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Integrated Thematic E-LKPD with RADEC- Based Neapod in Grade V Elementary School

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ABSTRAK

Pesatnya perkembangan IPTEK membuat pembelajaran tematik terpadu di sekolah dasar menggunakan teknologi. Namun LKPD yang ada saat ini hanya berisi kumpulan soal, materi tidak tersusun secara terstruktur dan tidak memuat gambar yang mampu menarik minat peserta didik. LKPD yang ada hanya sebagai penunjang pembelajaran, bukan menjadi media pembelajaran. Tujuan penelitian ini yaitu untuk menghasilkan produk E-LKPD menggunakan aplikasi Nearpod berbasis RADEC untuk mengikuti perkembangan teknologi yang ada dan membantu peserta didik dalam memahami materi. Jenis penelitian ini adalah penelitian pengembangan dengan model pengembangan ADDIE. Metode pengumpulan data yaitu dengan wawancara dan dokumentasi. Instrument pengumpulan data dengan menggunakan kuesioner. Teknik analisis data menggunakan analisis deskriptif kualitatif, kuantitatif, dan statistic inferensial. Hasil penelitian yaitu rata-rata persentase penilaian yang diberikan oleh guru yaitu 89% (sangat praktis) dan siswa 87% (sangat praktis). Tes skor N-Gain digunakan untuk menguji temuan pre-test dan post-test, dan hasilnya menunjukkan bahwa kategori efektif pada kategori tinggi. Efektivitas juga dapat dinilai dari seberapa aktif siswa terlibat dalam pendidikan mereka. Disimpulkan bahwa E-LKPD menggunakan aplikasi Nearpod berbasis RADEC dapat meningkatkan hasil belajar siswa.

ABSTRACT

The rapid development of science and technology makes integrated thematic learning in elementary schools use technology. However, the current LKPD only contains a collection of questions. The material is not structured and does not contain images that can attract students' interest. The existing LKPD is only a learning support, not a learning media. This research aims to produce E-LKPD products using the RADEC-based Nearpod application to keep abreast of existing technological developments and help students understand the material. This type of research is development research with the ADDIE development model. Methods of data collection, namely by interviews and documentation. Data collection instrument using a questionnaire. Data analysis techniques using descriptive qualitative analysis, quantitative, and inferential statistics. The result of the research is that the average percentage of the assessment given by the teacher is 89% (very practical) and 87% students (very practical). The N-Gain score test was used to test the findings of the pre-test and post-test, and the results showed that the category was influential in the high category. Effectiveness can also be judged by how actively students are involved in their education. It was concluded that E-LKPD using the RADEC-based Nearpod application could improve student learning outcomes.

1. INTRODUCTION

Learning is an activity carried out by the teacher programmed in an instructional design that creates a process of interaction between fellow students, teachers and students with learning resources. Learning aims to create continuous changes in the behaviour and thinking of students in a learning environment. A learning process is inseparable from teaching and learning activities (Damayanti et al., 2021; Dewi et al., 2017; Elfiani et al., 2019). One sign that someone has learned something is a change in behaviour within him (Ariani, 2017; Nugraha et al., 2017; Uno et al., 2021). These changes in behaviour involve changes in knowledge (cognitive) and skills (psychomotor) as well as those involving values and attitudes (affective) (Gabriele et al., 2016; A. P. Putri et al., 2021). Learning includes subject matter, mastery, habits, perceptions, enjoyment, competence, social adjustment, various skills, and aspirations. Learning is a process of interaction between students and their environment, resulting in changes in behaviour for the better (Putri et al., 2020; Sari et al., 2021).

The teacher's most important task during the learning process is to condition the learning environment to support student behaviour change. One of the lessons learned by elementary school students is thematic (Tinja et al., 2017; R. Wibowo et al., 2017). Integrated thematic learning is learning that

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uses themes and links several subjects to make learning meaningful to students. This integrated thematic learning has consequences that must be addressed, namely the consequences for teachers, students, facilities, infrastructure, and learning resources as well as the media (Khoeriyah & Mawardi, 2018; A. M. I. Puspita & Purwo, 2019). Arrangement of student study rooms and learning methods. Therefore, teachers should have high quality and capacity because this integrated thematic curriculum requires teachers who can produce accurate ideas (Saputra, 2017; Sari et al., 2018).

The teacher as a facilitator should be able to teach and create learning conditions that are effective, creative, and fun so that the learning objectives are achieved, namely, students can easily accept the material presented by the teacher (Dobber et al., 2017; Hendrawijaya et al., 2020; Palavan et al., 2016). In the era of the 21st century or the era of globalization, communication technologi, and information is growing, including in the world of education. The challenges of learning in the 21st century are related to the current ICT learning and development models. To achieve learning objectives, teachers also need skills in designing learning media and models (Adukaite et al., 2017; Amini, R., & Saniyah, 2021).

Furthermore, to see the conditions in the class, the researchers conducted a preliminary study on two elementary schools in Cluster IX, Aur Birugo Tigo Baleh District, Bukittinggi City, namely SDN 09 Belakang Balok and SDN 10 Sapiran. Preliminary studies were carried out by analyzing the problems, requirement, and characteristics of students. The data was taken through interviews with class teachers and observing students' responses to learning activities. The observation results show that when teaching in class the teacher uses LKPD but the LKPD only contains a collection of questions, the material is not structured and does not contain pictures that can attract students' interest. The existing LKPD is only as a learning support, not as a learning media. Based on the results of interviews with teachers regarding LKPD, the teacher explained that the LKPD used did not have a complete LKPD identity but only consisted of name and class columns. LKPD circulating in elementary schools have not taken advantage of existing ICT developments because In the form of printed sheets distributed to students.

Currently, technology can be used in learning activities, the benefit of this technology is that learning becomes more effective (Weng & Chen, 2020; Yelianti, Upik, 2018). The use of technology in learning can also increase students' interest in participating in learning. To adapt to technology, changes are needed, namely, the LKPD that is printed out and distributed to students is replaced with an E-LKPD that can be accessed on the Internet (Apriyanto et al., 2019; Yulhaqqi, A., & Amini, 2022). The advantage of this E-LKPD is that it can facilitate learning activities and be effective. To optimize the E-LKPD it is designed to use the Nearpod application. Nearpod is a web-based application that makes the learning environment more effective. Learning is carried out on the Nearpod application which can be filled with materials, quizzes, learning videos, and answering questions with existing games (Sarginson dan McPherson., 2021; Susiana, 2021).

Learning with the Nearpod application can be structured using the RADEC learning model so that it can make participants active and arouse students' creativity in learning. The RADEC learning model is a breakthrough for student-centered learning. The stages of the RADEC learning model consist of the name of the model itself (Sopandi, et al., 2018). In line with the discussion above, previous researchers conducted a research study conducted by Mustafa tahun 2021that learning using the Nearpod application can help students develop themselves. In addition, research explained that learning with the RADEC model can improve students' learning abilities. Researchers use the RADEC learning model because according previous research it is better used to shape the character of students to be better at participating in learning (Utsman, et al., 2022). This research aims to produce E-LKPD products using the RADEC-based Nearpod application to keep abreast of existing technological developments and help students understand the material.

2. METHOD

This study falls under the category of R&D. The ADDIE model was used to conduct this study (Branch, 2009). The ADDIE instructional paradigm is a five-phase instructional process that includes dynamic analysis, design, development, implementation, and evaluation. The ADDIE model is used because it offers the chance to continuously review and change throughout each phase, culminating in a product that a valid product. An integrated themed E-LKPD using the RADEC-based Nearpod application for fifth-grade primary school is the final product that needs to be created. This research was conducted on theme 6 "Heat and Transfer", sub-theme 1 "Temperature and Heat". Technical data collection, namely by interviews and documentation. Interviews were conducted with teachers regarding learning. Observations made in class used an observation sheet in the form of a checklist model. Documentation is done by collecting photos, videos, and writings that can complement this research. Product validation in this study uses a validity

instrument sheet. The validity of the instrument was given to five validators consisting of four lecturers and one elementary school teacher. The validation criteria for the E-LKPD instrument showed in Table 1.

Table 1. Table Of E-Lkpd Instrument Validation Criteria

Percent (%)	Criteria
81 -100	Very valid
61 – 80	Valid
41 – 60	Pretty valid
21 – 40	Less valid
0 - 20	Invalid

The questionnaire given to teacher and fifth-grade pupils at three elementary schools demonstrates practicality. The amount of student engagement during learning activities, the learning outcomes of students utilizing the E-LKPD and the findings of the N-Gain score produced from pre-test and post-test values are all indicators of effectiveness. The average N-Gain test analysis was used to evaluate the data in Microsoft Excel.

3. RESULT AND DISCUSSION

Result

R&D (Research and Development) is a research and development methodology used in this investigation. The ADDIE approach, which comprises five stages is the one used in this study (Branch, 2009). In preparation for analysis, the researcher conducted a pilot study at two elementary schools in Bukittinggi City: SDN 09 belakang Balok and SDN 10 Sapiran. After conducting a preliminary investigation in the two elementary schools, the researcher analyzed the students and found a number of difficulties, such as the teacher using the LKPD in instructional activities but having limitations on how students could use it because the LKPD used in elementary schools only consisted of questions and answers and showed no improvement. shown student aptitude. The primary school teachers used LKPD for learning, but just the written versions provided by the teacher did not incorporate technology. Regarding the learning model, the teacher did not employ one that piques pupils' interest in learning. The design stage intends to create a product in the form of an E-LKPD for fifth-grade elementary school students using the RADEC-based Nearpod application in integrated thematic learning, specifically on theme 6 "Heat and Its Transfer" Sub-theme 1 "Temperature and Heat." The RADEC learning model served as the basis for the construction of the E-LKPD on the nearpod application. Learning materials are adapted to KI and KD according to the 2013 curriculum. The design of the E-LKPD is in by the E-LKPD component, namely completing the requirements for preparing the E-LKPD which consists of didactic requirements, namely paying attention to the individual characteristics of students, construction requirements, namely paying attention to aspects of language that are appropriate with the level of development of students, and technical requirements, namely the use of letters, good pictures and an attractive appearance for students (Indriyani, 2016).

The E-LKPD research product uses the RADEC-based Nearpod application, validated by five experts, including three material/content experts, one design/graphics expert, and one language expert. The E-LKPD product display uses the nearpod application which has been validated and continues to the practicality test stage. E-LKPD products use the Nearpod application which will be continued at the practical stage. The development results are presented in Figure 1.

Figure 1. E-LKPD Using Radec-Based Nearpod Applications

After the design stage of the E-LKPD, the next is the development stage with validity tests by experts that the products made are valid and can be tested for practicality by teachers and students. The validity assessed on the E-LKPD includes several aspects including the validity of language use, content validity, presentation validity, and finally the validity of the field of graphics. By experts in their domains, the E-LKPD-based Nearpod application in grade V SD underwent a validity test, namely four UNP education faculty lecturers and one elementary school teacher. The results of the material validation get an average percentage of 90% with a very valid category. Integrated thematic e-LKPD using an application*Nearpod* based*RADEC* developed by the researcher is suitable for use and tested for its feasibility in this aspect of the material.

Evaluation and approval of works produced by linguists, specifically a professor who is a linguist. As a study tool, researchers employed a language validation questionnaire. The E-LKPD language validation results had a very valid category with a value of 92%. Conclusion: The Nearpod-based RADEC application that researchers built for the integrated theme E-LKPD is appropriate for usage and has been evaluated for its viability from linguistic perspectives. Media validation comes next. A media expert lecturer was given a questionnaire for media validation, and 90% of the responses fell into the category of "very valid."

The valid products were tested in three schools, namely SDN 03 Pakan Labuah, SDN 07 Belakang Balok, and SDN 04 Birugo City of Bukittinggi. After being tested, the researchers distributed practicality questionnaires to educators and students. The trial was carried out in the classroom using adequate supporting facilities and infrastructure. In the practicality test stage by educators and students, it was found that the E-LKPD uses the nearpod application integrating thematic learning for aspects of presentation, aspects of the process of using E-LKPD, and aspects of evaluation and assessment. The results of the practicality test of the E-LKPD from the aspects of teachers and students showed in Table 2 and Table 3.

Table 2. Result of The Teacher's Practical Test

Use of Class V Teachers	Percentage(%)
Teacher at SDN 03 Pakan Labuah	89%
Teacher at SDN 07 Belakang Balok	90%
Teacher at SDN 04 Birugo	88%
Total Percentage(%)	267%
Average Percentage(%)	89%
Category	**Very practical**

Table 3. Student Practical Test Result

Users (Class V Students)	Percentage(%)
Students at SDN 03 Pakan Labuah	83%
Students atSDN 07 Belakang Balok	90%
Students at SDN 04 Birugo	88%
Total Percentage(%)	261%
Average Percentage(%)	87%
Category	**Very practical**

Based on the aforementioned data, the teacher received an average percentage of 3 teachers on the practicality exam, or 89% in the highly practical category, for the researcher during the trial. The average percentage in the very practical category for the students' practicality test results was 87%. It can be noted that the Nearpod application was created using a model RADEC that is highly practical and appropriate for elementary school pupils in the fifth grade from both the teacher and student perspectives. Researchers have also examined student learning results to determine the efficacy of the E-LKPD with the RADEC-based nearpod application. Students at three elementary schools took pre- and post-tests as part of the research. The N-Gain score test was used to examine the findings of the pre-test and post-test, and the results showed that the effective category had an N-Gain score percent of 76.03% and an average N-Gain score of 0.76 in the high category. Effectiveness can also be judged by how actively students engage in their education. Results from observations of fifth graders' participation in learning activities using the integrated thematic E-LKPD employing the RADEC-based nearpod application showed that 86% of them fell into the category of very engaged learners.

Discussion

Using E-LKPD to learn prevents students from becoming disinterested in their studies because completing practice questions is more enjoyable and encourages engagement (Puspita & Dewi, 2021;

Rahayu et al., 2021). The assessment of the ADDIE learning system design model is the final step. Evaluation is a method used to provide value to the growth of E-LKPD in education. Formative evaluation is the only type of evaluation that is used. The evaluation's findings are utilized to offer feedback on how the E-LKPD has evolved and been put to use in the classroom. Following that, changes are made in response to evaluation findings or need that the E-LKPD development objectives have not been able to address. At this stage, it is necessary to improve the writing fonts in the E-LKPD to make it more attractive to students. With the use of the RADEC-based nearpod application, E-LKPD can enhance student learning results, as was previously explained.

Learning is a change from an event or situation that is designed in such a way as to provide assistance or convenience in the teaching and learning process so that it can achieve learning goals (Wahyuni et al., 2021; Wahyuni et al., 2021). The use of E-LKPD helps learning activities to be more interesting and fun. Learning media is anything that can be used to channel messages from senders to recipients so that they can stimulate thoughts, feelings, attention, and competence as well as students' attention in such a way that the learning process occurs (Lestari et al., 2017; Shalikhah, 2017; Wulandari et al., 2020). Learning media is also a set of auxiliary or complementary tools teachers or educators use to communicate with students or students (Ponza et al., 2018; Sukmanasa et al., 2017). Research results show the positive impact of using media as an integral part of classroom learning or as the main direct learning, such as learning that can be provided whenever desired or needed (Uno et al., 2021; Wibowo & Rahmayanti, 2020)Other findings also reveal that the media plays an important role in the learning process so that the distribution of information or material conveyed by the teacher to students can be easily accepted (Latifah et al., 2020; Mustaqim & Kurniawan, 2017).

The factors and criteria must be considered for what will be conveyed in selecting teaching media. E-LKPD is one of the teaching materials that can help students in learning. Teaching materials are a set of learning tools or tools that contain learning materials, methods, limitations, and ways of evaluating that are designed systematically and attractively in order to achieve the expected goals, namely achieving competencies or sub-competencies with all their complexities (Fadillah & Jamilah, 2016; Syafrudin & Sujarwo, 2019). The positive impact of teaching materials is that teachers will have more time to guide students in the learning process, help students to acquire new knowledge from all sources or references used in teaching materials, and the role of the teacher as the only source of knowledge is reduced (Fitriana et al., 2020; Muga et al., 2017). Previous research findings also revealed that E-LKPD could assist learning activities so that students more easily understand learning material (Apriyanto et al., 2019; Rizkika et al., 2022). So E-LKPD can improve student learning outcomes because students feel helped.

4. CONCLUSION

Based on the findings of the research, the E-LKPD was obtained using the RADEC-based nearpod application in class V SD, the validity of the integrated thematic E-LKPD with the RADEC-based nearpod application has been examined while taking into account media, linguistic, and material considerations. The findings of the validation test, which involved five expert validators, were used to determine the E-LKPD utilizing the RADEC-based nearpod application in class V SD in the extremely valid category. It may be inferred that the creation of this E-LKPD can be utilized as a learning resource by teachers and students in fifth grade in elementary schools, to help and promote knowledge of the topic being taught, as well as a reference in additional study.

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