Development of Interactive Smart Poster Media for Sexual Education Introduction to Children Aged 5–6 Years

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ABSTRACT

Purpose – A lack of interactive and developmentally appropriate educational tools has limited young children's understanding of basic sexual education. This study aims to develop an interactive smart poster as a responsive educational medium tailored for children aged 5–6 years to introduce foundational concepts of sexual education in an engaging and age-appropriate manner.

Method – This research employed a Research and Development (R&D) design using the 4D model (Define, Design, Develop, Disseminate) by Thiagarajan, focusing on the development phase. Data were gathered through expert validation and practitioner assessments using standardized instruments to evaluate media validity and practicality. Validity assessments included aspects of visual design, language clarity, and media functionality. Practicality was measured based on the content's relevance and its applicability in early childhood classroom settings. The instruments were reviewed by two content experts and two early childhood educators.

Findings – The interactive smart poster achieved a validity score of 90.59%, indicating a high level of validity, and a practicality score of 90.71%, denoting high practicality. These results support the media's suitability and potential effectiveness in introducing basic sexual education concepts to young learners.

Research implications/limitations – The study is limited to the developmental stage and initial feasibility testing. Future studies should explore the long-term impact, scalability, and integration of the smart poster into diverse educational contexts.

Originality/value – This study offers an innovative approach by integrating responsive visual media into early childhood sexual education. The use of smart posters represents a novel contribution to pedagogical tools aimed at fostering early awareness in a safe, engaging, and developmentally appropriate manner.

Introduction

Early childhood education is a critical period that significantly influences a child's overall development—cognitively, emotionally, socially, and morally (Syofiyanti, 2024). At the age of 5–6 years, children begin forming early perceptions about their bodies and interpersonal relationships. This stage is ideal for introducing foundational concepts related to self-protection and privacy. However, sexual education for this age group often remains a neglected aspect of early learning curricula, primarily due to cultural taboos, lack of appropriate educational resources, and insufficient training for educators and parents (Tampubolon et al., 2019; Salma, 2024).

Alarmingly, national data indicate a persistent rise in cases of child sexual violence. Reports from the Indonesian Child Protection Commission (KPAI, 2024) highlight a spike in incidents involving young victims, revealing gaps in prevention and awareness efforts. According to Faliyandra (2019), most parents lack the knowledge and confidence to communicate sexual issues with their children, and this educational void contributes to children's vulnerability. Without early exposure to appropriate information, children may fail to distinguish between acceptable and unacceptable touch or recognize dangerous situations (Tampubolon et al., 2019; Widyastuti et al., 2023). The urgency of addressing this problem is further reinforced by studies showing that early education significantly boosts children's ability to respond assertively in unsafe conditions (Widyastuti et al., 2023).

Despite the growing body of literature emphasizing the importance of early sexual education, practical and engaging learning tools remain scarce. Observations at the State Kindergarten Pembina in Tanah Datar revealed that instruction is still largely verbal—delivered through lectures and songs—lacking the interactivity needed for meaningful understanding. As noted by Sugiantara et al. (2024), static methods do not align with how young children best absorb information, which is through hands-on, sensory-rich experiences. Moreover, several children in the classroom were seen engaging in inappropriate touch out of ignorance, indicating a critical need for innovative media that facilitates experiential learning and internalization of personal boundaries.

Prior research has explored various media formats to teach sensitive topics to children. For instance, Widyastuti et al. (2023) developed audio-visual aids that proved effective in improving comprehension of sexual education. Similarly, Salma (2024) developed educational posters for 5–6-year-olds and found increased awareness in distinguishing private and public body parts. However, these studies relied on either passive visuals or non-interactive formats. Meanwhile, interactive digital learning tools—especially those using tactile and auditory features—remain underutilized in the context of early childhood sexual education. Studies by Suciani and Westhisi (2023) on poster media for language development and by Arifudin (2016) on early childhood learning media both suggest the potential benefits of integrating interactivity into physical learning aids. Nevertheless, the application of such approaches in sexual education, especially through smart responsive posters, remains relatively unexplored.

This research addresses that gap by developing an interactive smart poster that combines touch-responsive technology with educational content tailored to children's developmental levels. This medium provides a multisensory experience through sound, images, and interactive prompts—thus supporting deeper learning. While existing literature has examined printed posters and videos, this study contributes a novel form of learning media that not only informs but also actively engages children through responsive interaction. In addition to addressing the need for developmentally appropriate and engaging tools, the smart poster introduces a new direction for educators seeking practical and effective means to teach sexual education in early learning settings.

The objective of this study is to evaluate the feasibility, validity, and practicality of the smart poster as an instructional medium for children aged 5–6 years. Specifically, the media aims to foster understanding of body autonomy, safe versus unsafe touch, and strategies for seeking help. The outcomes are expected to enrich the growing body of educational tools aimed at child protection and holistic early childhood development.

Methods

This study utilized a Research and Development (R&D) approach, specifically adopting the 4D model framework, which comprises the stages of Define, Design, Develop, and Disseminate. However, the scope of this research was limited to the Development stage. The primary aim was to design, construct, and evaluate a responsive smart poster as an educational medium for introducing sexual education to early childhood learners.

The research commenced with the Define stage, which involved identifying the core problems associated with the lack of interactive and developmentally appropriate media in early childhood sexual education. This was achieved through classroom observations and semi-structured interviews with early childhood educators to gather qualitative insights.

Subsequently, the Design stage focused on developing a prototype of the smart poster tailored to the cognitive and psychosocial characteristics of children aged 5–6 years. The media incorporated multimodal interactive features—such as touch-based elements, illustrative visuals, and audio feedback—to enhance user engagement and facilitate concept comprehension.

During the Development stage, the media underwent a structured validation process involving content and media experts in the field of early childhood education. Practicality was assessed through implementation trials conducted by early childhood educators. The instruments used for evaluation included validation sheets, observation checklists, questionnaires, and interview guides, all designed to assess the media's feasibility in real educational settings.

Quantitative data obtained from the instruments were analyzed using descriptive statistical techniques. Validity and practicality scores were calculated based on percentage results, with a threshold of ≥80% considered indicative of high validity and practicality. This criterion served to determine whether the developed media met the necessary pedagogical and usability standards for early childhood instructional contexts.

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

Result

This study aims to develop a responsive smart poster media designed to introduce sexual education to children at Pembina State Kindergarten (TK Negeri Pembina), Tanah Datar Regency, Indonesia, 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. Indicators of Activities in Responsive Smart Poster Media

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	Information
		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 the material expert validator (V1) 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.

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	Percentage	Information
		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 RM(P1) and RV (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

The findings from the validity assessment of the responsive smart poster media for introducing sexual education to children aged 5–6 years indicate strong feasibility across all evaluated aspects. Specifically, the graphic feasibility scored 91.25%, language feasibility scored 97%, and media functionality reached 90%. The aggregate validity score of 90.59% categorizes the media as highly valid, based on the classification standards set by Sudjana (2010), where a score between 81%–100% denotes high validity.

The practicality assessment also yielded promising results. The content feasibility dimension attained a score of 90%, and media feasibility reached 91.11%, culminating in an overall practicality score of 90.71%. According to Sudjana (2010), instruments or media that achieve scores within this range are considered highly practical. These findings suggest that the developed media is not only valid in terms of design and content but also practical for implementation in early childhood educational settings.

The interactive smart poster effectively integrates responsive features such as touch-based elements, child-friendly visual illustrations, and concise, age-appropriate language. These features play a critical role in enhancing children's understanding of body privacy, acceptable versus unacceptable touch, and how to seek help in unsafe situations. The media's intuitive design enables children to engage with learning materials more independently, which is crucial at this stage of development.

This aligns with Arifudin's (2016) assertion that educational media for early childhood should stimulate cognitive, emotional, and psychomotor aspects simultaneously. Moreover, learning tools should reflect the developmental characteristics of children to encourage motivation and sustained engagement in the learning process. In parallel, Sugiantara et al. (2024) emphasized that media should be able to bridge abstract ideas into more concrete representations, thereby supporting cognitive development in young learners.

These findings are also corroborated by previous empirical studies. Salma (2024) demonstrated that educational posters enhanced children's understanding of sexual education by presenting information in a visually engaging and contextually appropriate manner. Similarly, Widyastuti et al. (2023) concluded that audio-visual media significantly improved young children's comprehension of sensitive concepts, as it allowed abstract ideas to be conveyed through concrete, sensory-based learning experiences.

Taken together, the results of this study confirm that the developed smart poster meets both validity and practicality benchmarks and holds significant potential as a learning innovation in early childhood education. By providing an interactive and multisensory experience, this media bridges the pedagogical gap between complex subject matter and the developmental readiness of young learners. As a result, it contributes meaningfully to the broader effort of safeguarding children through preventive education and awareness-building in a manner that is both effective and developmentally appropriate.

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.

References

Arifudin, O. (2016). Media pembelajaran anak usia dini. Yogyakarta: Deepublish.

Faliyandra, F. (2019). Tri pusat kecerdasan. Pekanbaru: Lembaga Rumah Cerdas Indonesia.

Humas KPAI. (2024). Paparan konten pornografi dapat menyebabkan anak terlibat dalam kekerasan seksual. Retrieved from https://www.kpai.go.id/publikasi/paparan-konten-pornografi-dapat-menyebabkan-anak-terlibat-dalam-kekerasan-seksual

Salma, S. (2024). Pengembangan poster edukasi dalam memahami pengetahuan seks pada anak usia 5–6 tahun di Sekayu. Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 8(1), 148–156. https://doi.org/10.31004/obsesi.v8i1.243

Saputro, B. (2017). Manajemen penelitian pengembangan (Research & Development) bagi penyusun tesis dan disertasi. Yogyakarta: Aswaja Presindo.

Suciani, R., & Westhisi, S. M. (2023). Pengenalan kosakata bahasa Sunda anak usia dini melalui media poster. CERIA (Cerdas Energik Responsif Inovatif Adaptif), 6(4), 464–468.

Sugiyono. (2013). Metode penelitian kuantitatif, kualitatif, dan R&D. Bandung: Alfabeta.

Sugiantara, I. P., Listarni, N. M., & Pratama, K. (2024). Urgensi pengembangan media pembelajaran lingkaran untuk meningkatkan hasil belajar siswa. Jurnal Literasi Digital, 4(1), 73–80. https://doi.org/10.54065/jld.4.1.2024.448

Sudjana, N. (2010). Penilaian hasil proses belajar mengajar. Bandung: Remaja Rosdakarya.

Syofiyanti, D. (2024). Perkembangan anak usia dini (Ditinjau dari beberapa aspek). Padang: CV DOTPLUS Publisher.

Tampubolon, G. N., Nurani, Y., & Meilani, S. M. (2019). Pengembangan buku pendidikan seksual anak usia 1–3 tahun. Jurnal Obsesi, 3(2), 321–328. https://doi.org/10.31004/obsesi.v3i2.243

Widyastuti, L., Khasanah, I., Rakhmawati, E., & Prasetyo, A. (2023). Pengenalan pendidikan seksual melalui media audio-visual pada anak usia 5–6 tahun. PAUDIA: Jurnal Penelitian dalam Bidang Pendidikan Anak Usia Dini, 12(2), 351–357. https://doi.org/10.26877/paudia.v12i2.17568