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Development of Animated Educational Media for Safe Sexuality Education for Elementary School Students

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Abstract

Safe sexuality education for elementary school students is crucial for building body awareness, personal boundaries, and reporting courage. However, the topic remains sensitive and taboo, requiring engaging learning media aligned with Generation Alpha's digital characteristics. This research and Development study aims to develop and assess the feasibility of digital educational content to enhance safe sexuality awareness among Generation Alpha elementary student using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The product is a 2D animated video, "Geno and Rena" (4 minutes 30 seconds), covering private body parts, personal boundaries, safe/ unsafe behaviors, and reporting to trusted adults. Data gathered through observation, expert validations, interviews, and documentation were analyzed qualitative-descriptively. Results show that subject and media experts rated the product in appropriate and highly appropriate categories. Educators and students responded positively, finding the media engaging, clear, and helpful for conveying sensitive material. The "Geno and Rena" media is deemed feasible and practical for safe sexuality education elementary schools.

Keywords: Digital Educational Content; Generation Alpha; Learning Media; Safe Sexuality

1. Introduction

Generation Alpha refers to the cohort of children born between the mid 2010's and the mid-2020s who are growing up rapidly in the digital age. As true digital natives, they have been accustomed to interacting with devices, the internet, and digital platforms from an early age (Gunawan et al., 2024; Ziatdinov & Cilliers, 2022). This widespread access to digital information offers many benefits but also increases the risk of exposure to age-inappropriate content. including material containing sexual elements without supervision (Ziatdinov & Cilliers, 2022). Early exposure without accurate understanding can lead to confusion, anxiety, and increased vulnerability to bullying, as well as potential sexual violence and exploitation (Nggolaon et al., 2025) Therefore, fostering an understanding of safe sexuality from an early age is an urgent priority.

Sexuality education at the elementary school level is not intended to introduce sexual activity but rather focuses on building an understanding of the body, personal boundaries, privacy, and self-protection (Solehati et al., 2022). The WHO and UNESCO emphasize that comprehensive sexuality education (CSE) should be delivered in a step by step manner using accurate and respectful anatomical terms, avoiding euphemisms (UNESCO, 2018). Nevertheless in practice, sexuality related topics are still often considered awkward, sensitive, and taboo for both teachers and parents to discuss (Amaliyah et al., 2017; Fathia et al., 2025; Joni et al., 2020). Furthermore, conventional methods are considered less effective in engaging the learning interests of Generation Alpha, who tend to prefer visual, interactive, and audiovisual content (Gunawan et al., 2024).

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To bridge this gap, the use of digital educational content in the form of interactive animated videos ins considered highly promising (Ismiulya et al., 2022; Tampubolon et al., 2019). Through child-friendly digital media, moral messages and education on self-protection can be conveyed in communicative and enjoyable way without instilling fear (Ismiulya et al., 2022). This study aims to develop and test the feasibility of a two-dimensional animation-based digital educational learning medium titled "Geno and Rena" in enhancing Alpha Generation students understanding of safe sexuality at SDN 3 Tirtomarto.

2. Method

This study employed a Research and Development (R&D) approach, adapting the ADDIE model, which consists of five main stages; Analysis, Design, Development, implementation, and Evaluation.

2.1. Analysis

During the analysis stage, data on needs were collected through observation of the learning environment at SDN 3 Tirtomarto, analysis of the characteristics of Generation Alpha student, analysis of safe sexuality awareness materials based on WHO and UNESCO standards, and analysis of the availability of digital at the school.

2.2. Design

The design stage involved formulating learning objectives and creating a story board featuring two main characters "Geno and Rena". This stage also included designing 2D animation visuals and developing evaluation instruments, such as subject matter expert validation forms, media expert validation forms, and interview guidelines for educators and students (De Vaus, 2014).

2.3. Development

In this stage, the product was developed into a 2D animated video lasting 4 minutes 30 seconds. The initial product was then validated by subject matter experts and media experts using a checklist-style evaluation instrument on a 1-4 scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 =strongly agree) as well as qualitative descriptive feedback to refine the media.

2.4. Implementation

The validated media was tested in classroom learning activities with students at SDN 3 Tirtomarto. Feedback and input were collected through in-depth interviews with classroom teachers and students after the intervention.

2.5. Evaluation

Formative evaluation was conducted at each stage of the development process, while summative evaluation was conducted to determine the final feasibility of the product based on expert validation data and practical user feedback (Scheinin, 2009). All data were analyze using qualitative descriptive techniques through the stages of data reduction, data presentation, and drawing conclusions.

3. Results and Discussion

3.1 Result

The final product resulting from this study is a two-dimensional (2D) animated educational video titled “Geno and Rena”, with a duration of 4 minutes 30 seconds. This video integrates audio narration, explanatory text, and colorful visual illustrations depicting children’s daily situations.

The results of the media feasibility assessment by subject matter experts and media experts showed that all indicators tested fell into the “acceptable” and “highly acceptable” categories. A summary of the instrument assessment validation is presented in Tables 1 and 2.

Table 1. Results of Subject Matter Expert Validation

No	Statement	Rating
1	The material presented is appropriate for elementary school-aged children	Appropriate
2	The material on safe sexuality is easy for students to understand	Very appropriate
3	The material is organized systematically and coherently	Appropriate
4	The material covers all learning indicators for safe sexual awareness	Appropriate
5	The examples and exercises presented are relevant and support understanding	Very appropriate

6	The language used is clear, age-appropriate, and easy to understand	Very appropriate
7	The material motivates students to learn	Very appropriate
8	The material fosters students' awareness of physical safety	Very appropriate
9	The material can be effectively applied to understanding	Appropriate
10	The material supports the achievement of learning objectives regarding safe sexual awareness	Very appropriate

Table 2. Results of Media Expert Validation

No	Statement	Rating
1	The visual presentation, colors, and selection of illustrations are appealing and align with the aesthetics of Generation Alpha.	Appropriate
2	Typography (font type, size, and color) is easy to read and does not introduce any bias in meaning.	Very appropriate
3	Navigation, layout, and media transitions are systematic and consistent.	Very appropriate
4	The language is straightforward, simple, child-friendly, and not vulgar.	Very appropriate
5	The use of terms or metaphors to explain the body's functions is considered appropriate and safe	Very appropriate
6	The media conveys moral messages and self-protection in an interactive and contextual manner.	Very appropriate
7	Sex education materials are accurate, objective, and appropriate for children's psychological development.	Very appropriate
8	The media presents conceptual boundaries for self-protection without scaring children.	Very appropriate
9	The media is effective for use both independently and with guidance from a teacher or parent.	Appropriate
10	Overall suitability and safety of the media for implementation in elementary schools.	Very appropriate

Feedback from subject matter experts indicates that this media is very helpful in providing safe sexuality education materials, for which there has not yet been a separate curriculum. Meanwhile, media experts suggest that future developments include a greater variety of facial expressions and mouth movements for the animated characters to make them more lifelike.

Results from the field trial, based on interviews, show that teachers felt greatly assisted in conveying sensitive topics in a polite and structured manner. Students also gave very positive responses, demonstrating that they could identify private body parts, distinguish between safe and unsafe actions, and understand their obligation to speak up to a trusted adult.

3.2 Discussion

The media development process using the ADDIE model proved to be effective and structured in producing a valid and practical digital educational media product. From a content perspective, the validity and appropriateness of this media content are grounded in its alignment with UNESCO's *Comprehensive Sexuality Education* (CSE) framework and WHO guidelines (UNESCO, 2018). The material on anatomy and *body boundaries* is presented without explicitly dictating anything, thereby effectively equipping children with self-protection skills (Fathia et al., 2025; Solehati et al., 2022).

The success of this media in capturing students' interest can be explained through three main theoretical foundations:

1. Generation Alpha Theory (Mark McCrindle)

   The Generation Alpha characteristics theory proposed by McCrindle (2021) serves as the basis for determining the suitability of the media for its learning targets. McCrindle introduced the term "Generation Alpha" to describe children born from 2010 onward who are growing up as digital natives, that is, a generation surrounded by digital devices such as smartphones, tablets, and touchscreens since birth. According to McCrindle et al. (2021), Generation Alpha has distinctive characteristics: they are accustomed to visual and audiovisual content, have short attention spans, prefer interactive learning processes, and are used to obtaining information quickly through digital media. These characteristics were a primary consideration in designing the learning media in this study.

   The Geno and Rena media are packaged as two-dimensional animated videos featuring bright colors, friendly child characters, a simple storyline, and a combination of audio narration and concise on-screen text. This design directly addresses the characteristics of Generation Alpha, who are visually oriented, familiar with audiovisual content, and drawn to engaging learning experiences. Therefore, from the perspective of McCrindle's theory, the media aligns with the characteristics and learning styles of its target learners. As a result, safe sexuality education, a topic long regarded as taboo, can be delivered in a way that is closer to the world of today's children.

2. Cognitive Theory of Multimedia Learning (Richard E. Mayer)

   The second theoretical basis explains the scientific rationale for the media's effectiveness: the Cognitive Theory of Multimedia Learning proposed by Richard E.

Mayer. Mayer (2021) explains that people learn better from a combination of words and pictures than from words alone, because information is processed through two distinct channels: a verbal (auditory) channel and a visual (pictorial) channel. Known as the dual-channel principle, this assumption holds that presenting narration and images simultaneously can optimize information intake without overloading either channel (Mayer, 2021).

The Geno and Rena media are designed in line with several of Mayer's principles. The multimedia principle is applied by combining animation with narration. The modality principle is applied by delivering explanations through spoken narration, so that the visual channel is not burdened with excessive on-screen text. The coherence principle is applied by removing extraneous elements so that children stay focused on the core message. Applying these principles provides a scientific basis for the media's effectiveness in helping children understand aspects of safe sexuality education. Through a well-organized combination of animated visuals and audio narration, children's cognitive load can be managed effectively, making the information easier to understand, remember, and internalize. This is consistent with the study's findings, which show that students were more interested in, and better understood, the material when it was presented through the animated stories of Geno and Rena.

3. Contextual Teaching and Learning (Elaine B. Johnson)

Third, the connection between the material and children's real lives can be explained through the Contextual Teaching and Learning (CTL) approach described by Johnson (2002). This approach helps learners connect what they study with real-life situations, so that learning becomes more meaningful rather than mere rote memorization. Learning is more effective when children discover the link between the knowledge they acquire and the everyday events they experience (Johnson, 2002).

In the Geno and Rena media, CTL principles are applied by presenting the material as stories that depict real situations close to children's daily lives. These include identifying private body parts, distinguishing safe from unsafe actions, refusing unwanted actions, and having the courage to speak up and report to a trusted person. Such situations can genuinely be experienced by children at home, at school, and in digital spaces. By presenting real contexts through characters and storylines, children not only grasp the concept of safe sexuality theoretically but are also able to apply it as a form of self-protection in daily life. Thus, from the perspective of Johnson's theory, the developed media successfully links learning to children's everyday experiences, making the learning process more relevant and practical.

Overall, the “Geno and Rena” digital educational content learning tool has proven to be suitable, practical, and safe for use as an innovative tool in early sexuality education in elementary schools.

4. Conclusion

The digital educational content titled “Geno and Rena,” developed using the ADDIE model, has been deemed suitable and practical for enhancing Alpha Generation students’ understanding of safe sexuality in elementary schools. The results of validation by subject matter experts and media experts showed “appropriate” and “highly appropriate” ratings across all assessment indicators. Implementation results also confirmed that this resource

helps educators convey sensitive topics in a respectful and engaging manner, while making it easier for students to understand private body parts, personal boundaries, and reporting procedures.

It is recommended that educators and schools integrate this media into thematic learning activities as well as character-building programs aimed at preventing violence against children. For future researchers, this media can be further developed into an interactive quiz-based application and enhanced with more responsive animated movements.

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