

Social-Emotional Development of Children from The Perspective of Ecological Systems Theory and School Readiness: A Participatory Action Research Case Study

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ABSTRACT

Teacher and parent involvement with children has been associated with a number of adaptive characteristics in preschool children, and the relationship between family and teacher is an important contributor to school readiness. This study reports a participatory, teacher-parent involvement case study approach designed to facilitate school readiness among disadvantaged preschool children, with a particular focus on social-emotional stimulation. The study aimed to extend the study of social-emotional development from ecological systems theory to the context of children's school readiness, stimulating (1) familiarity with the school environment, (2) adjustment, (3) displaying habits of independence and (4) helping behavior, and (5) tolerance. The study, conducted over a 12-month period, observed specific interpersonal competencies (i.e., attachment, initiative, and anxiety/withdrawal), in contrast, differences in the extent to which positive action was given to children experiencing behavioral problems (i.e., anger/aggression, self-control, or conduct problems) as a function of being prepared to be given action. With participants of the principal, group B teachers, who were willing to 44 children voluntarily participate in this study, Data for this study included field notes, non-participant and participant observations, curriculum documentation, focus group and individual interviews, reflective journals/diaries, and photovoice. Data were analyzed qualitatively and quantitatively using thematic analysis and narrative inquiry-based analysis. The contribution of this study can be used as input for policy makers, parents, PAUD teachers, and the community in Indonesia. The implications of this intervention appear to be very effective in building social-emotional competencies beyond the impacts experienced as a function of participation in the early school entry program. Limitations and implications for research can be reviewed for the future.

INTRODUCTION

From the moment of conception to the early stages of preschool, early childhood development occurs at a rate that surpasses any other stage of life. The first year of a child's life is a critical period for the formation of sensory-motor skills, early cognitive abilities, social-emotional development, self-regulation, and competencies that serve as the foundation for the child's initial adaptation to learning and absorbing during their first year, as well as understanding lifelong functioning (Shonkoff, 2001).

This evolving knowledge about life is essential to ensure the well-being of all young children, with social-emotional competence being a key component of early childhood development and school readiness (Sheridan, 2010). Interest in early childhood programs, particularly preschool,

has been increasing (Slicker, 2020), driven by the growing number of programs demonstrating evidence of the positive impact of early childhood education on children's short- and long-term outcomes in the United States (Yoshikawa, 2013). However, concerns about children's school readiness remain significant, particularly when considering the disparities prevalent among children in many communities in Indonesia. This disparity highlights how the skills children possess upon entering school affect their success in kindergarten (Snow, 2006). Research has identified the use of ecological systems theory, based on social-emotional development, as a lens to understand the impacts of interconnected factors such as poverty, low parental education, parental mental health issues, and living in linguistically isolated households. These factors present unique challenges for children's development (Zill, 2001), contributing to a gap in school readiness (Garcia, 2017).

Differences in initial performance in children's school progress do not simply disappear over time; in fact, achievement gaps between ethnic groups and among children from diverse backgrounds tend to widen as time goes on (R.C. Pianta, 2007). Therefore, it is crucial to stimulate social-emotional development through early learning experiences in various environments and support children's school readiness.

For the purpose of this study, we are particularly interested in one dimension of children's school readiness: social-emotional competence. The environments in which young children grow and develop, as well as the interactions and experiences they encounter during these formative years, shape the foundation for later stages of learning. This means that the first five years are filled with events, experiences, and relationships that either support or hinder a child's ability to benefit from ongoing and new opportunities while acquiring both basic and complex social-emotional and cognitive skills (Child, 2004). Thus, the level of a child's readiness to learn upon entering a formal school environment largely depends on what happens long before they enter school. Furthermore, we define school readiness for young children based on a range of developmental dimensions, including early childhood cognitive, physical, and social-emotional capacities and their reciprocal relationships. Research on pocketbooks and instructional guides for social-emotional development in early childhood remains limited, particularly among young children, teachers, and parents. Bronfenbrenner's ecological theory suggests that the factors influencing children's experiences before entering school and during the formative developmental years operate across multiple systems, including direct (microsystemic), interactional (mesosystem), and distal (meso- and macrosystemic) levels. By adopting an ecological perspective, our research conceptualizes school readiness for all children as (a) beginning at home, long before a child enters formal daycare or preschool, and (b) involving the relationships between children, families, and schools, as well as their interactions with one another (Mashburn, 2006). The concept of social-emotional development based on Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1979) is crucial for the current study. Specifically, we focus on one dimension of social-emotional development from the ecological systems theory of school readiness in early childhood using a praxiological approach with a participatory action research case study design.

In the context of children's social-emotional development from the perspective of Ecological Systems Theory and school readiness, particularly through participatory action

research case studies, this approach aligns with current understanding and best practices developed in this field.

This includes the latest theories, methodologies, and applications used to support and understand children's social-emotional development in the context of their readiness for school. Most previous research in this area has focused primarily on the child. Recent studies utilize Bronfenbrenner's Ecological Systems Theory as a framework to understand and support children's social-emotional development, examining how factors within various environmental systems (e.g., family, school, community) interact to influence their growth. This approach acknowledges that children grow and develop within interconnected systems, and their school readiness is shaped by the complex interactions among factors within these systems (Lake, 2018). There is an increasing use of participatory action research case studies in the study of social-emotional development and children's school readiness. This approach involves stakeholders in all stages of the research—from planning to implementation and evaluation—to ensure that the interventions developed are responsive to their actual needs. Recent research highlights the importance of developing social-emotional skills such as emotional awareness, emotion regulation, empathy, and social skills as part of school readiness (Weigel, 2006). There is strong evidence that fostering these skills contributes to the academic success and long-term well-being of young children. Community engagement and public policy play a vital role in supporting children's school readiness. Initiatives involving collaboration among schools, families, and community organizations, as well as integrating policies that promote children's holistic well-being, represent critical areas of innovation. The implementation of pocketbooks and rhombus card guides for children, teachers, and parents is a novel approach that reflects a significant shift in how we understand and support children's social-emotional development. By integrating innovative research methods, technology, and cross-sector collaboration, there is an increasing potential to develop interventions that are more effective and responsive to children's needs as they prepare for school.

METHOD

This study was conducted using data analyzed both qualitatively and quantitatively through thematic analysis and narrative inquiry, which involves a series of research activities followed up participatively (Widodo, 2015). The intervention utilized pocketbooks and rhombus card guidebooks. Findings from previous research highlight significant concerns regarding children's social-emotional readiness for school, particularly when considering common gaps among children, such as poverty, low parental education, parental mental health issues, and living in linguistically isolated environments. These factors present unique challenges to early childhood development (Muelle, 2010). The earlier studies, conducted in 2007 and 2010, focused on social-emotional competence. However, this study aims to further develop these findings by adopting ecological systems theory to understand how factors across various environmental systems (e.g., family, school, community) interact to influence children's development (Darling, 2007). This research identifies and analyzes the needs and design of pocketbooks and rhombus card guidebooks. The challenges addressed in this study were identified through direct observation and literature review. Sampling and data collection were

conducted using observation, interviews, documentation, and by socializing the design of pocketbooks and rhombus card guidebooks to teachers and parents in collaboration with early childhood education (PAUD) institutions.

RESULT

The results of the study and discussion will address: (a) the results of media development; (b) the feasibility of the media; (c) the effectiveness of the media; (d) the discussion of research findings.

1.1. Results of Developing Rhombus Playing Cards Media for Social-Emotional Development Based on Ecological Systems Theory in Children's School Readiness

This participatory action research case study was initiated by identifying the needs manifested as either strengths or limitations, which were addressed through innovative solutions aimed at creating practical, tested, and adaptable products. In the context of social-emotional development related to children's school readiness (Crawford, Snyder, & Adelson, 2020), this study produced a specific product based on findings from a series of trial processes. The steps and sequences were conducted in cycles defined by the researchers, referencing relevant theories.

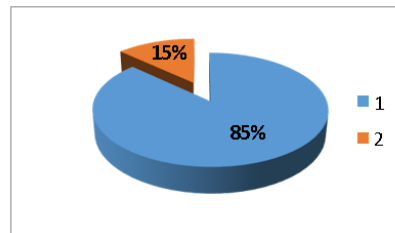
This participatory action research developed a media product in the form of rhombus playing cards and a guidebook focused on fostering social-emotional development to support school readiness, particularly in Raudhatul Athfal in Bekasi Regency, West Java Province. Thus, the ultimate goal of this study was to produce rhombus playing card media specifically oriented toward early childhood.

The results of participatory actions in media development are based on the obtained data and include the following descriptions:

1. **Preliminary Study Results:** This was conducted to gain an objective understanding of early childhood knowledge about social-emotional skills for school readiness, as well as the draft design of rhombus playing cards for social-emotional development in school readiness.
2. **Development of Rhombus Playing Cards Media:** The steps involved creating and refining the media to align with the study's objectives.
3. **Rhombus Playing Cards Media:** This focused on social-emotional development from the perspective of ecological systems theory in the context of school readiness.

The results of the needs analysis, conducted through interviews with twelve teachers, revealed that 85% of the teachers stated a need for a guidebook for rhombus playing cards as learning media, while 15% stated it was unnecessary.

1.2. A Guidebook for Teachers on Rhombus Playing Cards as Learning Media Social-Emotional Development Based on Ecological Systems Theory in School Readiness



Description:

1. Teachers who stated the need for a guidebook
2. Teachers who stated no need for a guidebook

Figure 1. Need for a Teacher's Guidebook for the Learning Model Using Children's Playing Cards Media

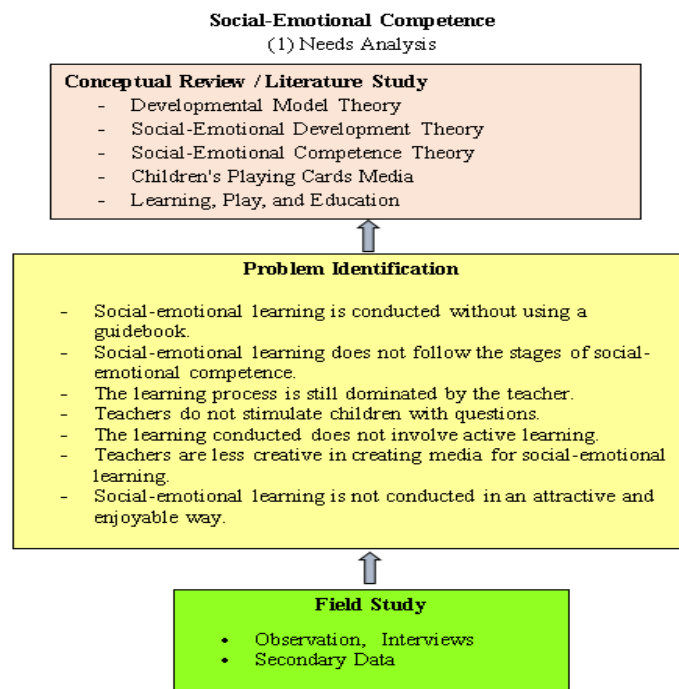


Figure 2

Flowchart of Needs Analysis for the Learning Model Using Children's Playing Cards Media to Enhance Social-Emotional Competence

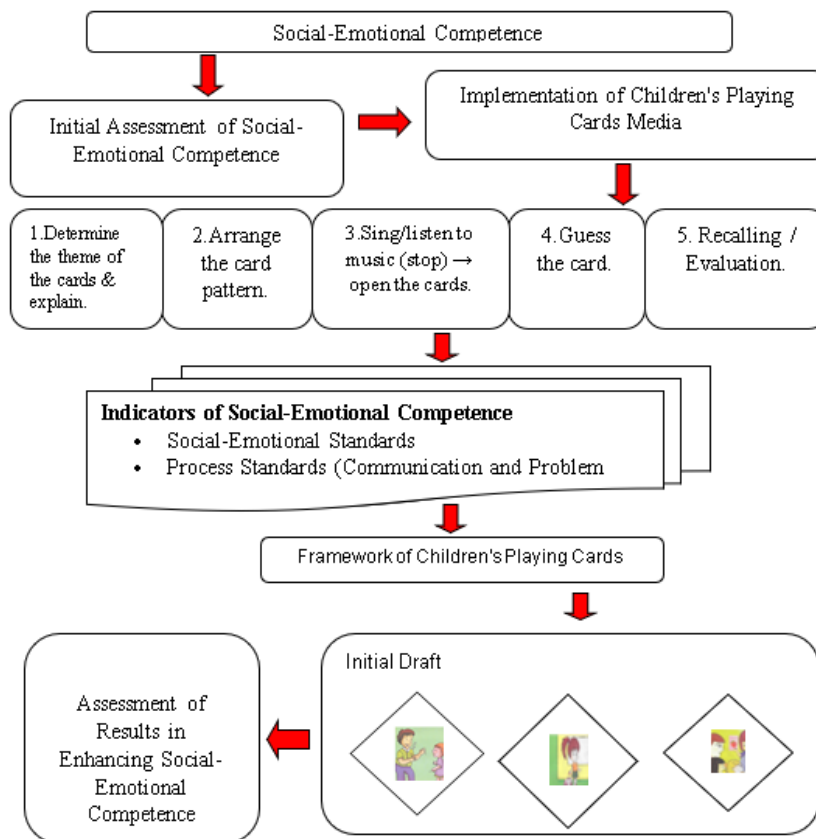


Figure 3

Table 1. Classification of Domain for Teachers and Children Aged 5-6 Years at Raudhatul Athfal Bekasi Regency**Classification of domains for teachers and children aged 5-6 years at Raudhatul Athfal, Bekasi Regency**

No	Domain	Teacher	Children Aged 5-6 Years
1	Intellectual Ability	<ol style="list-style-type: none"> 1. The teacher has limited understanding of social-emotional learning. 2. The teacher is not creative in creating enjoyable yet meaningful learning media for children aged 5-6 years. 3. The teacher does not provide social-emotional process skills for children. 	<ol style="list-style-type: none"> 1. Children are not sufficiently stimulated to behave curiously, such as asking about what they see, gathering information, and appreciating friends.. 2. Children are not sufficiently stimulated on how to adjust themselves, for example, with their peers, following school activities, and arriving at school on time. 3. Children are not sufficiently stimulated to show independent habits, such as being brave enough to enter the classroom alone, telling stories in front of the class, putting on shoes by themselves, etc. 4. Children are not sufficiently stimulated to show helping behavior, such as helping classmates, assisting the teacher, and helping their parents at home.
2	Verbal Information	<ol style="list-style-type: none"> 1. The teacher does not provide information about the social-emotional learning process in the classroom. 	<ol style="list-style-type: none"> 1. The child cannot answer the teacher's question because they do not know what is being asked or the child did not listen to what the teacher explained.
3	Kemampuan Afektif	<ol style="list-style-type: none"> 1. The teacher does not optimally stimulate the child's affective development. 	<ol style="list-style-type: none"> 1. The child is not optimally stimulated in their social-emotional development.

		2. The teacher lacks understanding of how to apply the connection between the learning process and the child's moral and social-emotional development.	
4	Interaction	<ol style="list-style-type: none"> 1. The teacher tends to provide individual learning. 2. The teacher tends to provide teacher-centered learning. 3. The teacher only uses a lecture method without engaging or attractive media. 	<ol style="list-style-type: none"> 1. The child is accustomed to individual learning. 2. The child is not involved in the learning process, so the child tends to be indifferent to what the teacher presents. 3. The lack of engaging and enjoyable media for the child makes them less motivated to participate in learning activities.

From the interviews with the teachers, it was also found that out of twelve teachers, none of them used media in the stages of teaching social-emotional development based on the ecological systems theory in school readiness. The teachers did not prepare the RPPH (lesson plans) when they wanted to conduct the learning activities; instead, they mostly used magazines or worksheets (LKA) during the learning process. Without using media, the teachers faced difficulties in delivering the material.

The teachers still have a level of competence that needs further education, as seen in the learning activities with the theme "My Environment (My School)." Some material was not effectively conveyed to the children because the teachers have not maximized the use of media as a tool to assist in the process of social-emotional development learning based on the ecological systems theory in school readiness.

The results of the needs analysis are then used to answer the questions in the research focus, which are: (1) how to develop the "belah ketupat" playing card media for social-emotional development based on the ecological systems theory in school readiness at Raudhatul Athfal Group B, Bekasi Regency, West Java Province; (2) what are the steps involved in the use of the developed "playing cards" media. belah ketupat” untuk The social-emotional development based on the ecological systems theory in school readiness at Raudhatul Athfal Group B, Bekasi Regency, West Java Province, so far, (3) how effective is the participatory action in the development of the "belah ketupat" playing card media for social-emotional development based on the ecological systems theory in school readiness at Raudhatul Athfal Group B, Bekasi Regency, West Java Province.

Based on the observations conducted by the researcher during March-April 2024 at several Raudhatul Athfal Group B in Bekasi Regency, including:

1. Raudhatul Athfal Az Zahra, Bekasi Regency, Tambun District

a) Objective Condition of Social-Emotional Development from the Ecological Systems Theory in School Readiness

Raudhatul Athfal Az Zahra is located at Jl. KH. Noer Ali Kalimalang Jatibaru RT 002 RW 01 No. 26, Setia Darma Village, South Tambun District, Bekasi Regency. It is one of the Raudhatul Athfal institutions with a relatively high number of students. This Raudhatul Athfal has been established for 26 years. On average, the children attending this Raudhatul Athfal come from the middle to upper economic class. For the 2024/2025 academic year, it has a parallel Group B with the groups divided into four, each group consisting of 12 students.

Meanwhile, based on the results of the review of the ongoing learning process, the researcher found that the learning conditions were still very conventional. Teachers are still familiar with using conventional media such as blackboards and several displayed media like blocks and pictures posted on the walls. The document analysis also showed that the evaluation results of social-emotional development from the ecological systems theory in school readiness revealed the issue of low social-emotional development in school readiness experienced by the children. There has been no effort from the teachers to develop a media that is more suited to the needs and problems they face in the field. Overall, the social-emotional development from the ecological systems theory in school readiness that has been happening at Raudhatul Athfal Az Zahra still needs to be improved and stimulated significantly in the social-emotional development and school readiness of the students. Therefore, the current learning conditions justify the need for the development of the "split diamond card play" learning media at Raudhatul Athfal Az Zahra to address the problem of low social-emotional development in school readiness for the students.

b) Results of the Needs Analysis for the Participatory Action of Split Diamond Card Play Learning Media

The needs analysis was conducted to assess the extent of the needs of Raudhatul Athfal Az Zahra regarding the development components of the split diamond card play media. The needs analysis was carried out alongside the analysis of the objective conditions with following the needs analysis instrument that includes 4 main components of the participatory action of the split diamond card play learning media: (1) the urgency of the learning media, (2) the teacher's guidebook for the split diamond card play media, (3) the split diamond card play learning media, and (4) the assessment of the results of social-emotional development from the ecological system theory in school readiness.

Based on these components, the criteria for the score levels of need for the split diamond card play learning media developed in this research were then established. The scores were created based on the needs analysis instrument that had been designed, taking into account each development component.

The urgency component of the learning media consists of 3 statements, with the lowest score being 1 and the highest score being 4. To determine the three criteria

(low, medium, and high need), the highest score is subtracted from the lowest score and then divided by the score criteria to be created. Similarly, the scores for the other components are determined based on the criteria scores, depending on the number of statements for each development component. For clarity, Table 1.2 presents the criteria for the level of need for the development of the split diamond card play learning media.

Table 2. Criteria for the Level of Need for the Development of Children's Play Card Learning Media

No	Development Aspect	Score	Criteria for Level of Need
1	Urgency of Learning Media	1 Until 1,99	Low
		2 Until 2,99	Medium
		3 Until 4	High
2	Guideline Book for Children's Play Card Learning Media	1 Until 1,99	Low
		2 Until 2,99	Medium
		3 Until 4	High
3	Children's Play Card Learning Media	1 Until 1,99	Low
		2 Until 2,99	Medium
		3 Until 4	High
4	Assessment of Learning Outcomes in Social-Emotional Skills for School Readiness	1 Until 1,99	Low
		2 Until 2,99	Medium
		3 Until 4	High

Referring to the score criteria for the level of need as presented in the table above, it is then used to analyze and determine the level of need for the media of the "kartu bermain belah ketupat" (diamond-shaped playing cards). Based on the criteria table, the level of need at Raudhatul Athfal Az Zahra for participatory action is

The "kartu bermain belah ketupat" learning media, overall, covers all development components and falls into the high category. In the urgency component of the learning media, a score of 3 was obtained; the guidebook for the "kartu bermain anak" media received a score of 4; the "kartu bermain belah ketupat" media scored 3; and the assessment of the results of social-emotional development from the ecological systems theory in school readiness received a score of 3.

The teachers of Group B at Raudhatul Athfal Az Zahra, in the urgency component of the learning media, have a high need, which reflects their orientation toward the development of the "kartu bermain belah ketupat" learning media. The teachers of Group B at Raudhatul Athfal Az Zahra agree that through this learning media, they will be able to address the issue of low social-emotional development based on the ecological systems theory in school readiness. They agree that learning media is the right way to solve the problem of low social-emotional development in the readiness for school, and they also agree that it is crucial to implement participatory action involving the learning media, including a guidebook, the media itself, and an assessment of social-emotional development based on the ecological systems theory in school readiness.

Next, in the participatory action component of the development of the teacher's guidebook for the "Belah Ketupat Playing Cards" educational media, teachers also expressed a high level of need based on the questionnaire results. They indicated several aspects that should be included in the guidebook. The high demand for certain development aspects in the guidebook is reflected in the teachers' opinions, such as agreeing on the specific learning objectives of the "Belah Ketupat Playing Cards" media to improve social-emotional development based on ecological systems theory in school readiness. They also agreed on the inclusion of criteria for the minimum mastery of social-emotional development, as well as the need for indicators of social-emotional development based on ecological systems theory in school readiness. Furthermore, there was an emphasis on the need for clear instructions on how to use the media, including materials and rules for applying the media, with step-by-step procedures. Teachers also highlighted the necessity for lesson plan examples that demonstrate how to implement the educational media, covering all the learning components comprehensively.

Meanwhile, when looking at the participatory action component of the development of the "Belah Ketupat Playing Cards" educational media, the teachers' needs, based on the questionnaire analysis, also fall under the high category. The teachers agree on the need for a participatory action in the development of the "Belah Ketupat Playing Cards" media in the form of 12 cards containing various materials in both images and written form. They also agree with the arrangement in a circular format and special organization by the teacher when implementing the "Belah Ketupat Playing Cards" media to address the issues. The low development of social-emotional skills based on the ecological systems theory in school readiness of the students is similarly addressed in the component of assessment of social-emotional development from the ecological systems theory in school readiness.

The teachers agree that assessments should be conducted at the beginning (pre-test) and at the end (post-test) of the learning process. They also agree that the assessment targets should include a series of indicators covering the learning materials, which include: (a) asking questions, (b) gathering information/discussing, (c) respecting a friend who is praying, (d) playing with friends, (e) arriving at school on time, (f) participating in school activities, (g) entering the classroom independently, (h) telling stories in front of the class, (i) using shoes independently, (j) helping classmates, (k) assisting the teacher in school, (l) helping the mother and father at home.

Based on the results of the needs analysis for Raudhatul Athfal Az Zahra regarding the participatory action for the development of the "Belah Ketupat Playing Cards" media, it can be concluded that Raudhatul Athfal Az Zahra requires the development of the "Belah Ketupat Playing Cards" media for social-emotional development from the ecological systems theory in school readiness. The components for media development consist of (1) the urgency of the learning media, (2) the guidebook for the "Belah Ketupat Playing Cards" media, (3) the media itself, and (4) the assessment of social-emotional development from the ecological systems

theory in school readiness. This needs analysis will serve as a basis for determining and developing the first draft of the "Belah Ketupat Playing Cards" media for social-emotional development based on the ecological systems theory in school readiness.

1. Raudhatul Athfal Al Munawwaroh Warung Bambu Cikarang

a. Objective Condition of Social-Emotional Development Learning Activities Based on Ecological Systems Theory in School Readiness

Raudhatul Athfal Al Munawwaroh Cikarang is an Islamic-themed Raudhatul Athfal located in a fairly dense village area, with a relatively large number of students. Every year, Raudhatul Athfal Al Munawwaroh serves two parallel classes for Group B, with one class for Group B1 and another for Group B2. For the 2024/2025 academic year, Raudhatul Athfal Al Munawwaroh has 12 students in Group B1, 13 students in Group B2, and 12 students in Group B3. These three groups are taught by three teachers.

Regarding the media used by the teachers to address children's weaknesses in the learning activities of social-emotional development from the ecological systems theory in school readiness, observations and interviews revealed that no specific media has been used. When children are unable to socialize or still need assistance from the teacher, or have not yet shown independent behavior. In performing tasks such as the material where children are able to put on their shoes independently, the teacher only handles it using conventional media, such as worksheets. This approach is ineffective because students only see pictures and color them, comparing them to inanimate objects as illustrations. Meanwhile, in understanding material, especially those with high levels of abstraction, children must engage their emotions and experiences fully. Therefore, the material they receive is not just about coloring, but it can be absorbed and understood at the level of conceptual development.

Based on the objective condition of the social-emotional development learning activities from the ecological systems theory in school readiness at RA Al Munawwaroh, as described above, there is a need for participatory actions to develop more productive and progressive learning media, such as the development of the "kartu bermain belah ketupat" (diamond-shaped playing card) media. Through this media, students will be fully involved. They will choose several cards that have been arranged in such a way, and they will not know the cards beforehand. When they open a card and it turns out to be correct, the students will feel very happy and enthusiastic. This will further motivate them to better understand the material and enjoy the concepts in the social-emotional development learning activities based on the ecological systems theory in school readiness.

b. Results of the Needs Analysis for Participatory Actions in the Development of the "Kartu Bermain Belah Ketupat" Learning Media

The needs analysis for the social-emotional development learning activities from the ecological systems theory in school readiness was conducted alongside the analysis of the objective conditions, following a needs analysis instrument containing

four main components of participatory actions for the development of the "Kartu Bermain Belah Ketupat" learning media, namely: (1) the urgency of the learning media, (2) the guidebook for the "Kartu Bermain Belah Ketupat" learning media, (3) the "Kartu Bermain Belah Ketupat" learning media itself, and (4) the assessment of the social-emotional development results from the ecological systems theory in school readiness.

Based on these components, the criteria for scoring the level of need for the "Kartu Bermain Belah Ketupat" learning media developed in this study were established. The scores were created based on the needs analysis instrument, taking into account each development component. The urgency component of the learning media consists of three statements, with the lowest score being 1 and the highest score being 4. To determine the three criteria (low, medium, and high needs), the highest score is subtracted from the lowest score and then divided by the score criteria to be made. The same approach is used to determine the scores for the other components, depending on the score criteria set based on the number of statements in each development component. For more clarity, the following Table 1.4 presents the criteria for the level of need for the participatory actions in developing the "Kartu Bermain Belah Ketupat" learning media.

Based on the table, the overall level of need for the development of the "Kartu Bermain Belah Ketupat" learning media at Al Munawwaroh is categorized as high, covering all development components. In the component of highly important learning media, a score of 3 was obtained; the guidebook for the "Kartu Bermain Belah Ketupat" learning media received a score of 4; the "Kartu Bermain Belah Ketupat" learning media itself received a score of 3; and the assessment results of the social-emotional development activities from the ecological systems theory in school readiness received a score of 3.

The B group teachers at Al Munawwaroh, in the highly important media component, have a high need, which reflects their orientation toward the development of the "Kartu Bermain Belah Ketupat" learning media. The B group teachers at Al Munawwaroh agree that through participatory actions, learning media will be able to address the issue of low social-emotional development outcomes from the ecological systems theory in school readiness thus far. They also agree that learning media is an effective way to resolve the issues of low social-emotional development outcomes and that it is essential to develop a participatory action plan for the "Kartu Bermain Belah Ketupat" learning media, including the guidebook, media, and assessment of social-emotional development activities from the ecological systems theory in school readiness.

Next, in the component of developing the guidebook for the "Kartu Bermain Belah Ketupat" media, the teachers also have a high level of need based on the survey results, which indicated that several aspects should be included in the guidebook. The high need for these development aspects in the guidebook is reflected in the teachers' opinions, agreeing that the media's goal should be specifically aimed at improving social-emotional development outcomes from the ecological systems theory in

school readiness for the students. They also agree on the inclusion of additional criteria for minimal completion of social-emotional development outcomes, the need for indicators of social-emotional development from the ecological systems theory in school readiness, instructions on how to use the media, including materials and rules for applying the media in a step-by-step manner, and examples of lesson plans on how to implement the learning media covering all components of the learning process.

Meanwhile, when reviewing the component of the "Kartu Bermain Belah Ketupat" learning media, the teachers' needs based on the survey analysis are also categorized as high. Teachers agree with the development of the "Kartu Bermain Belah Ketupat" media, which consists of 12 cards containing various materials, both in image and text form. Teachers also agree with the arrangement in the form of a circle and the specific organization by the teacher when implementing the media in the learning process.

The same applies to the component of assessing the results of social-emotional development activities based on the ecological systems theory in school readiness. Teachers agree that the assessment should be conducted at the beginning (pre-test) and at the end (post-test) of the learning process. They also agree that the assessment targets should include a range of indicators, covering learning materials such as: (a) Doing something by asking questions, (b) gathering information / discussing something observed, (c) being able to respect a friend who is praying, (d) being able to play together with friends, (e) arriving at school on time, (f) participating in school activities, (g) entering the classroom independently, (i) being able to tell a story in front of the class, (j) being able to wear shoes independently, (k) being able to help a friend, (l) being able to assist the teacher at school, and (m) being able to help both parents at home.

Based on the analysis of the needs of Al Munawwaroh regarding the participatory action of developing the "Kartu Bermain Belah Ketupat" learning media, it can be concluded that Al Munawwaroh requires the development of the "Kartu Bermain Belah Ketupat" media to improve social-emotional development outcomes based on the ecological systems theory in school readiness. The participatory development action components include (1) the urgency of the learning media, (2) the guidebook for the "Kartu Bermain Belah Ketupat" media, (3) the "Kartu Bermain Belah Ketupat" learning media, and (4) the assessment of social-emotional development results from the ecological systems theory in school readiness. The results of this needs analysis will serve as a basis for determining and developing the first draft of the "Kartu Bermain Belah Ketupat" learning media to enhance social-emotional development outcomes based on the ecological systems theory in school readiness.

The goal expected to be achieved by children after using the "Kartu Bermain Belah Ketupat" media is the development of social-emotional skills based on the ecological systems theory in school readiness.

a. Initial Assessment of Social-Emotional Development Based on the Ecological Systems Theory in School Readiness

The initial assessment of the social-emotional development outcomes based on the ecological systems theory in school readiness is conducted using an instrument that has been developed based on the constructs of the theory of social-emotional development outcomes in school readiness for children. The framework used to create this instrument is as follows:

Table 3
Instructions for Filling Out the Results of Social-Emotional Skills Activities

No	Aspect	Indicator	BSB (4)	BSH (3)	MB (2)	BB (1)	Number of Items
1	Curious Behavior	1.1. Does something by asking questions				√	2
		1.2. Collects information / discusses				√	2
		1.3. Able to respect friends who are praying				√	2
2	Ability to Adapt	2.1. Able to play with friends			√		2
		2.2. Arrives at school on time				√	2
		2.3. Participates in school activities			√		2
3	Independent Habits	3.1. Enters the class independently				√	2
		3.2. Able to tell a story in front of the class				√	2
		3.3. Able to wear shoes independently				√	2
4	Helping Behavior	4.1. Able to help friends			√		2
		4.2. Able to assist the teacher at school			√		2
		4.3. Able to help parents at home				√	2
Total							24

This table outlines the aspects, indicators, and the criteria for scoring social-emotional development activities, with a total of 24 items. Each indicator is assessed according to the levels (BSB, BSH, MB, and BB), and each aspect contributes to the final assessment.

Next, the assessment in this instrument uses a Likert scale rating interval with the following categories: score 1, which indicates "not developed," score 2, which indicates "beginning to develop," score 3, which indicates "developing as expected," and score 4, which indicates "developing very well." The instrument that has been created has

undergone validation by experts, including experts in Early Childhood Education (PAUD), Educational Media Experts, and Language Experts.

b. Determining the Indicators of Social-Emotional Development from the Ecological System Theory in School Readiness to Be Achieved by Students

The determination of indicators is carried out by the developer based on the results of the initial assessment of social-emotional development activities from the ecological system theory in school readiness. The results of social-emotional development from the ecological system theory in...School readiness can be determined from the results of the test instrument that has been prepared previously, following the scoring guidelines set in the assessment rubric. The results of social-emotional development from the ecological system theory in school readiness are the outcomes achieved by students after completing and selecting a number of images that match the before and after the students are given explanations and examples, which show their level of mastery of the material on social-emotional development from the ecological system theory in school readiness.

Furthermore, the aspects of social-emotional development activities from the ecological system theory in school readiness that have not been achieved, based on the criteria of completion that have been made, are set as targets to be improved when formulating the participatory action goals for developing the playing card media "belah ketupat" to enhance the outcomes of social-emotional development activities in school readiness.

- a. Applying the Belah Ketupat Playing Card Media
- The participatory action involves the developer designing the belah ketupat playing card media in the form of cards that have similar characteristics or levels from aspects such as images, words, or phrases based on the theme or goals to be achieved in the learning activity. In the context of social-emotional development activities from the ecological system theory in school readiness, the application of the belah ketupat playing card media is adjusted to the indicators of social-emotional development from the ecological system theory in school readiness that need to be enhanced in the learning process. These indicators will further determine the theme of the cards to be used; whether the cards will contain images and words or other images, depending on the scope of the indicators that are the target for learning and achievement in the lesson theme. Technically, the steps for implementing the belah ketupat playing card media in social-emotional development activities from the ecological system theory in school readiness are as follows:





1. Determining the Theme of the Cards

The theme of the cards is determined based on the material or content that will be delivered in the lesson. This content will be divided into 12 cards. The content is paired based on similarities in characteristics, patterns, shapes, and content criteria. For example, the theme in the social-emotional development activities for school readiness is demonstrating independent habits. Therefore, the cards can be categorized into images, with words explaining the image on the card. For example, "Entering the classroom on their own" could be represented by images of a girl and a boy entering the classroom without being accompanied by their parents, with words explaining the event depicted on the image, and so on for other words. Given that there are 12 cards and the theme describes

activities in the school environment, other images or instructions, such as the words "wearing shoes," should be matched **with relevant images**. The child who is wearing shoes on their own demonstrates the behavior of being able to wear shoes without assistance from others.

Below are the 12 cards with a theme that aligns with the content of social-emotional development from the ecological system theory in school readiness, according to the instruments used in this research, as shown in the following table.

Table 1.4
Children's Playing Cards According to Social-Emotional Skills Content

No	Aspect / Material	Example of Children's Playing Cards
1	Curiosity behavior	
2	: Ability to adapt	
3	Showing independent habits	
4	: Showing helping behavior	

2) Arranging the Card Pattern

At this stage, the teacher arranges the cards according to the play activity of the students present that day. Each card is placed on the table with the cards face down to spark the children's curiosity to guess the card arrangement based on the number of children present. The teacher explains the learning activity material and instructs the children to take one card each, following the rules of the game that have been agreed upon between the teacher and the students. The diamond-shaped card pattern consists of 8 diameters. The card pattern is adjusted to the play activities that are interconnected with the teacher's



instructions. The children listen to music while moving around the table. When the music stops, a child opens one of the cards in the pattern. The teacher can then determine which child will describe, demonstrate, or act out the image on the card accurately. For instance, if a card showing a child wearing their backpack independently is revealed, the child will take a backpack from the "magic box" and put it on without the teacher's assistance. The intended card pattern can be seen in the following illustration.

Arranging the Rhombus-Shaped Playing Card Media

Figure 1.4

Based on the figure, the cards are laid out in rows. The teacher arranges the cards in alignment with the number of children present. For example, 12 picture cards are placed based on the attendance of 12 children, then paired with another set of 12 identical picture cards placed in a parallel row. These rows must match exactly and should not be mixed to avoid errors when matching identical cards during the activity. This arrangement is essential to prevent mistakes when guessing matching picture cards during the implementation of this media for developing social-emotional skills and school readiness in children.

3) Distributing the Cards

After arranging the cards on the table, the children are instructed to listen to music and move around the table. When the music stops, the teacher selects a child to open a card and name what is shown on it. Once a card has been opened and the child names the picture on the card, the game continues, but the child is not allowed to open another card. The children are informed that the cards are not specially arranged to guarantee correct outcomes, fostering their engagement in the game while building trust in the fairness of the process. Through this card-playing activity, children actively participate in the game, which helps boost their confidence and belief that the cards are like any other regular cards but designed specifically for the activity.

The card placement technique can be observed in the image below.

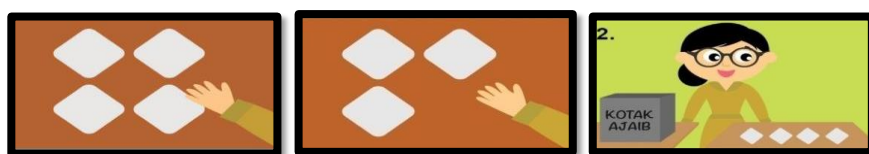
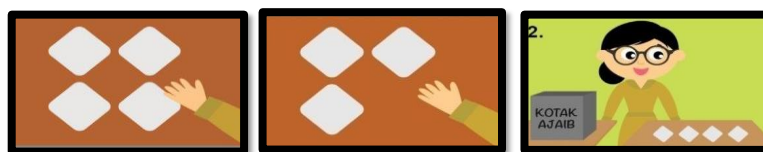


Figure 1.5.

Distributing the Diamond-Shaped Playing Card Media

Based on the image, the teacher instructs the children to pick cards with matching images, allowing them to choose cards from any position. A child can open a card and then search for its match in one attempt. If the images do not match, the child must wait for their next turn after all the other children have had their turns. The children must concentrate and remember the positions of the matching cards until all cards are revealed. Menyusun Posisi Kartu

Arranging the Card Positions The cards are arranged in a row, following a square/diamond-shaped pattern, with the cards aligned horizontally. Dengan demikian



Thus, the total number of cards is 14. The children are spread out following the pattern, where some cards are arranged seemingly at random, and the children must guess their locations. For a clearer view of the card positions, refer to the image below.

Figure 1.6.

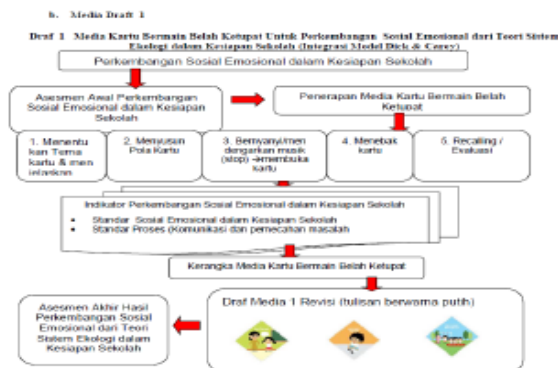
Arranging the Positions of Diamond-Shaped Playing Card Media

Based on the image, the children open a card and guess, show, or demonstrate what is depicted. The teacher guides or corrects the guesses made by the children, fostering curiosity and encouraging them to discover the correct matches among the cards. The teacher acts as a motivator, providing positive feedback to the children appropriately. This approach enhances the teacher's professionalism in the eyes of the students while keeping the children motivated to recognize the cards. In doing so, the children unconsciously learn the material on social-emotional skills as part of their school readiness activities....like playing a favorite game at home in their own settings.

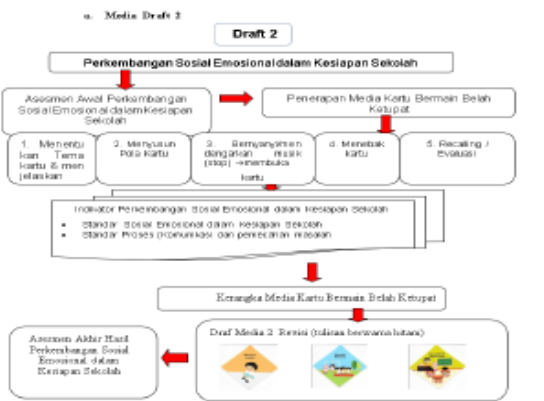
d) Assessment of Social-Emotional Development Activities Based on the Ecological Systems Theory in School Readiness

The final step in implementing the participatory action of using diamond-shaped card media for social-emotional development within the framework of ecological systems theory in school readiness is conducting a post-test assessment. This assessment aims to evaluate the outcomes of the social-emotional development activities. It serves to measure the effectiveness of the card media. Specifically, it examines whether the diamond-shaped card media significantly improves social-emotional development as theorized by the ecological systems approach in the context of school readiness.

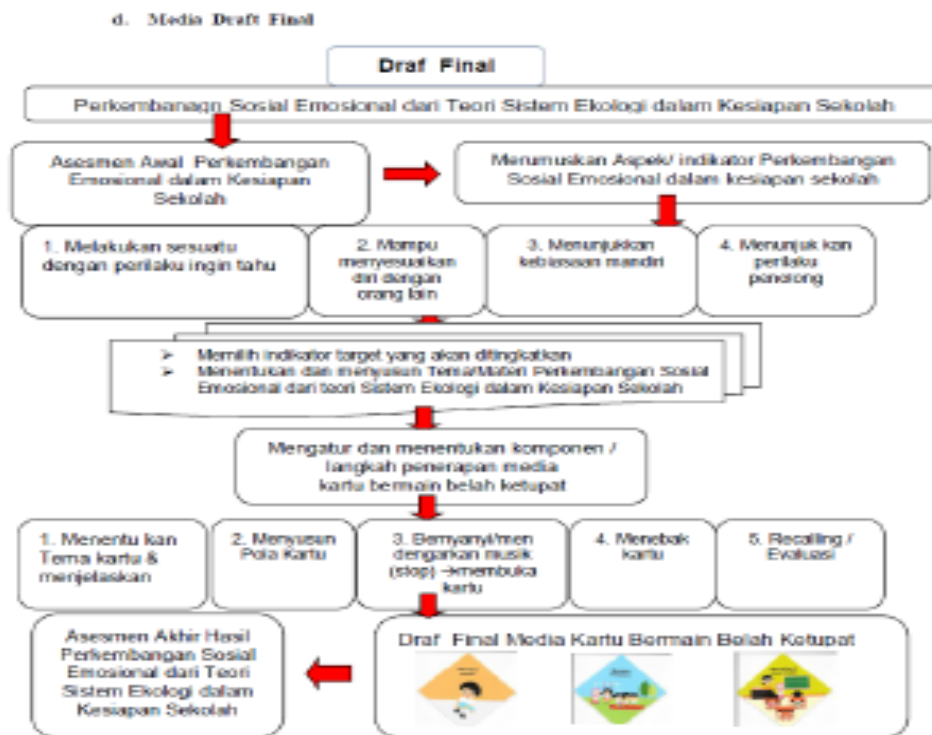
The assessment results are then used to identify aspects that need to be evaluated and improved for future sessions. The assessment is conducted at the end of the learning session using the diamond-shaped card media and employs the same test instruments as used in the initial assessment.



Gambar 4.6a. Bagian Draft 1 Media. Konsepual Media Kartu Bermain Belah Ketupat Untuk Perkembangan Sosial Emosional dari Teori Sistem Ekologi dalam Kesiapan Sekolah.



Gambar 4.6b. Bagian Draft 2 Media. Konsepual Media Kartu Bermain Belah Ketupat Untuk Perkembangan Sosial Emosional dari Teori Sistem Ekologi dalam Kesiapan Sekolah.



Gambar 1.6. Rupa Draf Final Media Konsep Media Kartu Bermain Belah Ketupat Untuk Perkembangan Sosial Emosional dari Teori Sistem Ekologi dalam Kesiapan Sekolah

1. Instrument Development

After completing the product development phase, the researcher determines specific learning objectives. The learning objective for this developmental research is to improve social-emotional skills in school readiness for Group B students at Raudhatul Athfal in Bekasi Regency. These learning objectives are derived from the identified issues faced by the children.

Before conducting the assessment phase to achieve the learning objectives, the researcher will develop instruments based on the theoretical construct of social-emotional skills in school readiness. The framework used to design the instrument for social-emotional skills in school readiness is presented in the table below:

Perkembangan sosial emosional dari teori system ekologi dalam kesiapan sekolah

No	Aspek	Indikator	Nomor butir	Jumlah
1	Perilaku ingin tahu	Melakukan sesuatu dengan bertanya	1,13	2
		Mengumpulkan informasi / berdiskusi	2,14	2
		Mampu menghargai teman yang sedang berbicara	3,15	2
2	Dapat menyesuaikan diri	Mampu bermain bersama teman	4,16	2
		Datang ke sekolah tepat waktu	5,17	2
		Mengikuti kegiatan di sekolah	6,18	2
3	Menunjukkan kebiasaan Mandiri	Masuk ke kelas dengan sendirinya	7,19	2
		Mampu bercerita di depan kelas	8,20	2
		Mampu menggunakan sepatu sendiri	9,21	2
4	Menunjukkan perilaku menolong	Mampu menolong sesama teman	10,22	2
		Mampu membantu ibu guru di sekolah	11,23	2
		Mampu membantu Ibu dan ayah di rumah	12,24	2
Total				24

Table 1.5..

Instrument Framework

After developing the instrument framework, the researcher conducts an assessment in the form of tests (pretest and posttest). The test consists of 24 statement items. These test items are used to evaluate whether there is an improvement in social-emotional skills in children's school readiness. The instrument used in assessing social-emotional skills in children's school readiness is evaluated using a scoring rubric with the criteria of: Very Well Developed (BSB), Developed as Expected (BSH), Just Developing (BB), and Not Yet Developed (BM).

1. Validation of the Social-Emotional Development Instrument Based on the Ecological Systems Theory in School Readiness

To evaluate the quality of the developed instrument, the researcher validated it with three experts:

1. **Dra. Sri Rahmatunnisa, M.Pd** – A lecturer specializing in early childhood education and an expert in social-emotional development at Muhammadiyah University Jakarta.
2. **Dr. Adiyati Fathurosonah, M.Pd** – A lecturer in early childhood education at Muhammadiyah University Jakarta and an expert in child and parental relationships.
3. **Dr. Anita Damayanti, M.Pd** – A faculty member at Muhammadiyah University Jakarta, currently serving as an assessor at BAN PT Jakarta.

The validation conducted by these experts aimed to assess the systematic structure and content of the material in each indicator of the instrument. Based on their evaluations, it was concluded that the instrument is feasible for use after revisions based on the experts' feedback.

The next step involved conducting a trial of the instrument at Al Munawwaroh. The trial results were analyzed to evaluate the validity of each item using Pearson's product-moment correlation test. The results of this instrument validation are presented in the table below:

Table 6

Hasil Uji Validasi Instrumen Perkembangan Sosial Emosional dari Teori Sistem Ekologi dalam Keterampilan Sekolah

Butir Pernyataan	Nomor Butir	r hitung	r tabel	Keterangan
Anak mampu menunjukkan dimana ruang kelasnya	1	0,44	0,632	Tidak Valid
Anak mampu mengamati ada berapa ruang di sekolah	2	0,79	0,632	Valid
Anak Mampu melakukan ibadah dengan tenang	3	0,74	0,632	Valid
Anak mampu bermain tali dengan teman lainnya	4	0,35	0,632	Tidak Valid
Anak mampu bermain tali dengan teman lainnya	5	0,84	0,632	Valid
Anak mampu datang ke sekolah pukul 7:00	6	0,52	0,632	Tidak Valid
Anak mampu bermain motorik mengisi ember dengan spons air	7	0,82	0,632	Valid
Anak mampu tidak menangi saat berpisah dengan orang tua	8	0,4	0,632	Tidak Valid
Anak mampu menunjukkan perilaku baik beracara sesungguhnya ke sekolah	9	0,38	0,632	Tidak Valid
Anak mampu menggunakan minitir seperti	10	0,74	0,632	Valid
Anak mampu menolong teman yang terjatuh	11	0,59	0,632	Tidak Valid
Anak mampu menyerahkan kelas di sekolah	12	0,68	0,632	Valid
Anak mampu menyapu lantai dan berbaris di rumah	13	0,71	0,632	Valid
Anak mampu menyajikan kempas hias ke sekolah	14	0,45	0,632	Tidak Valid
Anak mampu menjelaskan bagaimana menjaga lingkungan sekolah	15	0,54	0,632	Tidak Valid
Anak mampu tidak menangi pada saat di tempat ibadah	16	0,74	0,632	Valid
Anak mampu bermain pasir dengan teman lainnya	17	0,30	0,632	Tidak Valid
Anak mampu melakukan aktivitas sesuai cerita	18	0,87	0,632	Valid
Anak menunjukkan perilaku sedih saat berpisah dengan orang tua	19	0,11	0,632	Tidak Valid

				Valid
Anak mampu menceritakan pengalaman dari rumah ke sekolah secara sederhana	20	0,64	0,632	Valid
Anak mampu mengikat ludo tali sepatunya	21	0,72	0,632	Valid
Anak menunjukkan sikap tidak peduli ketika temannya jatuh	22	0,31	0,632	Tidak Valid
Anak menunjukkan cara merapikan buku di atas meja guru	23	0,67	0,632	Valid
Anak mampu beracris sesungguhnya membantu ibu / ayah di rumah	24	0,12	0,632	Tidak Valid

A. Feasibility of the Diamond-Shaped Card Game Media for Social-Emotional Development

In the feasibility stage of the model, the process involves validation and revision by experts as well as trials by respondents. The purpose of validation is to identify and understand the shortcomings and weaknesses of the developed media. The initial drafts through to the final draft of the media created were consulted and validated by experts in media learning, early childhood education, and language.

For the trial phase with children, it was conducted through individual trials, small group trials, large group trials, and effectiveness testing. For the finalization of the media, a review by peers was carried out to reassess and improve the media after revision. The validation and revision stages were adapted from the Dick & Carey model.

In testing the feasibility of the developed storybook media, the developer conducted both theoretical and empirical feasibility tests. The theoretical feasibility test was conducted through expert evaluation, which was assessed by three experts. Meanwhile, the empirical feasibility test was carried out with the target users of the card media product.

Child Play in Early Childhood at Raudhatul Athfal Group B in Bekasi Regency.

1. Theoretical Feasibility of the Media (Expert Feasibility Test)

After the final product design has been completed, the next step before field testing is the feasibility test by experts. This phase is carried out to obtain an assessment of the feasibility of the child card game media product from the experts. The feasibility is evaluated based on the results of the questionnaire with a rating scale of 1-4.

Subsequently, the scores from the expert questionnaire are analyzed using the following formula:

$$P = \frac{\sum xi}{\sum x} \times 100 \%$$

Keterangan :

P = Kelayakan

$\sum xi$ = Jumlah Jawaban Tertinggi

$\sum x$ = Jumlah Jawaban Penilaian

In the process of giving meaning and making decisions regarding the revision of the learning media that has been assessed by experts, the following qualifications will be used:

Presentase %	Kualifikasi Kelayakan
84% - 100%	Sangat Layak
68% - 84%	Layak
52% - 68%	Cukup Layak
36% - 52%	Kurang Layak
20% - 36%	Sangat Kurang Layak

In this expert feasibility testing phase, the developer received assessments and feedback from three experts. The experts providing assessments and feedback were: (1) Dr. Wawan Karsiwan, M.Pd, an Assessor from BAN PT and a lecturer in the Educational Technology program at the Universitas Muhammadiyah Bogor Raya, who provided feedback and assessment in the field of learning media development. (2) Dr. Desi Nurlillah, M.Pd, a lecturer at the Universitas Muhammadiyah Bogor Raya, an expert in Early Childhood Education (PAUD), who provided feedback and assessment on the feasibility of the playing card media product and its manual from the perspective of Early Childhood Development (AUD). (3) Nina, M.Pd, a lecturer at the Universitas Muhammadiyah Bogor Raya, a language expert who provided feedback and assessment on the language used in the media product.

developed. As a language expert, the results of the expert trial are explained in detail as follows.



1. Expert Validation and Revision a. Educational Media Expert



Dr. Wawan Karsiwan, M.Pd. is a practitioner and expert in educational technology, serving as a permanent lecturer in the Educational Technology Program at Universitas Muhammadiyah Bogor Raya. He was chosen by the researcher as the expert to validate the playing card learning media because of his experience in the field of educational technology, both in academia as an educator and in the field as a practitioner. He has conducted numerous training sessions and seminars related to educational technology as an expert in children's educational media. With his extensive experience, the researcher selected him to assess the playing card learning media, which will be used to enhance social-emotional development based on the ecological system theory in preparing children for school.

The evaluation was carried out by completing a questionnaire with 13 items of statements. The results of the questionnaire will then be calculated to determine the feasibility of the developed media. The calculation resulted in a score of 89%, indicating that this playing card media is feasible. According to him, overall, the playing card media is good, but there are a few suggestions that need to be addressed before the trial. His feedback will be explained in detail in the table below:

Table 7

Masukan dan Hasil Tindak Lanjut Ahli Media		
No	Masukan	Tindak lanjut
1.	Berikan tema, tujuan, petunjuk penggunaan di buku panduan	Peneliti sudah melakukan revisi dengan membuat sesuai masukan pakar
2.	Pada gambar di media tidak proporsional	Peneliti sudah melakukan revisi dan membuat sesuai masukan pakar
3.	Kualitas kertas dan tata letak gambar di buku panduan	Peneliti sudah melakukan revisi dengan mengganti kualitas kertas dan tata letak gambar yang proporsional
4.	Huruf pada tulisan di media tidak terlihat kontras	Peneliti sudah melakukan revisi dengan mengganti huruf tulisan dengan Font Arial hitam
5.	Ukuran kartu diperbesar	Peneliti sudah melakukan revisi dengan membuat kartu di perbesar
6.	Warna latar kartu agar disesuaikan dengan anak usia dini yaitu lebih cerahkan dan divariasikan lagi	Peneliti sudah melakukan revisi dengan membuat sesuai masukan pakar
7.	Tehnik pelekukan kartu agar sesuai dengan jangkauan anak	Peneliti sudah melakukan revisi dengan membuat sesuai masukan pakar

Sebelum Revisi	Sesudah Revisi
	
Tulisan pada kartu berwarna putih diubah menjadi warna hitam	

Sebelum Revisi	Sesudah Revisi
	
Tulisan pada cover buku pedoman diubah menjadi buku panduan Kartu Belah Ketupat	

b. Early Childhood Education Expert





Dr. Desi Nurlilah, M.Pd. is a practitioner and expert in early childhood education, serving as a permanent lecturer in the Early Childhood Education (PAUD) program at Universitas Muhammadiyah Bogor Raya. She was selected by the researcher as the expert to validate the playing card learning media due to her experience in early childhood education, both in academia as an educator and in the field as a practitioner.

The early childhood education expert evaluated the content of social-emotional skills in school readiness integrated with the media, as well as the suitability of the media with the characteristics of early childhood development. Out of the 8 questions in the instrument, all items were approved by the expert with a few notes for improvement on the playing card media. The results of the questionnaire, which were evaluated by her, were then calculated to determine the validity of the developed media product. The calculation resulted in a score of 79.44%, indicating that this children's playing card media is feasible and ready for field testing. In addition to calculating the results of the questionnaire evaluated by the early childhood education expert, the researcher has made revisions or improvements based on the feedback provided by her. The revision notes and the follow-up actions can be seen in the table below:

Table 8

Masukan dan Hasil Tindak Lanjut Ahli Anak Usia Dini

No	Masukan	Tindak lanjut
1.	Berikan tema, tujuan, petunjuk penggunaan di buku panduan	Peneliti sudah melakukan revisi dengan membuat sesuai masukan pakar
2.	Berikan ilustrasi gambar	Peneliti sudah melakukan revisi dan membuat sesuai masukan pakar
3.	Gambar media kartu bermain anak di buat lebih menarik agar anak tertarik	Peneliti sudah melakukan revisi dan membuat sesuai masukan pakar
4.	Buku panduan dibuat lebih sederhana dan tidak terlalu panjang	Peneliti sudah melakukan revisi dan membuat sesuai masukan pakar

Sebelum Revisi		Setelah Revisi	
			
Tulisan dan gambar kecil di revisi menjadi besar			

c. Linguistic Expert

Nina, M.Pd. is an expert in Indonesian language and literature. She currently serves as a lecturer in the Indonesian Language S1 program at Universitas Muhammadiyah Bogor Raya. Her involvement in the field of writing is unquestionable, as she has led several research projects in the fields of language and culture, both nationally and internationally. The expert validation conducted by the linguistic expert aimed to refine and validate the readability of the guidebook for the application of the children's playing card learning media, focusing on the vocabulary commonly used or those specifically intended for early childhood.

Similar to the early childhood education expert, the linguistic expert evaluated the media based on 11 items in the instrument for media validation. Out of all the items, the linguistic expert agreed with the language used in the guidebook with a few revisions. The evaluation results yielded a score of 78%. This result indicates that the media is feasible for use; however, there are numerous notes and suggestions that need to be revised for the improvement of the product before field testing. The detailed revision notes and suggestions are outlined in the table below:

Table 9**Masukan dan Hasil Tindak Lanjut Ahli Bahasa**

No	Masukan	Tindak lanjut
1.	bahasa yang digunakan sebaiknya disesuaikan dengan kompetensi guru pendidikan anak usia dini.	Peneliti sudah melakukan revisi dengan membuat sesuai masukan pakar
2.	langkah-langkah penerapan media diperjelas dengan menggunakan kata-kata yang lebih efektif dan operasional.	Peneliti sudah melakukan revisi dan membuat sesuai masukan pakar
3.	gambar perlu berwarna warni	Peneliti sudah melakukan revisi dan membuat sesuai masukan pakar
4.	Jenis huruf kurang menarik dan huruf terlalu kecil	Peneliti sudah melakukan revisi dan membuat sesuai masukan pakar
5.	Perlu diteliti kartu kata	Kartu ini adalah kartu bermain anak

1. Feasibility of the Model Empirically (User Feasibility Test)

a. One to One Trial

The one to one trial was conducted to assess the feasibility of the media after revisions made by the experts. The media feasibility test using the one to one method was carried out at Al Munawwaroh with 5 children from Group B. This trial was conducted to identify any issues, whether technical or related to the readability of the media. The product tested was the children's playing card media, which had undergone revisions by the experts.

From the results of this one to one trial, involving a small group of test subjects, several additional revisions were noted. The revisions and notes were obtained from interviews with the teacher and field observations. Some of the changes related to the children's interest in using the playing cards and the teacher's ease in delivering the material in the guidebook. The revisions included adjustments to the number of pages in the guidebook.

and image animation. The inputs and results of the revisions in this one to one trial can be seen in the table below:

Table 10**Masukan dan Hasil Revisi pada Uji Coba One to One**

Masukan	Hasil Tindak Lanjut
Pengurangan jumlah halaman pada buku panduan. Masukan ini diperoleh dari hasil catatan lapangan dan wawancara terhadap guru.	Hasil masukan sudah direvisi dimana jumlah halaman pada buku panduan sudah disederhanakan.
Media kartu bermain anak terlalu kecil	Hasil masukan sudah direvisi dimana jumlah media kartu bermain anak sudah diperbesar.

After the revisions were completed, the product resulting from the second draft of the one to one trial is now ready to be tested on a larger scale or through a small group trial. The playing card media product, which will be tested, consists of four playing activities with cards numbered 1 to 12.



Figure 1.7. One to One Trial Activities

b. Large Group Trial (Field Test)

After conducting the two previous trial stages, namely the one to one trial and the small group trial, the next stage, which is the final stage of the child playing card media trial, is the large group trial or field test. The purpose of this field test is essentially the same as the previous trials, which is to determine the effectiveness of the media's use on a larger scale, representing the users of the media, specifically Raudhatul Athfal Group B in Bekasi Regency.

This field test involved 22 children from two randomly selected RA Group B. The RA Group B samples for the study were Al Munawwaroh Cikarang and RA Al Ghaisani Cibitung. The first field test was conducted at Al Munawwaroh Cikarang, and the second field test at RA Al Ghaisani Tambun. In this field test, assessments in the form of pretests and posttests were conducted to evaluate the effectiveness of the developed media product. Additionally, data collection was carried out through interviews.

From the teacher interviews and field notes, several observations and suggestions for improving the media were obtained. The revised children's playing card media, based on the feedback from the field trial, is the final media for the participatory action of developing the diamond-shaped playing card media in Group B, Bekasi Regency.



Figure 1.8. First Field Trial Activity at RA Al Ghaisani Cibitung



Figure 1.9. Second Field Trial Activity at Al Munawwaroh

From the results of the field trial at Al Munawwaroh Cikarang, which was conducted by the researcher, no changes or revisions were made. This was based on the fact that the children appeared interested and were able to follow the game well until it was finished. When a review was conducted, the children were still able to remember key points from the theme of the card game activity that had been carried out that day. Another fact observed was the positive changes in the children's assessment results compared to the previous trial.

During the large group trial conducted at RA Al Ghaisani Cibitung by the class teacher, feedback was received regarding the illustrations and text on the media, which needed to be revised to better represent the theme.

1. Effectiveness of the Diamond-Shaped Card Game Media in Emotional and Social Development Based on the Ecological Systems Theory in School Readiness

The effectiveness of this children's card game media is assessed to determine how well the developed media can contribute to emotional and social development. The effectiveness of this media product can be observed from the assessment results obtained from the children's pretest and posttest scores. The assessment was conducted in three different schools with similar characteristics, chosen randomly. The results of the effectiveness test in these three RA (Raudhatul Athfal) schools in Bekasi Regency will be explained as follows:

2. Effectiveness Test in the Small Group Trial at RA. Az Zahra Tambun

The first effectiveness test was conducted at RA. Al Ghaisani Cibitung, with twelve children selected as the sample for the effectiveness test. The details of the pretest and posttest assessment results for the children at RA. Al Ghaisani can be seen in the table below:

Table 11

Nilai Pre Test dan Post Test Perkembangan Sosial Emosional dari Teoris Sitem Ekologi dalam Kesiapan Sekolah Anak RA. Al Ghaisani Cibitung

Pada Ujicoba Kelompok Kecil

No	Nama Anak	Pre Test	Post Test
1	NA	25	47
2	FA	24	29
3	MU	13	46
4	DE	17	43
5	SA	23	47
6	FZ	25	47
7	MS	17	45
8	MD	13	47
9	MH	25	45
10	NK	27	47
11	QA	25	48
12	IK	25	45

After obtaining the results from the pretest and posttest, the next step was to calculate the results to assess the initial and final assessments of social-emotional development based on the ecological systems theory in school readiness. The calculations were performed using Excel with the paired sample t-test formula, which is a two-sample test for paired data. A paired sample refers to the same subjects receiving different treatments.

From the paired test results at RA. Al Ghaisani, the calculated t value was 10.821, and the t table value was 2.201. Since the calculated t value was greater than the t table value ($t_{\text{calculated}} > t_{\text{table}}$), there is a significant difference, and the null hypothesis (HO) is rejected, or HO falls outside the acceptance region. Therefore, the alternative hypothesis

(H_i) is accepted. It can be concluded that there is a difference in social-emotional readiness for school before and after the children used the card game media. In other words, the use of the children's card game media has a positive impact on improving social-emotional readiness for school and contributes positively to learning at RA. Al Ghaisani Cibitung.

Effectiveness Test in the Large Group Trial at RA. Az Zahra Cibitung

The second school where the effectiveness test was conducted is RA. Az Zahra Cibitung. The number of children used as the sample for the trial was one class, consisting of 12 children. The assessment results from this effectiveness test are explained below:

Table 12

Nilai Pre Test dan Post Test Perkembangan Sosial Emosional dari Teori Sistem Ekologi dalam Kesiapan Sekolah di RA. Az Zahra pada Ujicoba Kelompok Besar

No	Nama Anak	NilaiPre Test	NilaiPost Test
1	AK	25	47
2	AL	12	31
3	AT	21	46
4	FA	21	45
5	JA	12	28
6	MU	12	29
7	AI	21	47
8	NA	21	47
9	QU	12	44
10	RA	12	31
11	RO	12	30
12	VA	25	47

The results of the pretest and posttest from the effectiveness test at RA Az Zahra mentioned above will then be calculated using the paired t-test formula. From the paired t-test results, a t-value of 15.750 and a t-table value of 2.201 were obtained, where t-count > t-table, indicating a significant difference or null hypothesis (H₀) is rejected. Since H₀ is rejected, the alternative hypothesis (H_i) is accepted. It can be concluded that there is a difference in social-emotional development readiness in children before and after the playing card media was introduced. In other words, the use of the "Belah Ketupat" playing card media can influence social-emotional development based on the ecological systems theory in school readiness and contribute positively to learning at RA Az Zahra Cibitung.

• Effectiveness Test in the Large Group Trial at Al Munawwaroh Cikarang

The third and final effectiveness test of the media product was conducted at Al Munawwaroh in the Cikarang district of Bekasi. For this effectiveness test, the researcher used a sample of 20 children, or one class. The results of the pretest and posttest can be seen in the table below:

Table 13

Nilai Pre Test dan Post Test Perilaku Prosocial
Di RA Al Munawwaroh pada Ujicoba Kelompok Besar

No	Nama Anak	Nilai Pre Test	Nilai Post Test
1	AL	25	47
2	DA	12	35
3	TU	20	46
4	HA	20	43
5	DN	23	47
6	FA	24	47
7	AZ	20	40
8	ZI	26	47
9	IC	24	45
10	BI	25	47
11	DZ	26	48
12	NU	20	45
13	TS	23	47
14	AG	24	47
15	RI	20	45
16	AT	26	47
17	FJ	24	45
18	WI	25	47
19	ZI	26	48
20	FR	20	45

To examine the difference in the results of the pre-assessment and post-assessment in the third effectiveness test at Al Munawwaroh, the researcher recalculated using the paired t-test formula with the help of Excel. From the paired t-test results, a t-value of 60.09 and a t-table value of 2.093 were obtained, where $t\text{-count} > t\text{-table}$, indicating a significant difference, so the null hypothesis (H_0) is rejected. Since H_0 is rejected and H_1 is accepted, it can be concluded that there is a difference in the social-emotional development results based on the ecological systems theory in school readiness before and after the introduction of the "Belah Ketupat" playing card media. In other words, the use of the "Belah Ketupat" playing card media can influence social-emotional development based on the ecological systems theory in school readiness and contribute positively to learning at Al Munawwaroh Cikarang.

The results of the effectiveness test at the three schools mentioned above demonstrate that the "Belah Ketupat" playing card media developed by the researcher significantly contributes to social-emotional development based on the ecological systems theory in school readiness for preschool children at RA Group B in Bekasi Regency. Therefore, it can be concluded that the process carried out in the participatory action of media development, as well as the results obtained from the application of the "Belah Ketupat" playing card media, meets the criteria of a good participatory learning media action, which is valid, practical, and effective to be used as an alternative learning media for social-emotional development based on the ecological systems theory in school readiness at RA Group B.

DISCUSSION

1. Product Development

The rapid development in early childhood education today is based on the fields of development and habituation, and the development of social-emotional knowledge, which includes habituation of routine activities, spontaneous activities, modeling, and programmed activities. Therefore, it is necessary to master the development of social-emotional skills based on ecological systems theory in school readiness from an early age. Social-emotional skills are fundamental abilities in social science. They serve as the foundation for understanding behaviors aimed at improving problem-solving skills. Problem-solving skills that are programmed through social-emotional development in school readiness must be practiced with children from an early age so that they have the basic skills to address and solve their problems wisely and appropriately, as well as prepare them for solving more complex problems in broader social contexts, such as in higher education.

Understanding social-emotional development in school readiness has not yet become a priority in the learning activities of early primary school groups. Social-emotional skills are still considered unnecessary to be taught to children, so the habituation that should be stimulated from an early age is often overlooked. Learning activities that have been conducted so far tend to merely fulfill curriculum requirements, rather than addressing the needs and interests of children as a foundation to build their capacity and skills in social-emotional development, which is crucial for future problem-solving strategies in their lives.

This phenomenon has a negative impact and has created a perception, both among teachers and children, that social-emotional knowledge is unnecessary because it relates to everyday activities. In reality, social-emotional learning can be measured by its success with students when developed using creative and attractive media. If this situation is left unaddressed, it will directly affect the low achievements of students in preparing their social-emotional skills for primary school. In addition, the lack of teacher mastery in various methods to improve social-emotional learning outcomes leads to a monotonous approach when handling issues in class due to children's inability to manage emotions and socialize. Based on observations conducted at several Raudhatul Athfal institutions in Bekasi Regency, the researcher found several problems, including: (a) the social-emotional learning media used by teachers still need to consider the social-emotional development of their students, (b) the intensity of media use and specific teaching techniques is very rare, (c) teachers often focus more on. teachers must be innovative in using learning resources optimally, and (d) teachers are still oriented toward teacher-centered learning that relies on one-way lectures, with limited active student participation.

The issues with social-emotional development learning activities based on the ecological systems theory in school readiness, as conducted by the teachers, also affect students' ability to engage in social activities within the classroom. Based on interviews with students, several challenges were identified, including: (a) students feeling excluded from learning activities, leading to very low motivation, (b) students becoming bored with the lessons because all materials are only focused on pre-existing magazines/books, (c)

students listening to explanations from teachers unilaterally while they are more motivated to explore certain learning techniques or play-based learning methods.

The development of the *kartu bermain belah ketupat* (diamond-shaped playing cards) media is based on the principle of a technique that involves pairing or matching one card with another based on certain characteristics. In practice, the social-emotional development in school readiness, as previously explained, will feature unique images across many cards. This way, students can directly apply what they see on the cards.

Thus, the *kartu bermain belah ketupat* media, with the cards as its main components, is very suitable for social-emotional learning in school readiness. The suitability refers to: (a) the theme/indicators and their operations being abstract for students; the playing cards can make the material more tangible by modifying the images and card-working techniques to stimulate students' visual understanding of the material, (b) students not being emotionally involved in learning activities; with the playing cards, students are engaged in determining which cards should be revealed or matched based on the images on the cards, which becomes a challenge for the students, and (c) students find it attractive because the learning source with the playing cards allows them to decide the game and then apply it through specific techniques.

As previously mentioned, learning media is a way to create patterns or design a learning process that is applied in a learning environment aligned with learning objectives. Considering the relevance of several instructional models as elements of the media to be developed in this research, the conceptual framework for social-emotional development learning media in school readiness with *kartu bermain belah ketupat* consists of: (1) Identifying and analyzing needs, (2) Analyzing the children's playing cards media, (3) Identifying the behaviors and initial characteristics of students, (4) Determining the content and designing a lesson plan for social-emotional development in school readiness using *kartu bermain belah ketupat* media, (5)...

Developing media draft 1, (6) Testing draft media 1, (7) Media revision (expert evaluation), (8) Testing media draft 2, (9) Revision of media for social-emotional development learning activities in school readiness with the *kartu bermain belah ketupat*, (10) Final media.

Based on the steps above, identifying and analyzing needs is intended to provide clear direction for the learning that will be designed. Next, analyzing the children's playing cards technique involves analyzing the possibilities for improvisation and modification of the media with the material and overall learning characteristics. From here, the initial characteristics and behaviors of the students can be identified. The characteristics of the students include social-emotional development outcomes based on the ecological systems theory of school readiness, learning styles, and motivation. This is important to accommodate the diversity of students in social-emotional learning activities in school readiness.

Next, determining the content and designing the lesson plan for social-emotional development in school readiness using children's playing cards media is an important step in learning, playing a key role in the implementation of the learning process. Subsequently, developing media draft 1, testing media draft 1, revising media (expert evaluation), testing media draft 2, and revising media for social-emotional development learning activities in school readiness using *kartu bermain belah ketupat* up to the final media are crucial steps that must be

taken to create a truly reliable media. Thus, through this social-emotional development learning media based on the ecological systems theory in school readiness using *kartu bermain belah ketupat*, the process and overall learning outcomes for students can be made more effective.

From the interviews conducted during the needs analysis, the responses from teachers and principals interviewed stated that the playing cards media for learning activities that the researcher developed should be equipped with a game guidebook, game media, and assessment of the children's attention skills. After several stages of media development, the *kartu bermain belah ketupat* media to improve social-emotional development learning outcomes based on the ecological systems theory of school readiness was evaluated as final.

The next crucial stage in the development of the *kartu bermain belah ketupat* media to enhance social-emotional development learning outcomes based on the ecological systems theory of school readiness is expert judgment. This process is undertaken to gather input from experts regarding the media developed by the researcher, as well as to validate its legitimacy. The feedback from experts on the media developed by the researcher was all positive, meaning that the *kartu bermain belah ketupat* media for improving social-emotional development learning outcomes based on the ecological systems theory in school readiness is suitable for development and use. The experts consulted included early childhood education experts, language experts, and media specialists.

1) Evaluation and Development Results

During the development process of the *kartu bermain belah ketupat* media for social-emotional development based on the ecological systems theory of school readiness, several improvements were made until it was considered final. These improvements were made following discussions and taking into account feedback from experts and practitioners. The goal of these improvements was to create an effective media.

The development process of the *kartu bermain belah ketupat* media for social-emotional development from the ecological systems theory in school readiness went through two stages of testing. Trial 1 (small-scale test) was conducted at Al Munawwaroh Cikarang. This trial involved 12 children. The location was chosen based on observations made during the preliminary study and reports from teachers and the school principal that the B group at this Raudhatul Athfal had children who exhibited low social-emotional skills. This was also confirmed by the results of the initial assessment of social-emotional development in school readiness.

Trial 1 was conducted to assess how the *kartu bermain belah ketupat* media for social-emotional development in school readiness could be implemented. The aim was to determine if the developed media was easy and practical for teachers to use. In addition, Trial 1 also aimed to assess the effectiveness of the developed media. Regarding the assessment of effectiveness, the researcher conducted both a pre-assessment and post-assessment.

a. Field Notes Results:

The children responded well to the developed media, as seen from their reactions during the trial process. Some children began to take the initiative to tell stories in front of their peers. Some children asked the teacher to provide them with the developed media.

During the review process, the children appeared to remember and repeat what they had learned from the card-playing activity they had completed.

b. Interview Results with Teachers:

The first interview was conducted with Mrs. Wiwiek after the one-to-one trial at Al Munawwaroh. The interview results indicated that the media was very good and could be used in teaching. According to the teacher, the children responded well and understood the content of the *kartu bermain belah ketupat* guide and cards. Mrs. Wiwiek's feedback from this one-to-one trial was minimal; she only requested that the developers reduce four aspects of the theme created for the card-playing activity.

The second interview was conducted at RA. Az Zahra with Mrs. Riri. According to Mrs. Riri, the developed media was very good, and such media had never been used before. The use of the theme of the environment (school) was a good idea, as it not only supported the social-emotional development of children based on the ecological systems theory of school readiness but also allowed children to practice independence, adapt to a new environment, and help others.

2) Interview Results

In this interview, the developer received feedback to change the images on the cards. According to the teacher, the illustrations on the cards did not fully represent the intended activity of the card game.

In this study, interviews with teachers were only conducted twice: once during the one-to-one trial at RA. Az Zahra and during the second field trial at Al Munawwaroh. No interviews were conducted during the small-group trial at Al Munawwaroh or the first field trial at RA. Al Ghaisani, as the media was used independently by the developer at the request of each school. The researcher discovered several facts: (1) the children showed interest in the interactive cards, (2) the children were able to explain what they had done using the *kartu bermain belah ketupat* media.

After conducting several trials, including one-to-one, small-group, and two large-group trials (field trials), the goal was to assess the effectiveness of the developed product. Additionally, the effectiveness of the media was assessed through field notes and interviews with teachers. After these stages, the development of the *kartu bermain belah ketupat* media was finalized. Further refinements were made, such as improving the printing quality, paper type, size, and colors.

Research Results

Several notes and outcomes from the first trial include:

1. The theme and indicators needed careful planning and deepening because the indicators to be achieved and the ongoing theme or material should match the cards to be used. If there was insufficient material to create 12 pairs or more, this tested the teacher's creativity in matching cards with other categories; this often posed a challenge for the teacher.

2. The physical design of the media needs to be more child-friendly, such as the color of the cards, the size of the cards, and the size of the images. If there is text, the font should be legible.
3. There was a significant difference between the pre-assessment and post-assessment results of the children's social-emotional development. Specifically, at Raudhatul Athfal Az Zahra, the average score before the *kartu bermain belah ketupat* was applied was 2.201, and after its application, the score increased to 15.75, indicating a significant improvement.

Following the first trial, the results were used to improve the media for the second trial (large-scale trial). The second trial focused on evaluating the effectiveness of the developed media and the improvement in children's social-emotional skills following the use of the media.

The second trial was conducted at two locations: Raudhatul Athfal Al Ghaisani Cibitung and Al Munawwaroh. The results of the second trial include:

1. Teachers gave positive feedback about the *kartu bermain belah ketupat* guidebook. They stated that the guidebook was easy to understand, so they did not face difficulties explaining the material using the media.
2. Teachers provided positive feedback about the test instruments for assessing social-emotional development, noting that the language was clear and the indicators were easy to use.
3. Teachers gave good feedback on the media consisting of 12 cards, finding the cards functional and attractive. The children were motivated to learn through play.
4. The assessment results showed an improvement in children's social-emotional development. At Raudhatul Athfal Al Ghaisani, the pre-test average score was 21.5, and the post-test average score was 48.5, representing a 23.26% increase. This indicates that the *kartu bermain belah ketupat* media improved learning outcomes.
5. At Al Munawwaroh, the pre-test average was 22.65, and the post-test average was 45.4, showing a 20% increase in children's social-emotional skills.

After the two rounds of field trials, the development of the *kartu bermain belah ketupat* media reached its final stage. Refinements were made, including improvements to the cover of the guidebook and using better quality paper. The materials used in the media were of high quality in terms of material, size, and color.

The final product of the developed attention-focus game media includes:

1. **Main Product:** *Kartu Bermain Belah Ketupat* Media
2. **Supporting Products:** a) Guidebook for Media Implementation b) Assessment of Social-Emotional Development Based on Ecological Systems Theory in School Readiness c) *Kartu Bermain Belah Ketupat* Media

After a long process of participatory action in developing the *kartu bermain belah ketupat* media for social-emotional development based on the ecological systems theory of school readiness, the researcher hopes this media will be a solution to help teachers address the challenges of low social-emotional development outcomes in early childhood education. The belief and determination are strong that with hard work, smart effort, and sincere intention, everything will come to fruition. Aamiin.

CONCLUSION

Early childhood social-emotional development is influenced by dynamic interactions between various layers of the environmental system. Key points include:

1. **Micro-System Influence:** The child's immediate environment, such as family, school, and peers, has a direct impact on social-emotional development. Warm, supportive, and consistent relationships between children and adults or peers encourage the ability to recognize, manage, and express emotions effectively.
2. **Meso-System Role:** Interactions between different elements of the micro-system, such as parent-teacher or parent-community relationships, play a crucial role in reinforcing children's social-emotional skills. Effective communication among these parties supports a conducive environment for social-emotional readiness.
3. **Ecosystem Influence:** Indirect factors such as education policies, social support programs, and media also contribute to social-emotional development. Community-based intervention programs involving parents, teachers, and community leaders enrich the child's ecosystem and support school readiness.
4. **Macro-System Role:** Cultural values, social norms, and educational policies significantly shape children's perceptions and strategies for social-emotional development. Emphasizing collective values and harmony in local culture often strengthens children's ability to collaborate, share, and respect others.
5. **School Readiness and Child Social-Emotional Skills:** Good social-emotional development supports children's readiness for school. Children who can manage emotions, demonstrate pro-social behavior, and build positive relationships are better able to adjust to learning activities and have more successful school experiences.
6. **Participatory Approach:** Involving various stakeholders, including children, parents, teachers, and communities, in research and interventions produces relevant and contextual approaches. This collaboration strengthens the support children receive from different aspects of their growing environment.

a. Practical Implications

This research emphasizes the importance of a holistic and collaborative approach to supporting children's social-emotional development. Interventions involving families, schools, and communities create an educational ecosystem that supports children's readiness to learn and participate actively in school. By considering the principles of ecological systems theory, educators, policymakers, and early childhood education practitioners can develop more effective strategies for facilitating optimal social-emotional development.

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