Development of Google Sites-Based E-Learning with TIME Learning Model

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Abstract. This research is a Google Sites-based E-Learning with TIME Learning Model development research in Informatics Class X SMKN 10 Garut. The purposes of this study are (1) to know and see the results of the development of Google Sites-Based E-Learning with TIME Learning Model in Informatics Subject Class X SMKN 10 Garut. (2) Knowing the feasibility of Google Sites-Based E-Learning with TIME Learning Model in Class X Informatics Subject at SMKN 10 Garut. (3) Knowing the responses of class X informatics teachers and students' responses to Google Sites-Based E-Learning with TIME Learning Model in Class X Informatics Subject at SMKN 10 Garut. With this Google Sites-based E-Learning, teachers and students can carry out learning independently, learning can be carried out effectively and efficiently and can be accessed anytime anywhere by students. The research method used is Research and Development (R&D) with the ADDIE development model which consists of five stages, namely Analysis, Design, Development, Implementation, and Evaluation. At the implementation stage, researchers conducted 3 trials with a total of 52 students. The results of this study obtained a validation value by material experts, namely 95.00% with the criteria "Very Valid", the validation value by media experts was 94.55% with the criteria "Very Valid", the value of the first trial was 94.00% with the criteria " Very Good", the second test score was 92.00% with the "Very Good" criterion, and the third trial score was 88.00% with the "Very Good" criterion. This shows the success of researchers in developing Google Sites-based E-Learning in class X class X SMKN 10 Garut, and the feasibility of Google Sites-based E-Learning learning media, and students are very interested in using Google Sites-based E-Learning.

Keywords: E-Learning, Google Sites, Informatics, TIME Learning Model, ADDIE

1   Introduction

Merdeka Belajar is a government program that provides freedom in learning, that is, it can be anywhere, and from any source. According to Rian Iwinsyah (2020), independent learning is one of the initiatives of the Minister of Education and Culture who wants to create a happy learning atmosphere and a happy atmosphere. The purpose of

independent learning is so that teachers, students, and parents can have a happy atmosphere. "Freedom learns that the educational process must create happy atmospheres."

Teachers need to be encouraged to apply various innovative learning models that enable students to learn more independently according to their abilities and potential. Moreover, the learning model that utilizes the development of ICT is already growing rapidly and can be utilized in learning. With ICT the learning process will occur easily and it is very possible for students to learn independently and of course learning is happier because of course children are more motivated to learn with technology, especially the internet and gadgets. Therefore, to realize this, teachers must have the ability to integrate information and communication technology in learning. In this case, the existence of ICT is not as a subject, but integrated in learning.

There are many innovative learning models that utilize ICT in learning, one of which is the learning model.

In the Blended Learning Learning Model Module, Pustekkom, 2019, according to Garner &; Okay (2015), Blended learning is a learning environment that is designed to integrate face-to-face (F2F) learning with online learning that aims to improve student learning outcomes. Meanwhile Carman (2005) explains the five main keys in the Blended learning learning process by applying the learning theory of Keller, Gagné, Bloom, Merrill, Clark and Gery, namely: (1) Live Event, direct or face-to-face learning synchronously at the same time and place or the same time but different places, (2) Self-Paced Learning, which combines self-paced learning that allows students to learn anytime, anywhere online, (3) Collaboration, combines collaboration, both teacher- students and collaboration between students, (4) Assessment, the teacher must be able to mix a combination of online and offline assessment types both tests and non-tests (class projects) and (5) Performance Support Materials, make sure learning materials are prepared in digital form, can be accessed by students both offline and online. (Blended Learning Learning Model, Pustekkom, 2019). Based on the definition above, it can be concluded that the Blended learning model is a learning model that combines face-to-face learning in class as usual with online (virtual) learning. So in the process besides students studying in class according to the schedule that has been made, there is online learning that is carried out outside of study hours. Online learning can be used to provide material or information from teachers regarding material, discussion forums, assignment assignments and assignment assignments by students. Not only that, independent learning is a government program that provides freedom in learning, which can be anywhere, anytime and from any source. One of them is by utilizing digital technology by utilizing the Google Workspace for Education platform or with a studi.id account

The features of Workspace for Education or you can use this id learning account such as Google Classroom, Google Drive, Gmail, Calendar, Google Office (Docs, Spreadsheets, Slides), Google Sites.

These various service features can be used by teachers to study and utilize them in facilitating online learning. Online learning in Blended learning can be maximized by teachers to allow students to learn more independently, not bound by time and place, can be anytime and anywhere according to students' abilities, and this can be a solu-

tion to limited time in class which is often a complaint for some teachers in achieving learning goals .

In the end, an innovative learning model with Blended learning can be an alternative that can be implemented by teachers in learning and can allow students to be independent in learning because with Blended learning, apart from students studying in class as usual, students can also learn online independently, freely looking for sources of material. and information to complete class assignments, independently use gadgets as media and learning resources according to the tendency of millennial children who prefer to learn with gadgets, and students can freely determine their own schedule when to access their online classes and where they will access them

One of the information and communication technologies that can be used in the field of Education in learning is Google Sites-based E-Learning

E-Learning is a combination of 2 words, namely electronic and learning. Literally, E-Learning is electronic learning or teaching and learning process that is carried out online. In practice, E-Learning utilizes information technology as a learning tool. Just like online principles in other media, the teaching and learning process in E-Learning can be done by anyone, anywhere, and anytime.

Google Sites is one of the Google Workspace for Education services which has various advantages including the application is free, easy to use, can be managed together or can collaborate in its management. (Putri, 2021) states that websites made with Google Sites can be used as learning media. Teacher creativity will become a media website with Google Sites integrated with several other services and applications. On learning websites or E-Learning teachers can link Youtube videos, include online assessments with Google Forms, Google docs files for students to collaborate on learning, etc.

So that with the existence of information and communication technology in the field of education that can be used in learning in the form of E-Learning, the researchers want to develop Google Sites-Based E-Learning in Informatics Subject Class X SMKN 10 Garut. Based on the results of the needs analysis from previous observations and open interviews conducted by researchers that the learning process in Informatics class X at SMKN 10 Garut, namely the teacher uses more lecture methods in class and the learning resources used in class are still very limited such as textbooks and learning is not student-centered (Teacher Centered Learning) so that students in learning become bored and feel bored, Material sources are fixated on one source, namely gifts from the teacher so that students are less creative in finding various learning resources, and assignment collection is not neat or scattered because only use a piece of paper as a collection task. With this Google Sites-based E-Learning, teachers and students can carry out learning independently, learning can be carried out effectively and efficiently and can be accessed whenever and wherever students are.

Some of the formulation of the problem in this study are as follows.

1. What are the results of Google Sites-Based E-Learning Development with TIME Learning Model in Informatics Subject Class X SMKN 10 Garut?
2. What is the feasibility of Google Sites-Based E-Learning with TIME Learning Model in Class X Informatics Subject at SMKN 10 Garut?
3. What is the response of class X informatics teachers and students' responses to

Google Sites-Based E-Learning with TIME Learning Model in Class X Infor-matics Subject at SMKN 10 Garut?

Based on the research background above, researchers are interested and need to do research and develop Google Sites-based E-Learning for Informatics Subjects, the research is entitled "Development of Google Sites-Based E-Learning with TIME Learning Model in Informatics Subject Class X SMKN 10 Garut".

2   Procedure for Paper Submission

This research belongs to the type of development known as Research and Develop-ment or abbreviated as R&D. This method has the goal of producing a product and testing the feasibility of the product to be developed. The product developed by the researcher is Google Sites-Based E-Learning in Informatics Class X at SMKN 10 Garut.

The implementation of research conducted through the stages of ADDIE develop-ment is as follows

2.1   Analysis Stage

The analysis phase aims to find out that it is necessary to develop Google Sites-Based E-Learning with TIME Learning Model in Informatics Subject class X SMKN 10 Garut. At this stage preliminary research will be carried out such as conducting inter-views with subject teachers and observing the learning conditions of students in class. Preliminary research is expected to be able to obtain aspects of needs analysis and curriculum aspects.

2.2   Design Stage

At this design stage, the design of the E-Learning framework that will be developed is carried out. Products designed at this stage will not be separated from the needs anal-ysis data. This stage is the creation of a Google Sites-based E-Learning development design. The design will be made as attractive as possible and as good as possible so that it becomes a quality E-Learning. The design stage is as follows.

1. Preparation of informatics teaching modules for class X SMK independent cur-riculum in contextual learning by examining learning objectives, elements and learning outcomes to determine learning materials based on facts, concepts, principles and procedures as well as learning time allocation
2. Designing a learning flow in e-learning informatics based on Google Sites with TIME Learning Model
3. Designing flowchart e-learning based on google sites with TIME Learning Model
4. Create a google sites-based e-learning with TIME Learning Model storyboard

2.3   Development Stage

The development stage is a development made based on the results of the design stage which will become the initial product in the form of E-Learning using Google Sites. In the development stage there are 3 activities as follows.

1)   Product Manufacturing and Development

The product to be developed is E-Learning Google Sites with TIME Learning Model. At this stage, Google Sites-based E-Learning products will be produced which contain subject matter, attendance, assignment submissions and G-Meet links for meeting links.

2)   Validation

This stage has the aim of measuring the feasibility of the E-Learning that will be developed and to get product improvement suggestions before being tested on students. The product to be developed is validated by material and media experts

3)   Revision of Validation Results

Products that have been validated by the validator team and get suggestions for improvement, the next step is to make revisions to improve the product in accordance with the criticisms and suggestions given

2.4   Implementation Stage

This implementation phase will be carried out in 3 trials, the first trial involving one class, the second trial namely adding one more class so that it becomes 2 classes and the third trial involving 3 class X Informatics at SMKN 10 Garut with research subjects in class X informatics subject. The trial phase is carried out after the product being developed has been improved. After completing the trial, students' responses were taken through a questionnaire

2.5   Evaluation Stage

Evaluation is the final step of the ADDIE development model. Based on the results of the implementation phase, Google Sites-based E-Learning will be finalized if there are suggestions for improvement from media experts, subject matter experts and student responses.

The data collection method that will be used in this study is the questionnaire technique or online questionnaire. The questionnaire was addressed to media experts and subject experts as well as trials to students. The questionnaire is in the form of a list of questions via online using Google Form which must be responded to by media experts and subject experts as well as trials on students. Media experts and subject matter experts respond by choosing alternative answers that already exist. The instrument was compiled to determine the feasibility of developing E-Learning which was developed as a learning media in the classroom.

1)   Media expert survey grid according to (Roni, 2022)

Table 1. Media expert survey grid according to (Roni, 2022)

Aspects	Statement Indicators	Value Score				
		1	2	3	4	5
Uses	Ease of accessing website addresses	1	2	3	4	5
	Efficient use of WEB (Google Sites)	1	2	3	4	5
	Ease of use menu	1	2	3	4	5
Navigation System	User interaction with WEB (Google Sites)	1	2	3	4	5
	Suitability or regularity of the contents WEB (Google Sites)	1	2	3	4	5
	The truth or authenticity of the contents of WEB (Google Sites)	1	2	3	4	5
Visual Design	Simplicity and attractiveness WEB (Google Sites)	1	2	3	4	5
	Use of attractive layouts	1	2	3	4	5
	Attractive text display	1	2	3	4	5
	Image quality on the contents WEB (Google Sites)	1	2	3	4	5
	Learning video quality	1	2	3	4	5

2)   Assessment questionnaire by Subject Experts

Table 2. Assessment questionnaire by Subject Experts

Aspects	Statement Indicators	Value Score				
		1	2	3	4	5
Learning Design	Clarity of learning objectives	1	2	3	4	5
	Digital age learning principles	1	2	3	4	5
	Material tuning	1	2	3	4	5
Content	Quality of material content	1	2	3	4	5
	The truth or authenticity of the material	1	2	3	4	5
	Scope and depth of material	1	2	3	4	5
Language and Communication Learning Design	Language Correctness	1	2	3	4	5
	Stylistic conformity	1	2	3	4	5
	Completeness of sentences	1	2	3	4	5
	Accuracy of learning redaction	1	2	3	4	5
	Clarity of learning objectives	1	2	3	4	5

3)   Student response questionnaire

Table 3. Student response questionnaire

No.	Aspects	Value Score				
		1	2	3	4	5
1	The appearance of the Google Sites page makes me eager to learn	1	2	3	4	5
2	The varied content of WEB (Google Sites) makes for a fun learning gym	1	2	3	4	5
3	Completeness of media and teaching materials	1	2	3	4	5
4	Very clear and good writing and media quality	1	2	3	4	5
5	The media provided is simple and accessible	1	2	3	4	5
6	Material made according to its affairs	1	2	3	4	5
7	The material is made clear, easy to understand	1	2	3	4	5
8	Learning media WEB (Google Sites) can be used as a guide for teachers in learning activities in the current era	1	2	3	4	5
9	Learning activities become varied with the help of WEB (Google Sites)	1	2	3	4	5
10	The usefulness of learning media content	1	2	3	4	5

Data analysis techniques in this study used quantitative analysis techniques. Quantitative analysis is used to describe the quality of the Google sites-based E-learning based on media experts, material experts and student responses.

1)   Guidelines for media validity (Lestari et al., 2018)

Table 4. (Lestari et al., 2018)

Interval	Validity Criteria	Interval
< 54%	Highly Invalid	< 54%
55% – 64%	Less Valid	55% – 64%
65% – 60%	Quite Valid	65% – 60%
80% – 89%	Valid	80% – 89%
90% -100%	Highly Valid	90% -100%

2)   Criteria for student response values (Darmawan, 2021)

Table 5. (Darmawan, 2021)

Scale	Achievement Level	Interpretation
5	80% - 100%	Very Good (SB)
4	60% - 79,99%	Good (B)
3	40% - 59,99%	Simply (C)
2	20% - 39,99%	Less (K)
1	0% - 19,99%	Very Less (SK)

3   Results and Discussion

3.1   Research Result

As discussed in the previous chapter, this research includes R&D research using the ADDIE model development. The product being developed is E-Learning based on Google Sites, Class X Informatics Subject at SMKN 10 Garut. Based on the research and development that has been completed, the following research results are obtained:

3.2   Analysis

At this stage the researcher analyzes and collects data or collects information that will be used as support for product development. The collection of information obtained is in the form of curriculum analysis and needs analysis for the use of instructional media used at SMKN 10 Garut. So that it will be easy to develop technology-based learning media in informatics lessons. The results of the analysis are:

a. Curriculum Analysis

The curriculum analysis used at SMKN 10 Garut is the Merdeka Curriculum. The parts of the curriculum that were analyzed were the curriculum phases, learning outcomes, learning objectives, indicators of achievement of learning objectives and core activities.

This curriculum is designed to create creativity as well as flexibility for teachers to adapt to the conditions of the education unit.

The phase used is Phase E of Class X Informatics Subject and the Learning Achievements are as follows.

1) At the end of phase E, students are able to apply standard algorithmic strategies in everyday life and their implementation in computer systems, to generate several problem solutions with large volumes of discrete data.
2) At the end of phase E, students are able to utilize various applications simultaneously and optimally to communicate, search for information on the internet, and are proficient in using advanced features of office applications (word processing, numbers, and presentations) along with their automation to integrate and present application content in various representations that facilitate the analysis and interpretation of the content.
3) At the end of phase E, students are able to explain how the computer works and each of its components, explain the role of the operating system and the internal mechanisms that occur in the interaction between hardware, software and users.

b. Needs Analysis

The results of the needs analysis based on interviews show that the learning process in Informatics class X SMKN 10 Garut uses more lecture methods in class and the learning resources used in class are still very limited, such as textbooks and learning that is not student-centered (Teacher Centered Learning). students in learning become

bored and feel bored, the source of the material is fixated on one source, namely a gift from the teacher so that students are less creative in finding various learning sources, and the collection of assignments is not neat or scattered because they only use a piece of paper as a collection of assignments

With this Google Sites-based E-Learning, teachers and students can carry out learning independently, learning can be carried out effectively and efficiently and can be accessed whenever and wherever students are.

3.3   Design

The design phase carried out several stages made by researchers, namely:

a. Preparation of informatics teaching modules for class X SMK independent curriculum in contextual learning by examining learning objectives, elements and learning outcomes to determine learning materials based on facts, concepts, principles and procedures as well as learning time allocation

b. Designing Learning Flow in Google Sites-Based E-Learning Informatics. Learning Flow in Information E-Learning Based on Google Sites, namely when students are on E-Learning, students choose material, then enter the meeting, followed by entering learning objectives, subjects, exercises and attendance using the Quiziz application and Google Form for attendance and conduct Video Conferences and WhatsApp Live Chat. After students finish all of this, they can proceed to the next meeting.

c. Designing a Google Sites-based E-Learning Flowchart.
Google Sites-Based E-Learning Flowchart Design In the informatics class X class of SMKN 10 Garut, they are as follows.
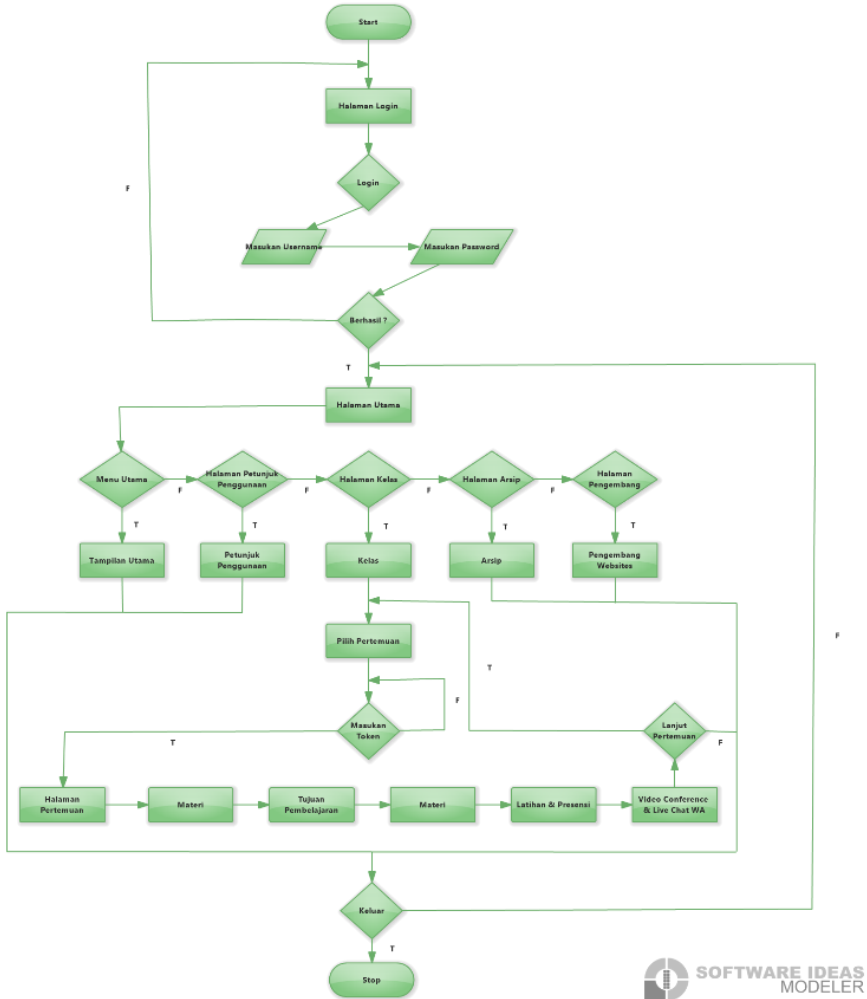
d. Create Google Sites-based E-Learning Storyboards.
The tools and Storyboards used in Google Sites-based E-Learning are as follows.

1) Google Sites Based E-Learning Development Tools and Materials. Tools and materials for the development of E-Learning are as follows.
a) Google Chrome browser
b) Internet Connection
c) Notepad++ app
d) Programming Language: HTML, CSS and JavaScripts
e) Images, icons and learning videos that are relevant to the material
f) Google Forms, Google Drive, Google Sites, Canva, Emojipedia
g) Class X SMK 2021 Informatics Material Book

h) Class X Semester II Teaching Module
i) Laptops and Smartphones
j) Microsoft Word 2021

2) Storyboard

Table 6. Storyboard

No	Page Name	Picture	Information
1	Input Page		This input page is the earliest page of this E-Learning, accompanied by a background. Before the user enters the Main Menu page, the user must fill in the usrname with "admin" and his password "smkbisa"
2	Main Menu Page		This page serves as the first page after the input page. On this Main Menu page has also appeared Clickable Menu Bar, learning motivation and other Menu Options.
			This Menu option is located on the Main Menu page where this menu option serves to go to the use, class and archive reference pages
3	How-to page		This page serves to display information on how to use this E-Learning
4	Class Page		This page serves to select classes according to their level
			This page is on the meeting page, this page is also used when the user selects meeting material. On this page there is a picture of the learning path. When the user clicks in, it will display the learning objectives page, material page, Practice & attendance page and VC &; Live Chat page along with a button like next previous
	Enter Token		This page appears when the user clicks the Advanced Meeting button and selects Meeting Material

No	Page Name	Picture	Information
5	Archive Page		This page serves to store various data and reference sources used in this E-Learning
6	Development Page		This page serves to display this E-Learning developer information

3.4   Development

Development is the stage to realize what was made in the previous stage (design stage) to get the contents of a product with good quality. The results of the development or development stage are as follows.

a. Product design development

The resulting product is Google Sites-based E-Learning learning media for class X informatics subjects. When developing product designs, researchers develop them by paying attention to UI/UX (User Interface/User Experience) or paying attention to interfaces and experiences. Like the layout, the choice of blue color is because it is based on SMKN 10. It has a dominant blue color, this can be seen from the color of one of the uniforms which is blue and gray pants, and the next previous button which is on the material is placed below so that the user is directed to read or understand first before moving to the next page.
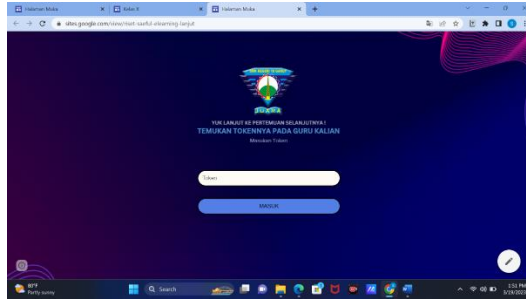
b. display of E-Learning on Students
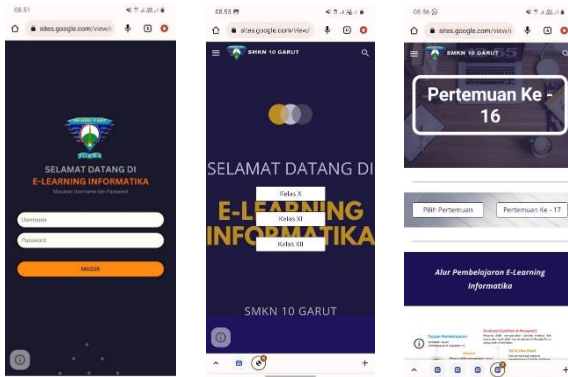
c. Product Validation

The initial product that has been developed is then validated by a team of experts. The purpose of validation is to get a media feasibility and get input suggestions to improve the weaknesses of the product that has been developed. Validation activities are carried out by providing or showing the initial product equipped with an online validation questionnaire to the validator to measure the level of validity of the media developed before it is carried out to the trial stage on students. The data validator that validates this media is as follows.

3.5   The results of obtaining validation by material experts

Material validation was carried out by 2 people, namely Dr. Deden Suhendar, A.Md, S.Pd, M.Pd. informatics teacher at SMK Negeri 10 Garut as validator 1, and Mr. Muhammad Ihsan Sibaweh, A.Md, S.ST, M.Pd. Telecommunications Computer Network Engineering (TJKT) teacher at SMK Negeri 10 Garut as validator 2. Following are the results of the validation of Google Sites E-Learning media material in this table.

Table 7. Expert materiAcquisition of Value by material experts

Aspects	Indicators	Validators	
		V1	V2
Learning Design	Clarity of learning objectives	5	5
	Digital age learning principles	4	5
	Material tuning	5	5
Content	Quality of material content	5	5
	The truth or authenticity of the material	4	5
	Scope and depth of material	4	5
Discussion and Communication	Language Correctness	5	5
	Stylistic conformity	4	5
	Completeness of sentences in the material	4	5
	Accuracy of learning redaction	5	5
Number of Scores		45	50
Number of Validations=(Number of Scores Obtained)/(Number of Highest Scores) x 100%=		95,00%	
Category		Highly Valid	

Based on the table, it can be seen that the total value of validator 1 is 45 out of the highest score of 50. The total value of validator 2 is 50 out of the highest score of 50. It can be concluded that based on the formula, the validation value reaches 95.00% meaning that E-Learning media material is based on Google Sites this is included in the Very Valid category and is suitable for use in learning.

3.6 Validation results by media experts

Media validation was carried out by 2 people, namely Mrs. Siti Husnul Bariyah, S.Kom., M.Pd. information technology Education lecturer as validator 1, and Mr. Muhammad Ihsan Sibaweh, A.Md, S.ST, M.Pd. teacher of Telecommunications Computer Network Engineering (TJKT) SMK Negeri 10 Garut as validator 2. Following are the results of validation of Google Sites-Based E-Learning media.

Table 8. Acquisition of Value by media experts

Aspects	Indicators	Validators	
		V1	V2
Uses	Ease of accessing website addresses	5	5
	Efficient use of WEB (Google Sites)	5	5
	Ease of use menu	5	5
Navigation System	User interaction with WEB (Google Sites)	5	5
	Suitability or regularity of the contents WEB (Google Sites)	5	5

		5	5
	The truth or authenticity of the contents of WEB (Google Sites)	5	5
Visual Design	Simplicity and attractiveness WEB (Google Sites)	4	5
	Use of attractive layouts	4	5
	Attractive text display	4	4
	Image quality on the contents WEB (Google Sites)	4	5
	Learning video quality	4	5
Number of Scores		50	54
Number of Validations=(Number of Scores Obtained)/(Number of Highest Scores) x 100%=		94,55%	
Category		Highly Valid	

Based on the table, it can be seen that the total value of validator 1 gets a value of 50 from the highest score of 55, the total value of validator 2 gets a value of 54 from the highest score of 55. It can be concluded based on the formula, the validation value reaches 94.55% meaning that this Google Sites-based E-Learning media in the category of Very Valid and feasible to be applied in learning

3.7   Implementation

After the product has been validated by the validator and has been revised, the next stage is the researcher implementing it. Where the implementation stage is a trial phase in 3 classes carried out at SMK Negeri 10 Garut, the first trial phase involves students namely class X TJKT 1 with 21 people, the second trial stage is class X TJKT 2 with 14 people and the trial phase the third is class X TJKT 3 as many as 17 people. So that there are a total of 52 students in this trial phase.

a.   First trial phase

Table 9. First trial phase

Students	Question Indicator										Total Score	Average
	1	2	3	4	5	6	7	8	9	10		
Abdi Duy Priyadi Putra	4	4	5	4	5	5	4	4	5	4	44	4,4
Asep Ridwanulloh	5	5	5	5	5	5	3	5	3	5	46	4,6
Badrul Umam	5	5	5	4	5	5	4	5	5	4	47	4,7
Devina Amelia Princess	5	5	4	4	4	5	4	5	4	5	45	4,5
Fahmi Prayogi	4	5	4	5	4	5	4	5	4	5	45	4,5

Fawwaz Khafithul Haq	5	5	4	4	4	5	4	5	4	5	45	4,5
Firgiansyah Nurul Alfath	4	5	4	4	5	4	5	4	4	5	44	4,4
Gilang Muslim Riyadi	4	5	4	5	4	5	4	5	4	5	45	4,5
Hani Khoerunnisa	4	4	4	5	5	4	4	4	4	4	42	4,2
Ihsan	4	5	5	4	5	5	5	5	5	4	47	4,7
Juliana Shaima Mulya Lestari	4	3	4	5	3	5	5	5	5	4	43	4,3
Julyana Shaima Mulya Lestari	5	5	5	5	5	5	5	5	5	5	50	5
Kartika Barrel	5	5	5	5	5	5	5	5	5	5	50	5
Muhammad Rizal Safari	4	5	5	4	5	4	4	5	5	4	45	4,5
Muhammad Andi Abdillah Husaeni	5	5	5	5	5	5	5	5	5	5	50	5
Nurdini Hafsari	5	5	5	5	5	5	5	5	5	5	50	5
Rifal Rizki Ramdan	5	5	4	5	5	4	5	5	4	5	47	4,7
Silpia Putri Lestari	4	5	4	5	5	4	5	4	4	4	44	4,4
Siti Reni Nurjanah	5	5	5	5	5	5	5	5	5	5	50	5
Syriac	4	5	5	4	5	5	5	5	5	5	48	4,8
Zayyin Akhsan Maulana Rahayu	5	5	5	5	5	5	5	5	5	5	50	5
Total Overall Score											977	
Average total score											4,7	
Percentage											94,00%	

Based on the table above, the total average score of the 21 students who participated as samples has received a total average score of 4.6. Then the percentage is calculated, namely getting a result of 94.00%. This means that the Google Sites-based E-Learning learning media is included in the "Very Good" category.

b.   Second trial phase

The second trial was Class X TJKT 2, totaling 14 people. This trial was carried out after the first trial

Table 10. Second trial phase

Students	Question Indicator										Total Skor	Averagea
	1	2	3	4	5	6	7	8	9	10		
Aulia	5	5	5	5	5	5	5	5	5	5	50	5
Chelsea Fauziah Princess	5	5	5	5	4	4	5	5	4	5	47	4,7

Debby Andara Aprilianti	5	5	5	5	5	5	5	5	5	5	50	5
Fadlan Anfa Qur-robi	3	3	3	3	3	3	3	3	3	3	30	3
Fahri Muhammad Ramdan	5	5	5	4	5	5	5	5	5	5	49	4,9
Fian Sofiyan	5	5	5	5	5	5	5	5	5	5	50	5
Giri Muhammad	3	3	3	3	3	3	3	3	3	3	30	3
Irgi Aryansyah	5	5	5	5	5	5	5	5	5	5	50	5
Moh Anggara Denata Putra	5	5	5	5	4	5	4	4	5	4	46	4,6
Nurul Fadilah	5	5	5	5	5	5	5	5	5	4	49	4,9
Maesha Nafisyah's Twilight	5	5	5	5	5	5	5	5	5	5	50	5
Siti Supartini	5	5	5	5	5	5	5	5	5	5	50	5
Sulaeman Alimudin	5	4	4	5	3	5	3	5	4	5	43	4,3
Tiara	5	5	5	5	5	5	5	5	5	5	50	5
Total Overall Score											644	
Average total score											4,6	
Percentage											92,00%	

Based on the table above, the total average score of the 14 students in the sample has obtained a total average score of 4.6. Then the results of the presentation were calculated, namely obtaining a result of 92.00%. This means that Google Sites-based E-Learning learning media is included in the "Very Good" category.

c.   Third trial phase

After the first and second stages of trials were carried out, the next trial was the third trial, namely in class X TJKT 3, totaling 17 people.

Table 11. Third trial phase

Students	Question Indicator										Total Score	Average
	1	2	3	4	5	6	7	8	9	10		
Adit Saputra	3	3	3	3	3	3	3	3	3	3	30	3
Aliyana Pus	5	4	4	5	5	4	5	5	4	5	46	4,6
Andiana Jamaludin Malik	5	4	5	4	4	5	4	4	4	5	44	4,4
Azril	4	5	5	4	4	4	4	4	4	4	42	4,2
D.Nesa Nuralena	5	5	5	5	5	5	5	5	5	5	50	5
Destra Anggara Putra	4	4	4	4	4	4	4	4	4	4	40	4
Diva Avda Nugraha	5	5	5	5	5	5	5	5	5	5	50	5

Said Ali Adiansyah	4	4	3	3	5	4	3	4	4	5	39	3,9
Gio Dwi Algiva	4	4	4	4	4	4	4	4	4	4	40	4
Ilham Pauji	5	5	5	4	4	5	5	5	4	5	47	4,7
M Nazril Yustisio	5	5	5	4	5	4	4	4	5	4	45	4,5
Muhammad Hilmi Hafizh	4	4	5	5	5	4	3	4	4	5	43	4,3
Nurfadilah Maulana	5	5	5	5	5	5	5	5	5	5	50	5
Rama Ramdani	5	5	5	5	5	5	5	5	5	5	50	5
Reysha Azahra	4	4	4	5	4	4	4	4	5	4	42	4,2
Tania Laura	5	5	5	5	5	4	4	4	5	3	45	4,5
Winda Yanti Ma-vika Sari	5	4	4	5	4	4	4	4	5	4	43	4,3
Total Overall Score											746	
Average total score											4,4	
Percentage											88,00%	

Based on the table above, the total average score of the 17 students in the sample has obtained a total average score of 4.3. Then the percentage of the results was calculated, namely obtaining a result of 88.00%. This means that Google Sites-based E-Learning learning media is included in the "Very Good" category.

3.8   Evaluation

The final stage in this development is the evaluation stage. Where the evaluation stage was carried out after the trial was carried out and seen from the responses of students. The product will be repaired if there are problems with students using Google Sites-based E-Learning.

4   Discussion

In this discussion the researcher will answer the problem formulation presented based on the results of the research that has been carried out. Based on the explanation discussed in the results section, the development of Google Sites-based E-Learning has the aim of knowing how the results of the development of Google Sites-based E-Learning in class X SMKN 10 Garut informatics subject, in order to obtain a feasibility of Google Sites-based E-Learning in class X informatics subjects at SMKN 10 Garut, and knowing the responses of subject teachers and student responses to Google Sites-based E-Learning in class X informatics subjects at SMKN 10 Garut. where the researcher conducted his research at SMK Negeri 10 Garut.

The answers to the problem formulation presented are based on the results of the research that has been carried out, namely as follows

The results of the development of Google Sites-Based E-Learning that have been developed are in the form of E-Learning created using Google Sites which contains

Informatics material for class X. This E-Learning can be accessed by both teachers and students anywhere and anytime.

According to Nursalam (2008: 135) the characteristics of E-Learning are as follows. Using self-learning materials which are then stored on a computer which can be accessed by teachers and students anytime and anywhere.

1) Utilizing the learning schedule, curriculum, results of learning progress, as well as matters relating to educational administration which can be viewed on each computer.
2) Utilizing electronic media or technology.
3) Utilizing the advantages of computers (digital media and computer networks)

Based on the eligibility results of E-Learning which have been developed from media validity guidelines (Lestari et al., 2018) the value obtained from the media expert validator is 94.55% with the criteria of "Very Valid" and the result of the material expert validator value is 95.00% with the criteria of "Very Valid". From the results of this good assessment, this proves that the Google Sites-based E-Learning Development in Informatics Class X SMKN 10 Garut is feasible for students to use.

Learning media is said to be suitable for use if the media is appropriate and aligned with learning needs and must support the content of learning materials (Mauldin and Edi in Fitria et al, 2017).

The informatics teacher's response to the development of Google Sites-based E-Learning was "The development of E-Learning has been very good. But it can still be improved on the depth of the material and the variety of references used. We recommend that there is not too much text, it can be presented in the form of images, animations or videos." And the results of student responses to the development of Google Sites-based E-Learning, namely based on the results of the student response criterion values, the results of the student response assessment from the first trial were 94.00% with the criteria "Very Good", the results of the student response assessment were from the second trial was 92.00% with the criteria of "Very Good" and the results of the assessment of student responses from the third trial were 88.00% with the criteria of "Very Good" the results of the data processing were obtained according to (Darmawan, 2021).

The development of Google Sites-Based E-Learning in Class X Informatics Subject at SMKN 10 Garut uses the ADDIE development model with 5 stages, namely Analysis, Design, Development, Implementation and Evaluation.

The first stage is the analysis stage, the researcher carries out activities in the form of curriculum analysis and needs analysis of learning media in the form of Google Sites-based E-Learning in class X SMKN 10 Garut informatics subject

In the Design Stage, the researcher makes a product design plan which consists of: making storyboards, making flowcharts, designing learning flows and selecting teaching modules

At the Development stage, the researcher begins to develop the design that is made so that it becomes a good product. This stage will be broken down into 3 parts, namely: product design development, expert validation and revision. It is at this stage that determines whether the product being developed is valid or not.

In the Implementation phase, the researcher made 3 trials, namely the first trial in class X TJKT 1, the second trial in class X TJKT 2 and the third trial in class X TJKT 3 in class X SMKN 10 Garut with a total of 52 students. At this stage the researcher tries to introduce the product that has been made and uses E-Learning in informatics class X based on Google Sites, after which the researcher distributes online questionnaires or online questionnaires containing student responses to the developed Google Sites-based E-Learning learning media.

At this Evaluation stage the researcher will make product improvements if there are obstacles faced by students in using Google Sites-Based E-Learning in class X SMKN 10 Garut informatics subject. But in the end, students really understand and accept well in using the product because the product is very clear and interesting. This can be seen from the results of the responses of students.

5   Conclusion

From the results of the research and discussion that have been described in chapter IV, conclusions are drawn, namely:

From the results of the research and discussion presented in chapter IV, conclusions are drawn, namely:

1. Development of Google Sites-based E-Learning in the class X informatics subject at SMKN 10 Garut using the ADDIE development model with the stages of Analysis, Design, Development, Implementation and Evaluation.
2. The development of Google Sites-based E-Learning in the class
3. Assessment of student responses to the development of E-Learning that has been developed is declared "Very Good". This proves that it is appropriate for E-Learning learning media to be developed to be implemented and students are interested in Google Sites-based E-Learning learning media.
4. The main objective of developing Google Sites-based E-Learning in the Class X Informatics Subject at SMKN 10 Garut is to achieve the Learning Objectives.
5. E-Learning based on Google Sites In the Informatics subject that has been produced by researchers is https://Sites.Google.com/view/riset-saeful-eLearning-smkn10

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