Educate
JURNAL TEKNOLOGI PENDIDIKAN
P-ISSN 2527-7677
E-ISSN 2614-8331
Vol. 10, No. 2, JULY 2025, pages. 177-184 DOI: 10.32832/educate.v10i2.20706

DEVELOPMENT OF EDUCATIONAL APPLICATIONS ON THE SUBJECT OF LIVELIHOODS IN CLASS IV AT THE SOKOWATEN BARU ELEMENTARY SCHOOL

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Abstrak

Abstrak berisi: Penelitian dan pengembangan ini bertujuan menghasilkan aplikasi edukatif berbasis teknologi untuk pembelajaran Ilmu Pengetahuan Sosial (IPS) pada materi "Mata Pencaharian" bagi peserta didik kelas IV SD Negeri Sokowaten Baru, Bantul. Proses pengembangan mengikuti model ADDIE yang meliputi lima tahapan: analisis kebutuhan, desain konten dan media, pengembangan aplikasi, implementasi, serta evaluasi. Pada tahap analisis, kuesioner dan wawancara dengan guru serta peserta didik mengungkap kesenjangan pemahaman konsep pekerjaan dan keterbatasan media interaktif. Konten visual dirancang di Canva, refleksi dilakukan melalui Padlet, evaluasi interaktif menggunakan Quizizz, dan seluruh rangkaian dipadukan dalam platform Nearpod. Validasi tiga ahli menunjukkan skor rata rata 3,93 (kategori sangat baik). Implementasi uji coba kelompok kecil melibatkan lima peserta didik; hasil pretest dan posttest memperlihatkan peningkatan skor rata rata dari 5,6 menjadi 9,4 dengan effect size Cohen's d = 3,33 (kategori sangat tinggi). Hasil tersebut menegaskan bahwa integrasi multimedia dan gamifikasi dalam Nearpod efektif meningkatkan pemahaman konsep mata pencaharian serta motivasi belajar peserta didik.

Kata kunci : Aplikasi Edukatif, ADDIE, IPS, Mata Pencaharian.

Abstract

This research and development study aimed to design an educational technology application for fourth grade Social Studies, specifically the topic "Occupations," at SD Negeri Sokowaten Baru, Bantul, Indonesia. The ADDIE model—analysis, design, development, implementation, and evaluation guided the process. Needs analysis through questionnaires and interviews revealed learners' conceptual difficulties and limited interactive media. Instructional content was created in Canva, learning reflection employed Padlet, interactive assessment used Quizizz, and all activities were integrated within Nearpod. Expert validation yielded a mean score of 3.93 (classified as excellent). A small group trial with five participants showed significant learning gains: mean scores rose from 5.6 (pre test) to 9.4 (post test), with a Cohen's d of 3.33 (very large effect size). These findings indicate that a multimedia rich, gamified Nearpod environment effectively enhances learners' understanding of occupation concepts and boosts engagement in elementary Social Studies.

Keywords: *ADDIE; Educational Application, Nearpod, Elementary Social Studies; Occupations.*

Submitted: 18-06-2025 Approved: 07-07-2025 Published: 15-07-2025

Kutipan: Rahmadani, A. P., Susanto, I. K., Mercy, S., Purba, V. A., & Prasetya, A. E. (2025). Development Of Educational Applications On The Subject Of Livelihoods In Class IV At The Sokowaten Baru Elementary School. Educate: Jurnal Teknologi Pendidikan, 177-184.

I. Introduction

In the digital era that has evolved, the use of technology in education has become an unavoidable necessity. One-way learning is often unable to meet the demands of the times, especially for elementary school students who are in the concrete cognitive development phase. The challenge for teachers is how to deliver subject matter interestingly and contextually, especially in Social Studies (IPS) class IV, such as the topic “Livelihood”. In this material, the rest often feels abstract due to the lack of visualization and connection with the real environment of students. This has an impact on children's low interest in learning, and students' understanding is not maximized. The results of the study showed that more than 70% of elementary school students had difficulty with the IPAS material presented, which was only delivered by textbooks and not supported by visuals or interactivity. The primary issue in this research is the scarcity of digital learning media that is contextual and tailored to meet the needs of students in understanding teaching materials. The purpose of this research is to develop educational applications that can make it easier for students to understand the material while increasing their engagement and learning outcomes with a fun and meaningful learning experience. This research is also supposed to contribute to teachers who provide learning media that are innovative and relevant to the situation and conditions of 21st-century learning.

Operationally, the educational application developed in this research can be interpreted as an Android-based learning media that includes livelihood material for grade IV elementary school students, complete with interactive content, digital quizzes, and discussion forums. With this application, students are expected to understand the various types of livelihoods in Indonesia better and be able to relate to everyday life in the environment around them. There are several things to consider in choosing educational applications. Among others, there must be educational value; educational applications are expected to have clear educational value and not just entertainment. Then, the quality of the content; many apps are not of the same quality. It is important to evaluate the content, and the app should support the child's cognitive development. Age and stage of development are also important; the app should be appropriate for the age and stage of development of the child. The features in the app should support the learning needs of the child at that particular age. There should be interactivity and engagement; a good app should be able to get children involved interactively. The child is not just a passive spectator. It is important that there are learning guidelines and design; the app should be designed and provided with clear guidelines for teachers or parents to maximize the child's learning experience. Reliable reviews and recommendations focused on children's education can help in choosing the right app. There are several challenges and opportunities in the use of educational apps, including challenges regarding inconsistent quality, as many educational apps cannot meet the needs of effective learning. Then, due to the unclear business model, many app providers do not make a profit. Most apps are free, and there is low user willingness to pay. Then, the balance between entertainment and education, many apps only focus on entertainment and less on educational aspects. While the opportunities for using educational apps are increasing due to the demand for

flexible learning, educational apps can be accessed and used anytime and anywhere. With the significant market growth, due to the surge in gadget usage and investment in development, there is a huge potential for educational apps. Another opportunity is innovation in content; the development of more engaging and innovative content can improve user experience and learning effectiveness.

II. Metode Penelitian

This research is a study and development (Research and Development) that has the aim of developing technology-based educational applications in social studies learning, specifically for the material “Livelihoods for grade IV students. This development uses the ADDIE model, which has five stages, including analysis, design, development, implementation, and evaluation (Branch, 2010).

This research was conducted from March to June 2025 at SDN Sokowaten Baru, which is located in Banguntapan District, Bantul Regency. The target of this research is grade IV students. The subjects in this study consisted of 6 grade IV students as users of the application. The steps of this research follow the stages in the ADDIE model.

In the analysis stage, researchers conducted a needs analysis through the distribution of questionnaires and interviews for students and teachers. This needs analysis aims to adjust to the characteristics of students, find out the obstacles faced by students and teachers in learning, and analyze the needs in determining the content or application to be used. Then, the design stage is carried out by designing what content, applications, and media will be used that attract the attention of students and are in accordance with the needs or characteristics of students. Then the next stage is development, which is to create and explore application features based on the design that has been made. Then the next stage is development, which is to create and explore application features based on the design that has been made. This development uses software applications that are in accordance with user needs. In this case, this educational application can be used easily on devices. Learning will be more interactive if you use this digital application, including Nearpod, Quizizz, and Padlet.

These three platforms complement each other to create a collaborative, reflective, and interactive learning experience. These three applications have different uses, but when combined, they will form a complete digital learning experience. Then, the implementation stage is carried out by testing the application for grade IV students at SDN Sokowaten Baru. Learning is carried out with the help of the application, and students are asked to use it directly. 1 device is used for 2 students during learning. The last stage is evaluation, which is carried out to determine the feasibility and effectiveness of the application. Evaluation is carried out during the development process through revisions based on input from

lecturers, teachers, and peers. The instruments used in this study include questionnaires for experts, teachers, and students as well as pretest and posttest questions. The data collection technique used was distributing questionnaires and giving tests to students. This quantitative data is processed using a Likert scale, and data from the pretest and posttest are processed by calculating the effect size using Cohen's d formula to determine the increase in student learning outcomes after using the application.

III. Findings and Discussion

A. Findings

This research aims to develop a digital-based educational application for grade IV students on livelihood material based on residence at the Sokowaten Baru elementary school. The developed application combines several digital media, namely Canva (for material), Padlet (for learning reflection, and Quiziz (for evaluation), which are all packaged in the Nearpod platform. The development process of this research uses the ADDIE model, which consists of five main stages, namely: Analysis, Design, Development, Implementation, and Evaluation. The following is a detailed explanation for each stage passed in the process of developing educational applications:

1. Analysis Steps

At the analysis stage, identification of learning needs in class IV is carried out. This stage is divided into 3 stages of analysis conducted:

a. Needed Analysis

In the needs analysis stage of this research, the researchers used interview and observation techniques. Observations made show that students still have difficulty in understanding the types of livelihoods and their relationship with the place of residence (geographical conditions). These results are reinforced based on interviews with teacher class of IV grade, showing that students still have difficulty in understanding livelihood material and a lack of interactive media.

b. Curriculum Analysis

The development of this educational application refers to the learning outcomes in the current curriculum, namely the Merdeka Curriculum, especially in the subjects of Natural and Social Sciences (IPAS). The material raised is the types of livelihoods in the neighborhood.

c. Analysis of Student Characteristics

Based on observations, the characteristics of grade IV students at Sokowaten Baru elementary school show that they are in the concrete operational stage of development, where students still depend on real experiences and visual representations. Based on observations and informal interviews, students tend to be more interested and focused on learning when the material is delivered using digital media that combines visual, sound, and game-based learning elements.

2. The Design stages

This research develops a product of an interactive multimedia-based digital educational application specifically designed for learning livelihood material for grade IV students. The application developed uses the Nearpod platform as the main container, by integrating several other digital media to enrich students' learning experience.Komponen yang tergabung dalam aplikasi ini antara lain:

a. Nearpod (Main Platfrom)
   Nearpod serves as the main platform that manages all learning activities. With Nearpod, all learning content, starting from materials, quizzes/LKPD, videos, as well as reflection and discussion activities, are accessed in a structured and integrated manner.
b. Canva
   Canva is used to develop visual materials about livelihood materials that are arranged using illustrations that support students' understanding of concepts. The visual design displayed in Canva can help students recognize the types of jobs around them more concretely and aesthetically.
c. Padlet
   Padlet serves as a space for reflection on learning, where students can write their opinions, ideas, or responses to the learning.
d. Quiziz
   Quiziz is used for interactive quizzes as an evaluation of learning comprehension, shaped into a fun game. In Quiziz, students are given multiple-choice quizzes with immediate scores and rankings.

3. Development Stages
   The development stage involves realizing the design into a complete product. This research develops educational applications by assembling various multimedia elements based on the Nearpod platform.
   a. Drafting Process
      The preparation of the application begins with designing learning materials designed using Canva, which are presented in the form of brief explanations and contain selected images that are contextual in nature by directly relating to the environment where students live, for example, farmers, fishermen, and traders. Next, the materials were uploaded and organized into a learning sequence in Nearpod. It contains text elements, polls, short explanation videos, and short quizzes. In the final stage of the development process, links to Padlet and Quiz were embedded directly within Nearpod to support collaborative activities.

   b. Expert Validation Results
      To ensure the feasibility of the developed product, validation was carried out by three experts based on the criteria for media validity.

Table 1. Media Validity Assessment Criteria

No	Criteria	Interval	Recommendation
1	Very Good	3,25 – 4,00	No Revision Required
2	Good	2,50 –	Needs minor

		3,25		revision
3	Not Good	1,75 2,50	–	Need for Major Revision
4	Very Poor	1,00 1,75	–	Needs a complete overhaul

Each validator provides an assessment based on predetermined indicators.

Based on the assessment results from the three validators, the developed application obtained an average score of 3.93, which is in the "Very Good" category. The developed product has met the learning media validity standards and does not require major revisions.

1. Implementasi stage

The implementation stage is carried out after the product is declared feasible based on the experts' validation results. The implementation was carried out through a small group trial involving five fourth-grade students of SD Negeri Sokowaten Baru. Learning activities are carried out face-to-face in the classroom using digital devices (laptops) that have been prepared by the teacher. In the implementation, the teacher acts as a facilitator and guide in the learning process..

2. Evaluation Stage

The evaluation stage is carried out to determine the effectiveness of the educational application that has been developed. The evaluation focused on learning outcomes obtained through pretests and posttests after students used the application.

The test subjects consisted of five fourth-grade students of SD Negeri Sokowaten Baru who took part in learning using the Nearpod application that has been integrated with other applications. Students were given pretest questions before starting learning, and after learning, students did a posttest with the same type of questions.

The trial results showed that there was an increase in the average score from the pretest of 5.6 to 9.4 on the posttest, with a standard deviation of 1.14 in each. The calculation of effect size is done with Cohen's d formula:

$$d = \frac{\bar{x}_{post-\bar{x}_{pre}}}{S_{polled}}$$

$$S_{polled} = \sqrt{\frac{(n-1)S_{post}^2 + (n-1)S_{pre}^2}{2n-2}}$$

Based on Calculation Results:

- Average pretest ($\bar{x}_{pre}$) = 5,6
- Average posttest ($\bar{x}_{post}$) = 9,4
- Standard deviation of pretest and posttest (S) $= 1{,}14$
- Number of subjects (n) = 5

$$S_{polled} = 1{,}14$$

$$d = \frac{9{,}4 - 5{,}6}{1{,}14} = 3{,}33$$

The results show that the effect size value of 3.33 is included in the very high category, in accordance with Cohen's (2002) interpretation, namely:

- 0,0 ≤ d ≤ 0,49 → Low
- 0,50 ≤ d ≤ 0,79 → Medium

- $0{,}80 \leq d \leq 2{,}00 \rightarrow$ High
- $d > 2{,}00 \rightarrow$ Very High

Based on the results obtained, the developed application has a very high effectiveness in improving students' learning outcomes on livelihood material in the surrounding environment.

The validation results of the three experts show an average score of 3.93, which is in the “Very Good” category. The high validation score indicates that the integration of the Nearpod platform with Canva, Padlet, and Quiziz successfully creates a digital learning ecosystem that is easy to use. The success of this validation is in line with the opinion of Ibrahim et al. (2025), which states that good learning media must meet the criteria of content, construct, and language validity. The trial results showed a significant increase in students' learning outcomes. The increase in the average score from 5.6 (pretest) to 9.4 (posttest) demonstrates the effectiveness of the application in improving learners' understanding of livelihood material. The effect size value of 3.33, which falls into the “Very High” category according to Cohen's (2002) interpretation, reinforces the evidence that the app has a substantial learning impact.

This improvement can be explained through several factors. First, the use of interactive multimedia in the application allows students to experience more concrete learning, by the cognitive development characteristics of grade IV students who are at the concrete operational stage according to Piaget's cognitive development theory. Second, gamification through Quizizz provides a game element that makes learning more fun and motivates learners to actively participate (Sugihartini & Yudiana, 2018).

IV. Conclusion

This research shows that digital-based educational applications developed through the ADDIE model are effective in improving the understanding of fourth-grade students of SD Negeri Sokowaten Baru on livelihood material based on place of residence. The integration of the Nearpod platform with supporting media such as Canva, Padlet, and Quizizz forms an interactive learning ecosystem that matches the characteristics of concrete operational age students. Validation by experts resulted in an average score of 3.93 in the “Very Good” category, while the pilot test results showed a significant increase in posttest scores with an effect size value of 3.33, which is included in the “Very High” category according to Cohen. This proves that digital-based learning media designed contextually and interactively can have a major positive impact on student learning outcomes. Based on the results of the study, it is recommended that educators in elementary schools begin to integrate interactive digital media in the learning process, especially for materials related to students' daily lives. For future research, it is recommended that the application be developed on a wider scale by involving a larger trial group and testing it on different materials and grade levels. In addition, it is also necessary to explore the integration of applications with differentiated learning approaches to meet more diverse learning needs.

V. Daftar Pustaka

Ibrahim, S. A., Yusuf, M. F., Husain, H. , I., Mamu, D. . H., & Katili, S. A. (2025). *VALIDITAS PERANGKAT PEMBELAJARAN MENGGUNAKN MODEL PEMBELAJARAN PROBLEM BASED LEARNING PADA MATERI KEANEKARAGAMAN HAYATI*.

Sugihartini, N., & Yudiana, K. (2018). ADDIE SEBAGAI MODEL PENGEMBANGAN MEDIA INSTRUKSIONAL EDUKATIF (MIE) MATA KULIAH KURIKULUM DAN PENGAJARAN. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *15*(2), 277. https://ejournal.undiksha.ac.id/index.php/JPTK/issue/view/851