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Building early childhood character through Indonesian traditional games: The development and implementation of the Komodoria model

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Abstract

Concerns over moral decline in the digital era have intensified the need for effective character education in early childhood. Character, conceptualized as enduring behavioral dispositions, is shaped through repeated social and cultural experiences. This study investigates the effectiveness of culturally adapted traditional games as a play-based intervention to foster character development among young children. Adopting a research and development (R&D) framework, this study introduces the *Komodoria* game, a modified traditional Indonesian game integrating structured play with character education. The model operationalizes nine pillars of character through embedded task-based indicator cards that promote values such as responsibility, honesty, cooperation, respect, and empathy. The intervention was implemented over 20 days with two cohorts of kindergarten children aged 4–6 years in West Lombok, Indonesia, with teachers facilitating guided play sessions. Findings indicate substantial improvements in post-intervention character scores across participants, demonstrating the model's effectiveness. Character acquisition occurred through dual mechanisms: explicit instruction embedded in gameplay and implicit social learning processes, including rule adherence, turn-taking, and peer interaction. This study concludes that culturally grounded, modified traditional games offer a robust and integrative approach to character education in early childhood. However, intervention outcomes are mediated by individual socio-emotional readiness and contextual factors, reinforcing the indispensability of teacher facilitation. These findings underscore the pedagogical value of culturally responsive, play-based models and advocate for their systematic integration into early childhood curricula and teacher professional development programs.

Keywords: Early childhood character; Kindergarten; Play and learning; Traditional games

1. Introduction

The rapid expansion of digital technology has profoundly reshaped children's daily experiences, raising global concerns regarding moral decline and weakened character formation in early childhood. Children growing up in the digital era are increasingly exposed to unfiltered information, limited social interaction, and reduced opportunities for direct experiential learning, which may contribute to undesirable behaviors and decreased socio-emotional competence (Fadlurrohim et al., 2020). These conditions emphasize the urgency of strengthening character education from an early age through developmentally appropriate and contextually relevant approaches.

Character is conceptualized as a relatively stable pattern of behavior integrating moral knowledge, emotion, and action, which is formed through continuous habituation within everyday social contexts (Berkowitz & Bier, 2004; Putriyanti et al., 2019). From a sociocultural perspective, children's development is inseparable from their cultural environment, as emphasized by Vygotsky's theory, which posits that learning and behavior are mediated by social interaction and cultural tools (Nasiopoulou, 2020; Veraksa et al., 2024). In Indonesia, a culturally diverse country, local wisdom and traditional practices play a significant role in shaping children's character, particularly in fostering values such as respect, cooperation, and social harmony (Hoon, 2021). However, empirical findings indicate that many young children still exhibit insufficient character development, especially in politeness, responsibility, and prosocial behavior (Tatminingsih, 2019; Turistiati et al., 2021).

Play-based learning has been widely recognized as a powerful pedagogical approach in early childhood education, supporting holistic development across cognitive, social, emotional, and moral domains (Lazar, 2025; Pramling Samuelsson & Björklund, 2023). Through play, children

actively construct knowledge, negotiate social interactions, and internalize values in meaningful contexts (Smolucha & Smolucha, 2021). In particular, play-based character education has been shown to significantly enhance children's behavioral outcomes through experiential and interactive learning processes (Görün et al., 2025).

Within this framework, traditional games offer unique pedagogical advantages due to their integration of cultural values, physical activity, and social interaction. Studies have demonstrated that traditional games effectively promote social-emotional development, cooperation, empathy, and communication skills in early childhood (Aulia & Sudaryanti, 2023; Ashar et al., 2024). In addition, traditional games serve as a culturally responsive medium that preserves local identity while fostering holistic child development (Wahyu & Rukiyati, 2022).

However, most existing studies focus on traditional games in their original form, with limited attention given to their systematic modification into structured learning models targeting specific developmental outcomes. This study addresses this gap by developing and empirically testing a culturally adapted traditional game model (*Komodoria*) that integrates explicit character indicators within structured play activities. By combining cultural relevance, instructional design, and assessment-based character measurement, this study offers a novel contribution to the field of early childhood education.

Therefore, this study aims to examine the effectiveness of the Komodoria game model in fostering early childhood character development. By integrating explicit instructional strategies and social interaction processes within culturally grounded play, this research contributes to the advancement of evidence-based and culturally responsive pedagogies in early childhood education.

2. Literature Review

Research on the use of traditional games to support early childhood development has been widely conducted across different cultural contexts. Studies in various countries have demonstrated that traditional games play a significant role in enhancing children's cognitive, social, and emotional development. For instance, research in Iran and South Korea has shown that traditional play activities can improve children's problem-solving skills, cooperation, and social interaction, as well as support the development of moral values through structured and unstructured play experiences (Kim & Choi, 2015). Similarly, studies in Ghana highlight that traditional games provide opportunities for children to develop teamwork, discipline, and self-regulation through culturally embedded practices (Yekple et al., 2021).

In the Indonesian context, traditional games have also been widely recognized as an effective medium for stimulating various aspects of child development. Previous studies indicate that traditional games contribute to social-emotional development by promoting cooperation, empathy, and communication skills among children (Cendana & Suryana, 2021). Other research findings emphasize that traditional play activities support children's holistic development, including motor, cognitive, and social competencies, through meaningful and culturally relevant interactions (We & Fauziah, 2020).

In addition to play-based approaches, research on character education in early childhood has shown that the development of values such as responsibility, honesty, and respect is primarily achieved through continuous habituation and reinforcement in both school and home environments (Suri, 2021). These studies suggest that character formation is not an instantaneous process but requires repeated exposure to value-based activities integrated into daily routines.

However, despite the recognized potential of traditional games, most existing studies focus on their use in natural or unstructured forms. Limited research has explored how traditional games can be systematically modified into structured pedagogical models that explicitly target character development outcomes.

Therefore, this study addresses this gap by developing and implementing the Komodoria model—a modified traditional game that integrates structured tasks and character indicators into gameplay. This approach provides a novel contribution by combining cultural relevance with

instructional design and measurable character development outcomes.

3. Methods

3.1. Research Design

This study employed a research and development design aimed at developing, implementing, and evaluating a modified traditional game model (*Komodoria*) to support early childhood character development. The present article focuses specifically on the implementation and effectiveness testing stage of the developed model, using a pre- and post-assessment design to examine changes in children's character development outcomes.

3.2. Preliminary Study

A preliminary needs analysis was conducted to identify existing issues related to children's character development. The study involved 30 parents of children aged 3–8 years and 30 early childhood education teachers [ECETs] from Jakarta and South Tangerang. Data were collected over a two-week period (July 14–24, 2019) through structured questionnaires and follow-up semi-structured interviews.

The questionnaire consisted of five indicators of children's behavioral habits, including the use of polite expressions, respectful behavior toward adults, appropriate responses in social interactions, situationally appropriate behavior, and proper self-presentation. Responses were categorized into three frequency levels: often, rarely, and never. The findings indicated that a considerable proportion of children demonstrated inadequate character-related behaviors, highlighting the need for structured interventions in early childhood character education.

3.3. Participants

The main participants of the study were kindergarten children from Pembina Kindergarten, West Lombok, Indonesia. Two groups were involved: Group A consisting of 14 children aged 4–5 years and Group B consisting of 24 children aged 5–6 years. Each group was supported by two classroom teachers who served as facilitators during the intervention process.

The participants included both boys and girls in each group. Although detailed gender distribution was not systematically recorded during the data collection process, classroom records indicate that the composition was relatively balanced across genders, reflecting the natural classroom population.

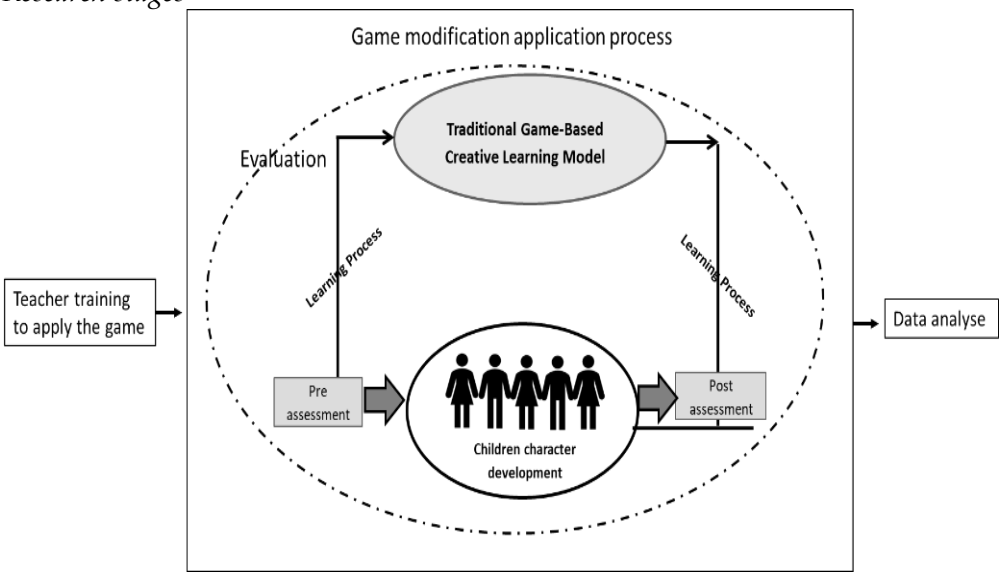
3.4. Intervention (Komodoria Game Model)

The intervention consisted of the implementation of the *Komodoria* game, a culturally adapted traditional game derived from the Indonesian game *engklek* (mpa'agopa/sonda). The modified game integrates structured play elements with character education through the use of indicator cards representing nine pillars of character development.

The game includes three main components: (1) a play mat representing numerical and spatial patterns, (2) indicator and neutralizing cards containing character-based tasks, and (3) a dice used to determine movement within the game. Through these elements, children engage in both physical and social activities while responding to task-based instructions designed to stimulate character-related behaviors.

The study was conducted over a 20-day intervention period, following a structured three-stage procedure. First, a pre-assessment of children's character development was conducted for one week to establish baseline data. Second, teachers participated in a two-day training session to familiarize themselves with the Komodoria game model, including its rules, learning objectives, and assessment procedures. Third, the intervention phase involved the daily implementation of the game for approximately 15–20 minutes, integrated into classroom learning activities. During this phase, teachers facilitated gameplay, guided children's participation, and conducted systematic observations. After the intervention, a post-assessment was conducted for one week to evaluate changes in children's character development.

Figure 1
Research stages



Two main instruments were used in this study. The first was a character development assessment instrument based on nine pillars of character (Zubaedi, 2013), operationalized into 35 observable indicators. Each indicator was rated using a three-point scale: (1) not yet appeared, (2) appeared with assistance, and (3) independently demonstrated. The total possible score ranged from 35 to 105. The second instrument was an observation guideline used to assess the effectiveness of the intervention, including children's engagement, interaction patterns, and behavioral responses during gameplay.

The Komodoria game was implemented as a brief, routine intervention integrated into the daily learning schedule. Sessions were conducted on school days for approximately 15–20 minutes per day, typically positioned at the opening of the learning sequence. Implementation took place in an open school hall to allow safe movement and uninterrupted group play, and the play mat was kept centrally placed to support logistical efficiency.

Teacher reflections highlighted several elements that supported implementation fidelity and children's engagement. First, teachers emphasized the importance of explicit instruction before gameplay (explaining rules and demonstrating procedures). Second, to minimize waiting time and maintain children's attention, teachers recommended dividing children into small groups (approximately 3–4 children per group) and organizing groups by position around the play mat; in Group B, alternating play order by group was also used. Third, teachers reported that reading the indicator cards aloud and guiding children in responding to the card tasks improved comprehension and encouraged peer learning. Finally, both groups underscored the value of brief end-of-session reflection (children sharing feelings, what was learned, and expectations for the next session), reinforcing character-related meanings beyond the physical gameplay.

Despite these enabling strategies, teachers reported common barriers. The most consistent constraint was the limited duration of play (15–20 minutes), which reduced children's satisfaction and opportunities for extended practice. In addition, teachers noted that some card images and instructions were not immediately clear to children, requiring teacher mediation and familiarity with the card set. Crucially, teachers explicitly stated that the role of the teacher cannot be replaced by the game tool, positioning guided facilitation as central to the intervention's effectiveness.

In Figure 2, several pictures of the implementation of the trials are presented for the children of kindergarten group A and group B at the Pembina Kindergarten in West Lombok.

Figure 2
Implements of group trials

3.5. Instrument Validity and Reliability

3.5.1. Character development assessment instrument

The character development instrument was developed based on the nine pillars of character and operationalized into 35 observable indicators. Each indicator was evaluated for its relevance, clarity, and suitability for early childhood developmental characteristics.

Content validity was established through expert judgment involving specialists in early childhood education and educational assessment. The experts reviewed the indicators to ensure that they adequately represented the construct of character development and were appropriate for the age group under study. Based on the expert feedback, several items were refined to improve clarity and alignment with the intended constructs.

To enhance response accuracy, participating teachers were provided with guidance and training on the interpretation of indicators and scoring procedures prior to data collection. This process ensured consistency in understanding and applying the instrument during classroom observations.

Reliability of the instrument was addressed by ensuring consistency in scoring procedures across observations. Teachers were trained to apply uniform criteria when assessing children's behaviors based on predefined scoring descriptors. Additionally, repeated observations during the intervention period contributed to the stability and consistency of the measurement results.

3.5.2. Observation instrument

The observational instrument used to assess the implementation of the intervention was also subjected to expert review to ensure its appropriateness in capturing children's engagement and behavioral responses during gameplay.

To ensure reliability, observations were conducted systematically using structured guidelines, and teachers were encouraged to follow consistent observation procedures throughout the study. The use of repeated and continuous observations strengthened the credibility and trustworthiness of the qualitative data obtained.

3.6. Data Analysis

Data were analyzed using both quantitative and qualitative approaches. Quantitative data were obtained from pre- and post-assessment scores and analyzed using descriptive statistics, including score differences and percentage increases to determine the level of improvement in children's character development.

Qualitative data from classroom observations and teacher feedback were analyzed using descriptive analysis to identify recurring behavioral patterns and factors affecting the effectiveness of the intervention. The integration of quantitative and qualitative findings provided a comprehensive understanding of the impact of the Komodoria game model on early childhood character development.

Given the exploratory nature of the study and the relatively small sample size, descriptive statistical analysis was initially applied to identify developmental trends. To further strengthen the analysis, normality testing and inferential statistical tests were subsequently conducted to examine the significance of the observed differences.

Normality testing was conducted using skewness and kurtosis values. The results indicated that all variables fell within the acceptable range of −2 to +2, suggesting that the data were approximately normally distributed (George & Mallery, 2010). Therefore, parametric statistical tests were considered appropriate.

Therefore, paired sample *t*-tests were employed to examine the differences between pre- and post-intervention scores within each group. The results of the *t*-tests showed statistically significant improvements in character development scores in both Group A and Group B ($p < .05$), indicating that the intervention had a significant effect on children's character development outcomes. In addition to descriptive analysis, inferential statistical tests were employed to examine the significance of observed differences.

3.7. Ethical Considerations

Participation in the study was voluntary. Written consent was obtained from teachers, and parental consent was secured electronically prior to children's participation. Participants were informed of their right to withdraw at any stage of the study. All data were treated confidentially, and no identifying information was disclosed.

The subsequent section reports the findings generated from the implementation of the Komodoria game model, highlighting changes in children's character development and the effectiveness of the intervention.

4. Results

4.1. Implementation of the Komodoria Game in Classroom Practice

Table 4 presents teachers' perspectives on effective strategies in implementing the Komodoria game.

Table 4
Teacher's Input on Effective Strategies in Implementing the Komodoria's Game

Kindergarten Teacher Group A	*Kindergarten Teacher Group B*
An effective strategy in the implementation	
1) Before starting the game, the teacher should explain what and how to play this game. 2) The teacher needs to divide the group so that the queue is not too long. One group consists of 3-4 children. 3) Each group is placed on a different side. 4) The teacher asks the children who are waiting for their turn to help count the steps of the child who is playing 5) The teacher must read and explain the contents of the cards to each child who plays aloud so that other children can hear. 6) Other children are asked to rate the child who is playing when carrying out orders according to the contents of the card. 7) After finishing playing, the teacher must explain the essence of the day's activities and evaluate the process of implementing the game. The teacher should ask the children, with these questions: a) whether the children feel happy with this game, and the reasons for their feeling (happy or not) b) Is there any part of this game that the children don't like, if any mention; c) whether the children still want to play this game again.	1) Before starting the game, the teacher must explain how to play this game. 2) Before the game, the children were asked to draw the order of play. 3) Applications are divided into two groups based on gender with different playing times. For example: On Monday the boys' group plays first. The girls' group played first on Tuesday. 4) The teacher needs to remember the card number when assessing the character of each child. 5) The teacher needs to choose one child to be an assistant able to help supervise the turn of the child playing. 6) The role of the teacher cannot be replaced by the Commodore game tool 7) At the end of the activity, the teacher asks the children to review the implementation of the game. The teacher asks the children to share their feelings while playing, what they get during playing and how they want to play the next day.

Table 4 continued

Kindergarten Teacher Group A	*Kindergarten Teacher Group B*
Game goal achievement	
Komodoria's game can stimulate the good characters of group A children. Direct stimulation can be done through the commands contained in the indicator cards. Stimulation can also occur indirectly through the process implementation games such as: queuing for their turn, concentrating while playing, being sporty and honest.	Komodoria's game can stimulate the character of children aged 5-6 years. Stimulation occurs when children follow the instructions on the indicator cards and while they are playing, such as: patiently waiting for their turn, being responsible when chosen to be an assistant, understanding gender, being polite and concentrating while playing, being sporty and honest, judging friends objectively.
Obstacles encountered during the trial	
1) The playing time provided during the trial was short (15-20 minutes) so that the children were not satisfied. 2) The pictures and instructions on the cards are not easy for students to understand, so the teacher must know each card to explain it clearly for student	Playtime is too short so children don't reach satisfaction in one play

The findings in Table 4 indicate that effective implementation of the Komodoria game strongly depends on active teacher facilitation. Teachers play a central role in explaining rules, guiding children's understanding, managing turn-taking, and reinforcing character values through reflection. These findings highlight that the effectiveness of the intervention is not solely dependent on the game itself but is highly influenced by the quality of instructional support.

4.2. Character Development Outcomes: Group A (4–5 Years)

Table 5 presents the results of the character development assessment for children in Group A (aged 4–5 years), showing pre-intervention scores, post-intervention scores, and the corresponding progress achieved by each participant.

Table 5
The Results of Group A Trials

Initial of Participant	*Score assessment*		*Progress*		*Character Criteria*
	Pre (X1)	*Post (X2)*	*X2-X1*	*%*	
A	40	78	38	54.29	Quite good
B	38	99	61	87.14	Good
C	37	67	30	42.86	Quite good
D	40	76	36	51.43	Quite good
E	35	88	53	75.71	Good
F	35	98	63	90.00	Good
G	39	100	61	87.14	Good
H	40	104	64	91.43	Good
I	44	103	59	84.29	Good
J	30	89	59	84.29	Good
K	36	88	52	74.29	Good
L	40	98	58	82.86	Good
M	44	102	58	82.86	Good
N	45	100	55	78.57	Good

Table 5 shows that all 14 children in Group A demonstrated improvement from pre- to post-assessment. Descriptively, baseline character scores were relatively low and closely clustered (M = 38.79, SD = 4.08). After the intervention, post-assessment scores increased substantially (M = 92.14, SD = 11.54), indicating marked growth across the observed character indicators.

The average gain score was 53.36 points (SD = 10.80), with individual gains ranging from 30 to 64 points. In percentage terms, the mean increase was 76.23% (SD = 15.43), ranging from 42.86% to 91.43%. In terms of character criteria, 11 children were classified as "Good" after the intervention,

while three children remained in the "Quite good" category. The results suggest a consistent upward shift in Group A, as no child showed a decline in score. Although all children benefited from the intervention, the variation in gain scores indicates that the magnitude of improvement differed across individuals.

To provide inferential support for the descriptive findings, a paired-samples *t*-test was conducted to examine the difference between pre- and post-intervention scores in Group A. The results indicated a statistically significant increase from pre-test to post-test scores, $t(13) = 18.48$, $p < .001$. This finding suggests that the Komodoria intervention significantly improved character development among children aged 4–5 years.

Table 6
Paired-Samples t-Test Results for Group A

Variable	*Mean*	*SD*	*t*	*df*	*p*
Pre-test Group A	38.79	4.08	18.48	13	< .001
Post-test Group A	92.14	11.54			

As shown in Table 6, the difference between pre- and post-test scores in Group A was statistically significant. This result provides empirical support for the effectiveness of the Komodoria game in enhancing children's character development in the 4–5 age group.

4.3. Character Development Outcomes: Group B (5–6 Years)

Table 7 presents the results of the character development assessment for children in Group B (aged 5–6 years), including pre-intervention scores, post-intervention scores, and the calculated progress for each participant.

Table 7
The Results of Group B Trials

Initial of Participant	*Score assessment*		*Progress*		*Character Criteria*
	Pre(X1)	*Post (X2)*	*X2-X1*	*%*	
AA	45	88	43	61.43	Quite good
AB	35	99	64	91.43	Good
AC	48	67	19	27.14	Quite good
AD	70	105	35	50.00	Quite good
AE	67	100	33	47.14	Good
AF	40	98	58	82.86	Good
AG	45	100	55	78.57	Good
AH	40	104	64	91.43	Good
AI	44	103	59	84.29	Good
AJ	35	96	61	87.14	Good
AK	36	102	66	94.29	Good
AL	40	100	60	85.71	Good
AM	38	102	64	91.43	Good
AN	45	102	57	81.43	Good
AO	56	99	43	61.43	Good
AP	43	87	44	62.86	Good
AQ	36	95	59	84.29	Good
AR	45	100	55	78.57	Good
AS	48	90	42	60.00	Good
AT	35	88	53	75.71	Good
AU	45	105	60	85.71	Good
UV	49	100	51	72.86	Good
AW	48	104	56	80.00	Good
AX	55	105	50	71.43	Good

The findings presented in Table 7 indicate that children in Group B also showed substantial improvement in character development following the Komodoria intervention. Baseline scores

were more variable than those of Group A (M = 45.33, SD = 9.23), suggesting greater heterogeneity in initial character-related behaviors among children aged 5–6 years. After the intervention, post-test scores increased considerably and became more concentrated at a higher level (M = 97.46, SD = 8.51).

The average gain score for Group B was 52.13 points (SD = 11.61), with individual gains ranging from 19 to 66 points. The mean percentage improvement was 74.46% (SD = 16.59), ranging from 27.14% to 94.29%. Most children in Group B reached the "Good" category after the intervention, while three children were classified as "Quite good." These findings suggest that the Komodoria model was effective for Group B, although the wider range of improvement scores indicates greater individual variability compared with Group A.

Compared with Group A, Group B demonstrated a similarly strong upward trend; however, the pattern of improvement was more heterogeneous, particularly at the lower end of the gain distribution. This suggests that individual differences, developmental characteristics, prior experiences, and contextual factors may have influenced children's responsiveness to the structured play-based intervention.

A paired-samples t test was conducted to examine the difference between pre- and post-intervention scores in Group B. The results showed a statistically significant increase from pre-test to post-test scores, $t(23) = 21.99$, $p < .001$. This finding provides empirical support for the effectiveness of the Komodoria model in enhancing character development among children aged 5–6 years.

Table 8
Paired-Samples t-Test Results for Group B

Variable	*Mean*	*SD*	*t*	*df*	*p*
Pre-test Group B	45.33	9.23	21.99	23	< .001
Post-test Group B	97.46	8.51			

As shown in Table 8, the difference between pre- and post-test scores in Group B was statistically significant. This result further supports the effectiveness of the Komodoria intervention in improving early childhood character development.

An independent-samples t-test was conducted to compare the gain scores of Group A and Group B (see Figure 9). The results indicated no statistically significant difference between the two groups, $t(36) = 0.32$, $p = .748$. This finding suggests that the effectiveness of the Komodoria intervention was relatively consistent across the two age groups.

Table 9
Independent-Samples t-Test Results for Group Comparison

Variable	*Mean*	*SD*	*t*	*df*	*p*
Group A	53.36	10.80	0.32	36	.748
Group B	52.13	11.61			

4.4. Synthesis of Findings across Groups

Across both cohorts, the intervention was associated with substantial improvements in character development scores, with the majority of children reaching the "Good" category after implementation. The results support the instructional premise of the Komodoria model: character development was stimulated both through direct exposure to structured character tasks (indicator cards) and through implicit social learning opportunities embedded in gameplay (e.g., waiting turns, adhering to rules, cooperating, and responding to peer evaluation).

At the same time, teacher reflections and observed implementation constraints suggest that the intervention's effectiveness is closely linked to the quality of facilitation. Short play duration and the interpretive demands of the cards were the most frequently reported obstacles, reinforcing that the Komodoria tool functions optimally as a teacher-guided pedagogical medium rather than a standalone resource. These findings provide important insights into the mechanisms of character

development, which are further discussed in the following section.

5. Discussion

The findings of this study demonstrate that the implementation of the Komodoria game model was associated with substantial improvements in early childhood character development across both age groups. Rather than merely reflecting incremental behavioral changes, the magnitude and consistency of the gains suggest that structured, culturally grounded play can function as a powerful pedagogical mechanism for character formation. These findings are consistent with previous research indicating that play-based learning provides meaningful contexts for children to internalize moral and social values through active engagement (Pramling Samuelsson & Björklund, 2023; Smolucha & Smolucha, 2021).

From an instructional perspective, the effectiveness of the Komodoria model appears to operate through dual learning mechanisms. First, character development was explicitly stimulated through structured tasks embedded in the indicator cards, which required children to demonstrate targeted behaviors such as honesty, cooperation, and responsibility. Second, and equally important, character acquisition occurred implicitly through the social dynamics of gameplay, including turn-taking, rule adherence, peer evaluation, and shared participation. These processes align with sociocultural perspectives of learning, which emphasize that children internalize social norms through interaction and mediated activities rather than through direct instruction alone (Kostov, 2026; Veraksa et al., 2024). In this sense, play-based and interactive activities can create contexts in which children make sense of social expectations, practise communication, and develop social-emotional skills through experience (Ezmeci, 2023; Herman et al., 2025; Isik & Sahin-Taskin, 2024). Related evidence also suggests that culturally grounded activities such as storytelling, traditional games, drama, and classroom participation can support children's moral values, social skills, cultural understanding, and active engagement in learning (Jacob et al., 2024). Moreover, similar findings have been reported by Görün et al. (2025), who highlighted that character education through play involves both explicit instruction and experiential learning processes.

The comparison between Group A and Group B further strengthens this interpretation. Although both groups demonstrated similar overall gains, the greater variability observed in Group B suggests that developmental heterogeneity and prior social experiences influence responsiveness to the intervention. Older children showed a wider spread of outcomes, particularly among those with lower gains, indicating that character development is not solely a function of age but is shaped by individual and contextual factors. This interpretation is consistent with evidence that children's participation and social-emotional development are influenced by developmental characteristics, learning behaviors, family practices, teacher support, peer relationships, and opportunities for meaningful social interaction (Fadlurrohim et al., 2020; Isik & Sahin Taskin, 2024; Kusuma & Sutapa, 2020; Offer-Boljahn et al., 2022). Related findings on adolescents also suggest that character-related strengths such as kindness are embedded in relational contexts, including perceived support from family, friends, and teachers, as well as attachment to parents and peers (Yıldız & Eldeleklioğlu, 2024).

Importantly, teacher feedback highlights a critical moderating factor: the central role of teacher facilitation. The findings clearly indicate that the Komodoria game does not operate effectively as an independent instructional tool. Rather, its success depends on how teachers guide children in interpreting tasks, modeling expected behaviors, and scaffolding social interactions during gameplay. This aligns with Vygotsky's concept of scaffolding, in which adult guidance is essential for supporting children's learning within their zone of proximal development. This interpretation is consistent with evidence from early childhood and interaction-rich learning contexts showing that children's learning outcomes are shaped not only by materials or activities but also by teacher-child interaction, peer interaction, teacher participation, and structured pedagogical support (Gilligan et al., 2020; Karademir & Saatçioğlu, 2023; Nasiopoulou, 2020; Uyar & Karamustafaoğlu, 2025). From this perspective, game-based learning is better understood as a pedagogical approach that supplements instruction and supports learner-centered, experiential engagement when

teachers organize the learning environment and provide appropriate guidance (Herman et al., 2025).

The constraints identified during implementation also provide important insights into the practical conditions required for optimizing the model. The limited duration of gameplay (15–20 minutes) was consistently reported as insufficient to achieve maximum engagement and behavioral reinforcement. This suggests that time-on-task is a critical factor in play-based character education, as repeated and sustained engagement is necessary for habituation processes that underlie character formation (Zubaedi, 2013). Additionally, the need for teacher assistance in interpreting card instructions indicates that cognitive accessibility and material design are important considerations in adapting traditional games into structured learning models. Evidence from activity-based and game-oriented learning contexts similarly shows that students may need support in understanding task logic, connecting activities with target concepts, and progressing through game-based tasks; therefore, instructional materials should be developmentally appropriate, clearly structured, and supported by teacher guidance during implementation (Herman et al., 2025; Mumcu et al., 2023; Xie et al., 2025).

Taken together, these findings support the argument that culturally adapted traditional games, when systematically modified and pedagogically guided, can serve as an effective and integrative approach to early childhood character education. Traditional games have been shown to promote social-emotional development and cooperative behaviors while maintaining cultural relevance (Aulia & Sudaryanti, 2023; Özdemir Beceren et al., 2025; Wahyu & Rukiyati, 2022). The Komodoria model demonstrates that combining cultural relevance, structured task design, and social interaction creates a learning environment that simultaneously addresses cognitive, behavioral, and social dimensions of development. However, the variation in individual outcomes and reliance on teacher facilitation indicate that such interventions should be understood not as standalone solutions, but as components of a broader instructional system that includes teacher training, contextual adaptation, and sustained implementation.

The statistically significant results obtained from paired sample t-tests further strengthen the empirical evidence supporting the effectiveness of structured play-based interventions in early childhood education.

6. Conclusion

This study demonstrates that the Komodoria game model, as a culturally adapted and structured play-based intervention, effectively enhances early childhood character development. The findings consistently show that children across both age groups experienced meaningful improvements in character-related behaviors following the implementation of the intervention. These results confirm that structured play, when systematically designed and pedagogically guided, can serve as a powerful medium for character education in early childhood settings.

Importantly, the effectiveness of the Komodoria model lies in its ability to integrate explicit and implicit learning processes. Character values were not only directly introduced through structured tasks but also internalized through social interaction, cooperation, and engagement during gameplay. This dual mechanism highlights the role of play as both a pedagogical tool and a social learning environment.

The study also reveals that individual differences and contextual factors influence the extent of children's development. Variations in outcomes, particularly among older children, indicate that socio-emotional readiness and prior experiences play a role in shaping responsiveness to the intervention. Furthermore, the findings emphasize that teacher facilitation is a critical component in ensuring the effectiveness of play-based learning models. Without active guidance and support, the impact of such interventions may be limited.

Overall, this study contributes to the field of early childhood education by providing empirical evidence that culturally grounded, play-based models can be transformed into systematic instructional strategies for character development. The Komodoria model illustrates how traditional games can be innovatively adapted to meet contemporary educational needs while

preserving cultural relevance.

7. Implications

The findings of this study have both theoretical and practical implications for early childhood character education. From a theoretical perspective, the study enriches the understanding of character development by integrating sociocultural theory with play-based learning frameworks. The findings support the view that character development is socially constructed and mediated through interaction, guided participation, and shared activities. In this regard, the Komodoria model demonstrates how structured play can serve as a bridge between explicit character instruction and implicit social learning processes.

This study also contributes to the literature on educational innovation by showing that play can be deliberately designed to support specific developmental outcomes. While previous studies have emphasized the general value of play in children's development, the present findings provide empirical support for a hybrid instructional model in which play is both enjoyable and pedagogically purposeful. Moreover, the adaptation of a traditional game into a structured educational model highlights the importance of cultural relevance in learning design. This suggests that indigenous knowledge and local cultural practices can be transformed into meaningful educational resources for early childhood education.

Practically, the Komodoria model offers educators a useful framework for integrating character education into daily classroom activities through short, structured play sessions. Teachers can embed character-related tasks within play-based learning environments, thereby supporting children's holistic development without requiring a separate instructional program. However, the findings also emphasize that teacher facilitation is essential for the effectiveness of such interventions. Teachers need to understand not only the procedures of the game but also how to guide interaction, interpret children's responses, encourage reflection, and reinforce character values during play.

The study further highlights the importance of designing developmentally appropriate and cognitively accessible learning materials. The challenges observed in interpreting some game instructions indicate that the clarity, usability, and age suitability of instructional tools should be carefully considered. In addition, the limited duration of play sessions suggests that sustained and repeated implementation may strengthen the impact of character education activities. Therefore, curriculum developers, school administrators, and early childhood educators may consider incorporating structured, culturally grounded, and teacher-guided play-based models as integral components of early childhood character education programs.

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