

Development of Interactive Smart Poster Media for Sexual Education Introduction to Children at State Kindergarten Pembina in Tanah Datar Regency

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ABSTRACT

Purpose – The lack of engaging and interactive educational media for introducing sexual education to young children has led to inadequate understanding of basic concepts. This study aims to develop responsive smart poster media as an educational tool tailored to the developmental characteristics of early childhood, in order to enhance their understanding of sexual education.

Method– This research adopts a Research and Development (R&D) approach using the 4D model by Thiagarajan, limited to the development stage. Primary data were collected through feedback, suggestions, and assessments from expert validators and practitioners using validity and practicality evaluation instruments. Validity was assessed based on graphic feasibility, language suitability, and media functionality. Practicality focused on content relevance and usefulness in the learning process. The instruments were reviewed by two experts and two early childhood education practitioners.

Findings – The responsive smart poster media received a validity score of 90.59%, categorized as highly valid, and a practicality score of 90.71%, categorized as highly practical. These results indicate that the media is both appropriate and effective for introducing sexual education to young children.

Research implications/limitations – This study is limited to early development and initial trials. Further research is needed to assess long-term effectiveness and broader implementation.

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Introduction

Early childhood education is a crucial stage in shaping children's cognitive, emotional, and social development (Syofiyanti Dessy, 2024). At this stage, children begin to understand their surroundings, including recognizing their own bodies and interpersonal relationships. Sexual education is often overlooked, despite its important role in raising children's awareness of privacy, body autonomy, and personal safety.

The Indonesian Child Protection Commission Humas KPAI (2024) reported that in early 2018, there were 117 cases of sexual violence against children, compared to 393 cases in 2017. Faliyandra (2019) stated that sexual issues in human life are widely sought after but least understood. The lack of parental knowledge on how to provide sexual education to children contributes to the ease with which sexual crimes are committed. Children who have not received sexual education remain naive and lack the ability to take preventive measures when facing threats such as sexual violence. Stated that the goal of sexual education in preventing child sexual abuse is to help children identify dangerous situations and prevent abuse (Tampubolon, 2019). It also teaches them to recognize inappropriate touches, how to refuse or end interactions with suspicious individuals, and how to seek help.

Based on observations at the State Kindergarten Pembina in Tanah Datar Regency, it was found that the introduction of sexual education remains limited. Teachers predominantly employ lecture and song methods to deliver the material, which are less effective in helping children understand the concepts of privacy and body boundaries. Some children still exhibit behaviors that reflect a lack of understanding of sexual education, such as touching their peers' body parts without realizing that such actions are inappropriate. This indicates that children have not fully grasped the concept of acceptable and unacceptable touch.

Several studies emphasize the importance of introducing sexual education at an early age to prevent misunderstandings and enhance children's ability to protect themselves from potential harm. Therefore, there is a need for more interactive and engaging educational tools that align with children's cognitive development.

Responsive smart posters offer an innovative approach to sexual education by integrating visual, audio, and interactive elements that align with children's learning styles (Suciani, 2023). This research focuses on the development of smart poster media as a tool to introduce the basic concepts of sexual education in an engaging, age-appropriate, and effective manner in early childhood learning environments.

The objective of this study is to explore the effectiveness of this media in enhancing children's understanding of body privacy, acceptable and unacceptable touch, and personal safety. The findings of this research are expected to contribute to the development of more effective learning strategies in early childhood sexual education.

Methods

This study employs the Research and Development (R&D) method using Thiagarajan's 4D model, which consists of the Define, Design, Develop, and Disseminate stages. However, this research is limited to the Development stage (Saputro, 2017). The objective is to develop and validate a responsive smart poster as an educational tool for introducing sexual education to early childhood students at TK Negeri Pembina Kabupaten Tanah Datar. The R&D method aims to create a product based on needs analysis and test its effectiveness to ensure it meets its intended purpose (Sugiyono, 2013). The research begins with the Define stage, which identifies issues related to the lack of interactive media in early childhood sexual education through observations and interviews with educators. In the Design stage, the poster is developed to align with early childhood characteristics by incorporating interactive elements such as visuals, touch sensors, and audio feedback to make it more engaging and comprehensible. The Development stage includes validation by media and early childhood education experts, as well as practicality testing by two teachers using observation, interviews, and questionnaires.

Data analysis is conducted using descriptive statistics, where the media is considered valid and practical if it achieves a score above 80%. The results indicate that the responsive smart poster meets the required standards for early childhood sexual education and can effectively enhance children's understanding of the subject.

Table 1. Validation Instrument Sheet for Feasibility Assessment of Responsive Smart Poster Media

| VALIDATION INDICATORS | ASSESSMENT ITEMS | ASSESSMENT ALTERNATIVES | | | | |
|------------------------------------|---|----------------------------|---|---|---|---|
| | | 5 | 4 | 3 | 2 | 1 |
| Size of learning media | 1. The size of the responsive smart poster media is safe for students | | | | | |
| Robustness of Learning Media | 2. responsive smart poster boards don't come off easily | | | | | |
| | 3. Made of strong materials | | | | | |
| Learning Media Forms and Materials | 4. Not pointed and sharp | | | | | |
| | 5. Not easy to break and tear | | | | | |
| | 6. Does not contain elements that are harmful to children | | | | | |
| | 7. Not flammable if exposed to sparks | | | | | |

Table 2. Rating Scale Validation Scale

| Letter | Value | Description |
|--------|-------|-------------|
| A | 4 | Very well |
| B | 3 | Good |
| C | 2 | Enough |
| D | 1 | Not enough |

Sumber: Sudjana, (2010)

Result

This study aims to develop a responsive smart poster media designed to introduce sexual education to children at TK Negeri Pembina Kabupaten Tanah Datar, meeting valid and practical criteria. This research follows a Research and Development (R&D) approach, adopting the 4D Thiagarajan model, which consists of four stages: define, design, develop, and disseminate. However, this study was conducted only up to the development stage.

The responsive smart poster media was validated by two expert validators (lecturers) to assess media feasibility and tested for practicality by two teachers at TK Negeri Pembina. The validation results showed that the responsive smart poster media achieved a validity score of 90.59%, categorized as highly valid. Meanwhile, the practicality test conducted by teachers resulted in a score of 90.71%, indicating that the media is highly practical.

The development process included several revisions based on validator feedback, such as simplifying the language, adjusting illustrations, enhancing color contrast, and structuring the information systematically to ensure better comprehension for early childhood learners. With its high validity and practicality scores, this media is expected to be an effective educational tool for introducing sexual education to young children in an interactive and engaging way.

Table 3. Indikator aktivitas media poster pintar responsif

| No | Indicator |
|----|---|
| 1 | Recognizing personal body parts and their functions |
| 2 | Differentiating between safe and unsafe touch |
| 3 | Knowing the actions to take in uncomfortable situations |
| 4 | Understanding the concept of body privacy |
| 5 | Recognizing gender differences |

Responsive Smart Poster Media Design



Figure 1. How to maintain body privacy



figure 2. Safe and unsafe touch



Figure 3. Resisting unsafe touch



Figure 4. Actions to be taken

Table 3. Recapitulation of Learning Media Aspect Validation Results

| No | Assessment Aspects | Validator | | Amount | Maximum Score | Presentase | Ket |
|----|------------------------------|-----------|----|--------|---------------|------------|------------|
| | | V1 | V2 | | | | |
| 1. | Graphic Feasibility Aspects | 72 | 74 | 146 | 80 | 91,25% | Very valid |
| 2. | Language Eligibility Aspects | 49 | 48 | 97 | 55 | 97% | Very valid |
| 3. | Media Language Aspects | 21 | 24 | 45 | 30 | 90% | Very valid |

The validation phase of the responsive smart poster media was conducted by two expert validators, namely Dr. Jhoni Warmansyah, M.Pd as the material expert validator (V1) and Wilma Rahma Hidayanti, M.Pd as the media expert validator (V2). This validation process

aimed to assess the feasibility of the media in helping young children understand sexual education appropriately.

The validation was carried out by filling out an evaluation sheet based on aspects of content feasibility, media design, and suitability with the characteristics of children aged 5-6 years. The validation percentage was calculated using the following formula:

$$NP = \frac{R}{SM} 100\%$$

Based on the validation results, the responsive smart poster media obtained a validity percentage of 90.59%, which falls into the highly valid category. The validators provided several improvement suggestions regarding language simplification, illustration adjustments, and the use of more contrasting colors to enhance children's engagement and comprehension of the material. The suggestions and feedback from the validators were used to revise the product design at the next stage to ensure the developed media is more effective and feasible for use in classroom learning. After revisions were made, the responsive smart poster media was ready to be tested for practicality and effectiveness in early childhood education.

Table 4. Recapitulation of Learning Media Practicality Test Results

| No | Assessment Aspects | Validator | | Amount | Maximum Score | Presentase | Ket |
|----|----------------------------|-----------|----|--------|---------------|------------|-----------|
| | | V1 | V2 | | | | |
| 1 | Aspect Content Eligibility | 22 | 23 | 45 | 50 | 90% | Practical |
| 2 | Aspect Media Eligibility | 40 | 42 | 82 | 90 | 91,11% | Practical |

The practicality assessment of the responsive smart poster media was conducted by Ibu Rosmanidar, S.Pd. Aud (P1) and Ibu Revinalis, S.Pd. (P2) to evaluate its usability in early childhood education. The evaluation focused on content feasibility and media feasibility, assessing material accuracy, durability, and clarity. The results showed that the media obtained a practicality score of 90.71%, categorizing it as highly practical. Practitioners noted that the media is easy to use, enhances teaching effectiveness, and helps children understand sexual education concepts interactively. With this high score, the responsive smart poster media is considered a practical and effective educational tool for classroom implementation.

Discussion

Based on the validity test results for the responsive smart poster media in introducing sexual education to young children, the findings indicate that the graphic feasibility aspect received a 91.25% score, the language feasibility aspect scored 97%, and the media feasibility aspect achieved

90%. The overall validity score was 90.59%, categorizing it as highly valid. This aligns with the criteria set by Sudjana (2017), which states that media scoring between 81%-100% is considered very valid. For practicality, the content feasibility aspect obtained 90%, while the media feasibility aspect received 91.11%, with an overall practicality score of 90.71%, categorizing the media as highly practical. This is consistent with Sudjana's (2017) classification, which considers media scoring 81%-100% as very practical.

These results indicate that the responsive smart poster media is both highly valid and practical, making it an effective tool for introducing sexual education to young children. The interactive features, simple language, and visually engaging illustrations enhance children's understanding of private body parts, appropriate and inappropriate touch, and personal boundaries.

According to Arifudin (2016), learning media for early childhood should stimulate children's cognition, emotions, and interest in learning. It must also align with children's characteristics to increase motivation and engagement in the learning process. (Sugiantara, 2024) emphasized that educational media should help children grasp abstract concepts in a concrete manner, thereby supporting their cognitive development.

Previous studies have also supported the effectiveness of interactive learning media. Salma (2024) found that educational posters significantly improved children's understanding of sexual education concepts. Similarly, research by (Widyastuti et al., 2023) concluded that visual media aids comprehension of complex and sensitive topics, helping children learn in an engaging and age-appropriate way.

Overall, the development of the responsive smart poster media meets the criteria for validity and practicality, demonstrating its potential as a valuable learning tool in early childhood education. Through engaging visuals, simple explanations, and interactive elements, this media effectively supports children's understanding of sexual education, ensuring a safe and age-appropriate learning experience.

Conclusion

The responsive smart poster media was developed to introduce sexual education to young children in an interactive and engaging way. Designed with clear illustrations, appropriate colors, and interactive features, this media helps children understand personal boundaries and safe interactions. The validity test showed a score of 90.59%, categorizing it as "highly valid", while the practicality test resulted in a score of 90.71%, making it "highly practical" for use in early childhood education. These results confirm that the responsive smart poster media is an effective learning tool that supports children's understanding of personal safety and awareness.

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