

## Islamic Sexuality Education for Early Childhood: Evaluating Flipped Learning Model with Parental Involvement in Indonesia

Hayatun Nufus<sup>1</sup>, Hardiyanti Pratiwi<sup>2\*</sup>, Ikta Yarliani<sup>3</sup>

<sup>1</sup>PAUD IT Ukhuwah

<sup>2,3</sup>Universitas Islam Negeri Antasari Banjarmasin

\*correspondence e-mail: [hardiyantiwati@uin-antasari.ac.id](mailto:hardiyantiwati@uin-antasari.ac.id)

**Abstrak:** Penelitian ini mengembangkan dan mengevaluasi model flipped learning berbasis Islam untuk pendidikan seksualitas anak usia dini di Kalimantan Selatan, Indonesia. Model ini mengintegrasikan video animasi yang berlandaskan pada prinsip-prinsip Islam, mencakup topik tentang otonomi tubuh, menjaga privasi, dan keselamatan diri. Sebanyak 16 guru dan 96 anak (usia 5–6 tahun) dari empat taman kanak-kanak berpartisipasi dalam penelitian ini. Dengan menggunakan kerangka kerja ADDIE, materi pembelajaran dirancang dan divalidasi oleh para ahli (validitas konten = 4,8; validitas media = 4,5). Desain kuasi-eksperimen digunakan untuk membandingkan model flipped learning (47 anak) dengan metode konvensional berupa mendongeng menggunakan buku bergambar (49 anak). Kedua kelompok menunjukkan peningkatan yang signifikan antara pretest dan posttest (Wilcoxon Signed-Rank,  $p < 0,001$ ). Namun, kelompok eksperimen menunjukkan hasil posttest yang lebih tinggi dibandingkan kelompok kontrol ( $M = 96,70$  vs.  $72,76$ ; Mann-Whitney  $U = 102.000$ ,  $Z = -7,933$ ,  $p < 0,001$ ,  $r = 0,81$ ). Temuan ini menunjukkan bahwa integrasi nilai-nilai Islam dalam pendekatan flipped learning, yang didukung dengan keterlibatan orang tua, lebih efektif dibandingkan metode konvensional. Model ini menawarkan strategi yang sesuai secara budaya untuk memperkuat perlindungan anak dan meningkatkan pendidikan seksualitas pada anak usia dini di komunitas mayoritas Muslim.

**Kata Kunci:** *Anak Usia Dini; Flipped Learning; Pendidikan Seksualitas; Video Animasi*

**Abstract:** This study developed and evaluated an Islamic-based flipped learning model for early childhood sexuality education in South Kalimantan, Indonesia. The model integrates animated videos grounded in Islamic principles, addressing topics of body autonomy, privacy, and personal safety. Sixteen teachers and 96 children (aged 5–6) from four kindergartens participated. Using the ADDIE framework, the learning materials were designed and validated by experts (content validity = 4.8; media validity = 4.5). A quasi-experimental design compared the flipped learning model (47 children) with conventional storytelling using picture books (49 children). Both groups showed significant improvements between pretest and posttest (Wilcoxon Signed-Rank,  $p < 0.001$ ). However, the experimental group outperformed the control group with higher posttest scores ( $M = 96.70$  vs.  $72.76$ ; Mann-Whitney  $U = 102.000$ ,  $Z = -7.933$ ,  $p < 0.001$ ,  $r = 0.81$ ). These findings demonstrate that integrating Islamic values into a flipped learning approach, supported by parental involvement, is more effective than traditional methods. The model

provides a culturally appropriate strategy for strengthening child protection and improving early sexuality education in Muslim-majority contexts.

**Keywords:** *Animated Video; Early Childhood; Flipped Learning; Sexuality Education*

## INTRODUCTION

Article 15 of Law Number 35 of 2014 of the Republic of Indonesia underscores the fundamental right of children to protection from various forms of abuse, including sexual violence. This legal framework highlights the urgency of addressing child protection comprehensively, especially against sexual crimes, which have become increasingly prevalent. In 2024, Indonesia's Ministry of Women's Empowerment and Child Protection reported 11.267 cases of sexual violence against children, underscoring the pressing need for effective preventive measures (Simfoni, 2024). One such measure is comprehensive sexuality education (CSE), which plays a critical role in equipping children with the knowledge and skills necessary to identify and resist inappropriate behaviors. Without adequate sexuality education, children remain vulnerable, unable to recognize and respond to boundary violations and inappropriate sexual behaviors (Rassool & Khan, 2020).

Despite the clear need for such education, many Muslim-majority countries, including Indonesia, face cultural barriers to providing comprehensive sexuality education. In these societies, discussions about sexuality are often considered taboo, with many parents viewing such topics as inappropriate for children. Sexuality is often narrowly defined within the context of marriage and intimate relations between spouses, leaving children with little reliable information on the broader aspects of sexual health and rights (Al Zaabi et al., 2019). This cultural silence leads many children to obtain misguided or harmful information about sexuality from unreliable sources such as pornography, peer groups, or the internet, further exacerbating their vulnerability to sexual violence (Rassool & Khan, 2020).

The World Health Organization (WHO) offers a broader and more inclusive definition of sexuality, describing it as a complex and integral part of human life that encompasses not only sexual behavior but also gender identity, sexual orientation, pleasure, intimacy, and reproductive health (WHO, 2006). Such an expansive understanding forms the basis of CSE, which is increasingly seen as a crucial part of school curricula worldwide. CSE aims to empower children and adolescents by providing them with age-appropriate, accurate, and comprehensive information on the cognitive, emotional, physical, and social aspects of sexuality (Venketsamy & Kinear, 2020). This education fosters critical life skills, such as decision-making, negotiation, and self-respect, and aims to promote positive sexual relationships and respect for personal boundaries (Women & UNICEF, 2018). Notably, CSE is grounded in a rights-based and gender-sensitive framework, ensuring that both boys and girls are educated in a manner that is respectful of their rights and developmental stages (Miedema et al., 2020).

Islamic teachings on sexuality education emphasize moral values and principles, including the importance of modesty, respect for bodily autonomy, and the sanctity of marriage. These values shape an approach to sexuality education that focuses on purity, appropriate behavior, and the moral obligations surrounding sexual health (Ashraah et al., 2013). Islamic teachings also stress the responsibility of both parents and educational institutions to educate children on these issues in a manner that aligns with religious and cultural norms (Othman et al., 2020). This perspective on sexuality education provides a

counterpoint to secular Western models, which often lack emphasis on values such as marriage and the moral dimensions of sexual behavior (Athar, 2018).

The need for a culturally sensitive and age-appropriate model of sexuality education is particularly pressing in countries with a Muslim-majority population, where cultural, religious, and educational challenges intersect (Nadeem et al., 2021). Recent studies highlight the reluctance of teachers to incorporate sexuality education into their classrooms due to perceived taboos, insufficient training, and the lack of suitable educational resources (Sanjakdar, 2018). In response to this, the development of a comprehensive, culturally and religiously responsive sexuality education program for early childhood is essential. This study seeks to contribute to the development of a more effective, culturally appropriate, and accessible model of sexuality education that can help reduce the incidence of sexual violence and promote healthier, more informed attitudes towards sexuality among young children in Indonesia. The research questions guiding this study are as follows: How can a sexuality learning video for early childhood be developed? And what is the effectiveness of a sexuality learning video in promoting early childhood understanding of sexual rights, body safety, and respect for others?

## METHOD

This study employed a mixed-methods research approach, integrating both qualitative and quantitative techniques within a single research design. The primary aim of this study was to develop an educational product, specifically a sexuality learning video for early childhood, that could be directly implemented in real-world educational settings. To achieve this, the research utilized a Developmental Research and Development (R&D) model, which focused on the creation and testing of innovative educational tools.

The development process followed the ADDIE model, which stands for Analysis, Design, Development, Implementation, and Evaluation (Abernathy, 2019). This systematic model ensured that each stage of product development was carefully planned, executed, and assessed. The research was conducted in the following sequence:

### Analysis Phase

The analysis phase began with a thorough needs assessment to identify the current gaps in early childhood sexuality education. In this phase, both qualitative and quantitative data were collected. The primary qualitative data were gathered through semi-structured interviews with 16 teachers—four from each of the four-participating kindergarten. These interviews explored the teachers' perceptions of the need for sexuality education, the challenges they faced in implementing such programs, and their expectations from a sexuality education product. Additionally, classroom observations were conducted to understand how sexuality-related topics were currently handled and to identify the gaps in teaching methods.

The quantitative data in the analysis phase included the initial assessment of students' existing knowledge of sexuality-related topics. This was done through a pre-test, designed to measure the baseline level of understanding among the children regarding basic concepts of body safety, respect for personal boundaries, and sexual rights.

### Design Phase

During the design phase, the insights from the analysis phase were used to create the framework for the sexuality learning video. The content of the video was carefully crafted to be developmentally appropriate for young children, ensuring that the language, visuals, and messages aligned with their cognitive abilities and emotional readiness. The

learning objectives were defined, focusing on teaching children basic concepts such as body safety, personal boundaries, and respect for themselves and others.

To ensure the relevance and cultural appropriateness of the video, input from the participating teachers and experts in child development and Islamic education was incorporated into the design. Additionally, the design phase included the preparation of the materials needed for the video production, such as scripts, storyboards, and illustrations.

#### **Development Phase**

In the development phase, the actual production of the sexuality learning video took place. The video was developed with input from media and material experts, who evaluated the design and provided feedback to ensure that the video met educational standards, engaged the target age group, and was culturally sensitive. Once the video was produced, it underwent expert validation by these professionals to assess its educational effectiveness, clarity, and appropriateness for young children.

#### **Implementation Phase**

The implementation phase involved the introduction and trial use of the video in real classroom settings. The video was implemented in an experimental group consisting of 47 children from four different kindergartens, while a control group of 49 children from the same schools, but who did not receive the video intervention, was also established. Both groups were evaluated to determine any differences in their understanding of sexuality-related concepts.

Teachers were instructed to incorporate the video into their lessons, and their observations of student engagement and learning outcomes were recorded. During this phase, post-tests were administered to both the experimental and control groups to assess any changes in knowledge after the video intervention.

#### **Evaluation Phase**

The evaluation phase assessed the effectiveness of the developed product using two statistical tests. First, a significance test was conducted on the pre-test and post-test scores within each group (experimental and control) to evaluate the effectiveness of the methods and media used, applying a paired sample t-test for normally distributed data or the Wilcoxon signed-rank test for non-parametric data. Second, a significance test compared the post-test scores between the experimental and control groups to determine which method—video intervention or traditional teaching—was more effective in enhancing children's understanding of early childhood sexuality education. Figure 1 below illustrates the steps taken by the researchers in developing and testing the product.

#### **Ethical Considerations**

This study received formal ethical approval from the Research and Community Service Institute (Lembaga Penelitian dan Pengabdian kepada Masyarakat) at UIN Antasari Banjarmasin (Reference: 012/LP2M-UIN.Antasari/ETIK/II/2024). All research procedures adhered to ethical guidelines for research involving human participants, particularly young children.

Prior to data collection, written informed consent was obtained from the parents or legal guardians of all participating children. The consent process included detailed explanations of the research objectives, procedures, potential risks, and benefits. Parents were informed of their right to withdraw their children from the study at any time without any consequences. Informed assent was also sought from the children in an age-appropriate manner, using simple language and visual aids to ensure their understanding and voluntary participation. To protect participants' privacy and confidentiality, all data were anonymized, and pseudonyms or codes were used in data recording and reporting.

## RESULTS AND DISCUSSION

### Analysis Stage

During the analysis stage, a needs assessment was carried out to ensure that the learning content was relevant, culturally appropriate, and developmentally suitable for early childhood within the context of Islamic values. The process involved a combination of observations and semi-structured interviews with 16 educators and 40 children (aged 5–6 years) from four selected kindergartens in South Kalimantan. The schools were selected based on their willingness to participate and their representation of diverse socio-cultural backgrounds.

#### Instruments Used

Observation Checklist: Focused on classroom practices related to personal safety education, hygiene teaching, and how teachers address body-related topics. It also recorded children's attention span, engagement patterns, and media preferences.

#### Semi-Structured Interview Guides:

For teachers: Questions explored their understanding of sexuality education, challenges in delivering sensitive content, perceived readiness, availability of teaching resources, and comfort level in discussing topics related to body autonomy and personal safety.

For children: Simple, developmentally appropriate questions assessed their ability to identify body parts, distinguish private parts, understand concepts of privacy, and recognize inappropriate touch. Interviews with children were conducted using visual aids such as body part charts and emotion cards to support communication.

### Material Analysis and Learning Objectives

The material for the video was developed in alignment with the following competencies and indicators for children aged 5-6 years, as outlined in Table 1 below:

Table 1. Basic Competency, Indicator, and Early Childhood Sexuality Education Material

Basic Competency	Indicator	Material
Belief in God through His creation	Children can distinguish between male and female physical traits	Gender understanding and private parts
Respect for oneself, others, and the environment	Children can identify themselves as male or female	Gender identity
Recognize body parts and their functions	Children can identify private body parts and their functions	Body parts and hygiene
Healthy living behaviors	Children can demonstrate proper sanitation and hygiene for private body parts	Sanitation and personal hygiene
Adaptable behavior	Children can identify inappropriate touching and sexual aggression	Self-protection and safety

### Delivery Method and Constraints

Interviews with educators revealed that sexuality education is primarily limited to verbal guidance, such as differentiating between male and female toilets and encouraging modest dress. Teachers expressed uncertainty about the appropriate content to deliver, and there is no existing educational media suited to the children's developmental stage. Based on these findings, both the principal and teachers suggested that sexuality education be delivered through extracurricular activities. Key considerations for this approach included: 1) Sexuality education could be effectively integrated into flipped learning sessions outside regular school hours. Within the school setting, it could be incorporated into existing topics, such as "Understanding My Body." 2) Flipped learning would encourage greater parental involvement, reducing taboos and resistance to discussing sexuality. 3) It would also enhance parents' competencies in active media mediation and guide them in supporting their children's learning.

### Learner Characteristics

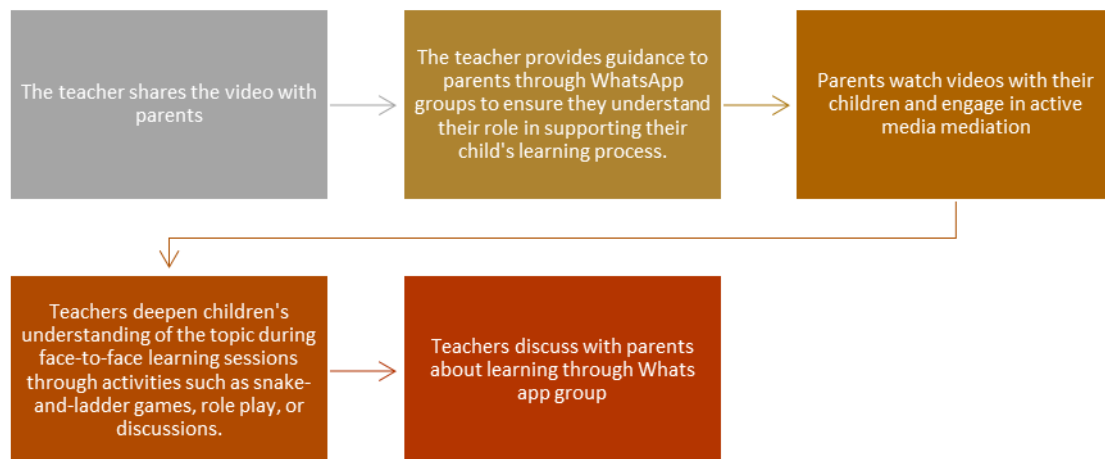
The analysis of learners' characteristics focused on understanding their academic abilities and motivation. The following insights were gathered: 1) Children enjoy watching animated videos, which can significantly boost their motivation to engage with the material. 2) Engagement in oral discussions about sexuality has been minimal, highlighting the need for more interactive and visual learning methods. 3) Children's initial knowledge of sexuality is limited, primarily covering private body parts and basic hygiene. Notably, 29 children used incorrect or unfamiliar terms for sensitive body parts, 33 children could not identify inappropriate touching, and none understood sexual aggression in terms of words or actions, nor were they able to demonstrate self-protection in such situations.

### Design Stage

In the design stage, the researchers defined the learning topics, duration, and methods based on the insights gathered during the analysis stage. Three key topics were selected for inclusion in the animated video: understanding gender and private parts, sanitation and hygiene, and protecting oneself from sexual harassment. Each segment was initially planned to last 3-4 minutes, with the total video duration not exceeding 11 minutes. The video was designed for asynchronous access, allowing children to watch it with their parents, who were provided guidance by the teachers on how to engage with the material.

### Development Stage

The development phase consisted of two main activities: the production of animated videos and expert validation of both the media and content. The animation video development process began with the creation of the video's opening section, where the researchers selected appropriate backgrounds, voice characters, and background music suitable for early childhood audiences. In this section, children were introduced to the main characters, Nabil and Nabila.



**Figure 1. Early Childhood Sexuality Education Learning Scenario**

The learning process took place over three sessions, each with specific learning objectives and materials. The details of each session are as follows:

**Session 1: Understanding Gender and Personal Body Parts.** The first session focused on teaching children about gender differences and the names and locations of private body parts. The session began by showing an animated video that explained the differences between boys and girls and identified the names and locations of private body parts. The results indicated that the children responded positively to this session. They appeared more engaged, attentive, and demonstrated a clear understanding of the material. There was a

significant improvement in their ability to identify their private body parts and differentiate between male and female, suggesting the effectiveness of the animated video in delivering this content.

**Session 2: Sanitation and Personal Hygiene.** The second session aimed to teach children about sanitation and hygiene practices. The children displayed a high level of engagement and actively participated in understanding the content presented in the video. The animated video effectively captured the children's attention and motivated them to adopt healthy hygiene behaviors, such as regular tooth brushing, bathing, and changing clothes. The children's increased interest and positive response to the material indicated that the animated video had a strong impact on their understanding of personal hygiene.

**Session 3: Safety and Self-Protection.** The third session focused on teaching children about safety and self-protection. In this session, parents watched an animated video with their children that depicted characters Nabil and Nabila facing a threatening situation. The children were highly focused while watching the video, which provided guidance on how to act in potentially dangerous situations and taught the concept of personal boundaries in physical interactions. After watching the video, the children demonstrated a better understanding of how to respond in threatening situations and showed awareness of who is permitted to touch, hug, or carry them. This session helped children recognize their personal rights over their bodies, indicating a successful outcome in promoting their understanding of safety and self-protection

### Animation Video Development



Figure 2. Opening View



**Figure 3. Material 1: Understanding Gender and Private Parts**

In this section, the characters Nabil and Nabila explained the differences between boys and girls, focusing on the concept of private body parts and the importance of understanding bodily differences.



**Figure 4. Material 2: Sanitation and Personal Hygiene**

The second section taught children about the importance of personal hygiene. Nabil and Nabila were shown reading hygiene-related hadiths and performing personal care activities such as bathing, using the toilet, brushing teeth, and washing hands.



**Figure 5. Material 3: Personal Protection and Safety**

The final segment introduced children to the concept of self-protection, including how to react in situations of sexual aggression. The video used a problem-based learning approach, where children were presented with scenarios involving sexual abuse and asked to determine appropriate reactions. This method aimed to enhance the children's critical thinking and problem-solving skills in situations involving personal safety.

#### **Animation Media Validation**

The validation stage aimed to assess the effectiveness of the developed media, both in terms of content and design. Validation was conducted by two groups of experts: content experts and media experts. Validation was based on a 5-point scale: 5 = very good; 4 = good; 3 = satisfactory; 2 = insufficient; 1 = poor.

#### **Content Expert Validation**

The content expert validation, conducted by Dr. Dina Aprilia, M.Ps.I., Psychologist, ensured that the materials were appropriate for early childhood sexuality education, aligned with the basic competencies, and developmentally suitable for children. Dr. Aprilia also evaluated whether the assessment instruments corresponded with the learning objectives and were appropriate for the cognitive and emotional development of the children's age group. Content expert validation criteria:

- (1) Alignment of achievement indicators with basic competencies
- (2) Suitability of content for the developmental level of children
- (3) Coherent sequencing of activities to stimulate children's thinking
- (4) Clarity and comprehensibility of material
- (5) Use of up-to-date scientific knowledge in the material presentation
- (6) Appropriateness of assessment instruments based on material coverage
- (7) Interactivity of the material to motivate children
- (8) Adequacy of material duration in relation to children's attention span

#### **Media Expert Validation**

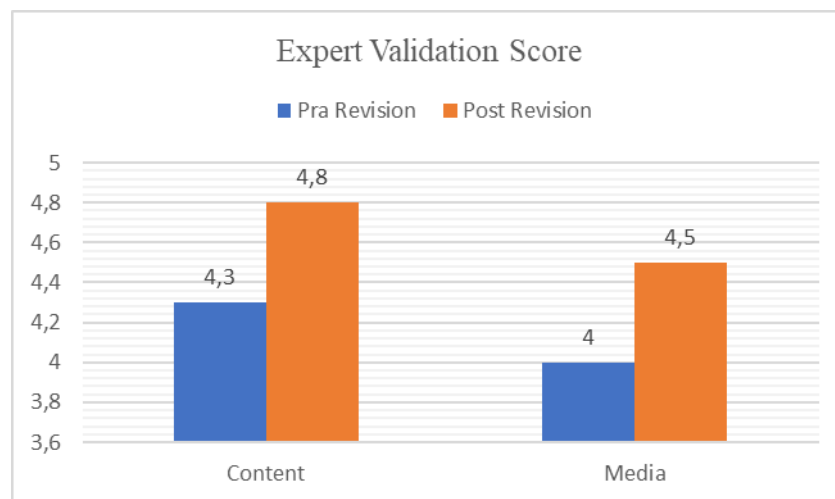
- (1) The media expert validation, conducted by Prof. Dr. Ani Cahyadi, M.Pd., focused on the visual and auditory quality of the video, ensuring that the media effectively conveyed the intended messages. The validation also assessed the appropriateness of background music, font selection, color contrast, and overall delivery to ensure the video was engaging and accessible for both children and educators. A crucial aspect of the validation was ensuring that the media was compatible with low-specification devices, making it accessible to users with limited technological resources. The media

expert validation criteria included technical quality, clarity of narration, child-friendliness of visuals, audio balance, cultural appropriateness, and user accessibility. Quality of visual and sound components

- (2) Accuracy of the video's content in conveying its message
- (3) Relevance of the content to the intended learning activities
- (4) Appropriateness of music for early childhood
- (5) Suitability of font selection for readability
- (6) Facilitation of independent learning and understanding
- (7) Integration of audio and visual elements to clarify concepts
- (8) Accessibility of the media with low-specification technology

### Expert Validation Results

The validation results from both content and media experts provided valuable feedback, ensuring the developed animated video met the necessary educational and technical standards. The feedback from the experts guided further refinement of the media, ensuring that it was both pedagogically sound and accessible for the target audience of young children.



**Figure 7. Expert Validation Results**

## Implementation

### Pre-Test Results

The implementation phase of the study involves the use of an animated video within a flipped learning framework to assess its effectiveness in enhancing children's understanding of sexuality education. A quasi-experimental design was employed due to the inability to randomly assign participants to groups. This design allowed for the measurement of the learning video's impact on improving comprehension of early childhood sexuality topics.

A total of 96 children from eight kindergarten groups (ages 5-6) participated in a pretest, which consisted of 20 questions about gender understanding, private body parts, sanitation, protection, and personal safety. The pretest was administered without any media interventions. The average pretest scores revealed that both the experimental group (mean = 55.00) and the control group (mean = 57.45) had similar baseline knowledge, with only minor differences between the groups. The pretest data serves as a baseline for evaluating the effectiveness of the animated video in improving understanding of these key topics in

sexuality education. Table 2 below describes the pretest results for the control and experimental groups.

Table 2. Descriptive Analysis of the Pretest Results

Group	Experimental	Control
N (Valid)	47	49
Mean	55.00	57.45
Median	55.00	60.00
Mode	65	60
Standard Deviation	9.724	7.979
Range	40	35
Minimum	40	40
Maximum	80	75
Sum	2585	2815

In the control group, early childhood sexuality education was conducted using conventional methods. The teacher relied on a basic sexuality education picture book and employed storytelling techniques. Children listened to the story presented by the teacher and were given an opportunity to ask questions. The teacher then reinforced the learning by posing several follow-up questions to the children. In contrast, the experimental group followed the learning scenario outlined in figure 8 below:

#### Post-Test Results

The post-test was administered using the same assessment instrument as the pretest, allowing for a comparison of children's knowledge before and after the intervention. The average score for the experimental group was 96.70, while the control group had an average score of 72.76. These results indicate a significant improvement in the experimental group's understanding of sexuality education, suggesting that the flipped learning approach developed by the researchers was effective in enhancing children's comprehension of the material.

The post-test data further supports the success of the flipped learning intervention, as the experimental group exhibited a much higher level of knowledge compared to the control group. The marked increase in the experimental group's average score highlights the positive impact of the flipped learning approach, particularly in utilizing the animated video to reinforce learning. We describe the post-test results for the experimental and control groups in Table 3 below:

Table 3. Descriptive Analysis of the Post Test Results

Group	Experimental	Control
N (Valid)	47	49
Mean	96.70	72.76
Median	100.00	70.00
Mode	100	60
Standard Deviation	6.104	10.610
Range	20	40
Minimum	80	60
Maximum	100	100
Sum	4545	3565

#### Evaluation

In the evaluation phase, the researchers conducted two statistical analyses to assess the effectiveness of the teaching methods and media used in the study. The first analysis tested the significance of pretest-posttest score differences within each group (experimental

and control) to evaluate the effectiveness of each method. The second analysis compared the posttest scores between the experimental and control groups to determine which method was more effective in delivering early childhood sexuality education.

### Statistical Test for Significance (Stage 1)

To assess the normality of the data, the Shapiro-Wilk test was used, as the sample size in each group was less than 100. According to Creswell (2014), normality tests are essential to determine whether data can be analyzed using parametric tests, which assume a normal distribution. The results of the Shapiro-Wilk test for normality are presented in Table 4 below:

Table 4. The Shapiro-Wilk Test Results for Normality

Groups	Shapiro-Wilk Statistic	df	Sig.
Pretest A (Control Group)	0.934	49	0.009
Posttest A (Control Group)	0.907	49	0.001
Pretest B (Experimental Group)	0.951	47	0.047
Posttest B (Experimental Group)	0.600	47	0.000

The results indicate that all groups (pretest and posttest in both control and experimental groups) have p-values less than 0.05, suggesting that the data is not normally distributed (Shapiro-Wilk  $p < 0.05$  indicates non-normality). As such, the Wilcoxon Signed-Rank Test, a non-parametric test, was employed to assess the significance of differences in pretest-posttest scores within each group (Creswell, 2014). The Wilcoxon test is suitable for analyzing paired non-normally distributed data and is commonly used when the assumption of normality is not met. The results of the Wilcoxon Signed-Rank Test for both groups are presented in Tables 5 and 6 as follows:

Table 5. Experimental Group Wilcoxon Signed-Rank Test result

Test Statistics	Z	Asymp. Sig. (2-tailed)
<b>Wilcoxon Signed Ranks</b>	-5.996	0.000

Table 6. Control Group Wilcoxon Signed-Rank Test result

Test Statistics	Z	Asymp. Sig. (2-tailed)
<b>Wilcoxon Signed Ranks</b>	-5.830	0.000

The p-values for both groups (Asymp. Sig. = 0.000) are less than 0.05, indicating that the differences between pretest and posttest scores are statistically significant for both groups. Therefore, the results suggest that both methods (conventional and animated video) were effective in improving children's understanding of sexuality education.

### Statistical Test for Significance (Stage 2)

Before comparing the posttest scores between the experimental and control groups, the researchers conducted tests for homogeneity of variances and normality of data. These pretests are necessary to determine the appropriate type of significance test, whether parametric or non-parametric. The homogeneity of variances test, using Levene's test, indicated that the variances between the two groups were not equal ( $p < 0.05$ ), as described in Table 7 below:

Table 7. Results of the Homogeneity Test for the Posttest Data of the Control and Experimental Groups

Test of Homogeneity of Variances	Levene Statistic	df1	df2	Sig.
<b>Child Posttest</b>	14.103	1	94	0.000

Since the p-value (0.000) is less than 0.05, the assumption of homogeneity of variances was violated, suggesting that a non-parametric test should be used for the next analysis.

Additionally, the normality test for the posttest scores showed that the data did not follow a normal distribution, as illustrated in Table 8 below:

Table 8. Results of the Normality Test for the Post Test Data

Groups	Shapiro-Wilk Statistic	df	Sig.
<b>Posttest (Control Group)</b>	0.907	49	0.001
<b>Posttest (Experimental Group)</b>	0.600	47	0.000

Both groups had p-values less than 0.05, confirming that the posttest data was not normally distributed. As a result, the **Mann-Whitney U test**, a non-parametric test, was employed to compare the posttest scores between the two groups. This test is appropriate when the data is non-normally distributed and when the assumption of homogeneity of variances is violated. Table 9 below presents the results of the Mann-Whitney U test.

Table 9. The Results of the Mann-Whitney U Test

Test Statistics	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
<b>Child Posttest</b>	102.000	1327.000	-7.933	0.000

The p-value (0.000) is less than 0.05, indicating a statistically significant difference between the posttest scores of the experimental and control groups. This suggests that the method used in the experimental group (animated video) was more effective in improving children's understanding of sexuality education compared to the conventional method used in the control group.

Sexuality education should be introduced in early childhood and progressively continue through adolescence and into adulthood. This process systematically provides children and adolescents with the foundational knowledge, practical skills, and positive values necessary to understand the complex dimensions of sexuality, develop safe and healthy relationships, and take responsibility for their own sexual health and well-being, as well as that of others (World Health Organization, 2010). Fostering healthy and positive self-esteem alongside a focus on well-being offers a vital perspective for understanding and conceptualizing childhood sexuality (Ketting et al., 2016; Morawska et al., 2015).

A comprehensive sexuality education program addresses multiple dimensions, encompassing sexual development, biological and reproductive health, self-regulation and safety, interpersonal relationships, identity formation, communication and negotiation skills, body image and self-esteem, decision-making processes, gender roles in civic life, and moral or ethical values (Gruskin et al., 2019; Seiler-Ramadas et al., 2021). Despite the growing body of research, health and education professionals, as well as parents, still possess limited knowledge regarding normal sexual development in children (Balter et al., 2016). To protect and support children's sexual development, it is essential to provide clear, age-appropriate, and easily understandable materials and media (REDACTED., 2023; REDACTED, 2023).

The absence of such a thorough sexuality education program can result in ignorance, fear, lack of understanding, low skills, poor decision-making (Angelides, 2019; Levand & Ross, 2021), and vulnerability to sexual harassment (Clonan-Roy et al., 2021). Furthermore, the unavailability of adequate sexuality education or information is contrary to the UN's specific and special legal rights to information, protection, health and education for children. This research proves that animated videos are an effective medium for introducing age-appropriate sexuality themes to young children while remaining

religiously and culturally responsive. The process begins with the development of a learning video tailored to early childhood understanding of the topic. This is in accordance with the characteristics of personalized learning which prioritizes learner-centered paradigm and meeting their learning interests (Alamri et al., 2020; Bernacki et al., 2021). This animated video is not to replace the role of the teacher, but to guide students in learning so as to get optimal learning results.

The flipped classroom approach provides an effective solution to the challenges of delivering sexuality education for young children. Animated videos ensure age-appropriate content by leveraging professionally developed materials tailored to the developmental stages of early childhood, addressing the limitations of teachers who may struggle to create such sensitive content. Additionally, these videos present complex topics in an engaging and child-friendly manner, making it easier for children to grasp fundamental concepts. The flipped classroom approach further complements this by involving parents in the learning process at home, where they guide their children through the materials before attending face-to-face sessions. This method not only alleviates the stigma often associated with sexuality education by allowing parents to familiarize themselves with the content but also fosters stronger parent-child communication and reinforces the values being taught. Together, these strategies bridge the gap between educational goals and societal concerns, ensuring effective and culturally sensitive sexuality education. Robinson's (2017) research shows that the majority of parents believe that early childhood sexuality education should be done collaboratively. This shows that in addition to the loss of resistance, parents are ready to collaborate with teachers in their children's sexuality education. Other studies (Chandra-Mouli et al., 2018) have shown that, even in conservative societies, sexuality education has proven successful based on collaboration with religious leaders, parents, teachers and media influencers. This shows that resistance to early childhood sexuality education is due to a misunderstanding of the term sexuality and the themes to be taught to children.

The use of animated videos for early childhood sexuality learning is carried out in 3 sessions, where children play a more active role and parents and teachers become facilitators. The research showed that each session had a positive impact on the development of children's understanding through small group discussions with parents and teachers. The discussion after children watches the video is part of active media mediation (Jiow et al., 2017; Livingstone et al., 2017; redacted, 2022). Through discussion sessions with parents, the reinforcement of positive values presented in the video becomes more effective. Children are given greater freedom to express their thoughts and experiences, while teachers and parents provide direct feedback. These learning conditions not only meet children's developmental needs but also foster their self-determination by supporting feelings of autonomy, competence, and relatedness (Wang et al., 2019).

Based on the analysis of pretest and posttest results, the animated video demonstrated a significant impact on enhancing children's understanding of sexuality education. Intrinsically, the video has the potential to increase learning motivation. Although it retains some characteristics of a one-size-fits-all approach, its development is grounded in children's prior knowledge, experiences, and developmental needs, ensuring relevance to the learners. Relevant learning accommodates students' individual aspirations, interests, and cultural backgrounds, making the educational experience more meaningful. Moreover, life-relevant learning connects directly to real-world issues, needs, challenges, and contexts, further enriching the educational process (Barrio et al., 2017; Reeve & Shin, 2020).

Teachers' and parents' facilitation provides specific support, encouraging maximum engagement from children in this learning setting. This learning context aligns with Bruner's theory of constructivism (Rannikmäe et al., 2020), Vygotsky's ZPD theory (Nardo, 2021) and Zimmerman's self-regulated learning theory (Adam et al., 2017; Callan & Shim, 2019). The study found that the flexibility and willingness of teachers and parents play a crucial role in providing personalized learning experiences, such as appropriate feedback, tailored assessments, additional resources, facilitation and guidance. Through this approach, learners feel more engaged as they feel supported and heard individually.

## CLOSING

The experimental results indicate that the flipped learning model using Islamic-based animated videos significantly enhances children's understanding of sexuality education compared to conventional storytelling. Both groups showed significant improvements from pretest to posttest (Wilcoxon Signed-Rank,  $p < 0.001$ ), but the experimental group achieved substantially higher posttest scores ( $M = 96.70$ ) than the control group ( $M = 72.76$ ), with a large effect size (Mann-Whitney  $U = 102.000$ ,  $Z = -7.933$ ,  $p < 0.001$ ,  $r = 0.81$ ). These findings confirm that combining animated media with parental involvement within a flipped learning framework is an effective strategy for delivering sensitive content in early childhood sexuality education. Practically, this approach offers teachers a structured method to introduce topics of body autonomy, privacy, and protection in ways that are both engaging for children and aligned with Islamic values, while also strengthening collaboration between schools and families.

Conceptually, this study contributes to Islamic sexuality education by proposing a pedagogical model grounded in the principles of *hifẓ al-'ird* (protection of dignity) and *hifẓ al-nafs* (protection of life). However, semantic tensions remain, as the term sexuality is often misunderstood within Muslim communities, emphasizing the need for culturally sensitive communication and framing. From a practical standpoint, the flipped learning model also presents challenges, particularly for parents with limited time or technological skills. Therefore, educators and policymakers must provide flexible support—such as simplified materials, alternative delivery formats, or community-based workshops—to ensure inclusivity and wider adoption. Future research should investigate the scalability of this model, explore complementary media development, and further examine how visual and narrative elements in sexuality education can maintain theological integrity while addressing the urgent need for child protection.

## ACKNOWLEDGMENTS

The researchers would like to express their sincere gratitude to all participants involved in this study for their invaluable contributions.

## REFERENCES

- Abernathy, D. (2019). ADDIE in Action: A Transformational Course Redesign Process. *Journal for the Advancement of Educational Research International*, 13(1), 8–19. <https://eric.ed.gov/?id=EJ1252113>

- Adam, N. L., Alzahri, F. B., Cik Soh, S., Abu Bakar, N., & Mohamad Kamal, N. A. (2017). *Self-regulated learning and online learning: A systematic review*. 143–154. [https://doi.org/10.1007/978-3-319-70010-6\\_14](https://doi.org/10.1007/978-3-319-70010-6_14)
- Al Zaabi, O., Heffernan, M., Holroyd, E., & Jackson, M. (2019). Islamic parents' attitudes and beliefs towards school-based sexual and reproductive health education programmes in Oman. *Sex Education*, 19(5), 534–550. <https://doi.org/10.1080/14681811.2018.1553708>
- Alamri, H., Lowell, V., Watson, W., & Watson, S. L. (2020). Using personalized learning as an instructional approach to motivate learners in online higher education: Learner self-determination and intrinsic motivation. *Journal of Research on Technology in Education*, 52(3), 322–352. <https://doi.org/10.1080/15391523.2020.1728449>
- Angelides, S. (2019). *The fear of child sexuality: Young people, sex, and agency*. University of Chicago Press.
- Ashraah, M. M., Gmaian, I., & Al-Shudaifat, S. (2013). Sex education as viewed by Islam education. *European Journal of Scientific Research*, 95(1), 5–16.
- Athar, S. (2018, January 3). Sex Education: An Islamic Perspective. *ISLAMICITY*. <https://www.islamicity.org/2191/sex-education-an-islamic-perspective/>
- Balter, A.-S., van Rhijn, T. M., & Davies, A. W. (2016). The development of sexuality in childhood in early learning settings: An exploration of early childhood educators' perceptions. *The Canadian Journal of Human Sexuality*, 25(1), 30–40. <https://doi.org/10.3138/cjhs.251-A3>
- Barrio, B. L., Miller, D., Hsiao, Y.-J., Dunn, M., Petersen, S., Hollingshead, A., & Banks, S. (2017). Designing culturally responsive and relevant individualized educational programs. *Intervention in School and Clinic*, 53(2), 114–119. <https://doi.org/10.1177/1053451217693364>
- Bernacki, M. L., Greene, M. J., & Lobczowski, N. G. (2021). A systematic review of research on personalized learning: Personalized by whom, to what, how, and for what purpose (s)? *Educational Psychology Review*, 33(4), 1675–1715. <https://doi.org/10.1007/s10648-021-09615-8>
- Callan, G. L., & Shim, S. S. (2019). How teachers define and identify self-regulated learning. *The Teacher Educator*, 54(3), 295–312. <https://doi.org/10.1080/08878730.2019.1609640>
- Chandra-Mouli, V., Plesons, M., Hadi, S., Baig, Q., & Lang, I. (2018). Building support for adolescent sexuality and reproductive health education and responding to resistance in conservative contexts: Cases from Pakistan. *Global Health: Science and Practice*, 6(1), 128–136. <https://doi.org/10.9745/GHSP-D-17-00285>
- Clonan-Roy, K., Goncy, E. A., Naser, S. C., Fuller, K. A., DeBoard, A., Williams, A., & Hall, A. (2021). Preserving abstinence and preventing rape: How sex education textbooks contribute to rape culture. *Archives of Sexual Behavior*, 50, 231–245. <https://doi.org/10.1007/s10508-020-01816-6>
- De Haas, B., & Hutter, I. (2019). Teachers' conflicting cultural schemas of teaching comprehensive school-based sexuality education in Kampala, Uganda. *Culture, Health & Sexuality*, 21(2), 233–247. <https://doi.org/10.1080/13691058.2018.1463455>
- Gruskin, S., Yadav, V., Castellanos-Usigli, A., Khizanishvili, G., & Kismödi, E. (2019). Sexual health, sexual rights and sexual pleasure: Meaningfully engaging the perfect triangle. *Sexual and Reproductive Health Matters*, 27(1), 29–40. <https://doi.org/10.1080/26410397.2019.1593787>

- International Planned Parenthood Federation. (2006). Sexuality education in Europe—a reference guide to policies and practices. *London: International Planned Parenthood Federation.*
- Jiow, H. J., Lim, S. S., & Lin, J. (2017). Level up! Refreshing parental mediation theory for our digital media landscape. *Communication Theory*, 27(3), 309–328. <https://doi.org/10.1111/comt.12109>
- Keogh, S. C., Stillman, M., Leong, E., Awusabo-Asare, K., Sidze, E., Monzón, A. S., & Motta, A. (2020). Measuring the quality of sexuality education implementation at the school level in low-and middle-income countries. *Sex Education*, 20(2), 119–137. <https://doi.org/10.1080/14681811.2019.1625762>
- Ketting, E., Friele, M., Michielsen, K., & European Expert Group on Sexuality Education. (2016). Evaluation of holistic sexuality education: A European expert group consensus agreement. *The European Journal of Contraception & Reproductive Health Care*, 21(1), 68–80. <https://doi.org/10.3109/13625187.2015.1050715>
- Leung, H., Shek, D. T., Leung, E., & Shek, E. Y. (2019). Development of contextually-relevant sexuality education: Lessons from a comprehensive review of adolescent sexuality education across cultures. *International Journal of Environmental Research and Public Health*, 16(4), 621. <https://doi.org/10.3390/ijerph16040621>
- Levand, M. A., & Ross, K. (2021). Sexuality education as a moral good: Catholic support for accurate, holistic sexuality information. *Theology & Sexuality*, 27(2–3), 169–187. <https://doi.org/10.1080/13558358.2021.1872827>
- Livingstone, S., Ólafsson, K., Helsper, E. J., Lupiáñez-Villanueva, F., Veltri, G. A., & Folkvord, F. (2017). Maximizing opportunities and minimizing risks for children online: The role of digital skills in emerging strategies of parental mediation. *Journal of Communication*, 67(1), 82–105. <https://doi.org/10.1111/jcom.12277>
- Miedema, E., Le Mat, M. L., & Hague, F. (2020). But is it comprehensive? Unpacking the ‘comprehensive’ in comprehensive sexuality education. *Health Education Journal*, 79(7), 747–762. <https://doi.org/10.1177/0017896920915960>
- Morawska, A., Walsh, A., Grabski, M., & Fletcher, R. (2015). Parental confidence and preferences for communicating with their child about sexuality. *Sex Education*, 15(3), 235–248. <https://doi.org/10.1080/14681811.2014.996213>
- Nadeem, A., Cheema, M. K., & Zameer, S. (2021). Perceptions of Muslim parents and teachers towards sex education in Pakistan. *Sex Education*, 21(1), 106–118. <https://doi.org/10.1080/14681811.2020.1753032>
- Nardo, A. (2021). Exploring a Vygotskian theory of education and its evolutionary foundations. *Educational Theory*, 71(3), 331–352. <https://doi.org/10.1111/edth.12485>
- Othman, A., Shaheen, A., Otoum, M., Aldiqs, M., Hamad, I., Dabobe, M., Langer, A., & Gausman, J. (2020). Parent–child communication about sexual and reproductive health: Perspectives of Jordanian and Syrian parents. *Sexual and Reproductive Health Matters*, 28(1), 1758444. <https://doi.org/10.1080/26410397.2020.1758444>
- Rannikmäe, M., Holbrook, J., & Soobard, R. (2020). Social Constructivism—Jerome Bruner. *Science Education in Theory and Practice: An Introductory Guide to Learning Theory*, 259–275.
- Rassool, G. H., & Khan, M. A. (2020). *Sexuality Education from an Islamic Perspective*. Cambridge Scholars Publishing.
- Reeve, J., & Shin, S. H. (2020). How teachers can support students’ agentic engagement. *Theory Into Practice*, 59(2), 150–161. <https://doi.org/10.1080/00405841.2019.1702451>

- Robinson, K. H., Smith, E., & Davies, C. (2017). Responsibilities, tensions and ways forward: Parents' perspectives on children's sexuality education. *Sex Education*, 17(3), 333–347. <https://doi.org/10.1080/14681811.2017.1301904>
- Sanjakdar, F. (2018). Can difference make a difference? A critical theory discussion of religion in sexuality education. *Discourse: Studies in the Cultural Politics of Education*, 39(3), 393–407. <https://doi.org/10.1080/01596306.2016.1272546>
- Seiler-Ramadas, R., Grabovac, I., Winkler, R., & Dorner, T. E. (2021). Applying emotional literacy in comprehensive sex education for young people. *American Journal of Sexuality Education*, 16(4), 480–500. <https://doi.org/10.1080/15546128.2021.1932657>
- Venketsamy, T., & Kinear, J. (2020). Strengthening comprehensive sexuality education in the curriculum for the early grades. *South African Journal of Childhood Education*, 10(1), 1–12. <http://dx.doi.org/10.4102/sajce.v10i1.820>
- Walsh, K., Zwi, K., Woolfenden, S., & Shlonsky, A. (2018). School-based education programs for the prevention of child sexual abuse: A Cochrane systematic review and meta-analysis. *Research on Social Work Practice*, 28(1), 33–55. <https://doi.org/10.1177/1049731515619705>
- Wang, C. J., Liu, W. C., Kee, Y. H., & Chian, L. K. (2019). Competence, autonomy, and relatedness in the classroom: Understanding students' motivational processes using the self-determination theory. *Heliyon*, 5(7). <https://doi.org/10.1016/j.heliyon.2019.e01983>
- Women, U. & UNICEF. (2018). *International technical guidance on sexuality education: An evidence-informed approach*. UNESCO Publishing.
- World Health Organization. (2006). *Defining sexual health: Report of a technical consultation on sexual health, 28-31 January 2002, Geneva*. World Health Organization.
- World Health Organization. (2010). Who Regional office for Europe and BZgA-Standards for Sexuality Education in Europe: A framework for policy makers, educational and health authorities and specialists. *Cologne: Federal Centre for Health Education*.
- Zulu, J. M., Blystad, A., Haaland, M. E., Michelo, C., Haukanes, H., & Moland, K. M. (2019). Why teach sexuality education in school? Teacher discretion in implementing comprehensive sexuality education in rural Zambia. *International Journal for Equity in Health*, 18, 1–10. <https://doi.org/10.1186/s12939-019-1023-1>



