

Pop-Up Interactive Cards-Based Moral Simulation to Enhance Elementary School Students' Interest in Learning Honest Morals

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ABSTRACT. This study aims to develop and examine the effectiveness of Pop-Up Interactive Cards themed on the moral value of honesty in improving the learning interest of second-grade elementary school students. The research problem stems from the low level of students' learning interest in the subject of Praiseworthy Morals, which is abstract in nature, with an initial score of 56% (categorized as moderately low). The study employed the ADDIE model using a Mixed Methods approach. The research subjects consisted of two expert validators, one Islamic Education (PAI) teacher, and 22 second-grade students at SD Negeri Kutogiri. The research instruments included expert validation sheets, a learning interest questionnaire, student activity observation sheets, and a teacher practicality questionnaire. Data were analyzed using a paired sample t-test and the N-Gain Score. The results indicate that the developed media achieved a validity score of 91.96% (very feasible) and a practicality score of 93.75% (very practical). The effectiveness test showed a significant increase in students' learning interest ($t = -88.362$; $p < 0.001$), with the mean score rising from 66.77 to 79.77 and an N-Gain value of 0.40 (moderate category). The pop-up interactive card media proved effective in concretizing moral dilemmas through action-reaction simulations involving students' physical manipulation. These findings reinforce constructivist theory and Piaget's concrete operational stage in the context of Islamic Education learning.

Keywords: *Pop-Up Interactive Cards, Moral Simulation, Learning Interest, Islamic Education, ADDIE.*

INTRODUCTION

Education plays a strategic role in shaping the quality of human resources, not only in cognitive aspects but also in affective and moral dimensions. In the context of Islamic Religious Education (PAI) in elementary schools, the learning objectives are not merely to transfer religious knowledge, but to instill commendable moral values (akhlaq al-karimah) as the foundation of students' character. Elementary school is a very crucial phase of development because it is at this stage that the habituation of values, attitudes, and behaviors begins to crystallize into a relatively stable character. Therefore, PAI learning at this level must be designed pedagogically to deeply touch the affective domain of students. One of the fundamental values in commendable morals is honesty (shidq). Honesty is not only understood as the alignment between words and actions but also as the foundation of moral integrity that underpins various other positive behaviors such as responsibility, trustworthiness, and discipline. In Islamic teachings, honesty holds a very high position and is a prerequisite for achieving virtue (al-birr). Instilling the value of honesty from an early age is very important to prevent the development of manipulative behavior and dishonesty that can have long-term effects on a child's personality. However, teaching the value of honesty in elementary schools faces pedagogical challenges that are not simple. Moral education materials are abstract, normative, and often conveyed in the form of definitions and verbal advice. For second-grade elementary school students, who are typically 7–8 years old, such abstract concepts are not easily understood unless supported by concrete representations. Based on Jean Piaget's

cognitive development theory, students in that age range are at the concrete operational stage. At this stage, children begin to think logically, but they still heavily rely on real objects and direct experiences to understand concepts. Without media that can concretize moral values, learning tends to become verbalistic and less meaningful.

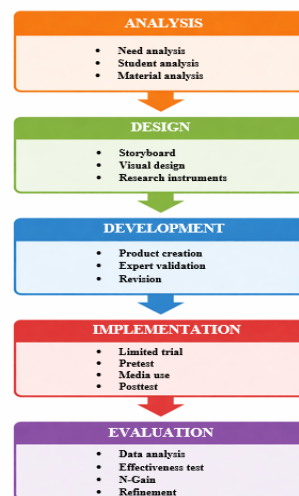
This problem becomes even more complex when linked to the aspect of learning interest. Learning interest is a psychological tendency that makes someone feel attracted, happy, and motivated to engage in a learning activity. Interest does not arise automatically; rather, it is influenced by internal and external factors, including the teaching strategies and media used by the teacher. Students who have a high interest in learning will show longer attention spans, active participation, and a willingness to strive to understand the material. Conversely, low interest in learning is often characterized by passive behavior, quick boredom, and low engagement in the learning process. The results of the pre-research conducted at SD Negeri Kutogiri show that the interest in learning among second-grade students in the subject of Praiseworthy Morals, particularly honesty, is in the fairly low category with an average score of 56%. Classroom observations indicate that most students are less enthusiastic, quickly lose focus, and rarely ask questions. This condition indicates a gap between the learning objectives of PAI, which emphasize the internalization of values, and the reality of the learning process that has yet to stimulate students' emotional engagement. Further analysis shows that one of the factors contributing to the low interest in learning is the limited use of innovative learning media that aligns with the developmental characteristics of students. The media used are still dominated by two-dimensional textbooks and lecture methods. However, various studies in constructivist learning theory emphasize that knowledge is actively constructed thru interaction with the environment. In the context of moral education, students need learning experiences that allow them to visualize real situations, simulate behavioral choices, and understand the consequences of their actions. Furthermore, the multimedia learning theory explains that the combination of visual and verbal elements can enhance understanding and information retention thru the dual coding mechanism. For elementary school students, strong visual stimulation and physical interaction (kinesthetic) can extend attention spans and foster curiosity. Therefore, tangible learning media (which can be touched and physically manipulated) become very relevant to bridge the abstraction of the value of honesty with students' concrete experiences.

One of the media innovations that has the potential to meet this need is Pop-Up Interactive Cards. Pop-up media has the advantage of three-dimensional visuals that can create a surprise effect when opened. When combined with interactive mechanisms such as pull-tabs or moving folds, this media allows students to perform direct physical manipulation. The interaction not only enhances the visual aspect but also engages the students' fine motor skills, making the learning process more active and participatory. The uniqueness of the interactive card-based pop-up media in this study lies in the integration between the compact card format and the action-reaction-based moral simulation mechanism. Each card is designed to present simple moral dilemma scenarios that are close to students' lives, such as finding money or admitting a mistake. Thru a sliding mechanism, students can see the visual consequences of the behavioral choices made. Thus, the value of honesty is not only explained but also visualized and simulated concretely. Previous studies have shown the effectiveness of pop-up media in improving cognitive learning outcomes in various subjects. However, most of these studies focus on the cognitive domain and have not specifically examined their impact on affective variables such as interest in learning in the context of moral education in elementary schools. Additionally, many interactive media based on digital technology require electronic devices, which are not always available or suitable for the sensory-motor stimulation needs of early childhood students. Based on this research gap, this study offers a new contribution by developing interactive card-based pop-up media that is physical (non-digital), specifically designed for the Honest Morals material for second-grade elementary school students. The novelty of this research lies in the use of media

as an instrument for simulating moral behavior tailored to the concrete operational stage of development. This media not only serves as a visual aid but also as a means of constructing moral experiences thru direct manipulation. Thus, this research aims to: (1) develop valid and practical Pop-Up Interactive Cards themed Honest Morals media for use in PAI learning, and (2) test the effectiveness of this media in increasing the learning interest of second-grade elementary school students. It is hoped that this research can provide theoretical contributions to the development of constructivist learning models in character education, as well as practical contributions in the form of innovative media alternatives that are easy to implement in elementary schools.

METHOD

Type and Research Approach This research is a research and development (R&D) study aimed at producing a product in the form of learning media and testing its quality and effectiveness. The R&D method was chosen because this research not only focuses on hypothesis testing but also on creating concrete pedagogical solutions to address the problem of low student interest in learning Akhlak Jujur. The development model used is ADDIE, which consists of five systematic stages: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model was chosen because it has a flexible, systematic structure and is widely used in the development of learning media. The research approach used is Mixed Methods, which combines quantitative and qualitative approaches. • Qualitative data is used to analyze needs, validator input, and student responses descriptively. • Quantitative data is used to measure the validity, practicality, and effectiveness of the media thru statistical analysis. This approach allows researchers to obtain a comprehensive picture of the quality of the developed product. ADDIE flowchart:



Detailed Development Stages. **Analysis Stage.** The analysis stage aims to identify problems and learning needs. Analysis is conducted thru: a. Needs Assessment: 1) Observation of PAI class II learning; 2) Interviews with teachers; 3) Distribution of initial interest questionnaires. The results show a learning interest score of 56% (considered quite low). b. Analysis of Student Characteristics: 1) Age 7–8 years; 2) Concrete operational stage (Piaget); 3) Short attention span; 4) Needs visual and manipulative media. c. Material Analysis. The material focuses on Noble Morals, specifically the trait of honesty, including: 2) Definition of honesty; 2) Benefits of honesty; 3) Consequences of dishonesty; 4) Examples of honest behavior in daily life d. **Design Stage** This stage includes the conceptual and technical design of the media: 1) Development of storyboards for each card; 2) Determination of moral dilemma scenarios; 3) Design of pop-up mechanisms (V-fold, pull-tab); 4) Visual design (bright colors, child-friendly fonts); 5) Preparation of research

instruments: a) Expert validation sheets; b) Learning interest questionnaires; c) Activity observation sheets; d) Teacher practicality questionnaires

Development Stage. At this stage, the following is done: 1) Creation of an interactive card-based pop-up media prototype; 2) Validation by: a) PAI material expert; b) 1 learning media expert Validated aspects: Material relevance; Language accuracy; Mechanism safety; Visual appeal; Instruction clarity. The product is revised based on validator suggestions until it reaches the "Very Feasible" category with an average score of 91.96%. Implementation Stage. This stage was conducted in Grade II at SD Negeri Kutogiri with a total of 22 students. The effectiveness test design used: One-Group Pretest-Posttest Design $O_1 \rightarrow X \rightarrow O_2$. Description: O_1 = Pretest of learning interest; X = Learning using pop-up media; O_2 = Posttest of learning interest. Implementation steps: Administering the pretest; Learning using pop-up media for 2 sessions; Observing student activities; Administering the posttest; Filling out the teacher practicality questionnaire. Evaluation Stage. Evaluation was conducted in two ways: Formative \rightarrow during the development and revision process; Summative \rightarrow after implementation. The analysis includes: Data normality test; Paired sample t-test; N-Gain score calculation. N-Gain Formula: Categories: High ($>0,7$); Medium ($0,3-0,7$); Low ($<0,3$). Research Subjects. The research subjects consisted of: 2 expert validators (content and media); 1 Islamic Education (PAI) teacher; 22 Grade II students of SD Negeri Kutogiri (saturated sample). The sampling technique used was saturated sampling (total sampling) because the entire population was used as the sample. Research Instruments: Expert validation sheet; Learning interest questionnaire (4-point Likert scale); Activity observation sheet; Teacher practicality questionnaire. The instruments were tested for content validity through expert judgment.

Data Analysis Techniques. Validity and Practicality Analysis. Categories: 81–100% = Very Feasible; 61–80% = Feasible; 41–60% = Fair; $< 40\%$ = Not Feasible. Effectiveness Analysis: Normality test; Paired sample t-test. Criteria: $p < 0,05 \rightarrow$ significant; $p > 0,05 \rightarrow$ not significant; N-Gain calculation. The research results showed: $t = -88.362$; $p < 0.001$; N-Gain = 0.40 (medium category). Research Success Indicators. The media is considered successful if: Validity score $\geq 81\%$; Practicality score $\geq 81\%$; t-test shows $p < 0.05$; N-Gain is at least in the medium category.

RESULT AND DISCUSSION

Results

Hasil penelitian ini disajikan berdasarkan tiga aspek utama, yaitu: (1) validitas produk, (2) praktikalitas media, dan (3) efektivitas media dalam meningkatkan minat belajar siswa. The results of this research are presented based on three main aspects, namely: (1) product validity, (2) media practicality, and (3) media effectiveness in increasing students' interest in learning.

Product Validation Results. Validation was conducted by two experts, namely an expert in Islamic Religious Education material and an expert in learning media. The assessment was conducted based on several indicators, including content suitability, language accuracy, visual design, mechanism safety, and alignment with the characteristics of elementary school students.

Table 1. Media Validation Results

Assessment Aspect	Percentage	Category
Subject Matter Expert Validation	92,3%	Very Feasible
Media Expert Validation	91,6%	Very Feasible
Average	91,96%	Very Feasible

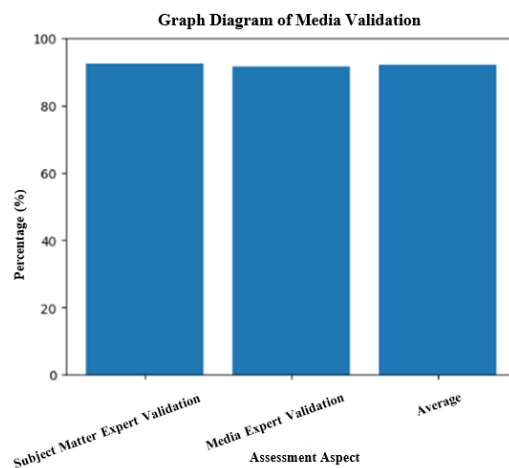


Diagram 1. Validation Results

Based on the table, the average validity score reaches 91.96% with the category “Very Feasible”. This means that the Pop-Up Interactive Cards media meets the feasibility standards in terms of content and appearance. In detail, the content experts stated that the presented content is in accordance with the Basic Competencies and learning indicators of Honest Morals for second-grade students. Meanwhile, the media experts assessed that the visual design, colors, illustrations, and pop-up mechanisms are already attractive and safe for student use. Minor revisions were made to the text layout and sentence simplification to better align with the literacy skills of lower-grade students. Practicality Test Results. Practicality is assessed by the PAI teacher after using the media in teaching.

Table 2. Teacher Practicality Results

Aspect	Percentage	Category
Ease of Use	95%	Very Practical
Time Efficiency	90%	Very Practical
The Attractiveness of Students	96%	Very Practical
Average	93,75%	Very Practical

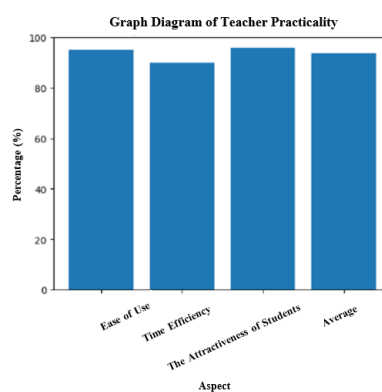


Diagram 2. Teacher Practicality Results

These results show that the media is easy to use without requiring special training. The teacher stated that the use of media does not extend the duration of learning; instead, it makes the process more focused and directed. Additionally, the teacher observed an increase in students' active participation during the learning process.

Description of Pretest and Posttest Data. The effectiveness test was conducted by comparing learning interest scores before and after the use of media.

Table 3. Pretest and Posttest Results

Indicator	Pretest	Posttest
Average Score	66,77	79,77
Category	Sufficient	High
The Attractiveness of Students	96%	Very Practical
Average	93,75%	Very Practical

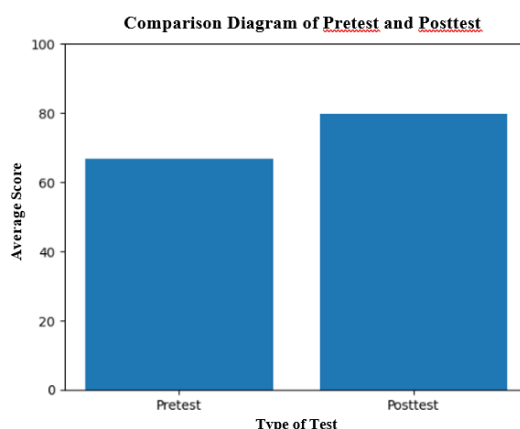


Diagram 1. Validation Results

There was an average increase of 13 points. Statistical Test (Paired Sample t-test. The test results showed: $t = -88,362$; $p < 0,001$. Because the p-value is less than 0.05, there is a significant difference between the pretest and posttest scores. Thus, the use of Pop-Up Interactive Cards media significantly affects the increase in students' interest in learning. N-Gain Calculation. The N-Gain value of 0.40 falls into the moderate category. This means that the improvement is at a moderate level of effectiveness, but it still shows a significant positive impact.

Discussion

Analysis of Increased Learning Interest. The increase in learning interest from 66.77 to 79.77 indicates that interactive card-based pop-up media can create a more engaging learning experience compared to conventional methods. Learning interest in this study includes three main indicators: Attention; Interest; Engagement. During the implementation, students showed spontaneous responses such as curiosity when opening the pop-up folds and trying the sliding mechanism to see the consequences of honest or dishonest behavior. The surprise effect of the pop-up triggers an increase in attention focus. Physical interaction with the card stimulates kinesthetic engagement, which enhances information processing. Connection to Cognitive Development Theory. The results of this study are in line with Piaget's theory of the concrete

operational stage. At this stage, students need real objects to understand abstract concepts. Pop-up media serves as a bridge to concretize moral values. The action-reaction simulation in the cards helps students understand the consequences of behavior visually and logically. Example: When the student slides the “honest” card, an illustration of a smiling friend and a praising teacher appears; When choosing “dishonest”, a disappointed expression appears; This visualization reinforces the understanding of cause and effect.

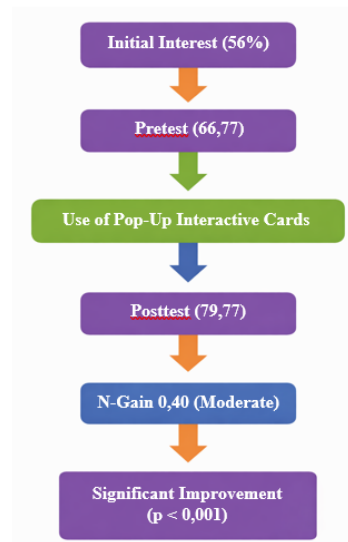


Figure 2. Research Results

Constructivist Perspective: According to constructivist theory, effective learning occurs when students build their own knowledge thru experience. This media: Not only conveying information; But inviting students to simulate moral choices. Thus, students do not merely know the definition of honesty, but experience a simple reflection process thru direct interaction. Moderate Effectiveness Analysis (N-Gain 0.40). Although the improvement is significant, the N-Gain category is at a moderate level. This may be caused by: The relatively short duration of media usage; Factors of the learning environment outside the classroom. Variations in individual student characteristics. However, moderate effectiveness has already shown that media has a real contribution in increasing learning interest. Pedagogical Implications. The results of this study have several implications: Tangible media is more effective for lower-grade students compared to verbalistic methods. Simple moral simulations can help with value internalization; Non-digital media remains relevant and effective in character education. Research Limitations: Some limitations of this study include; Not using a control group; Limited sample size (22 students); Measurement only on the variable of learning interest. Subsequent research is recommended to use an experimental design with a comparison group and to measure the impact on students' actual behavior.

CONCLUSION

Based on the research and discussion results, it can be concluded that the development of Pop-Up Interactive Cards media themed Honest Morals thru the ADDIE model successfully produced a valid, practical, and effective product in increasing the learning interest of second-grade elementary school students. First, from the aspect of validity, the developed media received an average score of 91.96% with a very feasible category. These results indicate that the media has met the feasibility standards in terms of material substance, curriculum alignment, language clarity, as well as the quality of visual design and interactive mechanisms. Expert validation ensures that the presented content is not only conceptually correct but also appropriate for the

cognitive development stage of 7–8-year-old students. Second, from the aspect of practicality, the media received a score of 93.75% with a very practical category. This indicates that the media is easy for teachers to use, does not require special training, and can be effectively integrated into the learning process without adding extra time burden. The media is also considered capable of enhancing student engagement actively during the learning process. Thus, Pop-Up Interactive Cards have a high level of applicability in the context of PAI learning in elementary schools. Third, from the aspect of effectiveness, the results of the statistical test show a significant increase in students' learning interest after the use of the media. The average learning interest score increased from 66.77 on the pretest to 79.77 on the posttest. The results of the paired sample t-test showed a p-value < 0.001, indicating a significant difference between before and after the use of the media. Additionally, the N-Gain value of 0.40 falls into the moderate category, indicating that the media contributed to a significant improvement, although not at a high level.

Theoretically, these findings reinforce the relevance of constructivist theory, which emphasizes that learning becomes more meaningful when students actively construct their knowledge thru direct interaction with the learning environment. Interactive card-based pop-up media allows students to conduct simple simulations of moral dilemmas, so the concept of honesty is not only understood verbally but also visualized thru concrete action-reaction mechanisms. The results of this study are also in line with Piaget's cognitive development theory, particularly the concrete operational stage, where students need real representations to understand abstract concepts such as moral values. Practically, this research contributes to the development of innovative, economical, and non-digital learning media that align with the characteristics of elementary school students. This media can serve as an alternative solution for PAI teachers in addressing the low interest in learning about abstract moral subjects. The use of media based on physical manipulatives has proven to enhance students' attention, interest, and active engagement. However, this study has limitations, including a limited sample size and the absence of a control group for comparison. Therefore, future research is recommended to use a stronger experimental design involving a control group and to measure the long-term impact on actual behavioral changes in students, not just in terms of learning interest. Overall, it can be asserted that Pop-Up Interactive Cards themed Honest Morals are an effective learning medium to enhance the learning interest of second-grade elementary school students, while also supporting the process of internalizing moral values in a more concrete, engaging, and meaningful way.

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