

Montessori Game Tools for Children Literacy

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ABSTRACT

This paper attempt to explore children literacy with Montessori game tools. An applicative form of the game to introduce the concept of literacy (words and numbers in early childhood, which adopted the concept of understanding of the Montessori's method. Discussing literacy is certainly endless, there are many activists. Not only because they want to be famous, but Indonesia 21st Century needs this literacy increase soon. We are aware, that we are accustomed to oral culture, so we forget that knowledge is inherited by written ties. Literacy, not only about literacy, but also about the reading and numerical culture that we need to instill in children in their golden age. Finally and perhaps study literature with Montessori game tools, let's hold hands together, realizing this country triumphs with civilized early literacy.

Keywords: *Children, literacy, Montessori game tools*

1. INTRODUCTION

Looking back at what appears in plain view or that escaped attention, that there are a lot of things that become critical issues in early childhood education care and parenting, namely the problem of literacy. As has been explained in the press release of the results of PISA 2018 that Indonesia's literacy rating is in the lowest condition (1). Not a comfortable thing of course. All parties are expected to improve. Especially in learning related to reading, mathematics and science which is included in the scope of literacy (2)

Like the message of the minister of education and culture, that education is not only in the classroom. It is not only the teacher who plays the role but also the parents and how they interact in the community. Some of the inequalities in literacy we find that the literacy ability of boys under girls (3), also the problem of limited literacy media that support the improvement which is of course closely related to economic problems where access to playing instruments in media literacy is closer to children of origin from middle class families while children from lower classes are less noticed (4)

A game with social sensitive pedagogy that adopts Montessori concepts in four areas of development including literacy in reading and mathematics by applying teaching in Early Childhood Education that is friendly to all groups, is able to shake the classic perspectives in society about practices and interactions in Early Childhood Education which are in fact influenced by children from middle class families (5). With the concept of a Montessori game tool that helps prepare students for new challenges presented by an increasingly globalized world, it is hoped that this will not only be applied to schools based on international standards, but also in public schools (6). This is to realize the mandate of the Indonesian Ministry of Education and Culture's strategic plan 2019-2024 which is expected to be able to compete internationally (7)

2. THE CONCEPT OF MONTESSORI GAME TOOLS

2.1 History of Montessori Approach

Maria Montessori was born in Chiaravalle, Italy. On 31 August 1870, she was the first female doctor of medicine in Italy who saw that early childhood development was a continuous development process (8) Montessori is very interested in educational problems of children who are classified as retarded. After graduating from medicine, he worked at the University of Rome Psychiatric clinic (9). Montessori made his first school in the slums in Rome in 1907, this school was called Casa Dei bambini which means children's home. The school is prepared for mentally handicapped children (10)

In 1909, Montessori published a book on Scientific Pedagogy as Applied to Child Education in the Children's House, as a manifestation of his great interest in children's education. Montessori thought slowly developed in several European countries and various other corners of the world (9). Maria Montessori died in the Netherlands in 1952 at the age of 81 years, and was succeeded by her son as director of the International Montessori Association headquartered in Amsterdam (11). Then the number of Montessori schools in the United States has increased dramatically in recent years, from one school in 1959 to 355 schools in 1970 to around 4,000 schools in 2005 (12)

Montessori learning model frees children to move, touch, manipulate and explore freely. The learning steps in the Montessori learning model consist of three steps (13), namely: 1. Steps show Example: While showing the sandpaper number 1, the teacher says, "this is one" as well as numbers, colors and others. 2. Steps to recognize Example: the teacher confuses sandpaper numbers, colors, letters or other things and says to the child, "take number one" 3. Steps to remember from the numbers, colors or letters sandpaper cards that have been confused, the teacher takes a card and ask, "What number is this? Or what color is this? Or what letter is this? "

2.2 General Concept of The Montessori Game Tools

Identifying, reviewing and evaluating Montessori education methods that have existed for more than 100 years. So, we should critically highlight why Montessori education is effective and how to modify its developments (14). Even in countries that are known for their advanced education such as Austria and Finland, in marginal schools teaching with the context of Montessori pedagogy is applied in the form of classes with diverse children's ages (15)

Without prejudice to the main concepts of the typical Montessori game tools in which literacy concepts in the interpretation of language, words, and symbols used in reading and mathematics in Montessori concepts use concrete and manipulative objects. The Montessori learning environment for children aged 3 to 6 years is generally divided into four basic areas (9,13,16,17):

1. Practical situation: practical life (daily life), this exercise is designed to teach children on work in the environment, not only with regard to homework, but also with regard to self-care skills such as tying shoelaces, planting and others.
2. Initial sensory: based on the senses (the material focuses on one or more senses), this exercise develops the five senses and prepares a basis for speech, writing and arithmetic using sensory materials.
3. Reading and writing: writing preparation is indirectly obtained by developing and stabilizing the senses of touch, sight and sound such as perfecting hand and finger movements.
4. Arithmetic: Children begin to be introduced to numbers from the age of 3 years (during the preparation of mathematics). Furthermore, at the age of 4 or 5-6 years children begin to learn numbers and symbols of numbers one to ten or up to twenty.

2.3 EARLY CHILDHOOD CARE EDUCATION AND PARENTING IN CHILDREN LITERACY

To realize the achievement of the children's literacy program, naturally there is a need for interrelated collaboration between schools, families and communities. Early Childhood Education Teachers are not only educators of children in schools, but more than that, their role as well as forming the best layers of society often goes unnoticed. Efforts to shift the gender construction discourse that has been built so far that the teacher early childhood education for women, so that when there is a male teacher it is identical with sissy, pedophiles and other abnormal blasphemies, but in this Montessori school the effort to avoid this bias continues to be encouraged (18). Many are found schools with the Montessori Method concept were also introduced to some free kindergartens, but they were more likely to be found in private kindergartens that were attended by middle class children (19).

In this Montessori learning concept which focuses on program services to children from poor families in America successfully refutes the theory that children from middle families are superior in academic achievement and include an interest in literacy (20). The concept of Montessori learning has a role in improving and equating the achievement of the quality of children's learning outcomes.

Variations in the concept of Montessori classrooms are also very diverse implementation, making the Montessori game tool very flexible. Allowed with the availability of all types of Montessori

game tools that tend to be commercial, or it could also be the availability of materials that exist in nature, meaning that it makes itself, no problem while the concept is the same (20).

Takwin said, in Maria Montessori's approach there was adult participation and assistance in children's learning (21). One method of teaching in the family is through concepts taught through games, such as Montessori mathematics and reading literacy (22). Literacy practices at home and school are often different, there are major similarities namely reading books aloud and math activities that are often ignored which are one of the most important ways to facilitate the development of children's literacy skills (23). The quality and responsiveness of the home environment of children aged 3-6 years have a profound effect on the child's language and literacy ability with which can foster well the child's early language and literacy habits early on (24).

Literacy activities that are carried out continuously and become a habit in the school, home, and community environment will make children's interest in literacy not only increase their interest or literacy abilities, but also foster a love for literacy in them (25). So the hope is to support all of this, fun media literacy game tools like the Montessori game are provided not only in the school environment, but also in the home and community environment.

2.4 FUN LITERACY WITH MONTESSORI GAME TOOLS

We should understand that literacy is not only a communication but also a sentence of instruction. Literacy practices such as verbal, listening and doing (26). There is also a relationship between behavioral regulations that are significantly predicted to lead to an increase in children's literacy and math literacy skills in early academic achievement and school readiness in kindergarten (25)

Montessori learning environments for children aged 3 to 6 years are generally divided into four basic areas: first, practical life (daily life). Second, based on the senses (the material focuses on one or more senses). Third, language. Fourth, mathematics. The implementation of Montessori game tools in all aspects of development shows a significant leap of improvement compared to only certain aspects or in other aspects is still conventional (9)

Montessori teaching aids function to explain or demonstrate a subject in learning that is adapted to the stage of child development, can also be used as a game tool so that children can learn while playing (5). In principle, this Montessori game tool is used in demonstrating a learning that uses real objects and actions to translate abstract ideas into concrete forms closest to the child's environment and gives the child freedom to explore as he wishes which has gradation, interesting, auto-education characteristics and auto-correction (15).

In the Montessori concept, the stages of learning mathematics literacy are carried out with the activity of buying and selling / playing coins, then using the red and blue rods, sand-paper numerals, association of number rods and numerals, spindle boxes (22)

The red and blue rods

After teaching arithmetic in this empirical style, Montessori goes on to more methodical exercises, with the learning material being one of a series of blocks that have been used in sensory education; that is, the series of ten bars that have been used for teaching about length. The parts are painted alternately or made into a union of red and blue stems as shown

Sandpaper Numerals

Next is to use the game tool "sandpaper numerals". This tool consists of cards whose numbers are made of sandpaper so that children can touch these numbers with their senses. Then, after the child touches the shape of the numbers on these sandpaper numerals, the child can represent his understanding of the shape of the numbers by writing them in fine sand or salt, as shown

Number Rods and Numerals

This activity is basically the same as the red and blue rods, it's just that in this activity the child is expected to be able to reach the indicator to sort numbers and match numbers with symbol numbers.

Spindle box

The next step is to practice with numbers. Linking graphic sign with identity / number. Montessori has designed two trays each divided into five small spaces. At the back of each room is placed a card that contains a number. The first tray numbers must be 0, 1, 2, 3, 4 and the second tray 5, 6, 7, 8, 9.

The training is clear; that is, putting in these spaces a number of objects that are equal to the number contained in the back of the space. We give children a variety of objects with the aim of making variations, but primarily we use wood chips in a form such that it is not easy to fall off the table. We put a number of these objects in front of the child whose job then is to arrange objects in the space provided, one piece of object in the room with the number one picture, and so on. When finished, bring the tray to the front and check the work together (18).

Montessori explained (22) that the sequence of introducing the concept of child numbers began as a logical extension of sensorial experiences that are familiar to children. Children who previously sorted 10 redwood logs by group / type also included a blue segment. Next follow the visual introduction and sensitivity to the symbol numbers (numbers with emery paper), then the child returns to activities with wooden sticks and connect the symbol numbers with the numbers.

Thus, in the same way, all Montessori mathematical material goes slowly from the real thing to the abstract as a form of physical embodiment of abstract concepts, or abstractions that are manifested in the form of play (27).

Furthermore, the concept of Montessori in literacy reading, children are taught to speak or speak any spoken language freely, then write first before learning to read. Because reading requires more skill than writing (28). Learning is done by writing preparation through the practice of daily life. Like pinning cotton balls, scooping up grains and other things that train the child's fine motor skills to strengthen the child's three fingers to hold the stationery.

If the child has been firmly holding the stationery, then go to the next step insets for design. The point is that the reading literacy concept of Montessori is a condition where children learn from concrete to abstract. Then introduced to the Large Moveable Alphabet (LMA) which is a form of letters made of wood, painted red and blue, consisting of 5 types of letters according to their pronunciation (18).

After the child can with this LMA, learning can then be continued with touch letters made of sandpaper. This game is also known as sandpaper letter which is similar to sandpaper numerals in math literacy games (29). Where the child first touches how the shape of the new letter and then write it in fine sand or salt. At this stage children are trained to write and are ready to use pencils. After the

child is able to write, give a word card so that the child also becomes accustomed to reading.

TABLE I. MONTESSORI GAME TOOLS FOR CHILDREN LITERACY

No	Montessori Game Tools for Children Literacy		
	Types	Math	Letter
1.	The red and blue rods	✓	
2.	Sandpaper Numerals	✓	
3.	Number rods and numerals	✓	
4.	Spindle box	✓	
5.	Sandpaper letter		✓
6.	Large movable alphabet		✓

Note: Table modified from (16)

Based on table 1, bring our paradigm how Montessori game tools helps learning difficulties in children literacy. All children need love, encouragement, support, and also for kids with learning difficulties in reading and numerical literacy, such positive reinforcement can help to ensure that they emerge with a strong sense of self-worth, confidence and determination to keep going even when things are tough.

3. CONCLUSION

The funding of research with this literature study demonstrate how the Montessori play a role in literacy practices for early childhood. Among them consist of literacy and mathematics. Montessori mathematical tool in its application using the senses and also the material of the maker is to use materials that are closest to the child's environment or the surrounding environment such as wood, sandpaper, sand, and others.

The embodiment of the practice of literacy with the Montessori game is if children now consider literacy as a habit which then makes love. The successor children whose generation is growing as a generation that is able to compete global. Thus, the benchmarks of a child's educational success in the millennial era are certainly inseparable from the trilogy collaboration of good synergy between school, family and community environment.

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