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IMPROVING EARLY CHILDHOOD'S ABILITY IN RECOGNIZING SYMBOLS OF NUMBER USING THE NUMBER CARD LEARNING MEDIA

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Abstract

This study seeks to find out the results of the Implementation of The Number Card Media Learning Model to Increase The Introduction of Number Symbols in Early Childhood. This research employed descriptive methodologies with a qualitative approach. The informants in the study comprised one ECE manager, two ECE educators, and eight ECE (PAUD) Mawar 1 students. Data collection approaches through interviews and observations. The study results indicated that the learning model using number cards can assist students develop as expected in their cognitive development specifically children can already recognize the symbol of numbers (numbers 1-10) and can already say the number symbol through the medium of number cards. With the medium of number cards, students look more interested in following the activities of recognizing the number symbol. The medium of number cards can facilitate the introduction of number symbols in early childhood.

Keywords: Early Childhood, Recognizing Symbols of Number Ability, Number Card Media

Abstrak

Tujuan penelitian ini yaitu untuk mengetahui hasil Implementasi Model Pembelajaran Media Kartu Angka Untuk Meningkatkan Pengenalan Lambang Bilangan Pada Anak Usia Dini. Penelitian ini menggunakan metode deskriptif dengan pendekatan kualitatif. Jumlah sampel dalam penelitian adalah satu orang pengelola PAUD, dua orang pendidik PAUD, dan delapan orang siswa PAUD Mawar 1. Teknik pengumpulan data melalui wawancara dan observasi. Dari hasil penelitian ditemukan bahwa model pembelajaran dengan kartu angka dapat membantu siswa berkembang sesuai harapan dalam pengembangan kognitifnya yaitu anak sudah dapat mengenal lambang bilangan (angka 1-10) dan sudah dapat menyebutkan lambang bilangan melalui media kartu angka. Dengan media kartu angka anak-anak terlihat lebih antusias dalam mengikuti kegiatan pengenalan lambang bilangan. Sehingga media kartu angka dapat membantu pengenalan lambang bilangan pada anak usia dini.

Kata kunci: Anak usia dini, Pengenalan lambang bilangan, Media Kartu Angka

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INTRODUCTION

Preschool education or early childhood education (ECE) is when children have not entered formal education. According to Hibama (In Isjoni, 2017), ECE is a service to children ranging from birth to the age of six years. The service provided is one of them through learning in school. Learning is a combination that is arranged, including human elements, materials, facilities, equipment, and procedures that affect each other to achieve the learning goals (Isjoni, 2017). Early childhood Learning is based on the development and growth of children so that children can develop aspects through religious, moral, social, emotional, language, cognitive, motor and artistic values.

In kindergarten, learning can take place in situations resembling daily life or in the context of the surrounding environment, which means that teaching materials must be tailored to the child's unique traits. Additionally, kindergarten learning should promote play-based learning or play-based learning so that children can experiment with a variety of activities and discover their inherent potential (see Aminah et al., 2020; Marliana et al., 2021; Nurhayati & Rumsari, 2020; Rosita et al., 2020; Yuliya et al., 2020). According to Badru Zaman (Rahayu et al., 2018), play naturally pushes youngsters to learn new things and develops their abilities spontaneously. Additionally, play is a critical component of the cognitive development of children. Thus, children require stimulation, which is provided by their physiological needs for growth and development.

According to Masitoh et al., cognitive development in preschool or playgroups allows for symbolic thinking; yet, thinking is still constrained by perception (Isjoni, 2017). Additionally, Inih et al. (2018) used smart bottle cap media to perform research on the cognitive elements of early infant development. Marliana et al. (2021) assert that hand movements can aid in the development of children's cognitive abilities. According to the research, instructors serve as motivators and are accountable for early childhood development in order for students to learn. Although their style of thinking remains rigid, they have begun to comprehend the concept of classification based on their relatively primitive comprehension. Teachers can incorporate types of play into their instruction.

To function properly, education requires learning media. Appropriate learning media are required to accomplish learning objectives effectively. The media utilized to build cognitive abilities must be differentiated according to the learning environment and learning goals. According to Soegeng Santoso, learning letters and numbers is the first step toward writing, counting, and writing; as well as practicing courage, honesty, trust, and creativity (Kamtini & Tanjung, 2005). As a result, we can see why the media must immerse children in their environment. It is critical for a child's future success that they learn to count. Before a youngster can comprehend numbers, he or she must develop an understanding of counting. Although the educational process may be challenging, youngsters will become accustomed to numbers with adult training. Elis Misyati found that children's capacity to recognize the symbols for the numbers 1-10 can be improved by the use of graphic number cards (Rahayu et al., 2018). Additionally, Sudaryanti stated that counting while exercising, counting things, counting above ten, counting while singing, and counting with fingers are all ways to introduce the symbol of numbers (Sudaryanti, 2006).

The introduction of numbers is the first skill that a child must acquire in order to master the fundamentals of math. While mathematics is an important subject to learn in early life, children's education does not put a priority on formula calculation. The number card is one of the lessons that is utilized. The number card is a thick rectangular card with a box on the back that carries a sign or symbol rather than a number. The benefits of memorizing this card include assisting the child's development in learning to count, assisting children in learning to identify colors, assisting children in learning to distinguish numbers, and assisting children in developing cognitively. Some of the students of PAUD Mawar 1 in the school year 2020/2021 still do not understand the symbol for numbers, which is due to a lack of engaging learning methodologies. PAUD Mawar group facilitates learning. A teacher will only assign tasks through the use of worksheets and media on the classroom's whiteboards. To avoid saturation and boredom during the learning process, an engaging learning strategy is necessary, one of which makes use of the medium of learning number cards while playing.

Early Childhood Education Concepts

Early childhood is defined by Bacharuddin Musthafa as a child between the ages of one and five years (Ahmad, 2016). Additionally, the Sub-Directorate of Early Childhood Education (PADU) defines early childhood as children between the ages of 0 and 6, i.e. children who have completed kindergarten. Early Childhood Education (ECE) is a type of education provided to children prior to their entry into primary education(Rahman et al., 2017). Early Childhood Education (PAUD) strives to create the groundwork for children to develop the attitudes, skills, and inventiveness required to adapt to their environment, as well as to prepare them for the next level of education. According to Elizabeth B. Hurlock, the principles of early childhood development are as follows: 1) development is concerned with change; 2) early development is more important than later development; 3) development is the result of the maturation and learning process; 4) predictable developmental patterns; 5) predictable developmental patterns have significant characteristics; 6) individual differences in each aspect of development; and 7) methodization in development (Ahmad, 2016). According to Hibama, ECE is a service to children ranging from birth to the age of six years (Isjoni, 2017). Then according to Rahman, Early Childhood Education is a deliberate and systematic effort carried out by educators 0-8 years to develop their potential optimally (Rahman et al., 2017). Early childhood education aims to develop the understanding and knowledge of parents and teachers, and parties related to education and development in early childhood.

Symbols of Number

The introduction of the number symbol is very important for early childhood. Many things around a child are related to the symbol of numbers. The number symbol is a basic aspect of mathematics (Sumardi et al., 2017). The number symbol is the ability to recognize the symbols of numbers (Balkis, 2019). Next number symbol is an abstract mathematical system or symbol to express a certain number or symbol of numbers used for enumeration and measurement (Satriana, 2013). Nevertheless, if the question is a natural or rational number, the answer is clear. There are several stages in helping to speed up the mastery of child numeracy. Susanto in Asiyah (2013) with these stages includes 1) The stage of mastery of the concept; 2) Transaction stage; and 3) The stage of recognition of the emblem. Furthermore, according to Luluk Asmawati (2014) said that for children aged 4-5 years, the ability to recognize the number symbol includes indicators pointing to the symbol of numbers 1-10, mimicking the symbol of numbers 1-10, and connecting / pairing number symbols with objects up to 10 (children are not told to write).

Number Card Learning Media

According to Gagne in Asiyah (2013) media is a variety of components in a child's environment that can encourage children to learn. Furthermore, According to Sudirman in Negara (2014) learning media functions including, a) to facilitate the learning process in the classroom; b)to increase the efficiency of the learning process; c) to maintain relevance between the subject matter with the purpose of learning; and d) to assist the concentration of learners in the learning process.

Lestari (2014) stated that number cards are manipulative game tools that contain replica images of an object around the child. Zaman (2009) argued that number cards contain numbers that children aged 5-6 years in the game to recognize the symbol of numbers and learn to count. Pujiati (2016) suggests that number card games are done with the following steps: 1) Children are grouped in small groups of 2-4 children each. All groups follow each round of the game. 2) The time of each round is approximately 10 minutes. 3) The teacher shows one of the cards the result or answer of a question or multiplication result. In the opinion of Aisyah in

Mufarizuddin (2017) advantages of Using Number Cards (Flashcard) consists of: 1) Can stimulate children to know numbers faster. 2) Make the child's interest stronger in mastering the concept of numbers. 3) Stimulates the child's intelligence and memory. 4) Able to develop cognitive abilities. 5) Have an excellent numeracy concept. 6) The child will develop all the potential that is in him. 7) Children will learn to know the order of numbers and understand the concept of numbers well. 8) Children will more easily understand the concept of addition and subtraction well by using images and objects. Disadvantages of Use of Number Cards (Flashcard): 1) Difficult to display motion in image media. 1) The costs incurred will be a lot if you want to make a better and more varied picture. 2) Various lesson units in image media should be designed so that it is not too much and boring for the child. 3) If not treated properly, the image media will be easily damaged and lost. 4) Requires creativity from a high teacher to provide innovation from image media so that it does not bore children. Cognitive is a thought process, which is the ability of individuals to connect, assess and consider an event or event. Cognitive processes related to various interests are primarily devoted to ideas and learning.

METHODS

This study use descriptive methods in conjunction with a qualitative approach. According to Sugiyono (2014), the research method are founded on post-positivism philosophy, which emphasizes the examination of natural objects (rather than experiments), with the researcher serving as a major instrument. Triangulating (mixed) data gathering procedures are used, inductive/qualitative data processing is used, and qualitative research outcomes emphasize meaning rather than generalization. Techniques for data collection included interviews and observations. According to Sugiyono (2014), the data source might be chosen purposefully, that is, with certain considerations and objectives in mind. In collecting the data, managers' education and role in ECE were chosen based on their involvement in the application of the learning curriculum in ECE. The study included one ECE (PAUD) manager, two PAUD instructors, and eight PAUD Mawar 1 pupils as informants. The informants above demonstrated how the model of learning number symbols through the use of number cards in early childhood is one of the learning models used in early childhood education to assist the children in memorizing the number symbol. The research took place at PAUD Mawar 1, Babakan Sagu Village, RT 01 RW 01, Cibeet Village, Ibun District, Bandung Regency.

RESULTS AND DISCUSSION

Result

According to the results of the interview with the manager of PAUD Mawar 1 with the initials P, the learning paradigm used at PAUD Mawar is based on groups with safe activities, in which children are divided into groups, often three groups with a maximum of five to six children in each group. Each group does a different activity. In the group learning model, educators utilize number cards to introduce the number symbol to children. The results of the learning model implemented in PAUD Mawar 1 through a group-based learning model in knowing the number symbol through the medium of this number card indicate that many children have attained indicators of child development in which children have developed according to expectations while engaging in learning activities, as well as when participating in the activity of knowing the number symbol, some children have begun to develop in knowing the number symbol/numbers. However, there are still children who have not completed developmental milestones or are considered underdeveloped. The obstacles encountered in the application of group learning models are a lack of educator security during learning activities, which results in children who have completed activities occasionally interfering with their friends, as well as other obstacles encountered during the learning process when using group learning models in

activities to teach children to recognize the number symbol, namely a lack of learning media used or prepared by children educators. The support factor received in implementing this group learning model is assistance from the Education Office in the form of Educational Game Tools (EGT), help from school donors, and support from educators in PAUD Mawar 1 in the form of increased human resources through higher education.

Additionally, the researchers conducted an interview with the second informant, Mrs E, as educator in PAUD Mawar 1, that the learning model used in PAUD mawar is a group-based model, however we occasionally use the Beyond Centers and Circle Time (BCCT) learning model as well, but the BCCT learning model is less effective when implemented." As a result, we frequently employ a group-based learning methodology. The planning process used by educators to implement a group-based learning model for introducing the number symbol to children begins with the educator creating a daily learning plan (DLP) that details the activities that will take place that day, which are, of course, organized around the group's ongoing theme, as well as the learning media that will be used by educators when introducing the number symbol to children." When imparting the number symbol to children, the medium of number cards is employed".

Following that, the researchers questioned the execution. Informant E stated that as for the implementation of introducing the number sign in early childhood through the medium of number cards and the group learning model, children are divided into many groups with varying activities. When the educator introduces the number symbol, she invites the child to take turns mentioning the number sign (number) on the number card. After mentioning the symbol for his number in the activity, the educator then instructs the kid to write the symbol for the number (number) stated on the number card. The results of the learning model used to introduce the number symbol in early childhood in PAUD Mawar 1 are still ineffective because there are still many children who have not reached the indicator of development or have not developed in their ability to recognize the number symbol.

Finally, respondent E discussed the obstacles encountered during the implementation of the learning model in introducing the number symbol to children in PAUD Mawar 1, specifically the limited learning media available to children, which results in children being less interested in the learning media used by educators; additionally, children become easily bored during activities. Regarding the other impediments, the youngster feels less concentrated while the activity is underway.

The researcher then conducted a final interview with the third informant, educators from PAUD Mawar 1 with the initials M, who stated that at PAUD Mawar 1, we use a group-based learning model, in which educators divide students into groups and provide safety activities throughout ongoing learning in order to organize children so they do not interfere with one another during activities. Additionally, it was communicated that the learning model for numbers in early childhood in PAUD Mawar 1 begins with educators from each group planning the day's activities; educators then prepare learning media to be used in the activity of introducing number symbols to children, which may include number card media or other media such as flannel boards and the whiteboard. According to respondent M, the application of the learning strategy in teaching the number sign to children in PAUD Mawar 1 begins with educators sorting children into three or more groups, each group containing between five and six children. The educator then invites the child to participate in activities that teach the child to recognize the number symbol; the educator mentions the number symbol or the number listed on the number card, and the child repeats the mention of the number symbol; if the educator is

teaching the child to recognize the number symbol using flannel board media, the educator asks the child to paste and sort the numbers 1 to 10 in the flannel board media.

Additionally, respondent M stated that the results obtained from the learning model for introducing the number symbol to children in PAUD Mawar 1, the group-based learning model is quite effective because, according to educators' assessments, children have begun to develop in their knowledge of the number symbol, but there are also children who are still not developing in this activity. Finally, respondent M stated that the obstacles educators face when using the group learning model to introduce numbers to children in PAUD Mawar 1 continue to be a lack of school-owned learning media, educators continue to lack strategies for the learning process, and the learning model used is always a group model, which can result in boredom in children's learning environment.

Along with conducting interviews with management and instructors, researchers observed eight pupils at PAUD Mawar 1 and made the following observations:

Table 1. Observation Results on The Development of Number Symbols in PAUD MAWAR 1 students

No	Name	Cognitive				Affective				Psychomotor			
		NYD	BD	DE	VWD	NYD	BD	DE	VWD	NYD	BD	DE	VWD
1	Arfa			V			V					V	
2	Revin		V			V						V	
3	Raya			V				V				V	
4	Zahra				V			V			V		
5	Siska				V				V			V	
6	Haikal		V				V					V	
7	Repina	V				V					V		
8	Nayla			V					V				V
Jumlah		1	2	3	2	2	2	2	2		2	5	1

Information:
NYD : Not yet developed
BD : Begin to Develop
DE : Develop as Expected
VWD : Very Well Developed

According to the data given in Table 1, Arfa has evolved cognitively as expected and has begun to develop in the affective domain. Arfa has also established the following psychomotor demands. Revin began development in the cognitive domain and has remained dormant in the affective domain, but has evolved normally in the psychomotor domain. Additionally, Raya has progressed as expected in terms of cognitive, affective, and psychomotor development. Following that, Zahra developed really well in the cognitive domain, as expected in the affective domain, and began to develop in the psychomotor domain.

Siska's development has progressed very well in the cognitive and affective domains and is progressing as expected in the psychomotor domain. Subsequent growth of Haikal began with cognitive and affective development but progressed predictably in the psychomotor domain. The subsequent development of Repina is still in its infancy in terms of cognitive and affective development, but has begun to mature in terms of psychomotor development. Nayla's

subsequent development has been consistent with expectations in terms of cognitive development and has been exceptional in terms of affective and psychomotor development. Thus, based on observations of eight children, it may be determined that students have developed as planned.

Discussion

Based on the results of the interviews and observations above regarding the learning model for recognizing the number symbol in early infancy through the use of number cards, it can be concluded that the learning model using number cards can assist children in developing normally. This, Sudirman believes, is consistent with the educational media's objectives includes: a) Facilitate the classroom learning process; b) Increase the efficiency of the learning process; c) Keep the subject matter relevant to the aim of learning; and d) Assist learners' concentration during the learning process (Negara, 2014). Additionally, Zaman (2009) stated that children aged 5-6 years old utilize number cards in the game to learn to recognize the symbol for numbers and to count. The learning method used in school through the use of number cards enables children to quickly understand the sign for numbers, ensuring that children develop appropriately for their age in early childhood. The usage of educational media should also take into account the principles of child development. This is in accordance with Elizabeth B. Hurlock's in Ahmad (2016) opinion on the principles of early childhood development, which include the following: 1) development is concerned with change; 2) early development is more critical than later development; 3) development is the result of the maturation and learning process; 4) predictable developmental patterns; 5) predictable developmental patterns have essential characteristics; and 6) individual differences in the development of specific ages. The process of number recognition in children is presented through the principles and purposes of media use, which teachers introduce in a variety of ways to ensure that children obtain an adequate education. According to Sudaryanti (2006), the first step in teaching the number symbol is to count while exercising, counting objects, numbering beyond 10, counting while singing, and counting with fingers. Along with the steps for introducing number lambing and implementing the use of number cards, which range from dividing children into groups to the time spent implementing the use of number card media, this is also consistent with Pujiati's opinion, which suggests that the form of number card games is accomplished through the following steps: 1) Children are divided into small groups of between 2-4 children. Each round of the game is followed by all groups. 2) Each round lasts around ten minutes. 3) The teacher reveals the result or answer to a question or multiplication result on one of the cards (Astuti, 2016).

The difficulties encountered during the learning process include a less-than-optimal ability to recognize the symbol for children's numbers due to a variety of variables, both internal and external. Internal elements affecting a kid include physiological aspects such as health and physical deformities, as well as psychological factors such as IQ levels, attention, interest, talent, and motivation. External variables include family, school, and community factors. The strategy used in school has had a minimal impact on the development of the ability to recognize the symbol of numbers, because what is conveyed by the teacher during instruction is still lacking, resulting in the child's ability to recognize the symbol of his or her number not developing optimally. In comparison, nonsocial elements that are examined when determining the success rate of children's learning include the usage of ineffective learning medium. Additionally, there must be a method for stimulating and stimulating children's cognitive development. This can be accomplished in a variety of ways, including the use of fascinating media and stimulating stimulation of children's cognitive growth. One method is through the use of graphic number cards.

Along with the difficulties inherent in the learning process, utilizing number cards to identify number lambing offers a lot of pros and downsides, as Aisyah points out the Benefits of Using Number Cards (Flashcards) include the following: 1) Can help children memorize numbers more quickly. 2) Increase the child's motivation to master the notion of numbers. 3) Stimulates the intelligence and memory of the child. 4) Capable of cognitive development. 5) Possess an excellent concept of numeracy. 6) The child will maximize his or her potential. 7) Children will develop an understanding of the numerical sequence and the notion of numbers. 8) By using images and objects, children will more quickly grasp the concept of addition and subtraction (Mufarizuddin, 2017). The disadvantages of using number cards (flashcards) include the following: 1) Motion is difficult to display in visual medium. 1) The prices will be considerable if you wish to create a more detailed and varied image. 2) Lesson units in picture media should be created in such a way that they are not overwhelming or boring for the youngster. 3) If not handled appropriately, image material is prone to damage and loss. 4) Requires imagination on the part of a high instructor to ensure that picture media is innovative and does not bore pupils. Cognitive is a mental process that refers to an individual's capacity to connect, analyse, and consider an event or series of events. Cognitive processes are related with a variety of interests, the most important of which are centered on ideas and learning.

CONCLUSION

According to the findings of the research and discussion on the Implementation of the Number Card Media Learning Model to Increase the Introduction of Number Symbols in Early Childhood, the majority of children develop cognitively in accordance with expectations, that is, they can already recognize the number symbol (numbers 1-10) and can already mention the number symbol via the number card media. With the aid of number cards, children appear more excited in participating in activities involving number symbol recognition, implying that the aid of number cards can aid in the early childhood introduction of number symbols.

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