Balinese Local Wisdom Oriented Digital Teaching Materials to Improve Cultural Literacy of Grade V Elementary School Students

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A R T I C L E   I N F O

A B S T R A K

Pengintergasian kearifan lokal dalam pembelajaran masih kurang. Guru masih belum mampu mengintegrasikan kearifan lokal ke dalam pembelajaran. Penelitian ini bertujuan untuk menciptakan bahan ajar digital berorientasi kearifan lokal Bali untuk kelas V sekolah dasar. Penelitian ini merupakan penelitian pengembangan dengan model ADDIE. Data diklasifikasikan menjadi dua yakni data kualitatif dan data kuantitatif. Teknik pengumpulan data menggunakan teknik kuesioner. Kuesioner digunakan untuk mengukur validitas dan kepraktisan bahan ajar digital. Validitas diuji oleh masing-masing 2 orang ahli yakni ahli materi, ahli media, dan ahli desain. Kepraktisan dinilai oleh 8 orang guru dan 8 orang siswa kelas V SD. Data dianalisis secara deskriptif kuantitatif. Hasil dari penelitian ini menunjukkan bahwa analisis uji validitas menunjukkan bahwa rata-rata keseluruhan validasi sebesar 3,84 dan berada pada katagori sangat valid. Kepraktisan bahan ajar digital ini menunjukkan rata-rata penilaian guru terhadap kepraktisan bahan ajar digital sebesar 3,78 dan berada pada kategori sangat praktis. Penilaian siswa diperoleh sebesar 3,65 berada pada kategori sangat praktis. Uji-t menunjukkan bahwa nilai Sig.(2-tailed) <0,05 yang bernilai signifikan. Maka, bahan ajar digital berorientasi kearifan lokal Bali untuk meningkatkan literasi budaya siswa pada materi Ekosistem kelas V sekolah dasar yang sangat valid, sangat praktis, dan efektif.

A B S T R A C T

The integration of local wisdom in learning is still lacking. Teachers are still not able to integrate local wisdom into learning. This study aims to create digital teaching materials oriented to Balinese local wisdom for fifth grade elementary school. This research is development research with ADDIE model. Data is classified into two, namely qualitative data and quantitative data. Data collection techniques using a questionnaire technique. Questionnaires were used to measure the validity and practicality of digital teaching materials. Validity was tested by two experts, namely material experts, media experts, and design experts. Practicality was assessed by 8 teachers and 8 fifth grade elementary school students. The data were analyzed descriptively quantitatively. The results of this study indicate that the analysis of the validity test shows that the overall average validation is 3.84 and is in the very valid category. The practicality of these digital teaching materials shows that the average teacher assessment of the practicality of digital teaching materials is 3.78 and is in the very practical category. The student's assessment was obtained at 3.65 which was in the very practical category. The t-test shows that the value of Sig.(2-tailed) <0.05 is significant. So, digital teaching materials oriented to Balinese local wisdom to improve students' cultural literacy on the Ecosystem material for grade V elementary school which is very valid, very practical, and effective.

1. INTRODUCTION

Indonesia is an archipelagic country that is rich in diversity, one of which is cultural diversity. The cultures that exist in this area have existed and developed into local wisdom (Nabila et al., 2021; Nengsih, 2020). Local wisdom is an important part given to educational units with the aim that students do not lose their basic cultural values, do not lose their historical roots and have insight and knowledge about the attitude of culturally social and environmental realities (K. S. Sularso, 2016; P. Sularso, 2017).

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This means that education cannot be separated from a culture that exists in society. Education plays an important role in the creation of civilization.

As a large country, of course, Indonesia was not only built by relying on abundant natural wealth and a large population. A great nation is characterized by a literate society, which has a high civilization, and is actively advancing the world community. The more residents of an area who are eager to seek knowledge, their civilization will also be higher (Permatasari, 2021; Pradana et al., 2021). This means that every resident is expected to be able to improve literacy skills. Literacy in this context is not only a matter of how a nation is free from illiteracy, but also more importantly, how citizens of the nation have the life skills to be able to compete and co-exist with other nations to create world welfare. (Fahmi, Syabrina et al., 2020; Setiawan, 2019). A nation with a high literacy culture shows the nation's ability to collaborate, think critically, be creative, communicative so that it can compete globally (A. Pratiwi & Asyarotin, 2019; N. L. M. T. Pratiwi, 2017). Education based on local wisdom can be used as a medium to preserve the potential of each region (Hermino & Arifin, 2020; Pingge, 2017). One of the entrances to develop the nation's cultural literacy is through learning in schools. Cultural literacy is a vital type of literacy to be instilled in students. Cultural literacy is the ability of individuals to understand, appreciate, and interpret the diversity in their environment. In the era of globalization, cultural diversity is an unavoidable aspect (Fatonah, 2019; Hadiansyah et al., 2017).

However, currently the integration of local wisdom in learning is still lacking. Teachers are still not able to integrate local wisdom into learning (Pingge, 2017; Riwu et al., 2018). In fact, local wisdom is a dynamic source of knowledge, developed and passed on by certain populations that are integrated with an understanding of the surrounding culture. Learning models that focus on elements of local wisdom as a context for introducing cultural values in learning (Sumayana, 2017; Widiastuti & Purnawijaya, 2019). Based on the results of the study of textbooks for fifth grade elementary school students on science content, especially Ecosystem material, it was found that the material available in the book was very limited. This statement is supported by online questionnaire data addressed to teachers and students of class V for the academic year 2021/2022 at Public Elementary Schools in Abiansemal. The results of the questionnaire showed that of the 8 fifth grade teachers, 50% of them stated that the science content material listed in the student handbook was still shallow and did not integrate local wisdom, 75% of the teachers stated that the science content material contained in the student book needed to be developed because teachers only use textbooks during learning, and 75% of students stated that the science content material, especially the Ecosystem material did not contain local wisdom, so it was necessary to develop teaching materials containing local wisdom. The integration of cultural literacy in learning is an important thing to do. As a large and diverse nation, teachers have a role in schools to introduce and impart cultural information to students. For that reason, real efforts are needed in implementing cultural literacy in educational institutions, especially in elementary schools.

The solution to overcome these problems In this era of globalization is the use of technology which has an important role in developing students' literacy skills. In the Regulation of the Minister of Education and Culture Number 22 of 2016 concerning Standards for the Process of Primary and Secondary Education, it is mandated that in the preparation and design of learning teachers are required to master Information and Communication Technology (ICT). The integration of cultural literacy in elementary schools can be done by providing teaching materials with local wisdom. Local wisdom-oriented digital teaching materials are teaching materials that integrate information technology and computing (Hutama, 2016; Murtini et al., 2019; Safitri & Nurkamilah, 2020). Teaching materials developed using a local wisdom approach can provide a more meaningful learning experience for students. In Bali, for example, one of the local wisdoms related to learning for fifth grade elementary school students is Tumpek Wariga and Tumpek Uye. Tumpek wariga and Tumpek Uye are local wisdom that can be linked to ecosystem materials in elementary schools. An example of integrating the local wisdom of Tumpek Uye and Tumpek Wariga in Ecosystem material is the activity of releasing fish in rivers or lakes in celebration of Tumpek Uye a series of Danu Kerthi. Another example is the activity of conserving large trees that play a role in supporting the soil in certain areas by installing cloth; and tree planting activities in the surrounding environment.

Regarding the content of science in elementary schools, the orientation of Balinese local wisdom that can be integrated into learning, especially in Ecosystem material is Tumpek Uye and Tumpek Wariga. Tumpek Uye is a tradition of offerings made by the Hindu community in Bali for the presence of animals. Tumpek Uye Day, which falls on every Saturday Kliwon Wuku Uye according to the calculation of the Balinese-Javanese calendar. This day comes once every six months (210 days). On this day Hindus make a ceremony to worship the majesty of God Almighty as Siva or Pasupati, who cares for all beings in this universe. This ceremony means gratitude for the creation of animals as friends for human life and which have provided various benefits for human life. This worship of God Almighty is realized by giving a

ceremony of salvation for all stars, especially livestock or pets. The animal rescue ceremony is intended to foster a sense of affection for all animals, especially livestock or pets. Tumpek Wariga falls on Saturday Kliwon wuku Wariga which comes once every 6 months. The Tumpek Wariga celebration is a ceremony of thanksgiving to God Almighty in his manifestation as Sang Hyang Saskara, because of the grace of all kinds of plants for human life and prosperity. Tumpek Wariga is a manifestation of the Balinese-Hindu socio-system in viewing the ecosystem. The Balinese-Hindu people believe that if they treat plants incorrectly, it will threaten the sustainability and balance of nature. Therefore, the noble values that exist in Tumpek Uye and Tumpek Wariga need to be informed to students as a form of introduction to the culture that exists in the student environment.

One example of the use of digital teaching materials local wisdom oriented is shown in several previous studies. One of previous study aims to investigate the properness of pepaccur local wisdom for Indonesian literary teaching materials (Fuad et al., 2020). The results of this study are in the form of pepaccur presentations that are appropriate to be used as teaching materials for Indonesia language and literature based on the characteristics of the functions and values of local wisdom contained in them Implications from this study, through pepaccur-based teaching materials, students can learn to live a simple life, have a community with mutual help and respect, and learn poetic arts. Other study aims to provide entertainment and advice examine the effectiveness and the positive responses given by dyscalculia students and teachers toward a module oriented to Kudus' local wisdom to improve the mathematical creative thinking ability of dyscalculia students (Purwaningrum et al., 2021). The results showed that the local wisdom-oriented module which was developed according to the experts is excellent Meanwhile, the results of interviews and questionnaires showed that teachers and dyscalculia students give positive responses to the use of modules oriented to Kudus' local wisdom. Based on these problems, the researchers were interested in conducting a study related to digital teaching materials on Balinese local wisdom oriented which was tested on fifth grade elementary school students. The purpose of this study is to create digital teaching materials oriented to local wisdom to produce digital teaching materials oriented to Balinese local wisdom in grade V elementary school Ecosystem materials that have been tested for their effectiveness in increasing students' cultural literacy.

2. METHOD

This study uses research and development methods. The research and development method is a research method to create or produce a new product, then test the effectiveness of the resulting product (Hussain, 2015; Sugiyono., 2014). This study will develop teaching materials oriented to local wisdom to instill the disciplined character of fifth grade elementary school students. This research design uses the ADDIE development model which consists of 5 steps, namely analize, design, development, implementation, evaluation. The test subjects in this study consisted of experts, teachers, and students. The experts in question are experts in the field of teaching materials to validate the feasibility of content, linguistic feasibility, presentation feasibility, and graphic feasibility. There are 3 experts who are material experts, presentation experts, and media experts. As many as 8 teachers to test the practicality of the product, and 30 elementary school fifth grade students to measure the effectiveness of using digital teaching materials oriented to Balinese local wisdom. The object of testing in this study is the validity, practicality, and effectiveness of digital teaching materials oriented to Balinese local wisdom to improve cultural literacy in Ecosystem materials for fifth grade elementary school students.

The data obtained in the development of illustrated teaching materials in the form of qualitative and quantitative data. Qualitative data obtained from the results of responses, criticisms and suggestions from experts on the content and appearance of teaching materials. Then these criticisms and suggestions are analyzed before being used as material for product revisions that are developed. While quantitative data is data in the form of scores obtained based on expert test reviews and scores obtained by students. The data analysis technique used in this development research is using qualitative analysis techniques and descriptive analysis. Product validity data was obtained from expert responses while product practicality data was obtained from teacher responses. For effectiveness data obtained from student learning outcomes after using the product. For the effectiveness of using the t-test with the condition that if the value of Sig.(2-tailed) <0.05, then there is a significant difference between the learning outcomes of the group that uses digital teaching materials (Group A) and the group that does not use digital teaching materials (Group B).

3. RESULT AND DISCUSSION

Result

The development of digital teaching materials with local wisdom was developed using the ADDIE development model. First, the validity test results of digital teaching materials. Test the validity of local wisdom digital teaching materials in this study including, test the validity of the material, test the validity of the design, and test the validity of the media. The material validity test was carried out by two material experts covering aspects of the feasibility of digital teaching material content, and linguistic components. The results of the validity of the experts can be presented in Table 1.

Table 1. Expert validity test results

No.	Validity Expert	Average	Criteria
1.	Material Expert	3, 82	Very Valid
2.	Design Expert	3, 90	Very Valid
3.	Media Expert	3, 80	Very Valid
4.	Teacher Practitioner Test	3,78	Very Practical
5.	Student Practitioner Test	3,65	Very Practical

Base on Table 1, the validation of local wisdom digital teaching materials by material experts obtained an average score of 3.82 and belongs to 3.50≤Rv≤4.00 interval which indicates that local wisdom digital teaching materials are included in very valid criteria. Furthermore, the design validity test was carried out by two design experts on the presentation component aspect. The validation of digital teaching materials with local wisdom by design experts obtained an average score of 3.90 and was in the interval 3.50≤Rv≤4.00, which indicates that digital teaching materials with local wisdom are included in very valid criteria. The design validity test was carried out by two design experts on the graphic aspect. The validation of local wisdom digital teaching materials by media experts obtained an average score of 3.80 and was at an interval of 3.50≤Rv≤4.00 which indicates that local wisdom digital teaching materials are included in very valid criteria.

Based on the results of the validity test, it shows that digital teaching materials in content including material, design, and media are feasible to be used at the next stage, namely testing the practicality of the product for teachers and students, and its effectiveness. The practicality test of digital teaching materials with local wisdom was tested on 8 teachers and students in Abiansemal elementary school. The results of the practicality test of digital teaching materials with local wisdom obtained an average teacher assessment of the practicality of digital teaching materials of 3.78 and in the interval 3.50≤Rk≤4.00 which indicates that digital teaching materials with local wisdom are in the very practical category. The average student assessment of the practicality of digital teaching materials is 3.65 and belong to 3.50≤Rk≤4.00 interval, which indicates that digital teaching materials with local wisdom are in the very practical category. The effectiveness test of digital teaching materials with local wisdom was carried out using a t-test by comparing the learning outcomes of two groups of students using digital teaching materials (Group A) and groups of students who did not use local wisdom digital teaching materials (Group B). The t-test calculation was performed using SPSS Version 24 for Windows. The calculation results are presented in Table 2.

Table 2. t-Test Result

Statistic		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning Outcomes	Equal variances assumed	3.918	0.054	6.931	48	0.000	27.8000	4.01082	19.73571	35.86429
	Equal variances not assumed			6.931	41.025	0.000	27.8000	4.01082	19.70013	35.89987

Based on Table 2 show the value of Sig.(2-tailed) <0.05, then there is a significant difference between the learning outcomes of the group using digital teaching materials (Group A) and the group not using digital teaching materials (Group B). Therefore, digital teaching materials with local wisdom are

declared effective for improving student learning outcomes. At the development stage there are notes or expert advice so that improvements need to be made as follows. First, the completeness of the navigation menu instructions for digital teaching materials. Digital teaching materials that can be independently explored need to be provided with clear menus/navigation features. Navigation features in online-based learning media can make it easier for students to explore independently. In addition, setting the position of the navigation buttons must also pay attention to the display on a laptop, tablet, or cellphone. Therefore, it is necessary to provide navigation buttons on each menu or submenu of learning media. Based on expert advice, the improvements made can be presented in Figure 1.
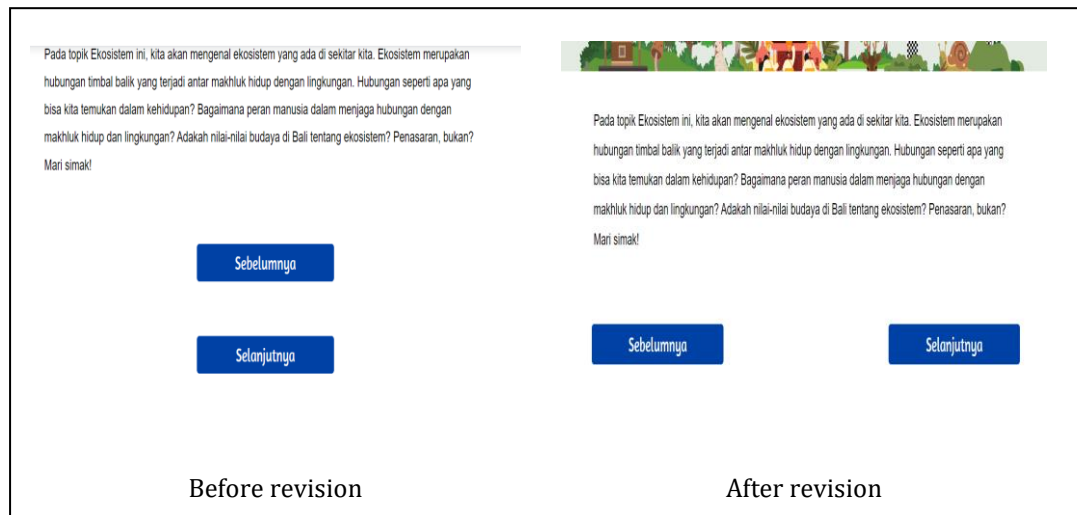

	Before revision		After revision

Figure 1. Improvement of Navigation features

Second, there are learning objectives for the achievement of basic competencies and are written explicitly at the beginning of each learning page. In the teaching materials made, the learning objectives are not made explicit in the teaching materials. Learning objectives interpret as learning outcomes obtained by students after the learning process for one learning topic in a certain period. The learning objectives designed are required to consider the learning tools available in schools and consider the circumstances of the students so that they need to be included in each subject in the teaching materials. Third, shorten the link for digital teaching materials. To find the location of digital teaching materials published on the internet, students must know the name/address of the link in question. This digital teaching material uses a fairly long link name, namely: https://sites.google.com/guru.sd.belajar.id/ekosistemtema5/beranda. In order to make it easier for users to find the address/site of this google sites, a custom link is made using the Bitly application https://bit.ly/ekosistemtema5.

Discussion

This research on the development of local wisdom digital teaching materials uses the ADDIE development stage model. To produce quality products, these digital teaching materials are tested for feasibility in terms of validity, practicality, and effectiveness. The results showed that digital teaching materials were in the very valid category. The fulfillment of the valid criteria is due to the fact that these digital teaching materials meet the required validity test aspects/criteria. The aspects of testing the validity of digital teaching materials include graphic elements, content feasibility, linguistic components, and presentation components. These aspects have indicators that can be used as a reference to measure the level of validity of a teaching material. Previous research has shown that a good process of drafting, planning and reviewing implementation will be able to achieve quality learning (Basuki, 2015). Teachers and students will more easily achieve learning objectives as set out in the curriculum if the teaching materials used are in good quality. Quality teaching materials must meet four elements of feasibility, namely content feasibility, presentation feasibility, linguistic feasibility, and graphic feasibility (Riananda, 2016; Susilawati et al., 2020; Wibowo & Pratiwi, 2018).

Then digital teaching materials with local wisdom were declared effective to improve student learning outcomes. Judging from the practical aspect, the achievement of the very practical category is because the developed teaching materials have met the specified practical aspects such as product attractiveness, product ease of use, and product benefits. The practicality of a product which includes the

attractiveness, convenience, and benefits of teaching materials to users (Anud, 2019; Dewanti & Yasmita, 2022). Measurement of the quality of teaching materials can be seen in terms of practical use, both by teachers and students. Practicality refers to the condition that the learning modules developed can be easily used by students so that the learning carried out is meaningful, interesting, fun, and useful for students' lives. Moreover it can increase their creativity in learning and have a degree of effectiveness on student learning outcomes (Alfitriani & Hutabri, 2017; Hutama, 2016; Magdalena et al., 2020). The practicality of product development is determined from the teacher's statement that the resulting product can be used easily by teachers and students in accordance with the intent of the product developer (Muga & D.N.L., 2017; Pawestri & Sukoco, 2017). Teaching materials are said to be effective if they meet the indicators, namely the student's appreciation of learning. The achievement of individual and classical competencies while the learning was carried out (Siregar, 2020; K. S. Sularso, 2016).

This finding is reinforced by previous research stating that quality teaching materials have a high level of validity, textbooks are suitable for use in learning (U. R. Pratiwi & Widyaningrum, 2021). In general, these textbooks have met the eligibility criteria in terms of content, presentation, linguistic and graphic components The effectiveness of a learning can be viewed from the independence of students in learning (Astuti & Prabowo, 2020; Fadillah & Jamilah, 2016). The development of digital teaching materials certainly provides opportunities for students to be independent in learning. The most important thing in the independent learning process is to increase the willingness and skills of students in the learning process without the help of others, so students do not depend on educators, mentors, friends, or other people when studying (Islam et al., 2022; Lestari, 2016).

Based on the results of research data analysis, the development of digital teaching materials with local wisdom has fulfilled the product feasibility aspect. Digital teaching material products have very high validity, very high practicality, and significant effectiveness categories. The implication of this research is teachers are expecting can use teaching materials that are in accordance with the material so as to facilitate students in the learning process. The limitation of this research lies in its scope. This research only focuses on raising themes related to ecosystem materials in 5th grade of elementary school. It is hoped that further research will be able to further expand the scope of research related to the development of digital teaching materials based on local wisdom oriented.

4. CONCLUSION

The development of digital teaching materials with local wisdom has fulfilled the product feasibility aspect. Digital teaching material products have very high validity, very high practicality, and significant effectiveness categories. In learning shows that these teaching materials can help students in independent learning.

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