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Development of Website-Based Social Teaching Material in Elementary School

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Abstract

This study aims to develop web-based teaching materials social in elementary schools and determine the effectiveness of student learning outcomes. This research uses a research and development model developed by ADDIE consisting of five stages, namely Analysis, Design, Development, Implementation, Evaluation. The test subject of this study was MI grade IV student Nurul Jadid Blitar. Data collection techniques use observation, interviews, questionnaires, tests and documentation. Analysis of product effectiveness using independent t-test. The results of the research were the development of web-based teaching materials getting material expert validation of 95% with very valid criteria, design expert validation of 89% with very valid criteria, and learning expert validation of 92.7% with very valid criteria. Student learning outcomes have increased, namely the average pretest score in the experimental class 52.5, then in the experimental class treatment using web-based teaching materials, the average value of the postest is 82.5 The results of the independent t-test show a value of 0.008, so it can be interpreted that there is an influence of the use of website-based learning media on student learning outcomes. So it can be said that the use of web-based teaching materials has an influence on improving student learning outcomes and is used in the learning process.

Keywords: Learning outcome, Teaching material, Website

Abstrak

Penelitian ini bertujuan untuk mengembangkan bahan ajar sosial berbasis web di sekolah dasar dan mengetahui efektivitas hasil belajar siswa. Penelitian ini menggunakan model penelitian dan pengembangan yang dikembangkan oleh ADDIE yang terdiri dari lima tahap yaitu Analisis, Desain, Pengembangan, Implementasi, Evaluasi. Subjek uji penelitian ini adalah siswa kelas IV MI Nurul Jadid Blitar. Teknik pengumpulan data menggunakan observasi, wawancara, angket, tes dan dokumentasi. Analisis efektivitas produk menggunakan uji t independen. Hasil penelitian pengembangan bahan ajar berbasis web memperoleh validasi ahli materi sebesar 95% dengan kriteria sangat valid, validasi ahli desain sebesar 89% dengan kriteria sangat valid, dan validasi ahli pembelajaran sebesar 92,7% dengan kriteria sangat valid. Hasil belajar siswa mengalami peningkatan yaitu rata-rata nilai pretest pada kelas eksperimen 52,5, kemudian pada perlakuan kelas eksperimen menggunakan bahan ajar berbasis web diperoleh nilai rata-rata postest sebesar 82,5. Hasil uji independen t-test menunjukkan nilai sebesar 0,008 sehingga dapat diartikan terdapat pengaruh penggunaan media pembelajaran berbasis website terhadap hasil belajar siswa. Jadi dapat dikatakan penggunaan bahan ajar berbasis web memberikan pengaruh terhadap peningkatan hasil belajar siswa dan digunakan dalam proses pembelajaran.

Kata kunci: *Bahan Ajar, Hasil Belajar, Website*

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INTRODUCTION

Teaching materials are a set of materials that are arranged systematically so that they can be used in teaching and learning activities so that they can be achieved(Siswanto et al., 2023). Through systematic teaching materials, students will be able to learn effectively in order to be able to apply norms that include rules, attitudes and values, carry out motor skills that have been learned, and (Ravenscroft et al., 2012) So that later learning competency standards can be achieved perfectly. Especially in today's technological era, teachers must have new innovations in learning activities to support innovative and interactive learning(Hanifah et al., 2020; Lynch et al., 2024)

Based on the observations made by researchers in class IV MI Nurul Jadid Blitar, it was found that during the learning process teachers only use learning materials from makeshift textbooks. Not only that, the teaching materials used are very limited, so it becomes an obstacle for students to learn. Based on an interview with one of the grade IV teachers at MI, Nurul Jadid stated that during the learning process the teacher had never used other teaching materials and had never developed teaching materials. So that the limited teaching materials in schools make it difficult for teachers to deliver teaching materials. Not only that, as a result of the lack of interesting teaching materials makes students in the classroom feel bored quickly during the learning process in class. Students lack enthusiasm during the learning process.

Teaching materials that are well arranged and tailored to student needs will be able to help students understand the material in depth (Ordu, 2021) and facilitate during the teaching process (Metekohy et al., 2022). The preparation of teaching materials also needs to be guided by applicable rules, especially can be used systematically by teachers and students (Ramdani et al., 2021). Teaching materials used in the learning process can be divided into two types, namely printed and non-printed teaching materials(Sudana et al., 2020). Printed teaching materials include books, modules, LKS, handouts, brochures and so on (Mayembe & Nsabata, 2020). While non-print teaching materials include videos, films, strips, tapes, compact disks, and so on (Omoike & DO, 2020).

The same problem is also found in research that has been conducted by (Nalasari et al., 2021) that the learning process in theme 9 of the Subtheme of Natural Wealth Utilization in Indonesia in class IV has a problem, namely students are less able to understand the material because the teaching materials used by teachers during the learning process are very monotonous. In addition, the limited use of teaching materials related to these materials causes students to be unable to learn flexibly. Therefore, it is necessary to develop web-based teaching materials. In addition, the same problem is also found in research that has been conducted by (Latifah & Rukmana, 2022) find problems in the student learning process. That during the learning process students are not yet familiar with the ability of independence. Thus, teaching materials are needed that are able to increase student independence and can be used anytime and anywhere(Suryantari & Mulyono, 2023). Therefore, based on these problems, it is necessary to develop it with web-based teaching materials.

Previous research relevant to this research, first the development of website-based media in science learning to improve student learning outcomes, make learning more effective(Astuti et al., 2020). Second, the development of website-based learning media for students in elementary schools, media that are developed practically and can attract students' learning interest (Putra et al., 2023). Third, research on the development of website-based learning media to train the literacy and numeracy skills of grade 3 elementary school students, this media gets an assessment from validators so that it can be used (Arifin & Nugroho, 2023). Based on previous research that has been described. The similarity of this research with previous research is to develop website-based learning media, while the difference between the current research that has been carried out by researchers, with previous research is that in this study Website-based teaching materials include ethnic and cultural diversity material. Google Sites has become an online application available that can be used as a website for a class, school, or a project(Sari et al., 2024). Google Sites is very easy to use as well as a medium to support teaching and learning activities by maximizing the features available in Google such as Google Docs, Google Sheets, Google Forms, Awesome Table and other features available in Google (Ramadannisa & Hartina, 2021) The web can be used as a Learning Managament System (LMS) (Sudiana, 2016), It is stated that teaching materials are learning management systems that can be in the form of web in the framework of learning efforts in the 21st century that utilize technology (Jannah et al., 2020; Kibtiyah et al., 2023; Kilag et al., 2024; Panggabean et al., 2021; Towip et al., 2022). The web can be used in the process of making teaching materials, especially if a quiz is given (Hanifah et

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al., 2022). Teaching materials are basically a set of materials or tools that teachers use in the process of learning to teach (Hayati et al., 2020; Song, 2023)

Based on previous research that has carried out the development of teaching materials, and the use of non-printed teaching materials in the form of websites, especially Google sites, has been proven to increase student learning interest, motivate students, and be able to improve student learning outcomes. The novelty in this study is that the learning media developed is associated with the environmental conditions of students in MI Nurul Jadid Blitar. Thus, this research also supports research conducted previously, that the development of teaching materials is effectively used in the student learning process, and can be used flexibly. Therefore, based on what has been described by the researcher, the purpose of this research is to develop website-based teaching materials in the learning process and find out the effectiveness of using website-based teaching materials.

RESEARCH METHOD

Research carried out with the research and development method is a research method with the main aim of producing a certain product or improving an existing one. This research uses the ADDIE model which consists of five stages (Bujuri et al., 2022; Hamzah et al., 2021; Rusdi et al., 2022), namely Analysis is the initial stage to find out the needs of students in the learning process, Design is the stage of designing teaching materials in the form of storyboards and designing materials and components of teaching materials, Development is the stage of product development and the stage of validating experts consisting of media experts, design experts, and learning experts, Implementation is the application stage to grade IV students at MI Nurul Jadid Blitar, Evaluation is the final stage that aims to evaluate the use of products from the beginning to achieve the expected goals. which adopts from Robert M. Branch (Branch, 2021). Data collection techniques used in this study are observation of the learning process in class, interviews with class teachers, validator questionnaires, tests to students with pretest and postest in experimental and control classes, and documentation during the learning process.

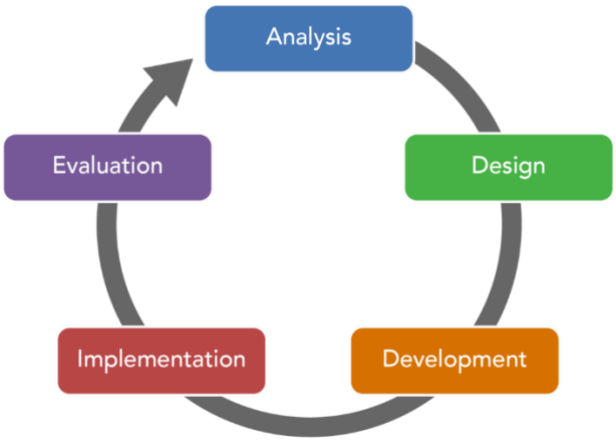

Figure 1. ADDIE Model

Trials of web-based teaching materials that have been developed and have been validated and declared suitable for use, then trials were carried out in class IV MI Nurul Jadid Blitar consisting of two classes, namely experiments and controls with a total of 12 students in each class. The value obtained is then calculated using a t-test to determine the difference in the use of website-based teaching materials. But before performing the t-test, it is necessary to calculate normality and homogeneity. If the value obtained is normal and homogeneous, a t-test can be performed.

RESULT AND DISCUSSION

The process of developing website-based media is first analyzing and knowing the initial needs before carrying out the development process. The second stage of design is to determine indicators in accordance with KD and learning objectives so that learning is in accordance with the mess in the curriculum, making a

framework for teaching materials. The third stage is development adjusted to the initial design. The results of the development of the media are presented in figures 2 and 3.

Figure 2. Google sites home view

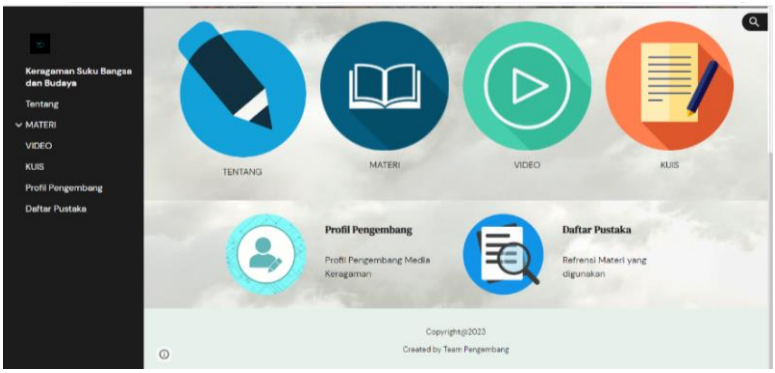

Figure 3. Google sites home view

Figures 2 and 3 are images of the initial display of the website-based teaching materials menu. The display shows various menus that can be accessed by students in utilizing teaching materials. Each menu in the teaching materials has its own explanation and is easily understood by students.

Furthermore, the teaching materials before the trial has gone through the validation stage. Validation was carried out to three experts, namely material experts, design experts, and learning experts. The validity of the products developed in this study was measured using an assessment instrument in the form of a questionnaire containing questions and answer fields using liket scale assessment guidelines ranging from 1 to 5. From questionnaires that have been filled out and assessed by validators.

This media received a revision of material experts, namely The part that needs to be improved in the material section is to provide additional material points related to cultural diversity.

Figure 4. Image before revision

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Figure 5. Image after revision

While the design expert's revision is the point that needs to be revised in the design section is to provide a unique icon on each menu.

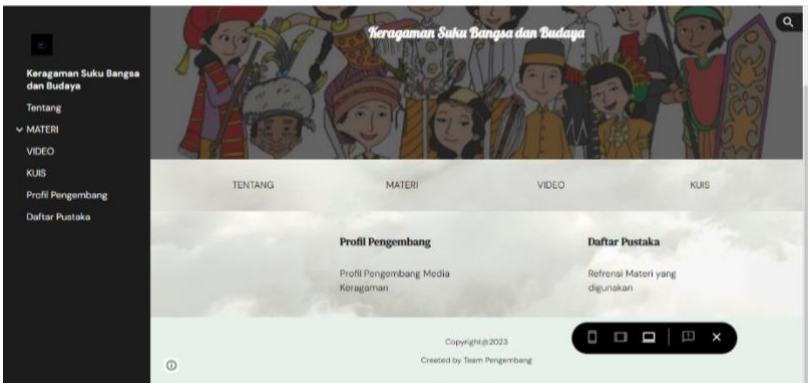

Figure 6. Image before revision

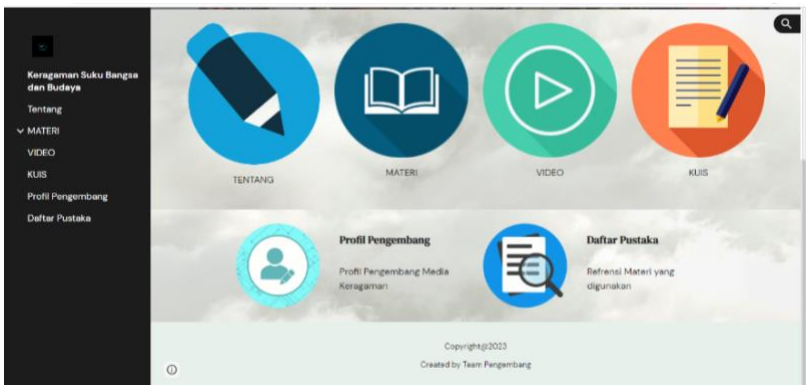

Figure 7. Image after revision

Based on the assessment of validators, there is not much need to revise the teaching material design. Only me, need to provide a consistent background in each part equally and use colors that are not too flashy. So that when users use it can feel comfortable.

The results of material expert validation are 95% so that the material in web-based teaching materials is very valid meaning it is suitable for use, this is based on aspects of appropriate learning objectives, related to the content of the material used in accordance with the curriculum, the material used is also in accordance with the elementary school level in grade IV (Okta Priantini & Widiastuti, 2021; Widiastuti et al., 2022). The results of media expert validation are 89% and get very valid criteria so it is worth using. The score obtained from the validation of learning experts is 94.7% and the criteria are very valid and feasible to use.

Based on the results of validation carried out by experts, it can be concluded that web-based teaching materials get very valid criteria, meaning that web-based teaching materials are very feasible to be used during the learning process. The next stage is to conduct trials on grade IV students of MI Nurul Jadid Blitar, each of which amounted to 12 students consisting of control classes and experiments using *pretests* and *postes* with the results presented in Table 1.

Tabel 1. Average Value Results

Average	Experimental class		Control class	
	Pre-test	Post-test	Pre-test	Post-test
	52.5	85.8	55.0	75.0

It is also associated with improved learning outcomes between experimental and control classes. Effectiveness tests that have been carried out show that Google sites-based teaching materials have an influence on learning outcomes and student scores have increased as presented in Figure 4.

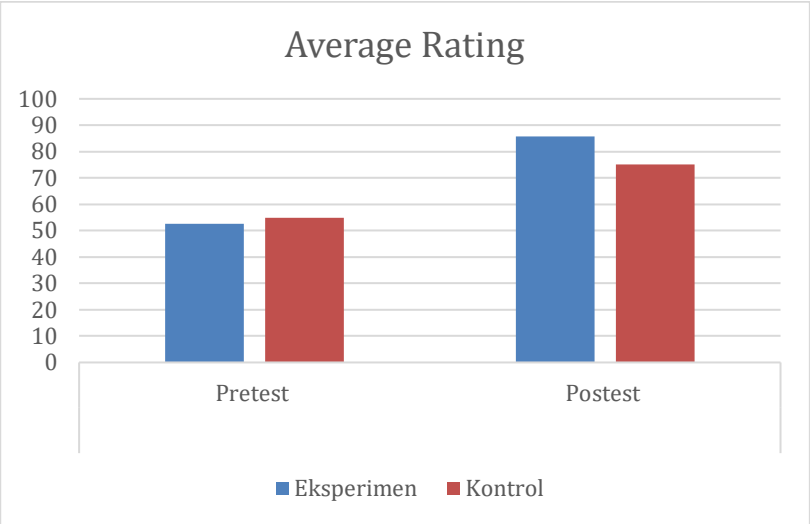

Figure 8. Comparative Average Value

Based on the average results, the value was compared using an *independent t-test* with the results presented in table 2.

Tabel 2. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Hasil	Equal variances assumed	.681	.418	-2.940	22	.008	-10.833	3.684	-18.474	-3.193
	Equal variances not assumed			-2.940	20.997	.008	-10.833	3.684	-18.495	-3.172

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Based on the pretest and postest values that have been obtained in the control class and experimental class and both classes, normality and homogeneity tests have been carried out. The basis for decision making is if the sig value < 0.05 then the data is abnormal and not homogeneous, while if the sig value is > 0.05 then it is normally distributed and homogeneous (Usmadi, 2020). That the normality test value of the experimental class with a sig value of 0.134 and the control class with a sig value of 0.60 where both are declared normal because the sig value of both classes is greater than 0.05

While the value of the homogeneity test based on mean between the experimental class and the control class is 0.832 so it is stated that the two data are homogeneous. Based on the normality and homogeneity test, the two classes are declared to be normally distributed and homogeneous. So the next step is to conduct an independent t-test to measure the effectiveness of using web-based teaching materials.

The independent t-test is used to determine the average comparison of two different populations and is taken randomly. The control class and the experimental class used for trials are two different classes so that in measuring the level of effectiveness must use an independent t-test. The basis for decision making is that if the t-test result > 0.05, there is no influence of teaching materials between the experimental class and the control class, while if the t-test results are < 0.05, there is an influence on the use of teaching materials between the experimental class and the control class (Artaya, 2018).

In this study, the t-test value of sig-two tailed obtained from the experimental class and control class was 0.008 and the value of 0.008 < 0.05 so that it can be said that the use of teaching materials in the experimental class and control class there are differences and the use of web-based teaching materials in the form of google sites has an influence on improving student learning outcomes. The influence of learning outcomes using this media, because the media developed can attract student learning, can increase student enthusiasm for learning, and can make learning fun, so as to improve student learning outcomes(Nurdyansyah et al., 2022). The last stage is carried out to evaluate as a whole to find out the shortcomings in teaching materials, this stage is always carried out comprehensively until the learning objectives can be achieved optimally.

Therefore, The advantages of this product are: Utilize Google Sites link sites with a homepage that shows a number of information, videos, images and more. Google sites-based teaching materials can help learning become more interesting by utilizing smartphone technology or other devices that can be accessed flexibly(Agustina et al., 2023; Hamid et al., 2024; Kassim, 2024). The main purpose of this teaching material is to optimize student learning outcomes as a manifestation of the use of technology in learning(Mills et al., 2014). The material developed in this teaching material is material on ethnic and cultural diversity.

Basically, learning in the current era, it is required that learning must be student-centered (Agustina et al., 2023; Kilag et al., 2024; Mukhibat, 2023) Thus, educators become facilitators who must be able to organize students to be able to be active during the learning process (Erickson et al., 2011). The existence of interesting teaching materials for students will provide a good stimulus to students (Culver et al., 2019). In addition, learning must be designed meaningfully to make it easier for students to remember learning material (Sudarti, 2019).

Web-based teaching materials that have been developed in the form of google sites web links (Klosterman et al., 2012; Mukhoyyaroh et al., 2023) Web google sites is a simple web that has been provided by Google to connect various types of material or information easily and practically (Culajara, 2022). The development of website-based teaching materials is a breakthrough that can potentially reduce gaps in education in the madrasah ibtidaiyah environment (Putri et al., 2023). Google sites can be used easily by early adopters, so users can create media or teaching materials according to their needs(Mulyaningsih et al., 2023). In addition, Google Sites learning media has the potential to improve student achievement (Ramasundrum & Sathasivam, 2022)

CONCLUSION

The findings of this study that the use of website-based teaching materials in social learning of ethnic diversity materials can provide convenience to students and provide a pleasant learning experience. However, this study has a limitation, namely the teaching materials developed only focus on one material, and are only applied to one level and one school. So that readers can develop other materials and different grade levels using web-based teaching materials. In addition, another limitation experienced by researchers is the lack of references related to this website-based teaching materials, so it is hoped that further researchers can improve other research with similar themes.

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