



# THE ROLE OF THE BOWLING GAME IN THE RECOGNITION OF NUMBERS IN EARLY CHILDREN

Evi Anugrah<sup>1</sup>, Eka Damayanti<sup>2</sup>, Nur Khalisah Latuconsina<sup>3</sup>, & Ilhamsyah<sup>4</sup>

<sup>1,2,3</sup>Universitas Islam Negeri Alauddin Makassar

<sup>4</sup>Universitas Muhammadiyah Makassar

Correspondence Email: [evhyanugrah23@gmail.com](mailto:evhyanugrah23@gmail.com)

## ABSTRACT

This research is based on problems in early childhood when providing stimulation, especially in recognizing numbers, in unique and interesting ways is needed. Bowling games have emerged as a captivating and extensively researched approach for facilitating number recognition in children. The purpose of this study was to describe the role of bowling games in number recognition in early childhood. This study used a literature review where the data came from the results of 10 previous research journals published from 2016 to 2021. The data were analyzed using descriptive analysis. The results of the study found that bowling games play a role in increasing children's numeracy skills because, in bowling games, children learn to say the number of pins arranged, they can count according to the number of pins, say the number of pins that have fallen and remain, and they can also learn to count the number of pins that fell and remained. This bowling game effectively fosters number recognition skills by providing a playful and enjoyable atmosphere for learning.

**Keywords:** Early childhood education; number recognition; bowling game

## 1. INTRODUCTION

Education is a very important basic need for the progress of the nation, which must be properly prepared in order to produce output that will be useful for all aspects. Early childhood education is an integral part, of not only increasing knowledge but also preparing children to be able to face future challenges. A solid foundation is needed for every child in order to support their development so that it is hoped that in the future each child will be able to grow according to their talents and abilities and also be able to

conquer any challenges that exist. The importance of a child's interaction with the environment makes early childhood education (PAUD) considered very important in supporting the growth and development of children.

According to Farhurohman (2017), early childhood education is an effort aimed at children ranging from 0 years to 6 years which is carried out by providing an educational stimulus to support the growth and development of children both spiritually and physically. So that one of the activities that is important to do for young children is playing. This is because playing for young children is considered to have the same value as working and learning for adults (Hayati & Putro, 2021).

Playing is a basic and important activity for children. Playing is done without any pressure or coercion from anyone or is done voluntarily (Latif, 2016). Lestari, Prima, & Sulistyadewi (2018) argue that children need games for the benefit of their growth and development. Meanwhile, according to Dewi (2022), play-based learning provides greater benefits than traditional learning methods. Learning in PAUD encourages children to continue to develop understanding, social skills, social-emotional development, motor function, and so on (Amiran, 2016). So that through play, children get various experiences to get to know the world around them. Playing stimulation also allows children to carry out their developmental tasks.

One aspect that needs to be developed for early childhood is the aspect of cognitive development. Cognitive development is a basic ability for children to think and gain new knowledge from the activities they do (Umayah, Juhri, Muqdamien, Fauzia, Qolbiyah, 2021). The development of the cognitive aspect is related to the child's ability to think and solve problems. Cognitive abilities can be achieved in early childhood by developing the ability to recognize numbers. The ability to recognize numbers is very necessary in terms of developing basic knowledge of mathematics, such as the introduction of the concept of numbers, number symbols, colors, shapes, sizes, spaces, and positions, and can form logical, critical, careful, and creative attitudes in children (Muijs & Reynolds, 2008).

Number recognition for early childhood can be done through play activities which are certainly considered more effective. Aspects of child development can develop optimally through play activities. Inviting young children to play is proven to be able to develop children's mentality and intelligence. Thus, based on this, researchers try to introduce numbers to early childhood through bowling games.

The game of bowling is a sport that anyone can do without any user segmentation, where this game is done by rolling the ball towards the pins with one throw, the number calculation is obtained from the number of pins that fall. According to Hayati & Mustika

(2018), bowling is a type of sports game that is done by rolling the ball towards a straight trajectory to drop as many pins as possible. Meanwhile, Khan & Yuliani (2016) explained that through bowling games children will learn eye-hand coordination to drop pins, as well as learn how to count the number of pins that have been dropped.

Geon, Cahaya, & Prima (2021) through their research results stated that the ability to recognize the concept of numbers through bowling has increased from 15% in Cycle I to 80% in Cycle II. Aulina (2018) added that bowling games can improve gross motor skills in children. Meanwhile, Kamtini & Sandy (2017) in their research results explained that in the ability to recognize numbers 1-10 children in the experimental class, there were 10 children in the Very Well Developed (BSB) category and 5 children (33%) in the Developing According to Expectations (BSH) category. In the control class, there were 9 children (60%) in the Developing According to Expectations (BSH) category and 6 children (40%) in the Starting to Develop (MB) category. So, Bowling games for children can improve cognitive development with concentration, improve children's fine and gross motor skills, improve hand-eye coordination, and ability to maintain body position. Based on this, it is necessary to conduct research that describes the role of bowling games on number recognition in early childhood.

## **2. METHODS**

The research was conducted using library research on documents, books, and previous research journals that were relevant. The research procedure is as follows: (1) Choose a general idea about the topic to be researched; (2) Finding supporting information; (3) Reinforcing research focus; (4) Finding the necessary reading materials and then classifying the reading materials; (5) Reading the materials that have been found and then making research notes; (6) Doing a review and enriching the reading materials even more, and (7) Re-classifying the readings then the researcher starts writing a report

The data source in this study is a secondary data source from library materials that have the same study, which discusses the role of bowling games in recognizing early childhood numbers in the year published between 2016-2021.

The following is the journal review flow.

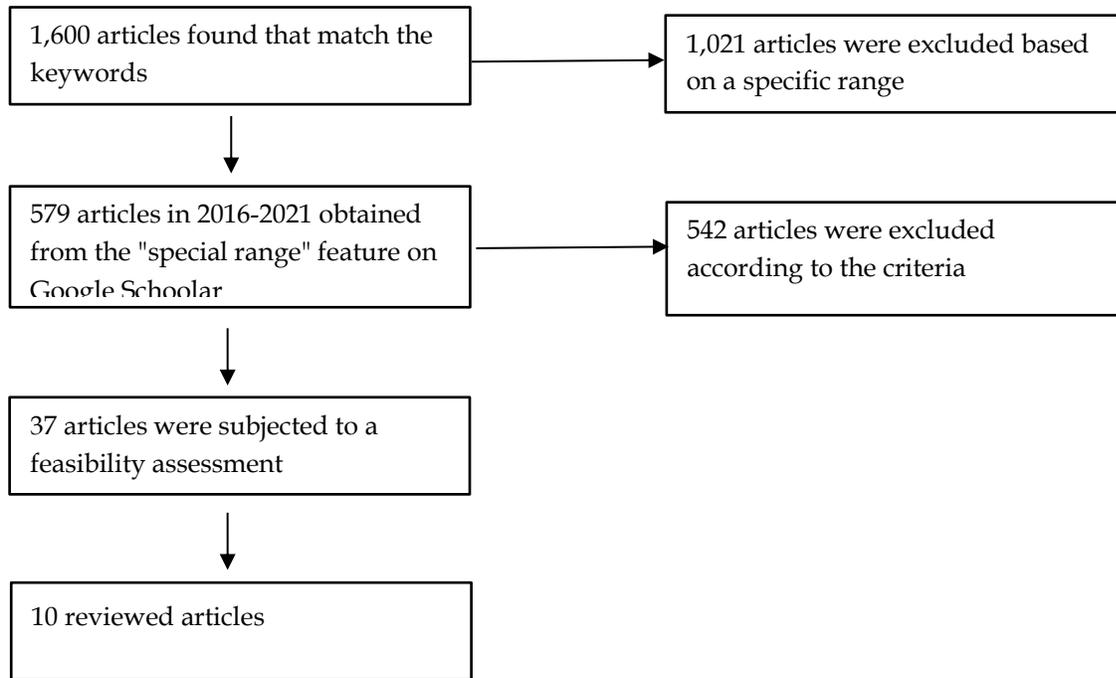


Figure 1. Journal review flowchart

The following is a list of journals that have been found:

Table 1. List of Journals

Title	Year	Writer
Penerapan Permainan Bola Gelinding (Boling) Untuk Meningkatkan Kemampuan Mengenal Bilangan Pada Anak Kelompok A	2016	Ni Kadek Dwi Pradnya Sari, Ketut Adnyana Putra, MG. Rini Kristiantri
Meningkatkan kemampuan Berhitung Anak Usia Dini Melalui Permainan Bowling Kaleng	2016	Rosa Imani Khan, Ninik Yuliani
Peningkatan kemampuan Mengenal Angka Melalui Permainan Bowling Anak Kelompok A Di Paud Kasih Ibu Banda Aceh	2016	Fitriah Hayati, Sari Mustika
Pengaruh Permainan Bowling Modifikasi Terhadap Kemampuan Mengenal Konsep Bilangan 1-10 Pada Anak Usia 4-5 Tahun di Tk Aisyiyah Bustanul Athfal (ABA) 05 Medan Tahun Ajaran 2016/2017	2017	Kamtini, Desi Ari Sandy
Konsep Bilangan Melalui Permainan Bowling Engklek	2018	Wulanda Aditya Azis

<b>Title</b>	<b>Year</b>	<b>Writer</b>
Peningkatan Kemampuan Mengenal Bilangan Melalui Permainan Bowling Modifikasi di Taman Kanak-Kanak Al Ikhlas Pasaman	2018	Fitri Susanti, Syahrul Ismet
Meningkatkan Kemampuan Pengenalan Konsep Bilangan Melalui Permainan Boling Pada Anak Usia Dini Kelompok B1 Di TK Wedha Lestari	2020	Agustina Farida Bulu Geon, I Made Elia Cahaya, Elizabeth Prima
Kajian Penerapan Permainan Bowling Berbahan Bekas Pada Kemampuan Berhitung Permulaan Anak	2020	Fiska Fara, Rosita Wondal, Nurhamsa Mahmud
Upaya Meningkatkan Kemampuan Mengenal Bilangan Melalui Permainan Bowling Anak Kelompok B TK Al-Latif Mutiara Timur Kabupaten Pidie	2021	Rahmaniah, Fitriah Hayati, Ahmad Nasriadi
Pengembangan Bermain Bowling dalam Meningkatkan Kemampuan Mengenal Angka Pada Anak Usia Dini	2021	Sri Suwanti, Fu'ad Arif Noor

Data collection techniques are carried out using the documentation method, namely collecting data in the form of books, documents, journals, and others that are relevant to research. The data were analyzed using the Miles and Huberman data analysis method, which consisted of data reduction, data display, and conclusion drawing stages.

### **3. RESULTS AND DISCUSSION**

The following is a framework of research results based on findings on the presentation of the role of bowling games on number recognition in early childhood.

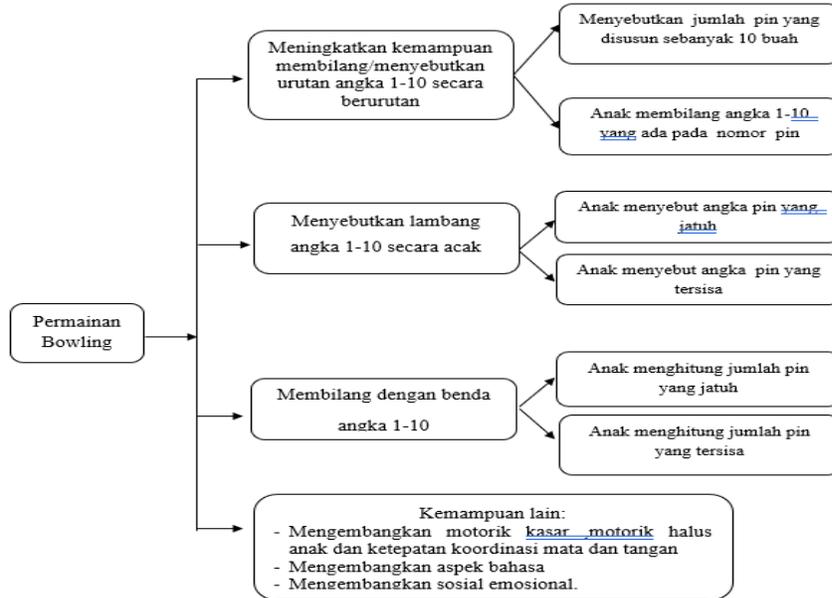


Figure 2. Research results framework

Based on the results of this study it was found that the implementation of learning to recognize numbers by playing bowling can make children interested and many criteria can be achieved in this study starting from children having the ability to recognize optimal numbers, which include:

1. Improve the ability to count/mention the sequence of numbers 1-10 sequentially  
 The cognitive development of children in number recognition can develop well through counting/mentioning numbers 1-10 in sequence. This is because when the child says the numbers on the pins, there are up to 10 of them.
2. Saying the symbols of the numbers 1-10 at random.  
 This game can also motivate children to recognize and understand numbers or numbers 1-10 so that it affects children's initial counting abilities, especially in the indicator calling the symbols of numbers 1-10 randomly, where when the child can count the pins that have fallen and the child can Mention the number in the pin.
3. Count with objects 1-10  
 Bowling games can improve number recognition in children, there is a significant increase in the recognition of numbers 1-10 including in the aspect of counting by pointing to objects 1-10. Learning to use bowling media through an interesting playing atmosphere can make children challenged and always want to try to play games until they succeed.

According to Rangkuti & Rangkuti (2020), the ability to recognize numbers is a child's ability to recognize number symbols. Knowing numbers is very important for children because it is the basic capital of mathematical abilities. Furthermore, Susanto (2012) suggests that the ability to recognize numbers in Kindergarten B-aged children is as follows: (a) calling the number sequence 1-10, (b) counting (knowing the concept of numbers with objects) to 10, (c) connecting /pairs number symbols with objects up to 10 (children are not told to write).

The child's ability to recognize numbers requires the concept of thinking about objects, things, or events. Children begin to recognize symbols (words, numbers, gestures, or pictures) to represent objects in their environment. Because children's way of thinking still depends on concrete objects and depends on the current period and the place where they are, they are not yet able to think abstractly, so they need concrete symbols when teachers instill a concept in early childhood (Suwanti & Noor, 2021).

The results of the research above are supported by what was stated by Susanto (2012) that children who are familiar with the concept of numbers 1-10 can count, call the sequence of numbers from 1-10, count by pointing to objects (knowing the concept of numbers with objects) to 10. , making sequences of numbers 1-10 with objects, connecting/pairing number symbols with objects up to 10 (children are not told to write), distinguishing and making two sets of objects that have the same number, which is not the same, more, less. The same thing was stated by Putri, Marlina, & Putri (2023) that there is a significant influence between bowling games on children's ability to recognize the concept of numbers. In addition, Sodikin & Satiningsih (2014) also stated that modified bowling game has a positive effect on children's ability to recognize the concept of numbers. Modified bowling games can be used as an introduction to the concept of numbers. Teachers can use the game method as a reference in stimulating children.

Research conducted by Helmidar (2016) on the effect of modifying the dragon game in increasing the ability to recognize the concept of numbers in PAUD Saves The Kids in Group B. Based on the data obtained, it can be concluded that the modified dragon game is effective in increasing the ability to recognize the concept of numbers in children.

The results of this study are also supported by research results by Geon, Cahaya, & Prima (2021) which show that the ability to recognize the concept of numbers through bowling has increased in each cycle. The same result was also found by Kamtini & Sandy (2017) that the ability to recognize numbers 1-10 children in the experimental class there were 10 children in the Very Well Developed (BSB) category and 5 children (33%) in the Developing According to Expectations (BSH) category. In the control class, there were 9

children (60%) in the Developing As Expected (BSH) category and 6 children (40%) in the Starting to Develop (MB) category.

According to Rahmaniah, Hayati, & Nasriadi (2021), to improve children's number recognition skills it would be better if the teacher used bowling games or other games that support according to children's needs. So, it is hoped that the principal will support the teacher's efforts in using bowling games and other games to improve the ability to recognize numbers in children.

## CONCLUSION

Based on the results of the study it was concluded that bowling game activities play a role in increasing the ability to recognize numbers in early childhood. This game can improve the ability to recognize numbers because bowling game activities consist of activities that can train the ability to recognize numbers in children. These activities such as increasing the ability to count/mention the sequence of numbers 1-10 in sequence, calling the symbol numbers 1-10 randomly, and counting with objects numbers 1-10. Besides that, other abilities can help aspects of development in children, namely, developing fine motor, gross motor, and accuracy of eye and hand coordination, developing aspects of language, and can also develop social-emotional in children. In addition, this game can also make children more enthusiastic about learning and support children to be more active in learning as for the methods used, one of them is the playing method which of course can lead to fun for children

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