

Digital Library Development Using Google Sites at SDN 15 East Mesuji

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Abstract

Libraries should be one of the places that students can use to increase their knowledge and information during the learning process and outside of learning. However, with all its limitations, the school library ultimately only functions as a supplement to formal education. This highlights the weak role of school libraries in supporting students' learning processes at school. Based on observations conducted by researchers at SDN 15 Mesuji Timur, the school has made efforts to provide library facilities for students as an alternative learning resource besides those provided by teachers. However, the school's efforts in providing library services have not yielded optimal results. The rarity of students visiting the library is a problem that must be addressed immediately by the school. In this digital age, conventional libraries have several limitations, such as limited time, service, and availability of reading materials, which are among the factors contributing to the low interest of students in visiting the library. For this reason, the researcher sought to develop a digital form, such as a digital library. In developing this digital library, the researcher used the ADDIE (Analyze, Design, Development, Implementation, Evaluation) development model. From the evaluation results, it can be concluded that the average N-gain score for the small group was 59.8%, which falls into the "Moderately Effective" category based on the N-gain score effectiveness interpretation table (%). The N-gain score ranges from a minimum of 16.67% to a maximum of 100.00%. The N-gain score is at 0.6, categorized as moderate. This means that the digital library product is effective in increasing students' interest for reading.

Keywords: digital library; digitization; interest for reading; google sites

INTRODUCTION

In the Legislation on Education System No.20 of 2003, says that Education is "a conscious and planned effort to create an atmosphere of learning and learning so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character and skills needed by themselves and society". To develop

students' potential, schools must provide alternative learning resources that can be used by students. One of the alternative learning resources that schools must provide is a library. In Law Number 43 of 2007 concerning Libraries, it is stated that the role and purpose of libraries is to improve the intelligence of the nation's life through the development and utilization of libraries as a source of information in the form of written works, printed works, and recorded works. The library should be one of the places that can be utilized by students to increase their information and knowledge in the learning process and outside of learning. However, with all its limitations, the school library only functions as a complement to the formal education unit. This shows the weak role of the school library in supporting the learning process of students at school.

Based on observations conducted by researchers at SDN 15 East Mesuji, the school has tried to provide library facilities for students as an alternative learning resource in addition to learning resources provided by the teacher. The school library is still rarely visited by students to be used as a learning resource. Based on the results of observations and interviews conducted, the rarity of students visiting the library is the time available to visit the library during recess is very insufficient, choosing books manually one by one takes a long time, the limited number of reading books available, the selection of books takes a long time, some students must be patient waiting, if they want the same book as other students because of the limited number, students only have the opportunity to borrow books in the school library during school hours. While outside of school hours must borrow manually and that is if the book is not being borrowed by other students.

Based on the situation above, the researcher assumes that there is a problem that must be resolved related to the limited school library facilities. This is supported by research conducted by Husna (2018) which says that conventional libraries have limitations related to information access, because most of the information is collected in the library. According to WTEC hyper-library (in Amelinda Rahma and Ratri Wulandari, 2022: 6) conventional libraries are passive where information gathers in one place which requires users to come to the building if they want to take advantage of existing collections. The conclusion from the theory above is that a conventional library is a library with a collection of books, journals, recorded information and a limited collection of publications in the form of print media that can only be accessed manually. Based on the situation above, the author considers that there is a need for a technology-based library development, so that library utilization can be maximized. Students can utilize digital-based libraries comfortably, choose books quickly, anytime and anywhere can utilize digital libraries. This is in accordance with what is expressed by Widiyana (in Abdul Rahman Saleh, 2010: 16) basically, digital libraries are the same as ordinary libraries, only using computer-based work procedures and digital resources.

Anwas (2013) concluded that the library does not just function as a vehicle for finding information, but has functions as educational, informative, research, cultural, and recreational functions. Therefore, in the era of advances in information and communication technology (ICT), libraries are still needed and can even be optimized by utilizing these technological developments.

METHOD

The type of research used by the author is Research and Development (R&D) with the ADDIE model (Analyze, Design, Development, Implementation, Evaluation). The ADDIE model is one

of the systematic design models. Rimiszowski (1996) suggests that at the level of learning material design and development, systematic as a procedural aspect of the systems approach has been realized in many methodological practices for the design and development of texts, audiovisual materials and computer-based learning materials.

Design

The five stages of ADDIE in the research design are at the **Analysis stage**, researchers analyze the needs of student characteristics, physical needs and the school environment. needs analysis is directed at the knowledge, attitudes and skills that students have as a basic capital to use the digital library to be developed. Analysis of the institution and the researcher's environment leads to the infrastructure owned by the school such as computers, wifi or other equipment that will be used by students to access the digital library. Furthermore, at the **Design (Planning) stage**, researchers plan all the needs of digital library development by making story boards, designing display designs, images, videos and texts as well as electronic books by integrating digital books from kemedikbud.id. Image design, background and color and writing are made using the Canva Education platform. At the **Development stage**, researchers conducted product validity tests validated by media experts and library material experts and practicality tests by individuals and small groups of 15 students. Followed by a field test at the **implementation stage** to see the effectiveness of the product. This field test was conducted by a total of 32 students consisting of grades 4 and 5, they will get socialization on the use of digital libraries, then before using the product students are given a pretest and after familiarization with the use of digital libraries students will be given a post-test to see an increase in students' interest in reading after using the product. And the last is to conduct an **evaluation stage** from several stages that have been passed as material for improvement.

Subject

The sample population of this research and development is the research subject in this case is SDN 15 Mesuji Timur students, namely grade 4 and grade 5 with a total of 32 students. With the sampling technique, namely random sampling.

Instrument

The instruments in this research and development use observation sheets and questionnaires or questionnaires and documentation. Where the observation sheet is used to make direct observations of the object of research and problems that arise when researchers conduct a needs analysis stage. While the questionnaire or questionnaire is used to see the response of media experts and library material experts as well as students and teachers when giving statements related to the digital library being developed. This questionnaire instrument uses a Likert scale consisting of 5 points, each statement is a representative of each indicator. According to (Riduwan and Akadon, 2020: 16) "Likert scale is used to measure attitudes, opinions and perceptions of a person or group about social events or symptoms". With a Likert scale, the variables to be measured are translated into dimensions, the dimensions are translated into sub variables, then the sub variables are translated into measurable indicators.

The following is a lattice of research instruments used in digital library research and development.

Table 1. Media Expert Instrument Grid

No	Aspect	Indicator	Item Number
1.	Accessibility	Indicators that lead to local access to digital libraries	1,2,3,4,5
2.	Visual/Display	Indicators that point to the visual/display of the digital library	6,7,8,9,10,11,12,13,14

Table 2. Digital Library Expert Instrument Grid

No	Aspect	Indicator	Item Number
1.	Book Collection	Indicators that lead to the design of digital book collections	1,2,3,4,5,6,7,8,9,10.
2.	Library Design	Indicators that lead to digital library design	
3.	Language	Indicators that lead to digital library language	

Table 3. Individual Response Instrument Grid (teacher)

No.	Aspect	Indicator	Item Number
1.	Accessibility	Indicators that lead to access to digital libraries	1,2,3,4,5,6,7,8,9,10
2.	Visual/Display	Indicators that lead to the visual/display of digital libraries	11, 12, 13, 14, 15, 16,
3.	Book Collection	Indicators that lead to the design of digital book collections	17, 18, 19, 20,
4.	Library Design	Indicators that lead to digital library design	21, 22, 23, 24,
5.	Language	Indicators that lead to digital library language	25.

Table 4. Small Group Response Instrument Grid (Students)

No	Aspect	Indicator	No Item
1.	Convenience /Accessibility	Indicators that lead to access and convenience to digital libraries	1,2,3,4,5 6,7,8,9,10,11.
2.	Time available	Indicators that lead to the time of visit to the digital library	
3.	Book Collection	Indicators that lead to the design of digital book collections	

In this study, the type of scale that will be used to determine the respondent's answer is a Likert scale. According to (Riduwan and Akadon, 2020: 16) "Likert scale is used to measure attitudes, opinions and perceptions of a person or group about social events or symptoms".

Table 5. List of Scoring and Question / Statement Options

Answer Options	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

(Source: Riduwan and Akadon, 2020).

Data Analysis

The analysis carried out by researchers in this study is by grouping the various data obtained so that researchers can easily understand the data and draw conclusions. The test carried out is the Validity Test by Media Experts and Library Material Experts, while the Practicality Test is carried out with individual and small group samples. The results of the analysis were used to revise the developed product. Quantitative descriptive analysis method is a data processing method that systematically compiles numbers and percentages about an object under study to obtain general conclusions. The analysis technique is used to process data obtained through instruments in descriptive percentages.

1. Validity and Practicality Test

The formula for managing perfection data from all items according to Riduwan and Akdon (2020) is as follows:

Table 6. Criteria for Assessing the Validity of a Product

Rating Scale	Criteria	Assessment
5	Very Strong	$81 < N \leq 100$
4	Strong	$61 < N \leq 80$
3	Fair	$41 < N \leq 60$
2	Weak	$21 < N \leq 40$
1	Very weak	$0 < N \leq 20$

(Riduwan and Akadon, 2020).

Based on these criteria, the digital library is said to be If the results are obtained more than 60% then the product can be tested to a limited group trial. (Riduwan and Akadon, 2020: 18) "This research can be said to be feasible if all elements contained in the validation assessment questionnaire of material experts, media experts, and students and teachers meet the minimum score criteria of $61 \leq \text{score} \leq 80$ or on strong criteria."

2. Effectiveness Test

According to Hake (2016) a test that can provide an overview of the increase in learning outcome scores between before and after the application of certain methods. The following is the form of score division

Table 7. Division of Scores in N-Gain Value

N Gain Value	Category
$g > 0,7$	High
$0.3 \leq g \leq 0.7$	Medium
$g < 0,3$	Low

(Source Melzer in syahfitri, 2008: 33)

Meanwhile, the division of the N-gain category in the form of percent (%) can refer to the following table 8.

Table 8. Division of Scores in the form of categories

N_Gain value	Interpretation
< 40	Not effective
40-55	Less effective
56-75	Moderately Effective
>76	Effective

(source hake, R.R, 1999)

The increase in students' reading interest is said to have increased if the N-Gain value is $0.3 \leq g \leq 0.7$ with a moderate category. Or > 0.7 with a fairly effective interpretation category.

RESULT AND DISCUSSION

This research and development is intended to see the effectiveness of digital library products that researchers develop to overcome a problem that occurs at SDN 15 Mesuji Timur. Based on the results of observations and interviews that have been conducted by researchers From 57 students in grades 4 to grade 6, only 5-10 children want to visit the library and even then some children visit on teacher orders. This means that of the total high class students only 17.5% want to visit the library. The rarity of students visiting the library is a problem that must be resolved immediately by the school.

One of the things that can be done from the situation that occurs is to develop a digital library. This is in accordance with what is expressed by Widiyana (in Abdul Rahman Saleh, 2010: 16) basically, digital libraries are the same as ordinary libraries, only using computer-based work procedures and digital resources. Anwas (2013) concluded that the library does not just function as a vehicle for finding information, but has functions as educational, informative, research, cultural, and recreational functions. Therefore, in the era of advances in information and communication technology (ICT), libraries are still needed and can even be optimized by utilizing these technological developments.

According to Chisenga (in Abdul Rahman Saleh, 2013) the benefits of digital libraries are the addition of collections faster with better quality, can accelerate access so that the information needed can be immediately owned and utilized by users, more free and can cut the administrative chain to obtain information, can be accessed anywhere, anytime as long as there is a device connected to the network and users can access not only in print format but also sound, image, video etc. formats.

The digital library development process uses the ADDIE development model which consists of five stages, namely 1) analysis, planning, development, implementation, evaluation. The following researchers show the results of validation and practicality tests from the responses of media experts, material experts, teacher and student responses.

Table 9. Media Expert Validation

Media Expert	Category	Number	Percentage	Average
Media Expert 1	<i>Very Good</i>	2	80 %	78,57 %
	<i>Appropriate</i>	10		
	<i>enough</i>	2		
	<i>Very Decent</i>	2		
Media Expert 2	<i>Appropriate</i>	9	77,14 %	
	<i>Reasonably Feasible</i>	3		

Based on these calculations, the average product validation obtained by media experts 1 and media experts 2 is 78.57 adjusted to the Criteria table for Evaluating the Validity of a Product in the range $61 < N \leq 80$ with a strong category, so the product is considered suitable for use, but does not rule out the possibility of re-evaluation.

Table 10. Library Material Expert Validation

Expert	Category	Number	Average
Library Material Expert	<i>Very Decent</i>	2	83,33 %
	<i>Appropriate</i>	10	
	<i>Decent Enough</i>	-	

Based on these calculations, the average product validation by material experts is 83.33 adjusted to the Criteria table for Evaluating the Validity of a Product in the range $81 < N \leq 100$ with a very strong category, so the product is considered very feasible to use, but does not rule out the possibility of re-evaluation.

Table 11. Individual response (Teacher)

Media Expert	Category	Number	Average score	Percentage
Teacher 1	<i>Very Good</i>	7	108	86,4 %
	<i>Feasible</i>	18		
	<i>Decent Enough</i>	-		
Teacher 2	<i>Very Feasible</i>	10		
	<i>Feasible</i>	15		
	<i>Decent Enough</i>	-		
Teacher 3	<i>Very Feasible</i>	7		
	<i>Feasible</i>	18		
	<i>Decent Enough</i>	-		

Based on these calculations, the average practicality of the product is 86.4 adjusted to the Criteria table for assessing the practicality of a product in the range of $81 < N \leq 100$ in the Very Practical category, so the product is suitable and easy to use.

Table 12. Small Group Response (Students)

Cetgory	Respondent															Presentace
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<i>Very Fisible</i>	2	2	5	2	4	-	-	2	-	3	3	2	-	-	2	78,53
<i>Fisible</i>	8	8	6	6	5	3	10	8	9	8	2	6	6	7	6	
<i>Decent Enough</i>	1	1	-	3	2	8	1	1	2	-	6	3	5	4	3	
<i>Average Score</i>	58,9															

Based on these calculations, the average practicality of the product is **78.53** adjusted to the Criteria table for assessing the practicality of a product in the range $61 < N \leq 80$ with the Practical category, so the product is considered practical and easy to use by students.

Furthermore, the Effectiveness Test is carried out to assess the extent to which a product, method, or program is successful in achieving the stated objectives. This test aims to determine how much influence or impact an intervention has, and whether the intervention is effective in producing the expected results. The effectiveness test was carried out by testing the product in the field with objects aimed at 4th and 5th grade students totaling 32 students. Testing the product by giving pretests and posttests before and after students get used to using the digital library. The pretest was conducted before the use of the digital library, while the post-test was conducted after the use of the digital library developed by the researcher. The goal is to see the increase in students' interest in reading before and after using the digital library, in addition to seeing whether the digital library is feasible or not.

This field test was carried out after the socialization process of using the digital library at school, then within one week and habituation of using the digital library, researchers measured the increase in students' interest in reading. The Student Reading Interest Questionnaire uses a Guttman Scale with point criteria for answering Yes = 1 and No = 0 while the questions presented in the questionnaire are 11 questions. After the results of the student pretest and posttest were collected, the researchers calculated the N-gain score to see how effective the digital library that

the researchers had developed was. The calculation results can be seen in the table below:

Table 13 N-Gain Score Calculation

No	Student Name	Pre	Post	Pre-post	max score (11-pretest)	N-Gain S	N-Gain %
Responden							
Average		3,84	9,22	5,38	7,16	0,75	74,98

Based on the results of the N-gain score test calculation, it shows that the average N-gain score is 74.98%, which is included in the Effective category based on the table of categories of interpretation of the effectiveness of the N Gain value (%). With a minimum N- gain score of 16.67% and a maximum of 100.00%. As for the value of N-Gain Score is at a value of 0.75 with a high category.

So it can be concluded that the use or utilization of digital libraries is effective in increasing students' reading interest in utilizing digital libraries for reading or learning activities. While the provision of conventional school libraries is less effective in increasing students' interest in reading.

The results of this study are also relevant to research that has been conducted by Zulpines Indira Putri, Gimin, Supentri (2024) with the title The Effect of Digital Library on Reading Interest of Man 1 Kuantan Singingi Students, Pancasila and Citizenship Education Study Program, Faculty of Teacher Training and Education Sciences, Riau University states that every 1% increase in the value of Digital Library, the value of Reading Interest increases by 0.374. The regression coefficient is positive, so it can be interpreted that the hypothesis in this study is accepted and the effect of Digital Library (X) on Student Reading Interest (Y) is positive. Then the processed statistical output is obtained, that the correlation or relationship value (r) is 0.609, so there is a relationship in the strong interpretation by the independent variable (Digital Library) on the dependent variable (Reading Interest).

In addition, other research from Rachman Arief, Andy Rachman, Rayinda Aseti Prafianti (2024) with the title Implementation of Digital Libraries to Support Increased Student Reading Interest at MTs. Nurul Hikmah Surabaya. Information Systems, Adhi Tama Institute of Technology Surabaya, Surabaya. it was concluded that with the digital library system student access to reading books became easier. Digital libraries can be accessed anytime and anywhere so as to support the increase in reading interest of MTs students. Nurul Hikmah Surabaya. Increased interest in reading of students of MTs. Nurul Hikmah Surabaya can be seen from the increasing number of digital library visitors each week.

Based on the results of research that is considered relevant, related to increasing students' interest in reading after using a digital library, but there is still a difference between this research and development and the research that is considered relevant. One of them is the platform used. If the platform used by other researchers is paid and requires high costs in developing a digital library, then the research and development that researchers do uses a platform that is free or free, this will have an impact on the cost efficiency of developing digital library products. This is in accordance with the opinion of Suryanto (2018: 14) Google Site is a free web hosting service provided by Google, through Google Site you can create a website that is used to present various interests on the internet. Google site has provided various features including templates with elegant designs.

In addition, another advantage is that if so far google sites have only been used as websites for sharing information and learning media, in this study researchers tried to utilize google sites as a place to create digital libraries. The simplicity and ease of use of google sites is what researchers make a strength to develop a digital library that is simple and easy to use, because it is in accordance with the object of research, namely the target is students who are still at the elementary school level. This thinking is based on the use of Google Sites makes it easy for someone to manage the web, especially for ordinary users. Users can manage access control easily and no programming knowledge is needed, because it only uses drag and click Haerul (in Taufik et al., 2018).

But it doesn't stop here, in the future researchers hope to further develop the library not only as a reading medium, but can further develop into a development that makes it easier for students to develop their knowledge without having to struggle because of place, time and cost.

CONCLUSION

Based on the results of research and development that has been carried out by researchers, it can be concluded that: Conventional libraries emphasize direct interaction with physical books, limited space and access are the main obstacles while digital libraries are present as a modern solution in answering the challenges of the times. With easy access anytime and anywhere, digital book collections that continue to grow online, and features with interactive and multimedia displays, digital libraries are able to increase the affordability and reading interest of the digital generation.

Google Sites, which has been considered only as a place to create simple websites, a place to share information, can actually be used as a digital library without the need to master programming languages and can be used free of charge so that it can be more efficient and effective in developing digital libraries.

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