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Development of a Visual Social-Based Video Tutorial to Enhance Understanding of Body Boundaries among Children with Intellectual Disabilities

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Abstract: Children with intellectual disabilities are at a high risk of sexual violence because their ability to recognize body boundaries and to navigate potentially risky social situations is limited. Even so, special schools still frequently provide body safety education through verbal and abstract instruction that does not align with students' cognitive characteristics. This study sought to create a visual–social tutorial video to enhance children with intellectual disabilities' understanding of body safety concepts. The research used a Research and Development (R&D) approach based on the ADDIE model, covering analysis, design, development, implementation, and evaluation. The research was carried out at SLB Negeri Pinang Merah, with participants including material experts, media experts, teachers, and students with mild intellectual disabilities. Data were collected through validation sheets, practicality questionnaires, observations, and pre-test–post-test evaluations. The results indicated that the media reached the valid category, with an average Aiken's V score of 0.792, and met the highly practical category, with an average practicality score of 93.41%. The effectiveness assessment showed a moderate increase in students' understanding, as evidenced by an average N-Gain score of 0.553. Although the Wilcoxon Signed-Rank Test found no statistically significant difference ($p > 0.05$), all students scored higher on the post-test after using the media.

Keywords: *body boundaries; intellectual disability; self-protection education; video-based learning; visual-social tutorial*

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INTRODUCTION

Children diagnosed with intellectual disabilities represent a demographic that exhibits a heightened vulnerability to violence and sexual exploitation compared to their typically developing peers. This vulnerability is influenced by deficits in cognitive functioning, challenges in decoding social signals, reduced capacity to identify dangerous situations, and barriers to assertively communicating disapproval in response to inappropriate behavior (Reis et al., 2022; Svae et al., 2022). Recent research indicates that individuals with intellectual disabilities continue to experience challenges in understanding the concept of consent, identifying signs of sexual violence, and acting appropriately in hazardous situations, thereby highlighting the need for a more nuanced, context-sensitive approach to prevention-oriented education. As a consequence, self-protection education—particularly the development of an understanding of safe and unsafe body boundaries (body safety)—has become a vital requirement that must be carried out systematically from an early stage, using teaching strategies tailored to the distinct learning profiles of individuals with intellectual disabilities (Strnadová et al., 2022; Pratt et al., 2025).

In special education, information regarding bodily boundaries is often conveyed verbally via abstract explanations that do not adequately align with the cognitive learning profiles of individuals with intellectual disabilities. Empirical findings suggest that individuals with intellectual disabilities are more likely to absorb information delivered via concrete, visual, contextual, and repeatedly presented stimuli, because limitations in their information-processing abilities, attentional focus, and capacity for conceptual abstraction constrain how they process information (Sterkenburg et al., 2022; K.-B. Park et al., 2026). This inflexible pedagogical approach can lead to a lack of understanding of body boundaries, hindering learners' ability to distinguish safe from unsafe touch in everyday experiences. Many current studies indicate that integrating visually oriented, technology-based media with context-driven simulations can significantly enhance learning engagement, conceptual understanding, and adaptive abilities in people with intellectual disabilities, compared with traditional verbal-based instruction methods (Lancioni et al., 2022; Lancioni et al., 2024). Consequently, the educational process around body safety requires more realistic, interactive, and contextually relevant media appropriate to students' cognitive characteristics, thereby facilitating a more meaningful and applicable understanding of self-protection.

Theoretically, Bruner's representational theory holds that the learning process proceeds through enactive, iconic, and symbolic stages, in which tangible visual representations play a crucial role in facilitating

the gradual development of conceptual understanding among learners. In people with intellectual disabilities, the iconic stage often predominates because their limited capacity to understand abstract concepts requires providing contextual and concrete visual supports to support effective learning (J. Park & Bouck, 2022; Bouck et al., 2023). In line with this notion, multisensory learning methodologies emphasize that integrating visual and auditory stimuli can improve attention, information retention, and conceptual processing among learners facing cognitive challenges (Shaojie et al., 2022; Wan & Li, 2023). Consequently, educational media that combine concrete visualizations, simple narratives, and authentic social simulations have strong potential to improve the effectiveness of body safety instruction, particularly by helping learners understand dangerous situations and develop more adaptive protective responses (Bryant & Hemsley, 2024).

Social-visual video tutorials offer an innovative learning medium that conveys physical limitations through behavioral demonstrations, social expressions, authentic scenario simulations, and direct, organized narratives. This instructional approach provides a more genuine, context-driven learning experience than conventional, verbally oriented methods, while also allowing content to be revisited in forms that can be adapted to the educational needs of individuals with intellectual disabilities (Özler & Akçamete, 2021; Stierle et al., 2023). Contemporary studies show that video-based instruction and social visual modeling can improve attention, engagement in learning, and understanding of social constructs among learners with cognitive challenges because they present information in a direct, structured, and easily observable way (Jacob et al., 2022).

Through authentic visual and social simulations, learners can develop a stronger understanding of body awareness, personal boundaries, and self-protection strategies in risky situations. Concrete visual demonstrations help students with intellectual disabilities distinguish between safe and unsafe touch more effectively. In addition, the media encourages learners to practice appropriate protective responses in everyday social interactions. These findings are consistent with prior studies suggesting that visual, adaptive learning resources can improve self-safety knowledge and students' social decision-making abilities among individuals with intellectual disabilities (Simmons et al., 2023; Asnawi et al., 2025). Therefore, visual and social tutorial videos have strong potential as innovative preventive learning media that are easier to access, more engaging, and better matched to the learning characteristics of children with intellectual disabilities.

Previous studies have shown that video modeling and video-based interventions effectively improve social, communication, and adaptive behavior skills among children with intellectual disabilities. These approaches provide concrete, repeatable, and easily observable behavioral demonstrations that support learners' comprehension and retention (Morris et al., 2022; Peng et al., 2026). In addition, visual-based learning strategies are widely recognized for increasing student engagement, strengthening understanding of social situations, and enhancing functional behavioral responses in individuals with cognitive limitations. These approaches enable learners to process information more meaningfully through authentic, contextual visual experiences (Türker-Yildirim, 2022; Dakopolos et al., 2024). Therefore, integrating visual and social elements into educational media offers strong potential to support adaptive learning and promote safer social behavior among children with intellectual disabilities.

However, research aimed at creating visual-social video tutorials for body boundary education remains scarce. Most earlier studies have focused on strengthening academic, communication, and self-improvement competencies, whereas the field of special education has not extensively pursued the systematic development of preventive media for self-protection education (Bődi et al., 2023; Nikken et al., 2024). Moreover, current research usually focuses on simply applying media or on the effectiveness of standalone interventions, while overlooking the incorporation of contextual social simulations, expert validation, practical evaluation, and an assessment of learning effectiveness within an encompassing R&D-oriented adaptive media development framework (Chrysafiadi et al., 2022; Almalky & Alqahtani, 2025). Accordingly, this study aims to overcome these limitations by creating adaptive visual-social video tutorials designed to match the learning characteristics of individuals with intellectual disabilities.

This disparity highlights the pressing need to develop adaptive learning media that effectively account for the distinctive learning characteristics of individuals with intellectual disabilities, especially for grasping self-protection concepts in more genuine, context-specific ways. Contemporary studies show that media based on visual elements, social simulations, and video modeling are highly effective in helping learners with cognitive impairments understand social behavior, build adaptive skills, and respond functionally in real-world scenarios (Michalski et al., 2023; Fusinska-Korpik & Gacek, 2024). However, creating preventive media that specifically incorporates physical safety education, authentic social simulations, and visual-social methodologies within a single adaptive learning paradigm remains relatively unexplored in special education research (Capallera et al., 2023; Simon & Nader-Grosbois, 2025).

This research is original in its creation of a visually oriented, socially informative video tutorial that combines visual modeling, simulation of authentic social scenarios, and education on body safety within a single adaptive framework designed using the ADDIE model. Unlike earlier studies that mainly examined visual media for purely academic or self-improvement purposes, this study emphasizes helping learners with intellectual disabilities develop an understanding of bodily boundaries, protective awareness, and the ability to respond

appropriately in critical situations. Furthermore, the developed media underwent a design and implementation phase. They were subjected to thorough evaluation using standards of validity, practicality, and efficacy for use within a special education setting, serving as an all-encompassing assessment of the quality of the resulting adaptive learning resources.

METHODS

This scientific study applied a Research and Development (R&D) approach, following the ADDIE development framework, which comprises five distinct phases: analysis, design, development, implementation, and evaluation. The ADDIE model was selected because its structured, flexible, and continuously evaluative development approach makes it highly effective for designing adaptive learning media customized to individuals with intellectual disabilities (Molenda, 2003; Dousay & Branch, 2023). Furthermore, this model is widely used in educational media development research because it integrates needs assessment, instructional design, product validation, and systematic evaluation of learning efficacy (Latip, 2022; Safitri & Aziz, 2022). The investigation was conducted at SLB Negeri Pinang Merah in 2026. The study participants comprised subject matter experts, media specialists, special education teachers, and students with mild intellectual disabilities.

Subject matter experts and media specialists were instrumental in assessing the content validity, pedagogical appropriateness, and overall quality of the developed media designs. At the same time, special education teachers and students evaluated the feasibility and implementation of the products to determine their effectiveness in an educational setting. The evaluation phase incorporated a range of participants to confirm that the developed media were not only theoretically robust but also practical, accessible to users, and consistent with the educational needs of learners with special requirements (Spatioti et al., 2022). The analytical phase involved systematic observations and structured interviews with educators to differentiate educational needs, learner characteristics, and the challenges encountered in understanding depictions of safe and unsafe body boundaries. The analysis indicated a reliance on verbal instruction, while learners needed tangible, visual, simple, and contextually relevant educational media to understand the subject matter better.

The design phase included formulating video storyboards and visual aesthetics, creating social simulation scenarios, developing narrative sequences, and preparing research instruments (Sanchez-García et al., 2023). Audiovisual content was carefully crafted to explain the concept of body boundaries through simulations of authentic social contexts, supplemented with live narration to align with the cognitive processing capacities of learners with intellectual disabilities (Fang et al., 2011; Drljača et al., 2017). The development phase involved producing a video tutorial based on visual–social principles and consistent with the validated instructional design. The prototype was assessed by subject-matter and media experts to determine the accuracy of its content, its pedagogical appropriateness, the quality of its visuals, and its usability. The experts' recommendations were incorporated to refine the instructional content, visual presentation, language clarity, and the media's compatibility with the learning characteristics of students with intellectual disabilities. The implementation stage involved a limited-scale pilot at SLB Negeri Pinang Merah with students who had mild intellectual disabilities. The teacher functioned as the learning facilitator, whereas the researcher observed students' engagement during the entire learning process.

A pre-test was conducted before the intervention, and an immediate post-test followed the learning session to assess changes in students' understanding of safe and unsafe body boundaries. The implementation trial involved three students who met the predetermined inclusion criteria: (1) enrollment at the same educational level, (2) ability to understand and respond to simple verbal instructions, (3) absence of severe sensory or behavioral impairments that could interfere with participation, and (4) regular attendance during the intervention. The limited sample size reflected the number of eligible participants available at the research site rather than a deliberate sampling strategy. Such small-scale implementation trials are common in educational Research and Development studies, particularly in special education, where they provide preliminary evidence regarding the feasibility and potential effectiveness of newly developed instructional products before larger-scale field implementation. Therefore, the effectiveness findings were interpreted descriptively and were not intended for statistical generalization.

The evaluation phase was conducted formatively throughout each stage of development and summatively following implementation to determine the validity, practicality, and effectiveness of the developed media. The data were gathered using expert validation forms, teacher practicality questionnaires, classroom observation records, and pre-test–post-test assessments. The expert validation instrument assessed content suitability, instructional design, visual presentation, and media usability, whereas the practicality questionnaire evaluated teachers' perceptions of the ease of implementation during classroom instruction (Kirilenko, 2026).

The pre-test and post-test measures were created from the instructional objectives of body safety education. They included the same indicators and were administered before and after the intervention. Students' understanding was assessed through an individual oral performance assessment consisting of ten body safety scenarios supported by visual illustrations. Each scenario was evaluated using a five-point rubric (0–5) reflecting the accuracy and completeness of the student's responses, for a maximum total score of 50. We chose oral

administration, supported by visual cues, to fit the cognitive profile of students with intellectual disabilities and reduce the constraints associated with written assessments. Prior to implementation, every assessment item was examined by two subject-matter experts and a special education practitioner to determine its relevance, clarity, and appropriateness. The team revised items based on expert recommendations to establish content validity. Because the assessment functioned as a criterion-referenced instrument within a very small implementation sample, content validity, established through expert judgment, was prioritized over statistical reliability estimates.

Media effectiveness was evaluated primarily through descriptive analysis of students' learning improvement using N-Gain scores and classroom observation data. The Wilcoxon Signed-Rank Test was used only as an auxiliary nonparametric analysis to compare pre-test and post-test scores, given the extremely small sample size ($n = 3$). Because such a small sample size limits statistical power, inferential statistics were not treated as the primary measure of effectiveness. Rather, greater emphasis was placed on the magnitude and consistency of individual learning gains, along with the observational evidence gathered during implementation. Students' learning improvement was subsequently calculated using the N-Gain formula and classified into three categories: high, medium, and low. Finally, a quantitative descriptive analysis was conducted to assess the validity, feasibility, and effectiveness of the developed video tutorial, which was based on visual–social principles.

RESULT AND DISCUSSION

The results of this study show a clear, distinctive contribution relative to earlier research on video-based learning for students with intellectual disabilities. Earlier studies primarily focused on improving academic achievement, communication skills, social interaction, or daily living skills through video modeling and visual supports (Sun & Brock, 2022; Sun et al., 2025). By contrast, the current study specifically focuses on instruction in personal safety, which continues to be scarcely represented in research on special education, even though children with intellectual disabilities are especially vulnerable to abuse and exploitation (Jojo et al., 2023; Ortega et al., 2023). The developed media integrates visual modeling, authentic social simulations, and explicit self-protection instruction within a single adaptive learning framework, enabling students not only to understand body boundaries conceptually but also to recognize risky situations and practice appropriate protective responses.

This study's originality lies in integrating three essential components. First, the media is tailored specifically to teaching body safety to children with intellectual disabilities, whereas most earlier visual-learning interventions emphasized academic and practical skills. Second, the instructional design integrates visual representations with contextual social scenarios that reflect real-life situations learners encounter. Third, the product was systematically developed and evaluated through the ADDIE framework, including expert validation, practicality assessment, and effectiveness testing, thereby providing empirical evidence regarding its educational feasibility and impact. This integrated approach extends previous research that typically examined either media effectiveness or social-skill interventions separately (Ding et al., 2024).

From a scientific perspective, the findings contribute to the growing body of knowledge on adaptive educational technology and preventive education for students with special needs. The results support contemporary evidence suggesting that contextual visual learning can facilitate conceptual understanding and adaptive decision-making among individuals with intellectual disabilities (Zhu et al., 2022). Furthermore, this study provides an instructional design model that can be adapted for other self-protection and life-skills education programs. Therefore, this research contributes more than a single learning product by offering a practical, evidence-based framework for preventive education in special education settings.

These empirical findings highlight a discrepancy between the pedagogical methodology used and learners' cognitive and social developmental requirements. Abstract conceptualizations often hinder learners' ability to translate personal safety concepts into concrete scenarios they can relate to in their everyday experiences (Dampa & Giagazoglou, 2023; Ramotopo & Wilson, 2025). Consequently, learners' skills in identifying potential threats, rejecting dangerous behaviors, and reporting dangerous situations remain suboptimal. These educational deficiencies are graphically represented in Figure 1.

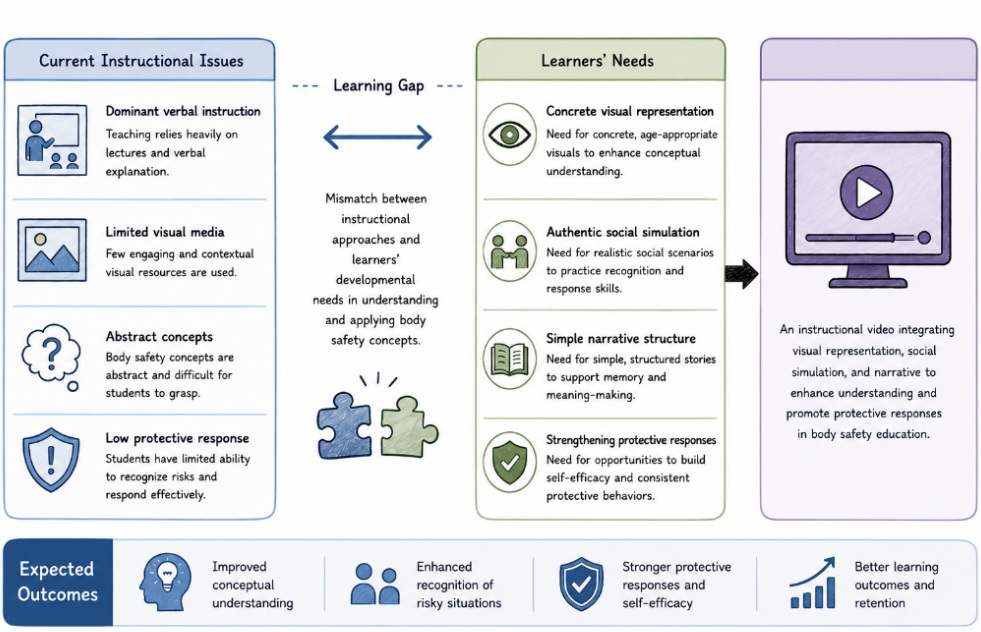

Figure 1. Learning Gap in Body Safety Education and the Developmental Solution

Figure 1 shows that the limited effectiveness of physical safety education stems not only from limitations in instructional materials but also from a mismatch between pedagogical methods and the typical learning profiles of individuals with intellectual disabilities. In practice, instruction often relies on verbal exposition and abstract ideas, with insufficient visual media, leaving learners with intellectual disabilities to struggle to understand physical limitations in concrete, applicable terms. Contemporary research shows that individuals with intellectual disabilities have difficulty abstracting concepts and are more likely to learn through visual illustrations, direct examples, and repeated contextual learning experiences (Jenner et al., 2023; Windsor et al., 2023). Instead, learners should engage in more authentic educational experiences that include contextual visualizations, social simulations, live narratives, and gradual reinforcement of protective responses to support a deeper understanding of body safety concepts. Research shows that visual and socially oriented instructional methods significantly increase learners' engagement, situational awareness, and adaptive response abilities in critical social situations (Satheesan, 2025; Syafril et al., 2025). Therefore, creating visually and socially driven adaptive learning resources is crucial to address the gap between abstract material and the concrete educational needs of learners with special needs (Bessarab et al., 2025; Sasongko et al., 2026).

In response to this identified need, the study established a visual-social-oriented video tutorial as an educational intervention that combines realistic visual representations, simulated social interactions, and reinforcement of protective behaviors within a cohesive pedagogical framework. This methodology is intended to facilitate learners' development of deeper conceptual understanding while enhancing their capacity to accurately identify, ignore, and respond to potentially dangerous scenarios. Consequently, the resulting media serve not only as visual resources but also as vehicles for adaptive learning that foster increased learners' self-safety competencies. Product feasibility was evaluated through validation conducted by subject-matter experts and media specialists.

The analysis results showed an average Aiken's V validity index of 0.792, indicating validity. The pre-test and post-test consisted of ten body safety scenarios administered individually through an oral performance assessment supported by visual illustrations. Each scenario was scored using a five-point rubric (0–5), resulting in a maximum score of 50. Oral administration was selected to accommodate the cognitive characteristics of students with intellectual disabilities. Prior to implementation, each assessment item was examined by two subject-matter experts and one special education teacher to confirm its relevance, clarity, and appropriateness. Changes were made in response to expert input in order to support content validity.

Table 1. Product Validation Results

Aspect	Value	Category
Content suitability	0.79	Valid
Visual design	0.80	Valid
Pedagogical suitability	0.78	Valid
Average	**0.792**	**Valid**

Validity metrics in Table 1 showed that the developed media adhered to pedagogical principles relevant to special education, particularly in visual legibility, narrative clarity, and alignment with the unique attributes of learners with intellectual disabilities. Modest modifications to visual pacing, the intensity of social expressions, and narrative brevity were made to improve information clarity and maintain learner focus throughout the educational experience. These refinements are crucial, as the effectiveness of adaptive learning for individuals with cognitive impairments is strongly influenced by a coherent visual framework, reduced stimulus complexity, and progressive information delivery (Bouck et al., 2023; Bryant & Hemsley, 2024). Beyond its validity, the media also demonstrated strong practicality, as educators rated it as user-friendly and found it facilitated the explanation of sensitive content in a more organized, contextually relevant manner than traditional verbal methods (Adyani et al., 2023; Mandala et al., 2025). The media's practicality is illustrated in Figure 2.

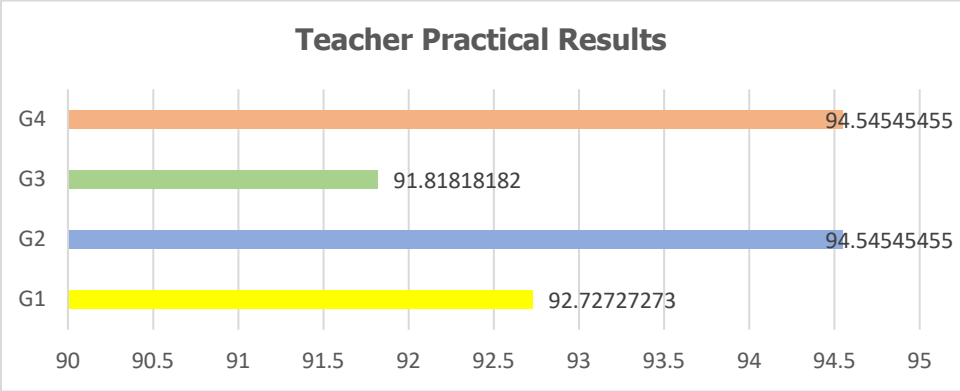

Figure 2. Teacher Practicality Response

Practicality data showed that all participants rated their experience above the Very Practical threshold (≥ 85%). The highest proportions were observed in Groups 2 and 4 (94.55%), while the lowest was recorded in Group 3 (91.82%). The cumulative average practicality score was 93.41%, indicating that this visually and socially oriented video tutorial was highly effective for educators teaching self-protection to students with intellectual disabilities. A visualization of the practicality data is depicted in Table 2. To statistically evaluate the significance of the increase in students' understanding from pre-test to post-test, the Wilcoxon Signed-Rank Test was used, using IBM SPSS Statistics (Sofyan, 2021; Windi et al., 2022). This test was chosen because the data are ordinal and the sample size is very small (n=3), so the assumption of normality is not met. The hypotheses tested are as follows:

H_0: There is no significant difference between pre-test and post-test scores (median difference = 0).

H_1: There is a significant difference between pre-test and post-test scores (there is an increase in understanding after using media).

Table 2. Results of the Wilcoxon Signed-Rank Test

Statistic	Value
N	3
W	6.000
Z	1.604
p-value	0.109
Decision	**Not Significant (p > 0.05)**

The Wilcoxon Signed-Rank Test yielded an Asymptotic Significance (2-tailed) of 0.109, which exceeded the predefined significance threshold of $\alpha = 0.05$. Accordingly, the null hypothesis (H_0) cannot be rejected, indicating that no statistically significant difference was identified between the pre-test and post-test scores. However, every learner's scores increased after adopting the visual-social instructional video, suggesting a consistent pattern of improved comprehension across the subject areas examined. The statistical test score (W) of 6.000, together with Z = 1.604, shows that every observed difference was positive (3 positive differences, 0 negative differences, 0 ties), thereby confirming that all students obtained higher scores from the pre-test to the post-test.

These statistically insignificant results can be explained by the limitations of the very small sample size (n=3). Implementing the Wilcoxon test with n=3 has very low statistical power, requiring a very large effect size to reach significance ($p < 0.05$). Consequently, although the tests were not statistically significant, the consistent improvements across participants (mean N-Gain = 0.553, categorized as Moderate, and mean post-test score of 65.3%) retain considerable pedagogical significance. These results align with findings from other small-scale developmental investigations using limited samples of participants in special education settings,

where descriptive N-Gain analysis served as a more representative metric of efficacy than inferential statistics. The product's effectiveness was evaluated using a single-group pre-test–post-test design (Taylor, 2023; Vergari, 2025). A group of three students with mild intellectual disabilities from Pinang Merah State Special Needs School (SLB Negeri Pinang Merah) had their understanding of body boundaries evaluated before (pre-test) and after (post-test) implementing a video tutorial. The maximum score is 50, and the effectiveness results are shown in Table 3.

Table 3. Pre-test, Post-test, and N-Gain Results of Understanding the Body Boundaries Concept

Student	Pre-test	Post-test	Max Score	% Pre	% Post	N-Gain
Student A	11	31	50	22%	62%	0.513 (Medium)
Student B	11	30	50	22%	60%	0.487 (Medium)
Student C	12	37	50	24%	74%	0.658 (Medium)
Average	**11.3**	**32.7**	**50**	**22.6%**	**65.3%**	**0.553 (Medium)**

Empirical data show that all participants improved their scores from the initial assessment to subsequent evaluations. Student A and Student B both scored 11 on the pre-test, then improved to 31 and 30, respectively. Student C, who had the highest pre-test score of 12, achieved the most favorable post-test score of 37. The mean pre-test score was 11.3 (22.6%), while the mean post-test score was 32.7 (65.3%), indicating substantial improvement. The N-Gain scores for the three students ranged from 0.487 to 0.658, categorically classified as Moderate ($0.30 \leq g < 0.70$). The average N-Gain of 0.553 reflects a moderate improvement in the level of understanding. In addition, the average post-test percentage of 65.3% falls into the Moderately Effective category (56-75%) according to the established criteria for evaluating media effectiveness. A contrasting graphical representation of the pre-test and post-test results is illustrated in Figure 3.

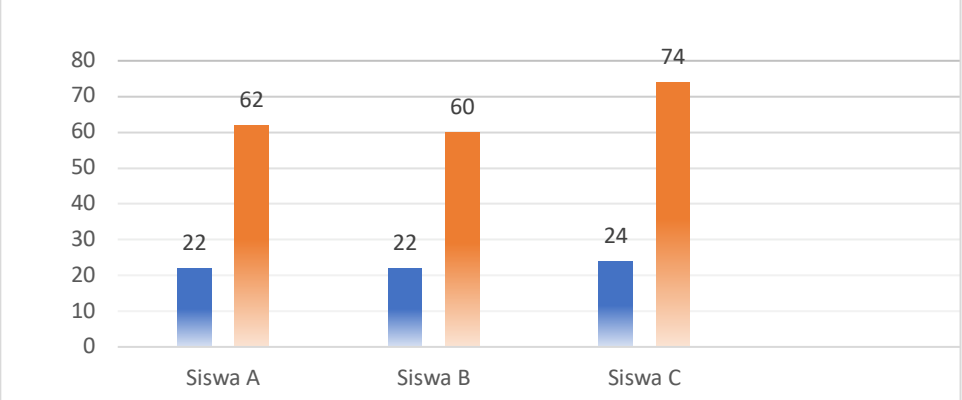

Figure 3. Comparison of Students' Pre-test and Post-test

Pedagogically, the improvement in post-test scores across all participants indicates that the visual-oriented social methodology used in the educational framework effectively reduced the discrepancy between learners' cognitive attributes and abstract notions of bodily safety. The incorporation of concrete visual aids, behavioral examples, and simulated social contexts created a more contextualized learning experience, helping learners more easily identify personal body boundaries, understand inappropriate physical contact, and accurately differentiate protective actions. These results underscore the importance of using visual-centric adaptive media in self-defense education for children with intellectual disabilities (Adyani et al., 2023). The results indicate that creating adaptive learning media in special education requires an approach that considers not only the delivery modality but also the cognitive processing attributes of individuals with intellectual disabilities. The designed media can provide a more organized, contextualized, and understandable educational experience, enabling learners to develop a more practical understanding of self-protection in their daily lives. The findings suggest that educational interventions related to body safety will be more effective when delivered through authentic learning experiences that align with learners' actual social context.

More broadly, the findings suggest that advances in educational technology in special education should aim to facilitate learning beyond mere academic objectives while fostering protective competencies and learners' readiness to navigate real-world scenarios. During this period, the emphasis on using visual social media in special education has largely focused on enhancing academic competencies and personal development, while the preventive dimension of education has remained relatively unexplored. Consequently, creating visual social media-based video tutorials in this study is an innovative preventive contribution that supports learners with intellectual disabilities in developing protective awareness, decision-making skills, and readiness to engage with dangerous situations more adaptively (Obodo et al., 2022; Voicu & Crăciun, 2023). Thus, the resulting media is

not only relevant for enhancing the educational experience in special schools but also strengthens the trajectory of developing learning media that is increasingly inclusive, contextual, and aligned with the authentic requirements of learners with special needs.

CONCLUSION

The present study focused on designing and evaluating a visual–social video tutorial intended to improve body safety awareness among students with intellectual disabilities in a special education setting. The instructional media was developed by adopting the ADDIE model, which consists of five sequential stages: analysis, design, development, implementation, and evaluation. Expert validation indicated that the product achieved satisfactory content and media quality, with an average Aiken's V coefficient of 0.792, confirming its validity for instructional use. Practicality testing further showed excellent usability, with a mean score of 93.41%, indicating that the video tutorial is easy to implement and effectively supports structured, contextual learning activities. The effectiveness evaluation showed noticeable improvements in students' understanding of safe and unsafe body boundaries after the intervention. This improvement was reflected in an average normalized gain (N-Gain) score of 0.553, representing a moderate level of learning enhancement. Although the Wilcoxon Signed-Rank Test did not reveal a statistically significant difference ($p > 0.05$), all participants scored higher on the post-test than on the pre-test. Overall, the findings indicate that visual–social video tutorials are a promising adaptive learning medium for body safety education, integrating realistic visual representations, meaningful social scenarios, and appropriate self-protection strategies tailored to the cognitive and learning characteristics of students with intellectual disabilities.

CONFLICTS OF INTEREST

The authors declare no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

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AUTHOR CONTRIBUTIONS

The authors' contributions in this study can be summarized as follows: Rayendra (Conceptualization, Methodology, Writing - Original Draft), Erwin Taufik (Validation, Supervision, Project Administration), Anggi Prasetia (Investigation, Formal Analysis, Data Curation, Writing - Review & Editing).

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