Journal for Lesson and Learning Studies
Volume 6, Number 1, 2023 pp. 27-34
P-ISSN: 2615-6148 E-ISSN : 2615-7330
Open Access: https://doi.org/10.23887/jlls.v6i1.57482

E-module with the Borg and Gall Model with a Contextual Approach to Thematic Learning

Septya Novena Elwana Putri [1*], Anak Agung Gede Agung[2], I Kadek Suartama[3]

[1,2,3] Teknologi Pendidikan, Universitas Pendidikan Ganesha, Singaraja, Indonesia

ARTICLE INFO

Article history:
Received January 17, 2023
Accepted April 07, 2023
Available online April 25, 2023

Kata Kunci:
E-Modul, Pendekatan Kontekstual, Tematik

Keywords:
E-Module, Contextual Approach, Thematic

ABSTRAK

Belum adanya penerapan bahan ajar digital dalam proses pembelajaran tematik kemudian berdampak pada proses belajar siswa, dimana siswa cenderung cepat bosan saat pembelajaran dan guru hanya menggunakan metode konvensional saja saat mengajar. Adapun tujuan dari penelitian ini yakni untuk menciptakan sebuah bahan ajar yaitu E-modul berbasis pendekatan kontekstual pada pembelajaran tematik kelas V SD. Subjek dari penelitian ini terdiri dari 1 ahli isi mata pelajaran. 1 ahli desain pembelajaran, 1 ahli media pembelajaran, hasil uji coba perorangan dari 3 siswa, dan kelompok kecil 9 orang. Penelitian ini merupakan penelitian pengembangan dengan model pengembangan Borg and Gall. Metode yang digunakan untuk pengumpulan data yaitu metode kuesioner dan tes. Teknik analisis data menggunakan analisis deskriptif kuantitatif dan analisis statistik inferensial. Hasil analisis data menunjukkan bahwa uji ahli isi mata pelajaran memperoleh skor 98%. Ahli desain pembelajaran memperoleh skor 98%. Ahli media pembelajaran memperoleh skor 89,33%. Uji perorangan mendapatkan skor 95,33 dan uji kelompok kecil mendapat skor 96%. Berdasarkan hasil tersebut maka dapat disimpulkan bahwa E-modul berpendekatan kontekstual pada pembelajaran tematik layak digunakan dalam kegiatan belajar, hal ini disebabkan karena media e-modul dapat membangun motivasi siswa dalam mengikuti kegiatan pembelajaran.

ABSTRACT

The absence of digital teaching materials in the thematic learning process impacts student learning processes. Students tend to get bored quickly during learning, and teachers only use conventional teaching methods. This study aims to create a teaching material, namely E-module, based on a contextual approach to fifth-grade elementary school thematic learning. The subjects of this study consisted of 1 subject matter expert. One learning design expert, one learning media expert, results of individual trials of 3 students, and small groups of 9 people. This research is development research using the Borg and Gall development model. The method used for data collection is the method of questionnaires and tests—data analysis techniques using quantitative descriptive analysis and inferential statistical analysis. The results of the data analysis showed that the subject matter expert test obtained a score of 98%. Instructional design experts get a score of 98%. Learning media experts obtained a score of 89.33%. The individual test got a score of 95.33, and the small group test got a score of 96%. Based on these results, e-modules with a contextual approach to thematic learning are appropriate for learning activities. It is because e-module media can motivate students to participate in learning activities.

1. INTRODUCTION

Education is one of the efforts made by a person to improve the quality of life. Through education, people can increase their resources to be well-received in the community. Education in Indonesia is carried out by implementing the 2013 curriculum, which has an approach to thematic learning processes. Thematic learning is synonymous with using themes, the main ideas or ideas that are the subject of discussion (Susilawati & Rusdinal, 2022; Wardani & Syofyan, 2018). It was further explained that thematic learning is a form of integrated learning by applying the concept of themes in linking several subjects (Geni et al., 2020; Riani et al., 2019). The implementation of thematic learning in elementary schools allows students to discover scientific concepts/principles holistically, meaningfully, and

Corresponding author
*E-mail addresses: septyanovena@gmail.com (Septya Novena Elwana Putri)

authentically that are connected and related through certain themes, both individually and in groups (Elendiana & Prasetyo, 2021; Kurniawati & Mawardi, 2021; Rohmanurmeta & Dewi, 2019). In addition, thematic learning allows students to be directly involved in the learning process through productive, creative, innovative, and affective activities (Fauziyah & Anugraheni, 2020; Ngazizah et al., 2022; Sintya et al., 2020). In practice, thematic learning in elementary schools is carried out with the aim that students can get to know their environment as a whole and thoroughly. It is hoped that students can solve problems faced in their surrounding environment (Anisah & Holis, 2020; Donna et al., 2021). So there is no presumption that material at school is only for pursuing grades and cannot be applied to solving everyday problems.

Implementing thematic learning in elementary schools will be more effective if learning media accompanies it. It is because learning media is an important element in today's teaching and learning process, as well as other elements such as models, methods, teaching materials, etc. (Darsana et al., 2021; Winaya, 2019). Media use in every learning process has become necessary for every teacher. Using learning media in the teaching and learning process drives motivation and enthusiasm for student learning, clarifies information and facilitates abstract concepts, and enhances absorption (Krissandi, 2018; Kumalasani, 2018). Learning media can generate a new passion for learning for students, so it has a good psychological influence on students in generating motivation and stimulating learning activities and has a major influence on students' understanding of the material (Kuncahyono & Sudarmiatin, 2019; Nopiani et al., 2021). Without the use of media, learning will not go according to plan. The teacher must be able to change something from anything into material that students can use as media or teaching materials. Teaching materials must be developed according to the learning objectives to improve the process, motivation, and student learning outcomes.

The reality shows that teachers need more time to develop technology-based learning media. The use of learning media is very necessary for students. It is because students have been unable to study independently and still need a teacher in tutoring. In the interview session, several problems were found. As many as 21 out of 28 students, or a percentage of 75%, stated that students had difficulty understanding the material presented by the teacher. It is due to the need for more learning media with structured material, such as teaching materials as student learning guides both at and outside school. There were eight students out of 28, or a percentage of 28.57%, stated that students were active when participating in the learning process. In comparison, 18 out of 28 students, or a percentage of 64.28%, stated that students were passive when participating in learning because the teacher only used conventional methods when giving learning material, although occasionally explaining the material with the help of PowerPoint. If left unchecked, these problems will certainly impact not achieving thematic learning goals in elementary schools.

One of the media that can be used to increase student learning activities is learning media in the form of e-modules. E-modules are teaching materials that contain methods, materials, and learning evaluation materials accompanied by images, videos, and audio that can help the student learning process (Romayanti et al., 2020; Sa'diyah, 2021). The application of e-module media in learning allows for a two-way communication process and can be used anywhere and anytime (Herawati & Muhtadi, 2020; Padwa & Erdi, 2021). A good e-module has five characteristics: self-instruction, self-contained, stand-alone, adaptive, and user-friendly (Santosa et al., 2017; Widiastuti, 2021). Applying e-module media will be more effective if accompanied by contextual learning models. Contextual learning model or contextual learning is a learning model that links learning materials with real-world situations, with the aim that students can make connections between the knowledge they have and its application in life as members of the family and society (Afrianti & Qohar, 2019; Agung et al., 2020). Contextual learning models are not exclusive but can be combined with other learning models, for example, discovery, process skills, experiments, demonstrations, discussions, and others (Wicaksono et al., 2020; Wulandari et al., 2021).

Several previous studies have revealed that e-module learning media based on a contextual approach is appropriate for learning because it helps students learn well and encourages a cooperative learning environment (Martin et al., 2021). The results of other studies reveal that e-module media based on contextual approaches are effectively used in the learning process because they can facilitate students' independent or conventional learning (Sari, 2022). The results of further research reveal that teaching materials in e-modules are very effective in learning. It is because e-modules contain pictures, videos, and quizzes that students use to study independently without a teacher, making it easier for students to understand the material (Herawati & Muhtadi, 2018). Based on some of the results of these studies, e-modules based on contextual approaches are effectively used in the learning process because they can increase student activity and learning outcomes. In previous studies, no studies specifically discussed the development of e-modules with the borg and gall model with a contextual approach to thematic learning.

So this research is focused on this study to create a teaching material, namely E-module, based on a contextual approach to fifth-grade thematic learning in elementary school.

2. METHOD

This research belongs to the development research developed using the Borg and Gall development model. The Borg and Gall development model consists of an initial stage, development stage, validation stage, field trial stage, and final product manufacturing stage. The subjects of this study were all fifth-grade students, totaling 32 students. In this E-module development research, two methods were used in data collection: questionnaires and tests. The questionnaire is a way of obtaining and collecting data by sending a list of questions to respondents. The written test method is a way to determine students' knowledge, skills, intelligence, or abilities by using a series of questions as an objective test. The data collection instrument grid is divided into two types of instruments, namely questionnaire instruments. Review of experts, individual trials, small groups, and test questions in the form of multiple choices. The research instrument grids are presented in Table 1, Table 2, Table 3, and Table 4.

Table 1. Subject Content Expert Instruments

No	Aspect	Indicator
1	Curriculum	1. The suitability of the material with basic competence
		2. The suitability of the material with learning indicators
		3. The suitability of the material with the learning objectives
2	Material	1. The suitability of the material presented
		2. The depth of the material presented
		3. The material presented is easy for students to understand
		4. The attractiveness of the presentation of the material
		5. The material follows the characteristics of students
3	Language	1. Language use
		2. Language suitability with student characteristics

Table 2. Learning Design Expert Instruments

No	Aspect	Indicator
1	Objective	1. Clarity of learning objectives
		2. Congruence of learning objectives with the material
		3. Congruence of learning objectives with materials and questions
2	Strategy	1. The delivery of material uses logical steps
		2. Free navigation on the delivery of the flow of material
		3. Ease of use of the E-module
		4. E-modules provide learning motivation to students
		5. Independent learning opportunities for students
3	Evaluation	1. Provide evaluation questions to test student understanding
		2. The questions presented follow the learning indicators

Table 3. The instrument for reviewing learning media experts

No	Aspect	Indicator
1	Messaging design	1. Text
		2. Image
		3. Videos
2	Organizing	1. Ease of use

Table 4. Individual and Small Group Test Instruments

No	Aspect	Indicator
1	Appearance	1. The attractiveness of the display of the E-module media
		2. Readability of writing on the E-module
		3. Clarity of sound on the e-module
2	Material	1. Clarity of material presented in the E-module
		2. Completeness of the material in the E-module
		3. Discussion of material in the E-module is accompanied by appropriate pictures and videos

No	Aspect	Indicator
3	Operation	1. E-module is easy to open
		2. E-module is easy to use
4	Benefit	1. the module facilitates student learning
		2. the module accommodates students' enthusiasm for learning

In order to determine the level of validity and reliability of the measuring instrument, the instrument was tested to determine the validity and reliability of the instrument. The requirements for fulfilling the instrument are the validity of the test items, the reliability of the test, the level of difficulty of the test items, and the differential power of the test. Data analysis techniques used in this study include quantitative descriptive analysis techniques and inferential statistical analysis. Quantitative descriptive analysis techniques are used to process data obtained through questionnaires in percentages. Inferential data analysis was used using the E-module development product to determine the level of product effectiveness on fifth-grade student learning outcomes at SD Negeri 3 Pejarakan. Target trial data were collected using the pre-test and post-test on the subject matter being tested. The results of the Pre-test and Post-test were then analyzed using the t-test to determine the difference between the results of the Pre-test and Post-test. Before carrying out the hypothesis test (correlated t-test), prerequisite tests (normality and homogeneity) were carried out. In order to be able to provide meaning and decision-making, achievement conversion with a scale of 5 is used, as shown in Table 5.

Table 5. Conversion of Achievement Levels with a Scale of 5

Achievement level (%)	Qualification	Description
81 - 100	Very Good	Very decent, no revision needed
61 - 80	Good	Decent. No need to revise
41 - 60	Enough	Inadequate, needs to be revised
21 - 40	Not enough	Not feasible, needs to be revised
< 21	Less	Not feasible, needs to be revised

3. RESULTS AND DISCUSSION

Results

The E-module design based on a contextual approach with the Borg and Gall development model is carried out in several stages. One of them is the first stage, the preliminary stage, which is carried out by analyzing student characteristics and problems in the learning process, competency analysis, and facility/environmental analysis. The analysis was carried out using instruments that researchers and direct observation had made. The second stage is the development stage which is carried out by designing a product development design based on the analysis carried out in the previous stage. At this stage, the things that are done are compiling lesson plans, making E-module frameworks, making flowcharts and storyboards, and product implementation. The third stage is the validation stage, which is carried out through assessment by three experts: learning content experts, media experts, and learning design experts. The fourth stage is product trials. In this trial phase, data is collected, which provides information about the products' quality. Data from the trial results were analyzed to revise the product. The fifth stage is the stage of making the final product. This final stage is the refinement and manufacture of re-products that have gone through the stages of trials and revisions from various parties so that a valid learning media will be obtained to support the learning activities in SD Negeri 3 Pejarakan, especially for a fifth grader. An overview of the products being developed can be seen in Figure 1.

Figure 1. The Results of Ebook Media Development Based on a Contextual Approach

The media that has been developed is then tested on product trials to subject content experts, instructional design experts, learning media experts, individual trials, and small group trials. The results of product validity tests by experts can be seen in Table 6.

Table 7. Percentage of E-Module Development Validation Results

No	Subjects test the validity of learning video media	Validity Results	Qualification
1	Subject expert test	98%	Very good
2	Learning design expert test	98%	Very good
3	Learning media expert test	89,33%	Very good
4	Individual trials	95,33%	Very good
5	Small group trial	96%	Very good

Based on the data in the table, the media developed is very qualified. After testing the validity, the analysis was then continued with testing the effectiveness of developing E-modules based on a contextual approach which was carried out using the multiple choice test method, which was measured by giving multiple choice question sheets to 32 fifth-grade students at SD Negeri 3 Pejarakan through pre-test and post-test. Based on the data on the pre-test and post-test scores of the 32 students involved, a t-test was performed for correlated samples. The average score of students' pre-test was 48.87, and the average score of students' post-test was 88.37. Based on the results of the t-test analysis, the t_count is 18.077. t_count is then compared with t_table at a significance level of 5% with db = n1 + n2 – 2 = 64 – 2 = 62 which is 2,000. These results show that t_count > t_table, so H_0 is rejected, and H_1 is accepted. It means a significant difference (5%) between before and after using the E-module in fifth-grade thematic learning at SD Negeri 3 Pejarakan for the 2022/2023 Academic Year. These results indicate that an E-module based on a contextual approach is effectively used in Fifth Grade Thematic learning at SD Negeri 3 Pejarakan in the 2022/2023 Academic Year.

Discussion

Based on the results of the data analysis that has been carried out, the media developed is a valid qualification, so it is very feasible to be developed and taught to students. Several factors first influence the success of media development. Media development is carried out using the borg and gall development model. The borg and gall development model is an industry-based development model used to design a product based on procedures (Putra et al., 2020; Rohmaini et al., 2020). This model consists of several research stages, including the preliminary stage, which analyzes the occurring problems. The development stage is carried out by designing product development designs. The validation stage is carried out through an assessment process by experts, and the trial phase is carried out by collecting information about the quality of the products produced, as well as the stages of making the final product which is carried out by perfecting the product being developed (Aka, 2019; Hakim, 2020). Through systematic development stages, the borg and gall development model will be able to produce products tested for validity so that they are very feasible to implement (Iriani & Handoyo, 2020; Ricu & Najuah, 2020). In addition, applying the borg and gall model allows the developer to carry out thorough preparations before developing so that the resulting product is maximal and has no defects (Susanti & Sholihah, 2021).

The second critical success factor is that the developed media has an attractive design to attract students' learning interest. Media design is related to using images, colors, and writing fonts that can clarify the presentation of the material (Darsana et al., 2021; Winaya, 2019). In addition to being able to contain images and writing, the developed e-module media also contains video and audio lessons, making it easier for students to understand the content of the material presented (Kuncahyono & Sudarmiatin, 2019; Nopiani et al., 2021). Through an attractive design, e-module media can concretize various abstract concepts presented in teaching materials (Krissandi, 2018; Kumalasani, 2018). The more interesting the media developed, the greater the interest of students in studying the media. It is also related to the characteristics of elementary school students who tend to like new and interesting things (Rahayu, 2019; Rosnaeni, 2021). The third critical success factor is that the developed media can increase student interest and learning outcomes. It relates to the application of a contextual learning approach that can help students relate learning material to conditions in the environment, with the aim that students can make connections between the knowledge they have and its application in life as members of the family and society (Afrianti & Qohar, 2019; Agung et al., 2020). E-module media with a contextual approach allows students to learn meaningfully through an active and innovative learning process (Wicaksono et al., 2020; Wulandari et al., 2021).

The results of other studies reveal that e-module media based on contextual approaches are effectively used in the learning process because they can facilitate students' independent or conventional learning (Sari, 2022). The results of further research reveal that teaching materials in e-modules are very effective in learning. It is because e-modules contain pictures, videos, and quizzes that students use to study independently without a teacher, making it easier for students to understand the material (Herawati & Muhtadi, 2018). Based on some of the research analysis results supported by previous research, e-modules based on contextual approaches are effectively used in learning because they can increase student activity and learning outcomes.

4. CONCLUSION

Based on the data analysis and discussion results, the E-module based on a contextual approach to Thematic learning is very qualified, so it is feasible to be developed and taught to fifth-grade elementary school students. E-modules based on a contextual approach are appropriate for learning because they help students learn well and encourage a cooperative learning environmentt.

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