

Development of Pop-Up Book Media Based on ADDIE on RT and RW Environmental Material for Grade IV Elementary School

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Article Info

Article history:

Accepted: 22 July 2026

Published: 04 Agustus 2026

Keywords:

Development,
Pop Up Book,
Learning Media,
RT and RW Environment,
Pancasila Education.

Abstract

This study aims to develop a Pop-Up Book learning media on the topic of RT and RW environment for fourth-grade elementary school students and determine its validity, practicality, and effectiveness. This research employed the Research and Development (R&D) method using the ADDIE development model, consisting of Analysis, Design, Development, Implementation, and Evaluation. The research subjects were fourth-grade students of SDN Burengan 5 Kediri City. Data were collected through interviews, questionnaires, observations, and learning achievement tests. The validation results showed that the material expert assessment reached 82% (valid), while the media expert assessment reached 78% (valid). The practicality test indicated teacher responses of 80% and student responses of 75%, categorized as practical. Furthermore, the effectiveness test showed that 85.60% of students achieved learning mastery after using the Pop-Up Book media. Therefore, the developed Pop-Up Book learning media is valid, practical, and effective to support the learning process in Pancasila Education on RT and RW environment materials.

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1. INTRODUCTION

Pancasila education in elementary schools plays a crucial role in shaping students' character and enhancing their understanding of social life. One of the topics covered in fourth grade is neighborhood units (RT) and neighborhood associations (RW) as part of the students' immediate social environment. This material requires students to understand the structure of their neighborhood, the roles of residents, and the attitudes they should adopt in social life. However, the delivery of this material is still dominated by textbooks and student worksheets (LKS), making the learning less engaging and unable to provide concrete learning experiences.

Based on observations at SDN Burengan 5 in Kediri City, it was found that teachers were not yet using innovative learning media. As a result, students were less enthusiastic about participating in learning, had difficulty understanding the material, and their learning outcomes were less than optimal. This situation highlights the need for learning media that can present material visually, engagingly, and interactively.

One of the media that suits the characteristics of elementary school students is a Pop-Up Book. This medium presents three-dimensional images that can move so that it can attract students'

attention, increase learning motivation, and facilitate understanding of concepts. Therefore, this study aims to develop Pop Up Book media on RT and RW Environmental material to determine the level of validity, practicality, and effectiveness.

The urgency of developing this medium can be further grounded in Piaget's theory of cognitive development, which places elementary school-aged children in the concrete operational stage, a period in which understanding of abstract social concepts, such as the structure and roles within RT and RW units, is best supported by concrete, manipulable representations rather than verbal or textual description alone. This is reinforced by dual-coding theory, which suggests that information presented simultaneously through visual and verbal channels is processed and retained more effectively than information presented through text alone, a mechanism that directly supports the use of three-dimensional, interactive illustrations such as those found in a Pop-Up Book. Given that the current teaching of RT and RW material at SDN Burengan 5 relies almost entirely on textbooks and worksheets, which present this social content in a largely abstract, text-based format misaligned with students' cognitive stage, there is a clear theoretical and practical gap that a concrete, interactive medium such as a Pop-Up Book is positioned to address, underscoring the urgency of the present development effort.

2. METHOD

This research uses the *Research and Development (R&D)* with the ADDIE development model (*Analysis, Design, Development, Implementation, Evaluation*). The ADDIE model was chosen because it has systematic and appropriate stages for developing valid, practical, and effective learning media. The research was conducted at SDN Burengan 5, Kediri City, with fourth-grade students studying the Pancasila Education subject, specifically the Neighborhood and Community Environment (RT and RW). The objective of this research was to produce learning media. A *pop-up book* that is suitable for use based on aspects of validity, practicality, and effectiveness.

The first stage is *Analysis*. At this stage, a needs analysis was conducted through observations and interviews with fourth-grade teachers to identify learning challenges. The analysis revealed that the learning process was still dominated by textbooks and student worksheets, resulting in students' lack of interest in participating and difficulty understanding the RT and RW Environment material. Furthermore, an analysis of student characteristics, material analysis, learning outcomes, learning objectives, and the need for learning media appropriate to the characteristics of elementary school students was conducted.

The second stage is *Design*. At this stage, the researcher prepared a Pop-Up Book media design which included compiling materials according to learning outcomes, making a storyboard, compiling a display design, selecting illustrations, colors, fonts, and compiling research instruments in the form of material expert validation sheets, media expert validation sheets, teacher response questionnaires, student response questionnaires, and pretest and posttest questions as instruments for measuring learning outcomes.

To support replicability, each instrument was structured around specific indicators corresponding to the aspect it measured. The material expert validation sheet assessed indicators of content accuracy, alignment with Pancasila Education learning outcomes, clarity of language for fourth-grade students, and logical sequencing of the RT and RW material, each rated on a Likert scale.

The media expert validation sheet assessed indicators of visual and pop-up mechanical design, durability of materials, color and typography suitability, and ease of physical use in a classroom setting. The teacher and student response questionnaires assessed practicality indicators, including ease of use, clarity of instructions, time efficiency during lessons, and the extent to which the media increased engagement and interest in learning. Effectiveness was assessed using pretest and posttest scores referring to the Minimum Completeness Criteria (Kriteria Ketuntasan Minimal/KKM) applied at SDN Burengan 5, with a student classified as having achieved learning mastery if their posttest score met or exceeded this threshold; the percentage of students meeting this threshold was then used as the effectiveness indicator. All validity, practicality, and effectiveness percentages were calculated using the standard percentage formula (score obtained divided by maximum possible score, multiplied by 100%) and interpreted according to conventional categorization ranges (e.g., valid/practical/effective, quite valid/practical/effective, and invalid/impractical/ineffective).

The third stage is *Development*. At this stage, the media design is realized into a Pop-Up Book product that can be used in learning. Next, the media is validated by subject matter and media experts to determine its suitability. Input and suggestions from the validators are used as the basis for revisions to ensure the developed media meets the eligibility criteria before being implemented with students.

The fourth stage is *Implementation*. The product, which had been declared feasible, was then piloted on fourth-grade students at SDN Burengan 5, Kediri City. At this stage, teachers implemented learning using Pop-Up Book media. During the learning process, data were collected through teacher and student response questionnaires to determine the media's practicality. In addition, students were given a *pretest* before using the media and a *posttest* after learning to determine the increase in learning outcomes as an indicator of media effectiveness.

The last stage is *evaluation*. Evaluations were conducted at each stage of development to address media deficiencies based on validation results, trials, and input from validators and users. The evaluation results were used to produce a final product, a Pop-Up Book, that met the requirements of validity, practicality, and effectiveness, making it suitable for use in Pancasila Education teaching, particularly in the RT and RW environment.

Research data were obtained through observation, interviews, questionnaires, and tests. Observations and interviews were used to analyze media development needs, while questionnaires were used to obtain validity data from material experts and media experts as well as practicality data from teachers and students. Tests were used to measure media effectiveness through student pretest and posttest results. Data were analyzed using quantitative descriptive analysis techniques in the form of percentages. Validity criteria were obtained from expert validation results, practicality was obtained from teacher and student responses, while effectiveness was determined based on the percentage of student learning outcomes completion after using the Pop-Up Book media.

3. RESULTS

This research resulted in a product in the form of a Pop-Up Book learning media on the RT and RW Environment material for fourth-grade elementary school students. The media development was carried out using the ADDIE model consisting of the stages of Analysis, Design, Development, Implementation, and Evaluation. The developed product contains RT and RW Environment material

presented through three-dimensional images (pop-ups), colored illustrations, examples of activities in the community, practice questions, and learning evaluations to provide a more concrete and interesting learning experience for students.

Before being used in learning, the Pop-Up Book media was validated by material experts and media experts to determine the level of product suitability.

Table 1. Expert Validation Results

Validator	Percentage	Category
Subject Matter Expert	82%	Valid
Media Member	78%	Valid

Based on Table 1, the validation results show that the media received 82% approval from material experts and 78% approval from media experts. Both results are considered valid, making the media suitable for use in the implementation phase without major revisions.

After being declared suitable, the media was implemented in Pancasila Education lessons in fourth-grade students at SDN Burengan 5, Kediri City. Furthermore, practicality was measured using teacher and student response questionnaires.

Table 2. Practicality Test Results

Respondent	Percentage	Category
Teacher	80%	Practical
Learners	75%	Practical

The results of the practicality test showed that teachers gave it an 80% rating, while students gave it a 75% rating. This indicates that the media is easy to use, engaging, and facilitates the delivery of material during learning.

The effectiveness of the media is measured through student learning outcomes using pre-learning tests (*pretest*) and after learning (*posttest*).

Table 3. Effectiveness Test Results

Indicator	Results
Learning Completion	85,60%
Category	Effective

The results of the effectiveness test showed that the level of student learning completion reached 85.60%, so that the Pop-Up Book media was declared effective for use in learning Pancasila Education on the RT and RW Environmental material.

The results of the study show that the media *Pop Up Book* developed media meets the aspects of validity, practicality, and effectiveness. The high level of validity was achieved because the material was structured based on Pancasila Education learning outcomes, adapted to the characteristics of elementary school students, and equipped with three-dimensional illustrations to support conceptual understanding. Furthermore, the media design utilizes an attractive color combination, easy-to-read font size, and systematic presentation of the material, resulting in an 82% rating from material experts and 78% from media experts.

The media's practicality was also categorized as practical, based on responses from teachers (80%) and students (75%). Teachers stated that the media was easy to use during the learning process, while students felt more engaged in the learning process because the media presented three-

dimensional images that could be opened and observed directly. The use of this media created a more active learning atmosphere, making it easier for students to understand the RT and RW Environment material compared to using only textbooks and worksheets. Critically, the somewhat higher practicality rating from teachers (80%) compared to students (75%) is theoretically consistent with their differing roles in the learning process: teachers evaluate the media primarily from an instructional-management perspective, such as ease of preparation, time efficiency, and fit with lesson planning, whereas students respond from an experiential perspective shaped by novelty, visual appeal, and hands-on interaction. This gap suggests that while the Pop-Up Book was well received by both groups, its practical integration into classroom routines may still require some adjustment from the teacher's side, such as guidance on pacing or classroom management when using a physically manipulable medium with a full class of students. This pattern aligns with technology and media acceptance perspectives, which distinguish perceived ease of use from perceived enjoyment as separate contributors to overall practicality, and suggests that future refinement of the media could focus specifically on streamlining teacher-facing implementation procedures without compromising the interactive qualities that students responded to positively.

The research also showed that the use of Pop-Up Book media was able to improve student learning outcomes, with a completion rate of 85.60%. The high learning completion rate indicates that the media successfully helped students understand the material more concretely. This is due to the characteristics of Pop-Up Book media, which are able to combine visual elements, color, illustrations, and interactive activities, thus aligning with the cognitive development stage of elementary school students who are still in the concrete operational stage.

The findings of this study support previous research that found that pop-up books can improve learning motivation, student activity, and learning outcomes due to their ability to present material in an engaging and contextual manner. Therefore, pop-up books are not only suitable for use as a learning medium for Pancasila Education but also have the potential to be applied to other materials requiring concrete visualizations to help students understand learning concepts.

4. CONCLUSION

This research succeeded in developing learning media *Pop Up Book* on the RT and RW Environment material for grade IV students of SDN Burengan 5, Kediri City using the ADDIE development model (*Analysis, Design, Development, Implementation, Evaluation*). The media developed is designed according to the characteristics of elementary school students through the presentation of material combined with three-dimensional illustrations, attractive colors, and interactive learning activities so that it can support the Pancasila Education learning process.

The results of the study show that the media *Pop Up Book* meets all eligibility criteria as a learning medium. Based on the validation results, the media received 82% approval from material experts and 78% approval from media experts, categorized as valid. The results of the practicality test showed a teacher response of 80% and a student response of 75%, which is categorized as practical. In addition, the results of the effectiveness test showed a student learning completion rate of 85.60%, so the media was declared effective in improving student understanding of the RT and RW Environment material.

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