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Stimulating Strategy Higher Order Thinking Skills in Early Childhood Education by Utilizing Traditional Games

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ABSTRACT: The education system in the 21st century needs some transformation, particularly in terms of enhancing thinking skills. Traditional games that are well-designed can be an effective strategy for stimulating higher order thinking Skills (HOTS). This research aims to develop active and creative learning models by utilizing traditional games to stimulate HOTS in early childhood. The current study is included in the descriptive-qualitative research. Data was collected using offline and face-to-face interview techniques. 20 teachers took part in this research. The finding illustrates that HOTS can be stimulated from an early age with several conditions, including developing play and learning activities that are well managed, fun, and consider the interests of early childhood. Games that effectively stimulate HOTS such as *Dolanan Gatheng, Bekel Ball, Tuk Tuk Geni, Gotah Games, Gundu, and Congklak*. Children also need to carry out simple and fun science activities, so they are trained to think and act scientifically and systematically. There are several suggestions regarding opportunities for future research applications. This research only includes traditional games to stimulate HOTS. Other researchers may also consider other innovative methods or other kinds of games that are also effective for increasing HOTS in early childhood.

Keywords: higher order thinking skills, early childhood education, traditional games, active learning

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1 INTRODUCTION

In the realm of education, good thinking skills are considered one of the most important skills that all students need to have so that their memory is able to bear the tremendous amount of knowledge and information (Qasrawi & Beniabdelrahman, 2020). Thinking skills can affect a person's learning ability and effectiveness, so this becomes a fundamental aspect of the learning process and educational process (Heong et al., 2011). The development of thinking skills is considered a skill that can realize the goals of schools or educational institutions (Moon, 2007). Educators emphasize that thinking skills are critical and useful skills in almost all disciplines and occupations (Facione & Facione, 1996). Thinking skills have gained attention in studies related to investigating the competencies and attitudes of students (Hashemi & Ghanizadeh, 2012).

Previously, conventional learning methods that emphasized lower-order thinking skills were used (Asari et al., 2019). Lower-order thinking skills emphasize optimizing the ability to recall and memorize knowledge (Qasrawi & Beniabdelrahman, 2020). However, lessons that only focus on memorization are not enough to stimulate critical thinking skills and the ability to apply knowledge (Driana & Ernawati, 2019). Further, education in the 21st century requires understanding, creating, analyzing, applying, and evaluating that knowledge (Qasrawi & Beniabdelrahman, 2020). Therefore, to deal with changes in 21st century learning, it is necessary to enhance competence and thinking skills, particularly higher order thinking skills. Higher-order thinking skills are skills needed in the 21st century that focus on producing higher-order thinking outcomes (Asari et al., 2019).

High-order thinking skills are related to improving students' thinking skills at a higher level of knowledge, which derives from cognitive concepts and taxonomies such as the Bloom taxonomy (Suprpto et al., 2017). Cognitive processes in higher-order thinking skills have six objectives, which are: remember, understand, apply, analyze, evaluate, and create (Krathwohl, 2002). Nowadays, students need to be able to think highly, think critically, think creatively, and be independent in learning activities (Asari et al., 2019). The inclusion of higher-order thinking skills as a fundamental skill in the educational process in the 21st century is an innovation to develop critical and creative thinking (Heong et al., 2011). The ability to think in higher order is a skill that can be trained. This is supported by research from Resnick (1987), which found that many components of thinking are clearly teachable. HOTS are complex thinking processes that involve a group of elaborative mental activities (Resnick, 1987).

The learning and teaching process in Indonesia in recent years has begun to be integrated with higher-order thinking skills at every level of education and in all subjects (Kosasih et al., 2022). HOTS can be nurtured in elementary and secondary schools for students with diverse backgrounds as long as the school implements authentic learning (Preus, 2012). The value of higher-order thinking skills generalizes to all disciplines and fields of study, from the humanities to the experimental and technological sciences. Driana and Ernawati (2019) found that primary school teachers did not yet have a

comprehensive understanding of higher order thinking skills. Further, the higher-order thinking skills instrument developed by primary school teachers has good content validity, but there are differences in cognitive processes between teachers' perceptions and expert perceptions (Driana & Ernawati, 2019). Dima et al. (2021) investigated the implementation of HOTS in Indonesian senior high schools. The results revealed that teachers have a good understanding of the higher-order thinking skills concept and have implemented it in the teaching and learning process (Dima et al., 2021). However, the implementation has yet to be effective due to the lack of teacher competence and limited learning facilities (Dima et al., 2021).

The result of the discussion with early childhood education teachers (including playgroups and kindergartens) in Mataram (Pembina Gerung Kindergarten and Pembina Mataram Kindergarten), Bengkulu (Pembina Padang State Kindergarten), and Bandung (Pembina Bandung Kindergarten) indicated that the concept of HOTS in early childhood education had not been optimally and explicitly applied. The HOTS concept has started to be developed and applied, but this is not listed in the learning objectives. This condition is illustrated by the results of interviews with early childhood education teachers. Teachers or institutions do not yet have a strategic strategy, model, or method that can be utilized to stimulate HOTS in students. Teachers do not fully understand the concept of HOTS and their learning strategies. Kindergartens or institutions have excellent potential and are open to developing new learning models that can stimulate children's development, particularly higher order thinking skills. Assessment instruments used in kindergartens/ECCE institutions do not include assessments to assess students' higher order thinking skills.

Based on previous studies, the concept of HOTS applied by most schools or institutions in Indonesia has not been comprehensively understood and implemented optimally. HOTS have also not been explored in the context of early childhood education. Therefore, the objective of the current study is to develop an active learning model that can be applied to stimulate HOTS in early childhood. This study will identify conceptual forms of active learning models that can develop higher-order thinking skills, develop physical devices for learning models, analyze the effectiveness of the results of applying these active learning models, and analyze the effectiveness of higher-order thinking skills in early childhood after the active learning model is applied. This research is important and useful to be studied considering that early childhood education is the basis for a child to undergo education at a later stage, from elementary school to higher education. Moreover, this study can optimally stimulate HOTS in early childhood.

2 THEORETICAL STUDY

2.1 *Children's Higher Order Thinking Skills*

The strong relationship between learning outcomes and HOTS assessment results provides opportunities for students to become good thinkers (FitzPatrick & Schulz, 2015). HOTS are also needed to apply knowledge that has been learned, associate it with other

aspects outside of that knowledge, and solve problems by utilizing that knowledge (Thomas & Thorne, 2010). In order to support the development of higher-order thinking skills, the learning system used should be active learning (Anggraini et al., 2019). Unfortunately, there are still many educational institutions where, in the learning process, they still use the old learning method, in which only the teacher is active and the students are passive (Anggraini et al., 2019).

Based on the Law of the Republic of Indonesia Number 20 of 2003 concerning the national education system, early childhood education is the stage of education for children aged 0 to 6 years (JDIH BPK RI, 2003). Early childhood education is an educational stimulus for the physical and spiritual development of early childhood in order for the early childhood to be ready for entering further education (JDIH BPK RI, 2003). Early childhood education is a medium for improving basic abilities and developing good attitudes and behaviors in early childhood (Roza et al., 2019). UNESCO found that early childhood refers to the age period from birth to 8 years old, which is a critical period for children's brain development (UNESCO, 2023). In early childhood education, teachers have the greatest role in the learning process (Roza et al., 2019). According to Sujiono (2013), the objectives to be achieved from early childhood education are: (1) identify signs of physiological development in early childhood and utilize the results of these identifications for the physiological development of early childhood, (2) explore the development of early childhood creativity and encourage its development, (3) understand multiple intelligences in early childhood, (4) understand the functions and benefits of playing for early childhood development, and (5) understand the process of learning knowledge and how to utilize it for the development of young children.

One effective method for stimulating HOTS in early childhood is by introducing them to traditional games. Games classified as traditional are representations of local wisdom in an area that have been handed down through the generations (Tatminingsih, 2020). Most countries have their own set of traditional games. More than ten different traditional game types may exist in just one nation (Tatminingsih, 2020). A game's creator or the exact date it was invented and first played are mostly unknown. Traditional games are developed in response to local community habits or to depict the way of life at the time. Many traditional games contain good meanings and messages about life, including the importance of having the values of honesty, responsibility, solidarity, obeying rules, democracy, helping others, and other necessary values in life (Tatminingsih, 2019).

2.2 Traditional Games for Early Childhood Education and Their Higher Order Thinking Skills

Traditional games refer to games that are learned through culture (Kim & Choi, 2015). Traditional games have a different concept than modern games (Choi & Sohng, 2018). Traditional games have educational value, so they are widely utilized for learning activities and educational purposes (Sarana, 2019). Traditional games have varied topics, such as philosophies about life values, loving family, teamwork, respecting others (Batsaikhan & Kaye, 2017), social life, urbanity, and culture (Alizadeh et al., 2014).

Traditional games can be enjoyed by people of all ages, both men and women, young and elderly (Gold et al., 2015). Waller et al. (2017) concluded that traditional games can be employed for learning activities in the classroom, including early childhood education.

Traditional games that are well designed can generate cognitive processes, physical-motor development, attitudes, language skills, creativity, and social skills in early childhood (Ersan, 2017). Traditional games may also build early childhood thinking skills, particularly in areas such as distinguishing, comparing, identifying, sorting, analyzing, synthesizing, evaluating, and creating something new (Ersan, 2017). Therefore, it can be concluded that traditional games can effectively stimulate HOTS in early childhood.

3 METHOD

This research is included in the descriptive qualitative research. Qualitative research aims to gain a general understanding of social reality from the perspective of the participant's (Creswell, 2012). Data was collected using offline and face-to-face interview techniques. This research location covers four regions of Indonesia, which were chosen based on the considerations of researchers that in these locations there are early childhood education institutions that apply HOTS to their students. These four regions are Mataram (West Nusa Tenggara), Padang (West Sumatra), Bandung (West Java), and Jakarta (DKI Jakarta).

3.1 Respondents

The number of respondents in each region was five early childhood education teachers, so the number of informants who participated in this study was 20 informants. All informants have expressed their willingness to become informants willingly, without pressure, and without intervention in answering the questions asked. The data collected is in the form of voice recordings from interviews.

Table 1 showed that there were 20 teachers who were respondents in this research, and all these teachers were female. Respondents aged ≤ 25 years and 26-35 years had 7 respondents, respectively. Meanwhile, there were six respondents aged 36-45 years. Based on teachers' years of experience, most of the respondents had teaching experience of 3-5 years (10 respondents). Followed by respondents who have had teaching experience for > 10 years, as many as 5 respondents. Respondents who had teaching experience for 6-10 years were 3 respondents, and respondents who had teaching experience for < 3 years were 2 respondents. Regarding the education category, there are 12 respondents who are high school graduates, while the other 8 respondents have a bachelor's degree (S1). Furthermore, out of the 8 respondents who have a bachelor's degree, only one respondent has a bachelor's degree in early childhood education. Meanwhile, the other respondents consisted of 2 respondents with a degree in civil engineering, 1 respondent with a degree in Islamic religious education, 1 respondent with an undergraduate degree in elementary school education, and 3 respondents with a degree

in management. Of the 12 respondents who were high school graduates, there were 3 respondents who had early childhood education teacher certificates.

Table 1. Respondents' Demographic Profile

Category	Frequency (f)	Percentage (%)
Gender		
Male	20	100.0%
Female	0	0.0%
Total	20	100.0%
Age		
< 25 years	7	35.0%
26-35 years	7	35.0%
36-45 years	6	30.0%
Total	20	100.0%
Teachers' years of experience		
< 3 years	2	10.0%
3-5 years	10	50.0%
6-10 years	3	15.0%
> 10 years	5	25.0%
Total	20	100.0%
Education		
High school	12	60.0%
Bachelor's Degree (S1)	8	40.0%
Total	20	100.0%

3.2 Data Collection and Analysis

These data were then transcribed into words and analyzed using a descriptive qualitative analysis. Each informant's answer is grouped based on the similarity of the answer. Then, these answers were analyzed using a qualitative approach and explained descriptively.

Techniques, sources, and time were triangulated to validate research findings. Each piece of information is pertinent to the study topics and is intended to explore many facets of intercultural education, such as teacher participation, methods for implementation, and knowledge gained via local dance events. Peer debriefing and member verification were employed to ensure the correctness of the data collected and to give an explanation. Researchers also document information that departs from the main idea. Researchers do not compel codes to fall inside predefined categories. Peer debriefing facilitates the discussion of disparities that counter the themes and patterns found in the analysis of observational and interview data by researchers and outside sources.

Members could confirm the details the participants had supplied in the interviews, even though some of their answers were repeated. There won't be any more editing or interviews until the procedure is complete. The process of triangulating data involves researchers comparing information they have obtained from many sources or data-gathering techniques to one another. To uncover proof for the preliminary conclusions, the researcher reviewed all the collected data, including interview notes and transcripts. Researchers make sure their notes are extensive to facilitate transferability. Themes were

derived from the data gathering after the matrix was analysed and linkages were made within and between focus groups and categories.

3.3 Procedure

The strategy used in this research is the result of a modification of Harnadek's (2010), strategy to improve children's high order thinking. This research procedure also outlines the research steps that result in data analysis of the importance of traditional games being preserved and included in early childhood learning. Table 2 will show the modification of the strategy that became the instrument in collecting qualitative data for this research and the research steps.

Table 2. Learning Strategy for Children's Higher Order Thinking Skills

Learning Strategy	Procedure
Using practical methods to convey information and abilities to children	Children understand more easily and are enthusiastic if they adopt the teacher's point of view. In this research, teachers were asked to teach topics or themes of information that were relevant to the child's environment or were the subject of intense discussion.
Varying learning contexts	Teachers are asked to vary learning contexts, so that students can utilize new knowledge or skills in various contexts. Providing children with a variety of learning environments gives them the freedom to relate the context of the knowledge they are learning to a certain level of thinking. For example, providing knowledge about the health benefits of eating fruit. Introducing various types of fruit, giving students the opportunity to taste or describe the taste, and then explaining the health benefits of each fruit is the first step that teachers must take, not a direct explanation of the benefits of eating fruit. Because the learning process or learning environment is different at each level of the thinking process.
Optimize every opportunity to develop high-level thinking skills in all learning activities.	Teachers are asked by researchers to help children know and understand the background of various fields of science. Children will be introduced to various information and skills that are important to learn. Teachers should give children the information they need and ask questions that encourage their curiosity and problem-solving abilities.
Sort items into many categories	Teachers are asked to categorize objects into many groups, such as fruit or ice cream, to help children gain colour recognition.
The foundation of knowledge teaching has many facets.	Teachers are asked to encourage children to be able to make decisions during the learning process using several dimensions of thinking. For example, Teachers will discuss the difference between appropriate and inappropriate behaviour. The instructor will explain both aspects and provide examples throughout the session. After that, the teacher will ask the class to identify behaviours that can be classified as good or bad and then provide an explanation for their choice. When you want to convey the value of upholding cleanliness, the teacher will discuss the differences between consuming clean and dirty food and the implications. Children will also learn about stomach aches from the teacher
Encourage children to formulate simple theories in daily activities	Teachers are asked to encourage students to be able to guess what outcomes they can expect from the actions or choices they might take. Providing answers to children's questions about things like what would happen if they played in the rain and

	how to encourage friendship between friends can help develop their hypothesis-making skills.
Teach children to draw conclusions	Teachers must draw inferences starting by describing how a situation, event, or problem can occur, then show children how to draw conclusions and ask children to make their conclusions.
Check everything based on the child's learning components	When the teacher teaches reading, the teacher asks the class what the first letter of the word "mother" looks like and how to write it. Children learn how to analyse things, classify them, and relate them to what they already know with these learning exercises.
Children's ability to solve problems is being developed	Teachers need to plan problem-solving learning for young children according to the content and degree of teaching. For example, when children go camping, they can practice solving problems together, such as setting up a tent.
Teach children to consider many ways of thinking.	Early childhood teachers must use thinking skills to carry out learning activities. For example, they can urge children to consider the reasons behind rules, the consequences of breaking them, and the need to comply.

3.4 *Traditional Games Used in Research*

3.4.1 *Dolanan Gatheng*

Dolanan Gatheng is a traditional children's game usually played by girls, using pebbles as playing tools. The word *Gatheng* itself comes from the name of the toy stones of Raden Rangga, the son of Panembahan Senapati from Mataram in the 17th century. The players prepared five or more pebbles and then drew lots to determine who would play first. The player whose turn it is to play spreads the five pebbles on the floor in front of him and tries to throw the five pebbles at each other. Then the player takes one of the pebbles and then throws it up. Then the player takes one pebble and then throws it up. Simultaneously with the pebble thrown up, the player picks up one pebble, while catching the pebble thrown up. Until everything is taken, if not taken, and the pebbles thrown up fall to the floor, then that player is over, and the game is replaced by another player. However, if this stage is successful, then the five pebbles are spread out again, and when one of the pebbles is thrown up, he simultaneously picks up the two pebbles thrown up, he simultaneously picks up two pebbles, then the other two pebbles. Apart from training eye and hand coordination, this game also trains children's high-level thinking skills, because children must play with strategy.

3.4.2 *Stone hiding game (Umpet Batu)*

The game of Seek Stones in some places is also called the Guess the Stones game. Players are divided into two teams, with 3-10 players. Before playing, draw lots using suits. According to Betawi cultural observer, Yahya Andi Saputra, the game of *Umpet Batu* (Stone hiding game) is a strategy game. This game is usually played by two groups, each of which has a strategy. This game is a strategy so that children can avoid, seek, and survive disturbances in life. This game is good for children because children can apply strategies to face life in the future to be successful.

3.4.3 *The Games of Marbles (Gundu)*

The game of marbles is a type of traditional game that can be used as a medium for training children's abilities (Slamet, 2020). Children's abilities are closely related to society's culture, namely social abilities towards the environment (Aulia & Ngaisah, 2023). The traditional game of marbles is played in groups played by more than two people. All players compete to win the marble game by collecting lots of marbles, apart from that, players also need to play with each other to win the game. One of the unique things about the game of marbles is that the game is played together, but in the process of playing the players are sporty in competing individually. This can help children develop their social skills optimally through playing together.

3.4.4 *Traditional game Gotah (Rubber Band)*

The traditional game of *Gotah* is a game using rubber bands and is like the game of jumping rope. In this relationship, both use a rope made of rubber bands and jump to play. However, each region certainly has different names, steps, game rules, and benefits according to the guidelines used by each region in playing this *Gotah* game. The traditional game of *Gotah* in developing cognitive aspects will be trained when the child weaves colorful rubber bands (rubber bands) so the child can recognize colors when the child jumps five times which requires the child's ability to count, and also when the size of the rope gets higher the child will find, in this case, the child is learning to involve his ability to solve problems, think logically and also think symbolically.

3.4.5 *Traditional Tuk Tuk Geni Game*

The game '*Tuk Tuk Geni*' or also known as '*Nenek Gerondong*' is a traditional Indonesian game typical of the Betawi region. This game requires more than two players and can be played indoors or outdoors. This game tells the story of a poor grandmother who wants to take the children's sweet potatoes. The way to play it is also simple, namely there is one player who plays the role of grandma and is determined by *hompimpa* (how to vote). Then the other players sit in a row hugging the waist of the player in front of them. Usually, the front player hugs a tree or sturdy pole. During the game, the grandmother sings a song and is answered in unison by other players who act as the children of the sweet potato owners.

3.4.6 *Bekel Ball Traditional Game*

Bekelan is a traditional children's game that is usually played by girls. The equipment needed is a rubber ball the size of a ping pong ball, a lead that is shaped like a bean, small stones, marbles, or something else, the important thing is that it is the size that fits in your hand, five in number. This game has been around since ancient times. Several objects must be prepared beforehand, including *Bekel* balls, some small and large according to the size of the player's hand. Then, there are six seeds called *Bekel*. This game consists of several levels. The higher the level of the game, the more difficult and challenging the game will be. Starting from taking the *Bekel* seeds one by one to six at once.

3.4.7 Traditional Congklak Game

Congklak is already known in almost all regions of Indonesia, Toppers. Congklak is played using clam shells which are also called congklak seeds and a congklak board which has 16 holes. This game can only be played by two people. In total there are 98 congklak seeds which will later be filled in the holes of the congklak board. Determine who will go first by drawing lots, the winner will take all the seeds in one hole and fill the holes on the board one by one, from left to right. Until the seeds run out and take more seeds from the last place you put the seeds. And so on until someone has the largest number of seeds, and he wins.

4 RESULT AND DISCUSSION

The findings from this study found that early childhood education teachers use strategies to improve students' higher order thinking skills. Using traditional games proves that children can participate in traditional games that can bring up high-level thinking skills happily. Besides that, it is also to maintain the preservation of traditional games in early childhood. These strategies refer to learning activities that improve students' skills in terms of comparing, differentiating, identifying, checking/evaluating, grading, combining/classifying, disassembling/assembling, fantasizing, self-personification, making/building something, planning, and drawing a conclusion.

Table 3. Summary of Data Analyses

Aspect	Instruction of Traditional Games	Categories and Conclusion
Comparing	The activity asks children to compare traditional game media which pebbles are large, and which are small in the game <i>Dolanan Ghateng</i> or <i>Umpet Batu</i> . Children's activities to compare which is bigger or smaller between balls and marbles (<i>Gundu</i>).	
Differentiating	Activities for differentiation skills by asking children for rubber bands that have different colors, then asking children to differentiate and tell the color of the rubber in the traditional game <i>Gotah</i> (Game with colorful rubber bands) tell the color of the rubber.	1. Traditional games stimulate children's cognitive aspects and other developmental aspects
Identifying	Activities to identify various media on tools and materials for various traditional games such as <i>Bola Bekel</i> , <i>Congklak</i> , <i>Batu Umpet</i> , <i>Gotah</i> and others. Invite children to observe various traditional games through audio-visual media, then ask them to identify the characteristics of these traditional games.	2. Aspects of Higher Order Thinking in Children are Well Stimulated Through Teachers' Learning Strategies Based on Traditional Games
Checking/ evaluating	The teacher randomly gives assignments to children to play traditional games in groups and then asks the children to check and evaluate their friends' games.	
Grading	The teacher gives the children tools for playing <i>congklak</i> and places several <i>congklak</i> seeds in the first row full of <i>congklak</i> seeds, and in the second row there are few <i>congklak</i> seeds. and children were asked to judge which row was full of <i>congklak</i> seeds or few <i>congklak</i> seeds. Children are also asked to assess good or bad behavior in playing the <i>congklak</i> game.	
Combining/ Classifying	Activities to classify objects used in traditional games. Organizing various colored rubber bands, or classifying objects used for traditional play, so that children can easily use and access them when playing traditional games.	

Aspect	Instruction of Traditional Games	Categories and Conclusion
Disassembling/ Assembling	Children carry out dismantling and assembling activities when the teacher provides materials for traditional games such as making kites. Children can be asked to dismantle whole kites to use as examples and patterns, then children can be asked to assemble new kites.	
Fantasizing	This fantasy stimulating activity is carried out with the traditional game of guessing and counting letters, the ABC 5 Basics game. This game asks the child whose turn it is to name the city, country, title of a film, song, singer, name of their closest friends or their dreams.	
Self-personification	Activities that cover self-personification are carried out through traditional games such as the <i>Tuk Tuk Geni</i> game. This game is about children who must play the role of a poor grandmother who wants to take the children's sweet potatoes. The way to play it is also simple, namely there is one player who plays the role of grandma and is determined by <i>hompimpa</i> . The role of being a grandmother will alternate for each child who loses in this game.	
Making/building something	This building activity is based on a traditional game, namely the Typical Indonesian Sand House Game. This game asks children to make a house with sand or ground ash, like the picture above. In this game, children will create and design a house complete with living room, bedroom, bathroom, and kitchen. Each child builds his own house. After finishing, the children were asked to visit each other at our friends' houses which had been completed.	
Planning	This activity can also be carried out with the same activity in the game of building an earthen house, children are asked to plan about what house they want to draw. Teachers also carry out activities to teach children how to play in the maze of artificial sand houses.	
Drawing a Conclusion	Activities that ask children to briefly explain the traditional games they play and those presented by the teacher previously. Children talk about the activities they did on the weekend and listen to stories or fairy tales from their peers.	

4.1 Discussion

4.1.1 Traditional Games Stimulate Children's Cognitive Aspects and Other Developmental Aspects

This research found that early childhood education teachers in Indonesia are starting to use strategies suggested by Harnadek (2010) and which have been modified to improve HOTS in children. These strategies include, using a real-world approach in teaching students' knowledge and skills, varying learning contexts, so that students can utilize the new knowledge or skills in various contexts, optimizing every opportunity to develop HOTS in all learning activities, and educating students to think about thinking strategies. This study also found that early childhood education teachers use strategies to develop students' higher order thinking skills. The results of the interviews with the respondents showed that all respondents confirmed that HOTS can be stimulated from an early age. However, some respondents emphasized that there are requirements that need to be met to stimulate HOTS in early childhood. These requirements include developing play and learning activities that are well managed, fun, and consider the interests of early childhood. Teachers also need to develop effective and careful strategies for early

childhood, both in terms of free play and guided and structured play. The findings of the present study are compatible with a study by Hamdan (2020), which found that higher-order thinking skills in a person can be improved in various ways and strategies.

Traditional games have been proven to improve aspects of children's development, this is in line with the latest research by Astini et al., (2022); Iswinarti and Suminar (2019); Kamaruddin et al., 2023; Kamid et al., (2021); and Melianasari and Suparno (2018) which provides research results on traditional games which have quite a significant effect on various aspects of child development. This includes aspects of cognitive development related to children's higher order thinking skills, as in research by Hastiana and Daliman (2023), which shows that the types of traditional games that can improve children's cognitive development are *engklek*, *congklak*, *bekel balls*, *statak angka*, *oray-orayan*, and games in circles. Children may learn to identify issues, make decisions, plan, and identify the best solution by playing traditional Javanese games. Furthermore, compared to *bekelan*, *congklak lidi* and *sellentikan* were superior at helping school-age children's problem-solving abilities (Iswinarti & Suminar, 2019). Their findings suggest that traditional Javanese games might serve as a substitute medium for enhancing kids' problem-solving abilities.

4.1.2 *Aspects of Higher Order Thinking in Children are Well Stimulated Through Teachers' Learning Strategies Based on Traditional Games*

There are several types of games that can effectively stimulate HOTS in early childhood. Games that effectively stimulate HOTS in early childhood are *Dolanan Gatheng*, *Bekel Ball*, *Tuk Tuk Geni*, *Gotah Games*, and *Gundu*, and *Congklak*. Most of these games are constructive and can be assembled based on the imagination and thinking skills of early childhood. In addition, respondents also mentioned some traditional games such as hide-and-peek, fantasy gymnastics, and project-based games as games that can stimulate higher-order thinking skills. This indicates that the games used to stimulate HOTS are games that are open and free to play according to thinking skills, age, and what early childhood wants. This study also found that whether games can be used optimally or not to stimulate HOTS will be greatly influenced by the creativity of the teacher who teaches them.

According to Adi et al., (2021) teachers are sometimes reluctant to use additional resources to expand their expertise and instead rely on curricular materials to adapt traditional games. The suggestion is that to incorporate traditional games into the classroom, teachers need to learn more about early developmental characteristics and gain a better understanding of the games. The teacher's ability to modify traditional games to meet children's needs is the key to successful research on improving children's higher order thinking skills.

The quality of traditional games is shown by how well it matches the quality of the child when playing the game. The primary source for content from external sources that are modified without providing further context may be the Child Development Level Standards. The idea of how teachers create learning stimulation strategies using different

stimuli and variables in the main learning environment is a different problem, of course this requires a lot of training that will increase teacher competence in implementing various kinds of learning stimulation strategies.

Some respondents argued that the best strategy to optimally stimulate HOTS was to explore thinking skills through conversing while playing and after playing. Starting a conversation can also be done as a way to identify and analyse critical thinking skills from early childhood. Feriver et al. (2019) highlighted that a person's thinking skills can be identified through speaking. Questions that encourage deeper thinking, explore personal opinions, and use graded questions can be used to stimulate HOTS in early childhood. Another strategy that is considered the most effective for stimulating HOTS in early childhood is the scientific method, which is a method that applies scientific thinking. Early childhood also needs to carry out simple and fun science activities, so early childhood is trained to think and act scientifically and systematically.

5 CONCLUSION

The purpose of this study is to develop strategies to stimulate and implement high order thinking skills in early childhood education. Based on the findings of this study, most teachers use strategies to improve HOTS such as, using a real-world approach in teaching students' knowledge and skills. Varying learning contexts so that students can utilize the new knowledge or skills in various contexts. Optimizing every opportunity to develop HOTS in all learning activities. Educating students to think about thinking strategies. This study also found that early childhood education teachers use strategies to develop students' higher order thinking skills. These strategies are learning activities that improve students' skills in terms of comparing, differentiating, identifying, checking/evaluating, grading, combining/classifying, disassembling/assembling, fantasizing, self-personification, building something, planning, and drawing a conclusion. The resulting qualitative research categories include traditional games that stimulate children's cognitive aspects and other developmental aspects. Aspects of higher order thinking in children are well stimulated through traditional game-based teacher learning strategies.

The present study found that HOTS can be stimulated from an early age. However, there are several conditions that need to be met, including developing play and learning activities that are well managed, fun, and consider the interests of early childhood. Traditional Games that effectively stimulate HOTS in early childhood such as, *Dolanan Gatheng*, *Bekel Ball*, *Tuk Tuk Geni*, *Gotah Games*, and *Gundu*, and *Congklak*. Respondents also mentioned some traditional games, such as hide-and-peek, fantasy gymnastics, and project-based games, as games that can stimulate higher-order thinking skills. Starting a conversation can also be done to identify and analyze critical thinking skills from early childhood. Questions that encourage deeper thinking, explore personal opinions, and use graded questions can be used to stimulate HOTS in early childhood. Early childhood also needs to carry out simple and fun science activities, so they are trained to think and act scientifically and systematically. There are several suggestions

regarding opportunities for future research applications. This research only includes traditional games to stimulate higher order thinking skills. Other researchers may also consider other innovative methods or other kinds of games that are also effective for increasing HOTS in early childhood.

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