



## Development of Fun Polly Games: A Practical Life-Based Learning Media to Enhance Young Children's Independence

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### ABSTRACT

This study aims to develop Fun Polly Games, a Practical Life-based learning media designed to enhance the independence of children aged five to six years in Early Childhood Education settings. The development process followed the ADDIE model—Analysis, Design, Development, Implementation, and Evaluation and employed a mixed-methods approach integrating qualitative techniques such as observations, interviews, and expert validation with quantitative feasibility assessments and comparative testing. The needs analysis indicated a wide gap in children's independence, as many were not yet able to carry out basic self-help tasks due to the predominance of academic-oriented activities and teacher-centered instructional practices. Teachers also reported that the lack of appropriate learning media hindered efforts to cultivate independence. Expert validation confirmed that Fun Polly Games met the criteria for feasibility, while field trials showed strong positive responses from both children and teachers. The implementation of this media led to improved engagement, richer social interaction, and greater autonomy in performing daily tasks in meaningful contexts. Overall, Fun Polly Games is considered feasible, practical, and contextually relevant as a learning medium capable of strengthening independence-building practices in Early Childhood Education. Aligned with Montessori principles and responsive to contemporary educational needs, this media offers promising potential for supporting long-term independence and character development in young children.

**Keywords:** Fun Polly Games, Independence, Practical Life, Early Childhood Education

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## INTRODUCTION

Early childhood is a crucial period for physical, emotional, and character development (Istiana, 2014; Sari & Mayar, 2021). At this stage, instilling fundamental moral values is essential to support children in growing into individuals with strong character. According to Riami et al. (2021), character formation in early childhood should encompass responsibility, respect, fairness, courage, honesty, discipline, empathy, perseverance, and independence. Among these values, independence is particularly important, as it represents a key aspect of self-actualization and contributes to children's readiness for transitioning to higher levels of education (Farantika, 2021; Komala, 2015; Sinansari & Hasibuan, 2021; Veriawan et al., 2023).

Therefore, an environment that provides sufficient stimulation is needed to support the optimal development of independence.

Montessori first introduced and developed the Exercise of Practical Life curriculum in early childhood settings, consisting of routine activities that help children care for and manage their environment (Hasibuan, 2024). She emphasized that preschool development is a gradual process that shapes discipline, independence, and self-direction (Anggini et al., 2024). Montessori-based education encourages autonomy, initiative, and self-regulation (Ling Koh & Frick, 2010). Practical Life activities are grouped into three areas: Elementary Movements, Care of the Environment and Self, and Social Relations, each of which contributes to the development of independence, social skills, and community life competencies through daily activities (Suprihatin & Widyasari, 2023).

Previous studies have shown that fostering independence from an early age plays a significant role in preventing deviant behaviors later in life (Fauziyyah & Nurul Afrianti, 2024; Fitriani et al., 2023; Purnamasari & Dimyati, 2022; Wahyuni & Al Rasyid, 2022). Ayu et al. (2023) reported that children with poorly developed independence tend to exhibit negative or maladaptive behaviors as they grow older. Similarly, other studies revealed that children displaying deviant behavior often demonstrate low independence, especially in terms of self-control and responsibility (Aesti & Aryani, 2023; Nabila et al., 2022; Rahmatika & Damayanti, 2023). Khotimah & Zulkarnaen (2023) further explained that impulsive behavior may emerge when children are not accustomed to acting independently from an early age. This is reinforced by Andhriana & Tanjung (2021), who found that an unsupportive environment significantly contributes to the increased risk of maladaptive behaviors. Thus, cultivating independence in young children not only encourages positive character formation but also prevents long-term negative outcomes.

In practice, many children still lack independence and tend to rely heavily on adults in their surroundings. Such dependency hinders the development of independence that should ideally emerge during early childhood, which in turn affects their overall developmental progress. Findings from observations, interviews, and questionnaires conducted in PAUD institutions in Agam Regency during the first semester of the 2024/2025 academic year showed that children's independence was not optimally developed. Learning activities remain heavily dominated by academic skills (CALISTUNG), while teachers tend to rely on lectures, and educational media are rarely utilized. Consequently, many children are unable to perform simple tasks such as opening lunch boxes, preparing materials, returning toys to their place, or fastening buttons. Questionnaire results also revealed that 85% of teachers require educational media that can effectively support the development of independence.

Fun Polly Games based on Practical Life activities offers an effective solution to enhance independence among early childhood learners in Agam Regency. As an engaging game-based learning medium, it allows children to practice independence in enjoyable and meaningful ways. Adapted from a simplified version of Monopoly, Fun Polly Games is designed to train children in making decisions through practical tasks such as managing resources and completing simple activities. The game encourages children to interact independently within their environment, thereby supporting the development of everyday life skills.

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A range of studies have shown that modified versions of Monopoly can effectively support various aspects of early childhood development, including religious behavior (Andini & Markamah, 2021), gross motor skills (Adawiyah et al., 2022), nationalism (A'nnisa et al., 2019), geometric recognition (Wartini et al., 2022), and courteous behavior (Asih & Maranatha, 2022). These games have also been shown to contribute positively to character building, social-emotional skills, and problem-solving abilities. Building on this evidence, the development of Fun Polly Games based on Practical Life is considered relevant and applicable for enhancing independence in young children through enjoyable learning experiences.

However, despite numerous studies confirming the effectiveness of Monopoly-based games for early childhood development, most have not integrated practical life learning that directly supports daily living activities. This study therefore introduces Fun Polly Games as an innovative medium that is not only engaging but also designed to comprehensively foster children's independence while aligning with the learning needs of PAUD institutions. The purpose of this study is to develop Practical Life-based Fun Polly Games as an effective instructional medium for promoting independence among early childhood learners in Agam Regency. Specifically, this research aims to: 1) identify the needs for developing Fun Polly Games to enhance independence in PAUD Agam; 2) design the development of Fun Polly Games; 3) develop Fun Polly Games as a Practical Life-based instructional medium; and 4) implement and evaluate the effectiveness of Fun Polly Games in improving children's independence.

## **RESEARCH METHODOLOGY**

### **Research Design**

This study employed a Research and Development (R&D) approach guided by the ADDIE model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The ADDIE framework was selected because of its systematic, iterative, and measurable nature, making it suitable for developing instructional media that is both pedagogically sound and effective for young learners. To strengthen methodological rigor, the study also adopted a mixed-methods approach that integrates qualitative and quantitative data to produce comprehensive and triangulated findings.

### **Participants and Research Context**

The research was conducted in several early childhood education (PAUD) institutions in Agam Regency, involving children aged five to six years, teachers, and expert validators. The participants were selected based on accessibility and their relevance to the development and testing of Practical Life-based learning media. Experts included early childhood education specialists, instructional media experts, and experienced PAUD practitioners who provided professional judgments during the validation process.

### **Data Collection Techniques**

Data were gathered through classroom observations, in-depth interviews, document review, expert validation sheets, and teacher response questionnaires. Observations were

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carried out to capture children's levels of independence and behavioral changes during the use of Fun Polly Games. Interviews with teachers provided insights into instructional challenges and children's readiness for independent learning. Validation sheets and questionnaires were used to assess feasibility, practicality, and content accuracy. All instruments were designed to capture rich qualitative insights as well as quantifiable evaluation scores.

### **Procedures**

The research began with the identification of learning needs related to children's independence. Observations and interviews revealed that a majority of children were still dependent on adults for daily tasks, while classroom practices were dominated by academic drills and lecture-based instruction. These findings informed the design of Fun Polly Games, which was developed to embed Practical Life activities into an engaging game format.

During the design stage, the researcher produced visual and conceptual plans for the game board, activity squares, instruction cards, and the overall flow of gameplay. The development stage involved producing the first prototype and refining it based on expert feedback. The implementation phase included small-group and large-group trials in authentic classroom settings, during which children's interactions with the media were closely examined. Teachers were encouraged to integrate the media into routine learning activities to evaluate its practicality and relevance.

### **Data Analysis**

Quantitative data were analyzed using descriptive statistics, specifically percentage calculations to determine the level of validity and feasibility of the media based on expert evaluations. An Independent Sample T-Test was employed to determine the effectiveness of Fun Polly Games by comparing children's independence before and after its implementation in the large-group trial. Qualitative data from observations, interviews, and open-ended questionnaire responses were analyzed using the Miles and Huberman model, which includes data reduction, data display, and conclusion drawing. The integration of both data types allowed for a deeper interpretation of how and why the media influenced children's independence.

### **Validity, Reliability, and Evaluation**

Validity was strengthened through expert review involving material, media, and practical usability assessments. Reliability was reinforced through repeated observations during field tests and triangulation across multiple sources of data. Evaluation occurred continuously throughout the development process, including formative evaluation during expert validation and prototype refinement, as well as summative evaluation based on the overall effectiveness of the media during field implementation.

## RESULTS AND DISCUSSION

## Results

## Needs Analysis Results

The needs analysis provided a comprehensive picture of the current state of independence learning in PAUD institutions in Agam Regency. Observations, teacher interviews, and questionnaires revealed that more than 70% of children aged five to six years were unable to perform three of the five key indicators of basic independence, which include tidying up learning materials, opening and closing food containers, and fastening buttons or zippers. This indicates a substantial performance gap between the expected competencies outlined in the Indonesian Early Childhood Development Standards (STPPA) and the reality observed in classrooms. In addition, approximately 65% of classroom learning time was still dominated by CALISTUNG activities, while less than 10% was allocated to Practical Life activities. A total of 85% of teachers reported lacking appropriate instructional media to facilitate independence learning. These findings served as the foundation for developing *Fun Polly Games* as an instructional solution.

## Design and Development Results

Based on the analysis phase, a prototype of *Fun Polly Games* was designed to consist of a  $50 \times 50$  cm acrylic board, twenty-five Practical Life activity squares, twenty activity instruction cards, a set of game pawns, and a dice. This prototype (Draft I) underwent a refinement process through expert validation, resulting in a revised prototype (Draft II) suitable for field testing.



Figure 1. Fun polly Product

## Expert Validation Results

**Table 1. Summary of Material Expert Validation**

Component Evaluated	Score (%)	Category
Content Feasibility	80.6%	Valid
Presentation Feasibility	85.4%	Highly Valid
<b>Total Validation</b>	<b>86.5%</b>	<b>Valid</b>

These results indicate that *Fun Polly Games* demonstrates strong material feasibility, with both content and presentation aligning well with the principles of independence

development in early childhood. The language, concepts, and illustrations were assessed as appropriate, although several aspects may still be refined for optimal clarity.

**Table 2. Summary of Media Expert Validation**

Component Evaluated	Score (%)	Category
Functional	86.67%	Valid
Usability	86.11%	Valid
Efficiency	89.58%	Highly Valid
Portability	87.50%	Valid
<b>Total Validation</b>	<b>87.50%</b>	<b>Valid</b>

The media is considered highly feasible across functional, usability, efficiency, and portability aspects. The game components including the board, cards, dice, and pawns meet visual, functional, and pedagogical standards, making them suitable for classroom learning activities.

**Table 3. Summary of Practicality Assessment by PAUD Teachers**

Aspect Evaluated	Score (%)	Category
Ease of Use	90.28%	Highly Practical
Attractiveness	89.58%	Highly Practical
Efficiency	91.67%	Highly Practical
<b>Total Practicality</b>	<b>90.48%</b>	<b>Highly Practical</b>

Teachers rated the media as highly practical, emphasizing that it is easy to use, visually engaging for children, efficient in preparation and storage, and simple to integrate into daily lesson plans. The media was also viewed as effective in supporting classroom management and monitoring children's independence development.

## Field Trial Results

### Small-Group Trial

Small-group implementation (n=5) showed that children quickly understood the rules, followed instructions, and performed Practical Life activities independently. These findings are consistent with Montessori theory, which states that young children learn most effectively through direct, hands-on experiences.

### Large-Group Trial

Large-group implementation (n=15) yielded stronger evidence of impact. Children demonstrated increased independence, improved turn-taking and cooperation, and heightened enthusiasm for task completion. Teachers reported that the media was practical, motivating, and easy to integrate into daily learning activities.

## Homogeneity Test

Table 3. Test of Homogeneity of Variances (*Pre-test and Post-test*)

Test	Levene Statistic	df1	df2	Sig.
Pre-test	0.002	1	32	0.966
Post-test	0.718	1	32	0.403

Both pre-test and post-test show  $\text{Sig.} > 0.05$ , indicating homogeneous variances.

### Mean Difference (Descriptive Statistics)

Table 4. Group Statistics

Test	Group	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	Control	15	60.80	10.452	2.699
Pre-test	Experiment	19	61.53	11.880	2.725
Post-test	Control	15	80.47	5.987	1.546
Post-test	Experiment	19	86.84	4.213	0.966

This shows that the experimental group achieved a considerably higher post-test mean score.

### Independent Sample T-Test

Table 5. Independent Samples Test

Test	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Pre-test	-0.465	32	0.645	-1.663	3.578
Post-test	<b>-3.512</b>	<b>32</b>	<b>0.000</b>	<b>-7.218</b>	1.518

The post-test  $\text{Sig. (2-tailed)}$  value of 0.000 ( $<0.05$ ) confirms a highly significant difference in independence between the experimental and control groups.

### Discussion

The results demonstrate that *Fun Polly Games* significantly enhances children's independence, supported by both descriptive improvements and statistical evidence ( $t = -3.512$ ;  $p = 0.000$ ). The substantial increase in the experimental group's post-test mean (86.84) compared to the control group (80.47) supports the effectiveness of integrating Practical Life-based learning within a play-based medium.

These findings are consistent with previous research indicating that independence in early childhood is influenced by opportunities for self-directed, hands-on learning (Suprihatin & Widyasari, 2023) and that the absence of these opportunities may lead to behavioral issues or delayed self-regulation (Aesti & Aryani, 2023; Ayu et al., 2023). Teachers' reliance on CALISTUNG-heavy instruction, as found in the needs analysis, is known to restrict children's autonomy, a pattern also highlighted by Andhriana & Tanjung (2021), who stated that unsupportive learning environments can hinder independence development.

The success of *Fun Polly Games* can also be attributed to its alignment with Montessori's Practical Life curriculum, which emphasizes real-life tasks such as care of self, care of the environment, and social relations. By embedding these activities into an interactive game, children were not only motivated but also placed in situations requiring decision-making, initiative-taking, and responsibility traits identified as crucial in early independence formation.

The significant improvement in socio-emotional independence, such as turn-taking and cooperation, aligns with studies on modified board games that promote social skills and

problem-solving (A'nnisa et al., 2019; Wartini et al., 2022). The narrowing of variance in the experimental group from 109.649 (pre-test) to 14.56 (post-test) further indicates that independence became more evenly distributed among children, suggesting that the media supports not only high achievers but also those initially struggling.

Overall, the results provide strong empirical support for the effectiveness of *Fun Polly Games* as a Practical Life-based educational intervention. The media is validated, practical, and responsive to the developmental needs of children aged 5–6 years, offering measurable gains in independence aligned with both pedagogical principles and local PAUD needs.

## CONCLUSION

Fun Polly Games has been proven to be a valid and effective learning medium for enhancing the independence of children aged 5–6 years, both in physical and socio-emotional aspects, as evidenced by expert validation and field observations. Its alignment with Montessori principles particularly Practical Life activities enables children to learn through meaningful, hands-on experiences, allowing independence to grow naturally and progressively. Positive responses from teachers further demonstrate that this medium meets the need for practical, engaging, and easily implementable learning tools without requiring complex training. The consistency between quantitative and qualitative findings reinforces the effectiveness of Fun Polly Games, indicating that it is highly suitable for broader implementation in early childhood education settings as an innovative medium for fostering young children's independence.

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