION

This study shows that the interactive learning media using the Genially website for the Grade X Informatics subject at SMA Terpadu Sunan Ampel achieved excellent results, as evidenced by the attached trial results.

Media Expert 1 scored 99.6% with a "Very Valid" criterion, Media Expert 2 scored 90.6% with a "Very Valid" criterion, the Material Expert scored 99.2% with a "Very Valid" criterion, the small group trial scored 91.7% with a "Very Feasible" criterion, and the large group trial scored 94.4% with a "Very Feasible" criterion. These results demonstrate that the developed media is valid and feasible for use in the learning process.

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