

Development of an Educational Smart Box Media for Pancasila Education Learning

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Abstract

The abstract nature of Pancasila values can present challenges for lower-grade elementary students who learn more readily through concrete and interactive experiences. This study aimed to develop an Educational Smart Box for teaching the application of Pancasila values in everyday life and to evaluate its feasibility, student acceptance, and preliminary learning outcomes. The study employed a *Research and Development* approach using the ADDIE model, comprising Analysis, Design, Development, Implementation, and Evaluation. The study involved 35 second-grade students at MI Tarbiyatus Shiblyan, one Pancasila Education subject-matter expert, and one instructional-media expert. Data were collected through observations, interviews, expert-validation questionnaires, student-response questionnaires, and pretest-posttest assessments. The developed Educational Smart Box integrated Pancasila symbols, behavior-classification activities, an interactive spinning game, and action cards using an impraboard-based design. Expert validation yielded feasibility scores of 89.33% for content and 92.00% for media, both categorized as highly feasible. Student responses reached 91.84%, indicating very positive acceptance. The mean learning-outcome score increased from 72.60 on the pretest to 92.09 on the posttest, with a mean *N-Gain* of 0.7193, categorized as high. These findings indicate that the Educational Smart Box is a feasible and well-accepted instructional medium and that its implementation was accompanied by substantial improvement in students' learning outcomes. Further controlled studies are required to establish its effectiveness across broader educational contexts.

Keywords: Educational Smart Box, Instructional media, Pancasila Education, Pancasila values, Elementary education.

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I. INTRODUCTION

Pancasila Education is an essential subject that plays a strategic role in developing students' character, moral values, and civic competencies from an early age. The Republic of Indonesia Law Number 20 of 2003 concerning the National Education System emphasizes that education serves to develop individual capabilities and shape the character and civilization of a dignified nation. In line with this mandate, Pancasila Education provides an important foundation for cultivating the nation's fundamental values, including belief in God, humanity, unity, democracy, and social justice, which are expected to be reflected in students' everyday behavior. At the elementary school level, particularly in the second grade, Pancasila Education is especially important because students are developing through a stage in which values and concepts are more readily understood through direct experiences and concrete activities. Consequently, learning should extend beyond conceptual knowledge to provide opportunities for students to develop attitudes and behaviors that reflect Pancasila values in everyday life (Efendi & Sa'diyah, 2020; Kartini & Dewi, 2021).

In practice, however, Pancasila Education continues to face instructional challenges. One recurring concern is students' limited learning interest and understanding, particularly regarding the application of Pancasila values in everyday life. This topic requires students not only to understand the conceptual meaning of each principle but also to connect these values with situations they encounter in their immediate environment. Classroom instruction, however, is often dominated by teacher-centered explanations and limited variations in instructional media, making learning relatively abstract and providing few opportunities for meaningful engagement. Under such conditions, students may experience difficulty internalizing Pancasila values because the concepts being taught are insufficiently connected to concrete experiences relevant to their lives. This

mismatch may limit opportunities for students to translate conceptual knowledge into attitudes and behaviors consistent with Pancasila values.

This challenge is particularly relevant to students in the lower grades of elementary school. Ahmad and Mustika (2021) emphasized that students at this developmental stage tend to learn more effectively through concrete, visual, manipulative, and experience-based activities. Accordingly, engaging and interactive instructional media are needed to facilitate conceptual understanding and active participation. Nevertheless, the use of instructional media in Pancasila Education remains relatively limited. Teachers frequently rely on conventional audiovisual resources, such as instructional videos and presentations. Although these resources can attract students' attention, they do not necessarily provide opportunities for active manipulation, interaction, and participation. This situation indicates a mismatch between young learners' developmental characteristics and some of the instructional approaches currently employed, highlighting the need for learning media that provide more concrete and interactive experiences.

One potential response to this need is the development of an Educational Smart Box (Smart Box Edukatif). The Educational Smart Box is an interactive box-based learning medium designed to integrate educational games, learning activities, and manipulative experiences within a single instructional resource. Unlike conventional Smart Boxes commonly constructed from simple cardboard, the Educational Smart Box developed in this study uses polypropylene-based impraboard, which provides greater durability and enables the incorporation of a wider range of learning activities. The medium also incorporates visual elements, educational games, simulations of everyday situations, and interactive activities through which students can identify and apply Pancasila values within contexts familiar to them. These features are intended to transform relatively abstract value-oriented content into concrete learning experiences appropriate for second-grade students.

Previous research provides support for the potential use of Smart Box media in educational settings. Sukaryanti et al. (2023) reported that the use of a Smart Box in learning about Indonesian diversity improved elementary school students' learning outcomes. Similarly, Yuliasri et al. (2021) found that Smart Box media supported young children's cognitive development, particularly in recognizing colors, shapes, and numbers, classifying objects, and engaging in simple problem-solving activities. Collectively, these findings suggest that Smart Box media can provide concrete and interactive learning experiences with the potential to support student engagement, concentration, and conceptual understanding.

Despite these promising findings, the existing literature indicates that Smart Box research has predominantly been conducted in social studies, mathematics, and early childhood education. Studies specifically developing Smart Box media for Pancasila Education, particularly for teaching the application of Pancasila values in everyday life to second-grade elementary school students, remain limited. Furthermore, previous development studies have employed various developmental frameworks, including Alessi and Trollip and Kemmis and Taggart, while systematic development of an Educational Smart Box using the ADDIE model remains relatively underexplored. This gap indicates the need for instructional media development that simultaneously addresses the developmental characteristics of lower-grade students and the contextual learning requirements of Pancasila Education.

Accordingly, the novelty of this study lies in the development of an impraboard-based Educational Smart Box specifically designed to provide visual, interactive, manipulative, and contextually relevant activities for learning the application of Pancasila values in everyday life. Rather than presenting Pancasila values solely as abstract concepts, the proposed medium is designed to engage students with concrete situations through which these values can be identified and applied. The development process employs the ADDIE model to systematically guide the analysis, design, development, implementation, and evaluation of the instructional medium. Therefore, this study aims to develop an Educational Smart Box for teaching the application of Pancasila values in everyday life to second-grade elementary school students and to evaluate the quality of the developed medium through the stages implemented in the study. The study is expected to contribute theoretically to the literature on instructional media development for Pancasila

Education and practically by providing an interactive learning medium aligned with the developmental characteristics of lower-grade elementary school students.

II. METHOD

This study employed a Research and Development (R&D) approach using the ADDIE model, which comprises five stages: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model was selected because it provides a systematic and structured framework for developing instructional media, with each stage contributing to the alignment of the developed product with identified learning needs and objectives (Gustiani, 2019). The study was conducted at MI Tarbiyatus Shiban and involved 35 second-grade students from Class II Amanah. Additional participants included a Pancasila Education teacher as the subject-matter expert and a lecturer specializing in instructional media as the media expert.

The Analysis stage focused on identifying existing learning conditions and students' instructional needs through classroom observation and an interview with the second-grade teacher. Particular attention was given to the learning process, instructional media currently used, students' characteristics, and difficulties encountered in learning the application of Pancasila values in everyday life. The results of this needs analysis provided the basis for determining the content and characteristics of the Educational Smart Box. During the Design stage, the structure and components of the Educational Smart Box were planned in accordance with the learning objectives and characteristics of second-grade students. This stage included determining the organization of Pancasila Education content, visual elements, educational games, manipulative activities, and everyday-life situations representing the application of Pancasila values. The design also specified the use of polypropylene-based impraboard as the primary material and the arrangement of interactive components within the box.

The Development stage involved producing the Educational Smart Box based on the established design and evaluating its feasibility through expert validation. The subject-matter expert assessed the appropriateness and accuracy of the Pancasila Education content, whereas the media expert evaluated the design and instructional-media aspects of the product. Suggestions and comments provided by the experts were used to revise the product before classroom implementation. Expert validation data were collected using Likert-scale questionnaires and converted into percentage scores using the following formula:

$$P = \frac{\text{Obtained Score}}{\text{Maximum Score}} \times 100\%$$

The resulting percentages were interpreted using four feasibility categories: 81%–100% = highly feasible, 61%–80% = feasible, 41%–60% = less feasible, and 0%–40% = not feasible.

During the Implementation stage, the revised Educational Smart Box was used in Pancasila Education lessons with the 35 students of Class II Amanah. Students completed a pretest before learning with the developed medium and a posttest after its implementation. A student-response questionnaire was also administered to assess the practicality of the Educational Smart Box from the learners' perspective. Student responses were analyzed using a Guttman scale by calculating the percentage of "Yes" responses.

The Evaluation stage examined the overall quality of the developed product based on expert validation, student responses, and changes in learning outcomes. Qualitative data obtained from observations, interviews, and expert comments were analyzed descriptively and used to inform product revisions. Quantitative data from expert-validation questionnaires, student responses, and pretest–posttest scores were analyzed using percentages and normalized gain (N-Gain).

N-Gain analysis was used to determine the magnitude of improvement in students' learning outcomes from pretest to posttest after the Educational Smart Box was implemented. The N-Gain score was interpreted as high when $g \geq 0.70$, moderate when $0.30 \leq g < 0.70$, and low when $g < 0.30$. In addition, N-Gain percentages were interpreted as follows: below 40% = ineffective, 40%–55% = less effective, 56%–75% = moderately effective, and above 76% = effective (Binta & Ritonga, 2023). These analyses were used to describe the feasibility, practicality, and preliminary effectiveness of the developed Educational Smart Box.

III. RESULTS AND DISCUSSION

A. Results

The Educational Smart Box was developed for teaching the application of Pancasila values in everyday life to second-grade students. The development process was aligned with the *Kurikulum Merdeka* implemented at MI Tarbiyatus Shibyan Kembiritan and followed the five stages of the ADDIE model. The initial results of the development process, covering the Analysis, Design, and Development stages, are presented below.

1. Analysis

The analysis stage was conducted through classroom observation in Class II Amanah at MI Tarbiyatus Shibyan on February 7, 2026, followed by an interview with the second-grade Pancasila Education teacher. This stage focused on identifying existing instructional practices, the learning media used by the teacher, students' responses during classroom activities, and the need for more interactive learning resources. The observation showed that the teacher had incorporated several instructional resources, including printed pictures or posters, textbooks, simple exercises, and examples presented through YouTube videos. However, these resources were primarily used to present information and provided relatively limited opportunities for students to interact directly with the learning content. During the observed lesson, several students periodically lost concentration, engaged in playful interactions with peers, and showed limited enthusiasm. These findings indicated that the existing media did not consistently sustain students' attention or provide sufficient opportunities for active participation. This condition was particularly relevant for second-grade students, who require concrete, visual, and manipulative learning experiences to facilitate their understanding of relatively abstract concepts.

The needs analysis also revealed that learning about the application of Pancasila values requires students not only to recognize the symbols and meanings of each principle but also to connect these values with concrete behaviors in everyday situations. Therefore, the proposed instructional medium needed to be visually attractive, interactive, physically manipulable, and appropriate for the developmental characteristics of lower-grade students. Such a medium should provide opportunities for students to identify symbols, classify behaviors, make choices, and apply Pancasila values through simple contextual activities. This need is consistent with Anggraeni et al. (2021), who reported that interactive instructional media can support elementary school students' learning interest, attention, and classroom participation. Based on these findings, the identified instructional needs were translated into the main features of the Educational Smart Box, including detachable Pancasila symbols, behavior-classification pockets, an interactive spinning game, and action cards connecting Pancasila values with situations encountered in students' everyday lives.

2. Design

Based on the needs identified during the analysis stage, an Educational Smart Box measuring 29 cm × 38 cm was designed using impraboard as the primary material. The medium was structured into five functional sections. The first section featured the Garuda Pancasila emblem with detachable and reattachable symbols representing the five principles of Pancasila. The second contained pockets presenting examples of behaviors corresponding to Pancasila values in everyday life. The third incorporated a spinning game to provide an interactive learning activity. The fourth consisted of an action-card game designed to help students connect Pancasila concepts with concrete examples of attitudes and behaviors. The fifth, located at the base of the Educational Smart Box, served as a storage area for the cards used in the different learning activities.

The visual components of the Educational Smart Box were designed using Canva, with attention to colors, illustrations, readability, and attractiveness for second-grade students. The internal components were organized according to the learning content and the activities students were expected to perform. The emphasis on visual and manipulative elements was intended to make abstract Pancasila values more accessible through concrete learning activities. This design consideration is supported by Ginting et al. (2021), who emphasized the

contribution of visual elements in instructional media to students' understanding and interest in learning. The overall design of the developed medium is presented in Figure 1.

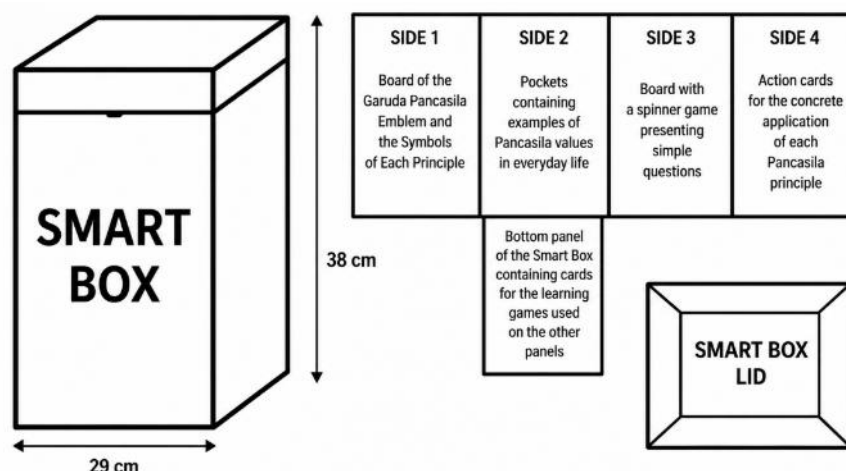


Figure 1. Educational Smart Box Design

3. Development

During the development stage, the Educational Smart Box design was transformed into a physical instructional medium measuring 29 cm × 38 cm. The product was developed in accordance with the needs identified during the analysis stage and the characteristics of second-grade students. Developing instructional media based on learners' needs is important for ensuring alignment between product characteristics and the intended learning context (Marufah et al., 2023).

The materials used to construct the product included impraboard, black adhesive tape, printed stickers, buffalo paper, styrofoam, cable ties, and other supporting materials. The production process began by cutting the impraboard according to the predetermined dimensions. The individual sections were then assembled using cable ties, allowing the box components to be opened and closed. Printed stickers were applied to the exterior and interior surfaces, while additional visual elements were designed using Canva and incorporated into the product.

Four main instructional components were incorporated into the Educational Smart Box: the Garuda Pancasila emblem and its corresponding symbols, pockets containing examples of behaviors representing Pancasila values in everyday life, an interactive spinning game, and an action-card board containing concrete situations related to the application of each Pancasila principle. These components were designed to enable students to interact directly with the learning materials rather than merely observe or read the content.

Following product development, expert validation was conducted to assess the feasibility of the Educational Smart Box before classroom implementation. Two validators participated in this process: one Pancasila Education subject-matter expert and one instructional-media expert. Validation was conducted using questionnaires scored on a five-point Likert scale. Expert validation is an important stage in instructional product development because it provides evidence regarding the appropriateness of the product and identifies aspects requiring revision prior to implementation (Marisa et al., 2024).

Table 1. Subject-Matter Expert Validation Results

Validator	Obtained Score	Maximum Score	Percentage	Category
Subject-Matter Expert	67	75	89.33%	Highly Feasible

As presented in Table 1, the Pancasila Education subject-matter expert, Maspuhah, S.Pd.Sd., awarded a score of 67 out of a maximum score of 75, corresponding to a feasibility percentage of 89.33%. Based on the predetermined criteria, this result was categorized as

Highly Feasible. The assessment therefore indicated that the instructional content incorporated into the Educational Smart Box was appropriate for use in second-grade Pancasila Education.

Table 2. Media Expert Validation Results

Validator	Obtained Score	Maximum Score	Percentage	Category
Media Expert	69	75	92.00%	Highly Feasible

As shown in Table 2, the media expert awarded a score of 69 out of a maximum score of 75, resulting in a feasibility percentage of 92.00%, which was categorized as Highly Feasible. This result indicates that the Educational Smart Box met the predetermined feasibility criteria from the instructional-media perspective. The media expert also recommended covering the joints between the box components with adhesive tape to improve the neatness of the product. This recommendation was used as a basis for product refinement before the implementation stage.

The implementation stage was conducted after the Educational Smart Box had been rated as highly feasible by both expert validators. The classroom trial was conducted on June 8, 2026, involving 35 students from Class II Amanah. The Educational Smart Box was integrated into Pancasila Education for two instructional periods. During the learning activities, students were given opportunities to interact directly with the different components of the medium, including the behavior pockets, action-card board, and spinning game. A pretest was administered before the learning activity and a posttest after the intervention to examine changes in students' understanding of the application of Pancasila values in everyday life. At the end of the session, students completed a response questionnaire to evaluate their perceptions of the developed medium. The student-response questionnaire was used to provide evidence regarding the practicality and acceptability of the Educational Smart Box from the learners' perspective. The results are summarized in Table 3.

Table 3. Summary of Student Responses to the Educational Smart Box

Number of Respondents	Obtained Score	Maximum Score	Percentage	Category
35 students	225	245	91.84%	Very Good

As shown in Table 3, the students obtained a total response score of 225 out of a maximum possible score of 245, corresponding to 91.84% and categorized as Very Good. Classroom observations also showed that students were enthusiastic about interacting with the Educational Smart Box and actively participated in the learning activities. In particular, students engaged directly with the behavior pockets, action cards, and spinning game. Taken together, the questionnaire and observational findings indicate that the developed medium was well received by the students and practical for use in the classroom.

Students' learning outcomes were subsequently examined descriptively by comparing their pretest and posttest scores. The descriptive statistics are presented in Table 4.

Table 4. Descriptive Statistics of Pretest and Posttest Scores

Test	Mean	N	SD	SE
Pretest	72.60	35	5.35	0.90
Posttest	92.09	35	3.67	0.62

Table 4 shows that the mean pretest score was 72.60 (SD = 5.35), whereas the mean posttest score increased to 92.09 (SD = 3.67). The descriptive difference between the two means was 19.49 points, indicating higher learning-outcome scores following instruction using the Educational Smart Box. Because the study employed a one-group pretest-posttest procedure without a comparison group, this increase is interpreted descriptively as an improvement following implementation rather than as evidence of a causal effect attributable exclusively to the developed medium. To further characterize the magnitude of improvement

between the pretest and posttest, normalized gain (N-Gain) analysis was performed. The results are presented in Table 5.

Table 5. N-Gain Analysis of Students' Learning Outcomes

Measure	N	Minimum	Maximum	Mean	SD
N-Gain Score	35	0.45	0.94	0.7193	0.1133
N-Gain Percentage	35	45.45%	94.44%	71.93%	11.33

As presented in Table 5, the mean N-Gain score was 0.7193, equivalent to 71.93%. Based on the predetermined N-Gain criteria, the mean score falls within the high-gain category ($g \geq 0.70$). Using the percentage-based interpretation adopted in this study, 71.93% falls within the moderately effective range of 56%–75%. Thus, the results indicate a relatively high magnitude of improvement in students' learning outcomes between the pretest and posttest following the implementation of the Educational Smart Box.

5. Evaluation

Evaluation was conducted throughout the ADDIE development process to identify weaknesses and guide revisions to the Educational Smart Box. At the development stage, evaluation was informed by expert validation, including recommendations for improving the physical neatness of the product. During and after implementation, evaluation incorporated student responses, classroom observations, and pretest–posttest learning outcomes.

Overall, the evaluation provided complementary evidence regarding three aspects of product quality. First, expert validation resulted in feasibility scores of 89.33% from the subject-matter expert and 92.00% from the media expert, both categorized as highly feasible. Second, the student-response score of 91.84% indicated very positive acceptance and supported the practicality of the medium for classroom use. Third, the increase from a mean pretest score of 72.60 to a mean posttest score of 92.09, accompanied by a mean N-Gain of 0.7193, demonstrated a high magnitude of improvement in learning outcomes following implementation. Collectively, these findings indicate that the developed Educational Smart Box was highly feasible, practical, and associated with substantial improvement in students' learning outcomes when implemented in second-grade Pancasila Education.

B. Discussion

The expert-validation results provide initial evidence regarding the feasibility of the Educational Smart Box. The product obtained a feasibility score of 89.33% from the subject-matter expert and 92.00% from the media expert, both of which were categorized as highly feasible. These findings indicate that the developed medium met the predetermined feasibility criteria in terms of instructional content and media design for second-grade Pancasila Education. This finding is consistent with Sukaryanti et al. (2023), who demonstrated that Smart Box media can be developed as a concrete instructional resource appropriate for elementary school students. In the present study, product feasibility was also supported by the use of durable impraboard material and by visual and instructional activities designed to accommodate the characteristics of lower-grade students. Nevertheless, these validation results should be interpreted cautiously because the assessment involved only one subject-matter expert and one media expert. Therefore, the findings represent preliminary evidence of product feasibility rather than comprehensive evidence of content and media validity.

Students also responded positively to the developed medium, with an overall response percentage of 91.84%, categorized as very good. This result indicates a high level of student acceptance during classroom implementation. Such positive responses may be associated with the visual, concrete, manipulative, and game-based characteristics of the Educational Smart Box. Rather than merely observing or listening to instructional explanations, students interacted directly with the medium through the behavior pockets, Pancasila symbols, spinning game, and action cards. This finding is consistent with Yuliasri et al. (2021), who reported that Smart Box activities can support students' attention, concentration, and engagement by providing direct

learning experiences. Similarly, Nata and Putra (2021) emphasized that concrete and visual media can facilitate elementary school students' understanding of learning materials.

However, the highly positive student response should not be interpreted as comprehensive evidence of the practicality of the Educational Smart Box. The data collected in this study primarily represent students' perceptions and acceptance after using the medium. A more comprehensive assessment of practicality would require additional evidence concerning ease of use from the teacher's perspective, instructional time efficiency, implementation fidelity, product durability, preparation requirements, and difficulties encountered during classroom use. Accordingly, the 91.84% student-response score is more appropriately interpreted as evidence of positive learner acceptance and as one indicator of the product's classroom practicality.

The learning-outcome data showed an increase in the mean score from 72.60 on the pretest to 92.09 on the posttest, representing an average descriptive increase of approximately 19.49 points following instruction with the Educational Smart Box. This pattern indicates that students demonstrated better understanding of the application of Pancasila values in everyday life after participating in the learning activities. The finding is consistent with Okta et al. (2025), who reported improved learning outcomes following the use of Smart Box media in civic learning, where students were provided with more active and concrete learning experiences. Similar findings were reported by Shofiyah (2025), who indicated that Smart Box media could support students' understanding of Pancasila-related learning content.

The improvement in learning outcomes was further reflected in the mean N-Gain score of 0.7193, which falls within the high-gain category according to the classification adopted in this study. When expressed as a percentage, the mean N-Gain of 71.93% falls within the moderately effective category based on the percentage-based criteria used. Together, these findings indicate a substantial improvement in students' cognitive learning outcomes between the pretest and posttest. However, the results should not be interpreted as evidence of the causal effectiveness of the Educational Smart Box. The study did not employ a control or comparison group, and the reported analysis did not include inferential testing designed to isolate the effect of the intervention. Consequently, the findings demonstrate improvement following the implementation of the Educational Smart Box, but they cannot establish that the observed improvement was attributable exclusively to the medium.

The observed improvement can be understood in relation to the instructional characteristics embedded in the Educational Smart Box. Learning about Pancasila values requires students to connect symbols and abstract values with concrete behaviors in everyday situations. The developed medium transformed these concepts into manipulative activities in which students identified Pancasila symbols, classified examples of behavior, selected appropriate actions, and responded to situations through the spinning game and action cards. Students were therefore engaged not only in receiving information but also in observing, selecting, matching, classifying, and applying concepts. Instructional media that integrate visual representations with concrete activities can facilitate more meaningful understanding among elementary school students (Ginting et al., 2021; Nata & Putra, 2021).

The contribution of the Educational Smart Box extends beyond the use of impraboard as a more durable construction material than conventional cardboard. More importantly, its distinctive feature lies in the integration of four instructional components: visual representations of Pancasila symbols, classification of behaviors according to Pancasila principles, an interactive spinning game, and action cards connecting Pancasila concepts with everyday situations. Together, these components provide a learning sequence that moves from recognizing symbols and understanding values to identifying appropriate behaviors and applying those values to simple contextual situations. The Educational Smart Box therefore functions not merely as a medium for presenting information but as an activity-based instructional resource through which students can actively explore the relationship between Pancasila concepts and their application in everyday life. This characteristic represents an important added value compared with instructional media that primarily present content through static visual representations.

Despite these positive findings, several limitations should be considered. First, the classroom trial involved only 35 students from a single class at one school, limiting the transferability and

generalizability of the findings to other educational settings. Second, the medium was implemented for only two instructional periods, which does not provide evidence regarding the consistency or sustainability of learning outcomes over longer periods. Third, the absence of a control or comparison group prevents the observed pretest–posttest improvement from being attributed exclusively to the Educational Smart Box. Fourth, expert validation involved only one subject-matter expert and one media expert, limiting the breadth of evidence regarding product feasibility. Finally, the study primarily assessed students’ cognitive learning outcomes and did not examine whether learning with the Educational Smart Box resulted in sustained changes in students’ attitudes, behaviors, or internalization of Pancasila values in everyday life. This distinction is particularly important because the ultimate purpose of Pancasila Education extends beyond conceptual understanding to the enactment of values in students’ behavior.

Future research should therefore evaluate the Educational Smart Box with larger and more diverse samples across multiple schools, incorporate comparison groups or stronger quasi-experimental designs, and implement the medium across multiple learning sessions. Product evaluation should also be expanded to include teacher-rated practicality, implementation fidelity, instructional efficiency, product durability, and retention of learning outcomes. Importantly, subsequent studies should examine not only students’ knowledge of Pancasila values but also whether they can consistently demonstrate these values through attitudes and behaviors in authentic school and everyday contexts. Such research would provide stronger evidence regarding the Educational Smart Box as an instructional resource for supporting both the understanding and sustained application of Pancasila values among elementary school students.

IV. CONCLUSION

This study developed an Educational Smart Box for teaching the application of Pancasila values in everyday life to second-grade students using the ADDIE model. The developed medium integrates visual representations of Pancasila symbols, behavior-classification activities, an interactive spinning game, and action cards within a durable impraboard-based design. Expert validation provided preliminary evidence of product feasibility, with scores of 89.33% from the subject-matter expert and 92.00% from the media expert, both categorized as highly feasible. Student responses reached 91.84%, indicating very positive acceptance of the medium during classroom implementation. Students’ mean learning-outcome score increased from 72.60 on the pretest to 92.09 on the posttest, with a mean N-Gain of 0.7193, categorized as high. These findings indicate that the Educational Smart Box is a feasible and well-accepted instructional medium and that its implementation was accompanied by substantial improvement in students’ learning outcomes. However, because the classroom trial involved only 35 students from one class, used no comparison group, and was conducted over a short period, the findings should be regarded as preliminary rather than as evidence of causal effectiveness. Further research involving broader expert validation, multiple schools, longer implementation periods, and comparison groups is recommended to examine the effectiveness of the medium and its contribution to the sustained application of Pancasila values.

CONFLICT OF INTEREST

The authors declare that there are no financial, institutional, personal, or professional conflicts of interest that could have influenced the development, implementation, evaluation, or reporting of this study. All research activities and interpretations were conducted independently, and the authors take full responsibility for the integrity of the work presented in this manuscript.

AUTHOR CONTRIBUTIONS

Nur Hidayatus Sofia: Conceptualization, Investigation, Product Development, Data Collection, Data Curation, Formal Analysis, and Writing – Original Draft. **Nur Wiarsih:** Conceptualization, Methodology, Supervision, and Writing – Review & Editing. **Eka Rahmiati:** Validation, Methodological Guidance, Data Interpretation, and Writing – Review & Editing. **Nurul Fatimah:** Supervision, Validation, Critical Review, and Manuscript Refinement. All authors contributed to the interpretation of the findings, critically reviewed the manuscript, and approved the final version for publication.

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DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES

Generative AI and AI-assisted technologies were used only during manuscript preparation for academic translation, language refinement, proofreading, and improvements in clarity and readability. These technologies were not used to generate research data, design or fabricate the Educational Smart Box, conduct expert validation, administer the classroom trial, calculate research results, or determine the study findings. All AI-assisted outputs were reviewed, revised, and verified by the authors against the original research data. The authors retain full responsibility for the accuracy, originality, interpretation, and final content of the manuscript.

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