



Innovation in Early Childhood Learning Media: Creating Spin Games to Identify Gender Identity

Dwi Haryanti¹, Kari Mega Putri Hartani², Yurinda Withasari³, Asrul Faruq⁴

¹Fakultas Tarbiyah, IAIN Syaikh Abdurrahman Siddik Bangka Belitung, Indonesia

^{2,3}Fakultas Tarbiyah, IAIN Syaikh Abdurrahman Siddik Bangka Belitung, Indonesia

⁴Fakultas Tarbiyah, Institut Agama Islam Pemalang, Indonesia

*Email: whiha90@gmail.com

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ABSTRACT

Purpose-Gender identity formation is tightly linked to early childhood social and emotional development. Nonetheless, traditional approaches that lack interest continue to dominate learning activities for kids aged 4 to 5. The purpose of this project is to create and assess the viability of using Spin Game media as a cutting-edge teaching tool to introduce gender identification to youngsters between the ages of four and five.

Methodology-The ADDIE model, comprising analysis, design, development, implementation, and evaluation, was used in this study's Research and Development (R&D) methodology. At PAUD KB Mutiara Bangsa, information was gathered by surveys, observations, and documentation. Teacher response questionnaires, observation sheets measuring children's gender identity recognition, and media and material feasibility questionnaires made up the research tools.

Findings-According to the findings, the Spin Game media received a very feasible score of 96.7% from media professionals and 100% from material specialists. 84.4% of children's gender identity recognition was supported, according to observation results from small-scale experiments. Additionally, with a feasibility percentage of 97.3%, teacher replies showed a very high degree of acceptance. These results show that the Spin Game media is efficient and successful for teaching young children.

Contribution-By offering a fun, play-based learning tool that promotes gender identity awareness among kids ages 4-5, this study advances early childhood education. The Spin Game enhances the development of learning media for early childhood gender education and provides a practical, creative alternative to conventional teaching techniques.

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INTRODUCTION

Identity is a basic psychological and social concept that helps people comprehend who they are and how they interact with others. Gender and ancestry are examples of intrinsic traits that combine with socially environment-shaped experiences to produce one's self-identity (Drummond, 2021; Haslam et al., 2020). It also includes innate characteristics, such as gender and ancestry, that are present from birth. These two components make up self-identity, which is also known as essential or innate identity. A person's self-perception and how others perceive them can be influenced by their gender and origin. Experiences, choices, and interactions with the outside world can all influence how one feels about oneself. (Sary et al., 2023).

According to Polderman et al., gender identity is an individual's internal knowledge and recognition of themselves as male, female, or otherwise. It is not solely determined by biological factors, but rather by psychological, social, and cultural processes. From a conceptual standpoint, gender identity needs to be separated from sex education, which emphasizes body safety, reproductive health, and anatomical knowledge, and from child protection, which focuses on protecting children from exploitation and abuse. Despite their connections, these three concepts have distinct educational and developmental goals, necessitating distinct theoretical bounds (Polderman et al., 2018).

Gender identity formation is crucial during early childhood, especially between the ages of three and five, according to empirical research (Cervantes, 2018; Perry et al., 2019; Polderman et al., 2018). During this stage, children begin to identify gender categories and progressively develop a solid sense of their own gender identity (Polderman et al., 2018). Gender recognition difficulties and a restricted comprehension of personal identity boundaries may result from inadequate stimulation and guidance during this time (Boddington, 2016). Gender identity education in early childhood settings is frequently disregarded or confused with more general talks of sexuality that are not developmentally appropriate, despite this developmental urgency (Ben Abd Elsalam, 2023; Brill & Pepper, 2022).

The home is the primary setting that shapes gender identity, followed by school and community settings (Qosyash & Adriany, 2021). Teachers serve an important role as role models in early childhood education settings, and their actions, words, and teaching methods help kids understand gender norms (Koch & Farquhar, 2015). However, cultural taboos, a lack of age-appropriate learning materials, and insufficient pedagogical methodologies make it difficult for many early childhood educators to deliver gender-related learning (Islamiya & Oktavianingsih, 2024).

Prior research has highlighted the value of educational media in promoting young children's comprehension of sexuality-related subjects, such as body awareness and self-defense (Nurbaiti et al., 2022; Putri et al., 2020). However, the majority of current research focuses on printed materials or conceptual explanations, paying little attention to interactive, play-based media specifically designed to support gender identity recognition. This suggests a glaring research deficit in the creation and empirical assessment of creative educational materials that are both engaging and developmentally suitable for young children.

Field observations in early childhood education settings further reveal that gender identity learning is often delivered verbally and abstractly, resulting in low student engagement and superficial understanding. Children become passive learners when no interactive media is available, and teachers use euphemistic language that may hide factual information and make it difficult for kids to understand personal limits. These circumstances emphasize the need for educational materials that can turn abstract ideas about gender identity into tangible, meaningful learning opportunities.

To close this gap, the current study suggests using an interactive spin game as a teaching tool to help young children recognize their gender identity. The Spin Game incorporates visual, motor, and cognitive components to engage kids in the learning process actively. It is founded on the concepts of play-based learning. In contrast to traditional teaching methods, this medium enhances children's attention, motivation, and conceptual understanding by allowing them to interact directly with learning information through structured play (Gusnida & Nurzanah, 2023; Ulfa et al., 2024).

Several situations influence the development of gender identity. The primary setting that significantly

impacts gender identity formation is the family (Qosyash & Adriany, 2021). However, the surroundings at school and in the community are as significant. Because children watch and mimic the conduct of their teachers—male and female—especially in Early Life Education, the school environment plays a critical role in the development of gender identity in early life (Koch & Farquhar, 2015). While parents are ultimately in charge of teaching sexual education, PAUD institutions, which serve as environments that promote development, also have this obligation. Learning media can be used to develop sexuality education for kids (Islamiya & Oktavianingsih, 2024; Putri et al., 2020). Learning resources that enhance early childhood comprehension of sexuality education are needed to ensure that children understand it. Children's sex education must be tailored to their developmental stage and needs. As a result, the learning materials must be appropriate for the child's age and needs.

The study was carried out at Mutiara Bangsa Preschool, an early childhood education facility serving children ages three to six and serving as a typical urban early childhood learning setting. Based on initial observations (Observation, 2024) that identified several pedagogical issues in the implementation of gender identity and sexuality-related learning in early infancy, this preschool was chosen as the research site. Specific learning resources and structured instructional procedures addressing gender identity were scarce, even though the learning activities typically adhered to the conventional early childhood curriculum.

Due to a lack of suitable learning resources, few instructional modifications, and unclear, developmentally appropriate explanations, observations showed that teachers tended to give gender identity education little attention. Without tangible visual or interactive devices, gender-related subjects were often communicated implicitly through narrative or spoken explanations. When gender-related topics were introduced, children's attention and comprehension decreased, and learning activities became less interesting. This disorder reflects a larger problem in early childhood education, as children's cognitive and developmental traits are often overlooked when introducing abstract concepts (Observation, 2024).

Additionally, it was frequently seen in classroom interactions that body parts and genitalia were referred to using euphemism and figurative language. Both kids and teachers often used terms like "burung" for penis, "apem" for vagina, and "gunung" for breasts. Such language may impede children's proper awareness of their own bodies and personal limits, even though it is frequently used to avoid discomfort or cultural taboos. Children's low understanding of body privacy, which is crucial for early sexuality education and self-defense, is a result of the incorrect terminology.

From a developmental standpoint, this condition is critical because children between the ages of three and six are in a sensitive learning stage and are greatly impacted by their surroundings. Experiences and language exposure at this stage are crucial in forming children's cognitive and conceptual understanding, according to Montessori's developmental philosophy (Catherine et al., 2020). The efficacy of early sexuality and gender identity education may be diminished by inappropriate or inconsistent terminology, which can result in misconceptions that last into later developmental stages.

Therefore, the choice of Mutiara Bangsa Preschool as the study site is quite pertinent to the goals of this investigation. A solid empirical foundation for the creation of a novel, play-based learning medium is provided by recognized limitations, such as the absence of interactive learning materials, reliance on spoken explanations, and cultural constraints when discussing gender-related subjects. The necessity of the Spin Game as an educational intervention intended to improve kids' comprehension of gender identity in a way that is interesting, tangible, and developmentally appropriate is supported by these contextual factors.

The novelty of this study lies in integrating gender identity education into an interactive game-based medium specifically designed for early childhood learners, addressing both developmental needs and the pedagogical challenges educators face. Scientifically, this research contributes to the literature by clarifying conceptual boundaries between gender identity and sex education while offering an empirically grounded instructional innovation.

To improve early childhood recognition of gender identity, this project aims to create and assess the viability and efficacy of a Spin Game learning medium. It is anticipated that this research will contribute to

the field of early childhood gender studies and have practical consequences for educators creating engaging, developmentally appropriate learning experiences.

METHODOLOGY

Research Design

In order to create and validate a learning media product in the form of a spin game for early childhood gender identity recognition, this study used a research and development (R&D) approach. R&D was chosen because it concentrates on both product development and evaluating its viability and efficacy in actual educational environments (Ariyanti et al., 2025). Because it offers a methodical, iterative, and practice-oriented framework appropriate for early childhood learning media creation, the ADDIE development paradigm (Analysis, Design, Development, Implementation, and Evaluation) was chosen. This study applied ADDIE in an operational, context-based approach, rather than a simple conceptual description, and each stage generated tangible outputs that influenced the next. (Hamzah, 2021).

Analysis

A needs assessment was conducted during the analysis stage through informal interviews with early childhood educators and classroom observations. The analysis concentrated on determining: (a) children's preliminary comprehension of gender identity; (b) the shortcomings of current educational materials; and (c) the social-emotional developmental traits of early childhood learners. The findings showed that, to support gender identity recognition in an age-appropriate way, a play-based, interactive, visual learning medium is required (observation, 2024).

Design

The Spin Game was created by identifying learning objectives, gender identification indicators, game mechanics, graphic components, and evaluation methods based on the analysis results. Learning indicators, such as identifying gender roles, identifying personal traits, and effectively expressing self-identification, were directly mapped to concepts of gender identity.

Development

The Spin Game preparation stage and the validation test stage were the two stages in which researchers created the Spin Game media. The Spin Game media was produced in a game style during the planning phase. The Canva program was used to make the flap. Since cutting the image patterns for the Spin Game needed a lot of work due to their size, the characters and drawings were then printed individually. After cutting each pattern, they were placed into prepared colored envelopes. Experts in media and materials conducted validation testing after the product was fully developed.

Implementation

This step entails incorporating educational media into the curriculum. To assess student responses and the appeal of the Spin Game learning materials, both small-group and large-group trials are conducted.

Evaluation

Spin Game needs to be evaluated based on its implementation stages. Final changes to the generated product are made during the evaluation stage in response to student feedback and ideas during the implementation phase.

Table 1. Design Spin Game Media

No	Picture	Information
1.		The Spin Game Media display features eight colorful components, a clock hand on top, and is constructed of wood, specifically plywood.
2.		Colored envelopes: Depending on where the clock hand stops, the youngster is given one of the colored envelopes. For instance, the youngster gets a red envelope if the clock ends on red. The child must solve the puzzle in the envelope.
3.		The graphic depicts the men's and women's restrooms, with blue for men and pink for women. Children are required to estimate which sign symbolizes males and which represents women, and to recognize the differences, when they are given an envelope containing these drawings.
4.		Both male and female characters are present. The child is asked to describe me in this illustration. How will the youngster explain it if it is a boy?
5.		Illustration: after the envelope is opened, a picture of the clothes the boys are wearing appears.
6.		Illustrations like this one, where a picture of the girl's attire appears once the package is opened.
7.		If a youngster receives an envelope with a picture of a boy on it, they are asked to identify the boy's gender and describe his traits.
8.		If the youngster receives this envelope, they will be asked to identify the girl's gender in the photo and describe her traits.

No	Picture	Information
9.		An overview of the human body's components, including their names and shapes.

Subjects and Sampling Technique

Early childhood learners selected through purposive sampling comprised the research subjects. The following specific academic factors led to the selection of this technique: (a) children are in the developmental stage that is relevant to the creation of gender identity; (b) implementation is feasible and accessible; and (c) it aligns with the experimental nature of early-stage R&D trials.

Since the study's objective was to test the product's viability and practicality rather than to generalize results, the small sample size is methodologically valid. This aligns with early childhood education research and development studies (Kasliyanto et al., 2025). Young children aged 4-5 enrolled at the KB Mutiara Bangsa Early Childhood Education Center (PAUD) participated in this study.

Research Instruments

Documentation and observation sheets were used to gather data. Expert judgment (content validity) was used to guarantee instrument validity, and indicators were examined for developmental appropriateness, relevance, and clarity. Inter-observer agreement improved instrument reliability and guaranteed consistency in observation outcomes.

Data Analysis Techniques

Descriptive, qualitative, and quantitative methods were used systematically to analyze the data. Product feasibility was assessed by converting quantitative observation ratings into percentages and analyzing qualitative field notes and expert feedback using data reduction, classification, and interpretation. This combination guaranteed transparency and analytical rigor.

Another step in the data analysis process was interpreting the results of a classroom trial of the Spin Game media, in which researchers observed behavioral and gender identity changes in children before and after its use. Observational data were coded and categorized using indicators of gender identity recognition, including the ability to determine the character's gender, recognize male and female symbols, and display attitudes associated with gender roles in the game. Analyzing the interview data revealed important themes reflecting instructors' perceptions of the media's value. A thorough investigation was conducted by combining data from several sources, including experts, educators, and children, to ensure the validity of the findings and identify the benefits and drawbacks of the developed medium.

Ethical Considerations

Given that youngsters participated in the study, ethical guidelines were closely adhered to. Prior to data collection, parental agreement was sought, children's identities were kept private, and all learning activities were created with their safety, comfort, and developmental appropriateness as top priorities. Because each research subject must be treated humanely and reasonably to achieve a balance between potential benefits and potential dangers, researchers must consider a range of physical, psychological, and social risks (Sibarani & Albina, 2025).

Bias Control Strategies

The study used several techniques to reduce researcher bias, including peer review of data interpretation, expert validation, and structured observation tools. These steps improved the credibility of the findings and ensured objectivity.

FINDINGS

Using the previously described ADDIE model development approach, research on the creation of spin game learning media for introducing gender identity to children aged 4-5 years goes through numerous stages:

Analysis

According to the requirements analysis of the Mutiara Bangsa Early Childhood Education Center (PAUD Mutiara Bangsa), media for teaching gender identity must be created to make learning more engaging and pleasurable, and to pique kids' interest in learning. The researcher will create a spin game to introduce gender identity to kids between the ages of 4 and 5. It will be made as engaging as possible and feature a game kids can play directly, which will have a positive effect because kids play with their friends and have fun while still receiving instruction aligned with their developmental achievement levels.

Design

The researcher's next step is to design the spin game they are developing after performing a needs analysis.

Table 2. Media Expert Instrument Design

No	Aspects	Observed aspects
1	Media	<p>The spin game media features bright, varied colors.</p> <p>The spin game media has a unique shape.</p> <p>The media is presented clearly and neatly.</p>
2	Illustration	<p>Spin game media is safe for children.</p> <p>Spin game media can attract children's attention and interest.</p>
3	Media Quality and Display	<p>Suitability of the type and form of media used</p> <p>The spin game media is not easily damaged.</p>
4	Attractiveness	<p>The spin game media uses a combination of bright, contrasting colors.</p> <p>The spin game media has an attractive form.</p> <p>Spin game media can introduce letters to children.</p> <p>The spin game media is easy to use</p>
5	Safety	<p>There are no sharp edges or possibly dangerous pieces in the spin game media.</p> <p>The game spin media is easy to clean.</p>

Subject matter experts evaluated the original design of the Spin Game media expert instrument. The purpose of this tool is to evaluate the material's appropriateness for pupils in terms of content, images, and utility.

Table 3. Media Expert Instrument Design

No	Aspects	Observed aspects
1	Media	<p>The spin game media features bright, varied colors.</p> <p>The spin game media has a unique shape.</p> <p>The media is presented clearly and neatly.</p>
2	Illustration	<p>Spin game media is safe for children.</p>

No	Aspects	Observed aspects
3	Media Quality and Display	Spin game media can attract children's attention and interest.
		Suitability of the type and form of media used
4	Attractiveness	The spin game media is not easily damaged.
		The spin game media uses a combination of bright, contrasting colors.
5	Safety	The spin game media has an attractive form.
		Spin game media can introduce letters to children.
		The spin game media is easy to use
		There are no sharp edges or possibly dangerous pieces in the spin game media.
		The game spin media is easy to clean.

Development

Following the design of the spin game media, experienced media validators and material experts are consulted to provide recommendations, enhancements, and evaluations. According to the study's findings, young children can effectively and engagingly learn about gender identity through Spin Game media. Youngsters who participated in the media trial demonstrated a greater comprehension of fundamental gender ideas, such as differentiating between boys and girls based on the game's roles, colors, and symbols. When using this media rather than traditional approaches, children were more engaged, energetic, and enthusiastic, as observed during the learning process. The Spin Game received favorable feedback from teachers as well, who said the media was engaging, user-friendly, and pertinent to kids' developmental requirements. According to expert validation, this material met the eligibility requirements for visual appeal, content, and usefulness in the context of early childhood education. These results demonstrate that media innovations like the Spin Game can serve as a successful alternative for teaching gender identification at a young age.

Expert validation, which evaluated the Spin Game media's appropriateness in terms of both medium and content, further reinforced the research findings, along with observations and interviews. Two experts, one in media and the other in content, validated 13 assertions using a Likert scale with a range of 1 to 5.

According to media experts' validation data, a total score of 63 out of a possible 65 was achieved, with an average Likert scale score of 4.8. As a consequence, the feasibility percentage was 96.7%. This % indicates that the Spin Game medium falls into the "very suitable" category for use in early childhood education, with strong design, visual appeal, and usability. The media's ability to grab children's attention and its kid-friendly design, which aligns with their developmental traits, were also mentioned by media experts.

Table 2. Results of Validation by Media Experts

No	Observed aspects	TL	KL	CL	L	SL
1.	Media					
		a. The spin game media features bright, varied colors.				✓
		b. The spin game media has a unique shape.			✓	
2.	Illustration	c. The media is presented clearly and neatly.			✓	
		a. Spin game media is safe for children.			✓	
3.	Media Quality and Display	b. Spin game media can attract children's attention and interest.			✓	
		a. Suitability of the type and form of media used				✓
		b. The spin game media is not easily damaged.			✓	
4.	Attractiveness					
		a. The spin game media uses a combination of bright, contrasting colors.				✓

No	Observed aspects	TL	KL	CL	L	SL
	b. The spin game media has an attractive form.					✓
	c. Spin game media can introduce letters to children.					✓
	d. The spin game media is easy to use					✓
5.	Safety					
	a. There are no sharp edges or possibly dangerous pieces in the spin game media.					✓
	b. The game spin media is easy to clean.					✓
Frequency		13				
Total Score		63				
Average		4,8				
Maximum Score of Likert Scale		65				
Constant Number		100				
Percentase		96,7%	Definitely Worth It			

In the meantime, validation results from material specialists showed a feasibility rate of 100%, an average Likert score of 5.0, and a perfect score of 65 out of 65. This indicates that the Spin Game media is highly appropriate in terms of its content, the accuracy of its learning messages, and its fit for establishing gender identity. According to material specialists, the concept of gender has been successfully communicated through this medium in a factual, straightforward, and developmentally appropriate way.

Table 3. Results of Validation by Material Experts

No	Observed aspects	TL	KL	CL	L	SL
1.	Media					
	d. The spin game media features bright, varied colors.					✓
	e. The spin game media has a unique shape.					✓
	f. The media is presented clearly and neatly.					✓
2.	Illustration					
	c. Spin game media is safe for children.					✓
	d. Spin game media can attract children's attention and interest.					✓
3.	Media Quality and Display					
	c. Suitability of the type and form of media used					✓
	d. The spin game media is not easily damaged.					✓
4.	Attractiveness					
	e. The spin game media uses a combination of bright, contrasting colors.					✓
	f. The spin game media has an attractive form.					✓
	g. Spin game media can introduce letters to children.					✓
	h. The spin game media is easy to use					✓
5.	Safety					
	c. There are no sharp edges or possibly dangerous pieces in the spin game media.					✓
	d. The game spin media is easy to clean.					✓
Frequency		13				
Total Score		65				
Average		5				
Maximum Score of Likert Scale		65				
Constant Number		100				
Percentase		100%	Definitely Worth It			

In terms of both content and technological design, Spin Game is a very appropriate learning tool for use in early childhood education settings, according to these two validation results. Experts' quantitative data demonstrates that this media innovation can be successfully incorporated into the educational process to provide kids a more engaging and meaningful understanding of gender identity.

Implementation

According to the findings of the Spin Game media experiment conducted at the Mutiara Bangsa Early Childhood Education Center (PAUD KB Mutiara Bangsa), the media is highly appropriate for use in teaching young children to identify their gender identity. Using the assessment table, 44 Likert-scale items yielded a total score of 371 out of a possible 440, with children as the primary subjects. These findings yielded an appropriateness percentage of 84.4%, placing it in the "very suitable" range. This proportion shows that kids responded favorably to media use in terms of engagement, comprehension of the subject matter, and play delight. Through the Spin Game's symbols and actions, children were able to identify and describe gender identity and seemed to participate actively. The trial's findings thus confirm that the Spin Game media is not only viable in theory and professional evaluations but is also positively regarded by kids as a direct learning tool.

Table 4. KB Mutiara Bangsa Early Childhood Education Center's Observation Results Sheet for the Creation of Spin Game Media for Gender Identity Introduction for Children Ages 4-5

No	Criteria	Assessment				Amount
		1	2	3	4	
1.	Children can differentiate colors	0	0	0	11	44
2.	Children can count	0	0	5	6	39
3.	Children can distinguish between men's and women's toilets	0	0	7	4	37
4.	Children can write the words male and female	0	0	7	4	37
5.	Children can differentiate between men and women	0	0	8	3	36
6.	Children can identify male and female characteristics	0	0	5	6	35
7.	Children can complete their tasks well	0	0	8	3	36
8.	Children can state what gender they are according to the picture they get.	0	0	7	4	37
9.	Children can distinguish between their father and their mother	0	0	11	0	33
10.	Children can arrange letters and match them.	0	0	7	4	37
Total Score From Validator						371
Question Items						10
Average						37,1
Total Likert Scale Score						44
Ideal Total Score						440
Percentage						84,4%
Criteria						Definitely Worth It

The validator's score was 371, yielding a Likert scale score of 44 out of 440 (84.4%), according to the children's assessment table for the spin game media at the Mutiara Bangsa Preschool. These findings suggest that the spin game media is quite appropriate for use.

Evaluation

The last phase of the ADDIE development paradigm is evaluation. Only a limited trial stage was completed by this study. Following the implementation of the spin game media product at KB Mutiara Bangsa Preschool, the researchers used the spin game to evaluate the learning outcomes. The researchers' product implementation results showed that the spin game media product was highly suited for teaching gender identification to youngsters aged 4-5. Children's responses to the spin game media during observation trials were highly enthusiastic, and the media may help children recognize their gender identity. They were also able to see the graphics clearly and were quite excited.

DISCUSSION

The findings of this study indicate that the Spin Game is a feasible and well-accepted learning medium for introducing gender identity concepts to children aged 4-5 years, but do not provide evidence of causal effectiveness in improving developmental outcomes. This distinction is important, as the research design focused on development, validation, and user acceptance rather than comparative pre-post measurement. Conceptually, these findings support play-based learning theories, which argue that young children construct understanding of abstract social concepts through concrete, sensory-rich, and socially mediated experiences, as emphasized in constructivist early childhood education frameworks (Lewington, 2020; van Aswegen, 2019). Learning is enhanced when information is presented through multiple sensory modalities. This perspective is consistent with Vygotsky's view that learning occurs through active experience and social interaction, as well as with Montessori's belief that children's minds cannot be optimally engaged through verbal instruction alone. Montessori emphasized that children learn most effectively when they can involve all their senses in the learning process. She valued real-life experiences as a core component of learning and identified purposeful activity as a key stimulus that promotes and supports children's holistic development (van Aswegen, 2019).

The positive reception of the Spin Game aligns with international studies showing that game-based and manipulative learning media enhance children's engagement and meaning-making processes, particularly when addressing social identity and socio-emotional development (Downie, 2022). Within the context of gender identity education, prior research emphasizes the importance of non-stereotypical, developmentally appropriate approaches that allow children to explore identity through guided play rather than direct instruction, as noted in international early childhood gender studies (Tzannetis, 2022). National studies in early childhood education similarly report that play-based media increase children's participation and social interaction, although most emphasize feasibility and engagement rather than longitudinal developmental impact (Luthfi et al., 2025).

Therefore, this study extends existing literature by contributing an empirically validated learning media model that integrates play, identity recognition, and socio-emotional stimulation in early childhood settings. Nevertheless, the findings are limited by the small sample size, single-institution context, and absence of comparative outcome measures, which restrict claims regarding effectiveness. Future research is recommended to employ experimental or quasi-experimental designs, to include broader socio-cultural contexts, and to examine long-term developmental effects to strengthen the empirical basis for play-based gender identity learning media.

Theoretical and Practical Implications

The findings of this study theoretically reinforce the early childhood learning paradigm, which positions play-based activities as a fundamental foundation for concept formation, including abstract concepts such as gender identity. The use of the Spin Game demonstrates that game-based learning functions not merely as a strategy for content delivery but also as a medium for knowledge construction, enabling children to build meaning through direct experience, exploration, and meaningful social interaction. This aligns with

constructivist perspectives that emphasize children's active role in the learning process, in accordance with their cognitive and socio-emotional developmental stages.

Furthermore, this study contributes theoretically to the development of early childhood learning media by affirming that innovative, game-based media possess multidimensional potential. The Spin Game serves not only as a cognitive tool for introducing specific concepts but also as a medium for strengthening socio-emotional development, self-identity recognition, and the formation of positive social attitudes in early childhood. These findings broaden understanding that learning media in early childhood education should be designed holistically, focusing not solely on academic achievement but also on the comprehensive development of children's personalities and characters.

Thus, from a theoretical perspective, the Spin Game can be positioned as a learning media model that integrates play principles, experiential learning, and comprehensive developmental stimulation. This contribution provides a conceptual foundation for developing early childhood learning media theories that are more contextual, inclusive, and responsive to the developmental needs of young children in contemporary learning environments.

Practically, the findings of this study offer tangible contributions to instructional practices in early childhood education settings, particularly for teachers in selecting and developing learning media that align with the characteristics of young learners. The Spin Game can be utilized as an applicable, engaging, and easily integrated learning medium within classroom activities. Through its implementation, teachers are equipped with a tool to introduce gender concepts in a positive, contextual, and non-stereotypical manner, thereby fostering an inclusive, safe, and child-friendly learning environment. Additionally, this medium encourages active child participation, enhances peer social interaction, and strengthens the quality of pedagogical interactions between teachers and children.

Moreover, the Spin Game provides teachers with flexibility to adapt learning activities to the needs and conditions of their classrooms. It can be implemented in various thematic learning activities, both individually and in group settings, thereby supporting the integrated development of children's cognitive, socio-emotional, and language skills. In this regard, the Spin Game serves not only as a learning aid but also as a pedagogical strategy that helps teachers create meaningful, child-centered learning experiences.

For learning media developers, the results of this study serve as an important foundation for designing play-based educational media that respond to the real needs of early childhood education institutions. The Spin Game illustrates that learning media with relatively straightforward designs, when creatively developed and supported by clear instructional objectives, can have a significant impact on children's learning processes and outcomes. These findings open the door to developing similar media that are more contextually relevant, adaptive, and sensitive to early childhood developmental stages, in both conventional and technology-based formats. Therefore, the practical implications of this study extend beyond the use of the Spin Game as an alternative learning medium and encourage teachers and media developers to be more innovative in creating holistic, inclusive, and sustainable learning media. This contribution is expected to enrich early childhood education practices and enhance the overall quality of learning experiences for young children.

Directions for Future Research

Based on the findings of this study, future research is recommended to examine the use of the Spin Game on a broader scale by involving diverse early childhood education settings, socio-cultural backgrounds, and learner characteristics. Expanding the research subjects and contexts is expected to provide a more comprehensive understanding of the effectiveness and flexibility of the Spin Game as a learning medium, as well as to test the consistency of the findings across varied educational contexts.

Future studies may also explore the development of the Spin Game in digital or interactive technology-based formats to align with the demands of 21st-century learning. The integration of technological elements is expected to enrich children's learning experiences, enhance motivation and engagement, and create opportunities for implementing the Spin Game in hybrid or technology-enhanced learning environments.

Comparative studies between conventional and digital versions of the Spin Game would be particularly relevant for evaluating the effectiveness of each format.

Additionally, future research should investigate the long-term effects of using the Spin Game on children's self-identity formation, socio-emotional development, and social attitudes. Longitudinal research designs may be employed to examine the sustainability of the impacts of game-based learning media on early childhood development. In this way, future studies can strengthen empirical evidence while advancing the continuous theoretical and practical development of early childhood education.

CONCLUSION

Overall, this study demonstrates that the Spin Game addresses the identified research gap regarding the limited availability of developmentally appropriate, play-based media for introducing gender identity in early childhood education. Beyond confirming its high feasibility through expert validation and small-scale implementation, the findings suggest that structured game-based media can serve as a pedagogical mechanism for constructing abstract social concepts, such as gender identity, through experiential and socially mediated learning.

The scientific contribution of this study lies in positioning the Spin Game as a model of learning media that integrates play principles with socio-emotional and identity development, thereby extending existing discussions on early childhood learning media beyond cognitive outcomes alone. However, this study is limited by its small sample size, single institution setting, and short-term implementation, which restricts the generalizability and long-term interpretation of its effects. Consequently, future research is recommended to involve broader and more diverse educational contexts, adopt longitudinal designs to examine sustained developmental impacts, and explore digital or hybrid adaptations of the Spin Game to respond to contemporary learning environments. Such investigations are expected to strengthen the empirical and theoretical foundations of play-based learning media in early childhood education.

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