

Number Mussels as a Medium for Learning to Count for 5 - 6 Years Old

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Abstract. The ability to calculate is the effort to carry out calculations such as adding, subtracting and manipulating numbers and mathematical symbols. In addition, counting is an essential cognitive ability in human daily life. Various factors can influence a person's ability to count, including genetics, learning environment, and individual experience. Some people may have a natural tendency to understand mathematical concepts more easily, while others may require a different learning approach to master numeracy skills. The learning approach is carried out through various media, one of which is number shells. This research aims to determine the effectiveness of number shells as a medium for learning to count. Apart from that, number shells make children recognize basic colors and know the various sizes, namely small, medium and large. The method used is a qualitative method by collecting data on children using the number shell educational game tool. Data collection was carried out through observations at PAUD Hidayatul Mustafid. The data analysis technique was carried out using the Revised KKO Bloom which was developed into a research instrument. The research results show that taking into account children's abilities in critical, creative, collaborative and communicative thinking. In this game, children actively participate in answering the questions given. So it can be concluded that this educational game tool with number shells is effective as a medium for children in learning to count in preschool for ages 5-6 years.

Keywords: *counting, numeric shells, learning.*

Abstrak. Kemampuan berhitung adalah usaha melakukan, mengerjakan hitungan seperti penjumlahan, mengurangi, serta memanipulasi bilangan-bilangan dan lambang-lambang matematika. Selain itu, berhitung merupakan kemampuan kognitif esensial dalam kehidupan sehari-hari manusia. Berbagai faktor dapat memengaruhi kemampuan seseorang dalam berhitung, termasuk faktor genetik, lingkungan belajar, dan pengalaman individu. Beberapa orang mungkin memiliki kecenderungan alami untuk lebih mudah memahami konsep matematika, sementara yang lain mungkin

memerlukan pendekatan pembelajaran yang berbeda untuk menguasai keterampilan berhitung. Pendekatan pembelajaran dilakukan melalui berbagai media, salah satunya yaitu kerang angka. Penelitian ini bertujuan untuk mengetahui efektifitas kerang angka sebagai media belajar berhitung. Selain itu, kerang angka membuat anak mengenali warna dasar dan mengetahui berbagai ukuran yaitu kecil, sedang, dan besar. Metode yang digunakan yaitu melalui metode kualitatif dengan mengumpulkan hasil data anak dalam menggunakan alat permainan edukatif kerang angka. Dalam pengumpulan data dilakukan melalui observasi di PAUD Hidayatul Mustafid. Teknik analisis data dilakukan dengan menggunakan KKO Bloom Revisi yang dikembangkan menjadi instrumen penelitian. Hasil penelitian menunjukkan bahwa dengan memperhitungkan kemampuan anak dalam berpikir kritis, kreatif, kolaboratif, dan komunikatif. Pada permainan ini, anak berpartisipasi aktif dalam menjawab pertanyaan yang diberikan. Sehingga dapat disimpulkan bahwa alat permainan edukatif kerang angka ini efektif sebagai media anak dalam pembelajaran berhitung di paud untuk usia 5-6 tahun.

Keywords: *Berhitung, Kerang Angka, Pembelajaran.*

Introduction

Early Childhood Education (PAUD) is a coaching focused on children from birth to the age of 6 (six) years which is carried out through the provision of educational stimuli to help growth and development so that children have readiness to enter further education. . One of the education that children get is the ability to count.(KEMENDIKBUD, 2014)

Counting is a cognitive ability that is used in human daily life. Therefore, numeracy is a fundamental ability that must be developed. Numeracy is an effort to perform, do calculations such as addition, subtraction, and manipulation of numbers and mathematical symbols. . There are 3 (three) stages of counting the beginning, namely the concept stage, the transition stage, and the symbol stage. The concept stage is that children are given an introduction to concrete objects and provide interesting lessons so that children do not get bored. In this transition stage, children have begun to be able to recognize number symbols by counting the number of objects and the last stage, namely the symbol stage, this stage children can already write number symbols without having to be forced. Just as a child is told to make the number seven, the child is already able to make the number 7 (seven) without confusion.(Widjayatri, 2016)(Authary, 2016)

A variety of factors can affect a person's ability to count, including genetic factors, learning environment, and individual experiences. Some people may have a natural tendency to more easily understand mathematical concepts, while others may require a different approach to learning to master numeracy skills. The learning approach is

carried out through various media, one of which is number shells. (Miftahul Jannah, 2021)

Number shells are shells that are used as educational game tools with the most attractive design possible and numbers are drawn on each shell to form the numbers one to 0. One is depicted on the smallest shell, two is depicted on the largest shell than one, and so on until 0 is depicted on the largest shell. To make it interesting, the mussels are given basic colors, namely blue, yellow, and red.

This number shell aims to determine the ability of children to learn to count. In addition, this number shell makes children recognize basic colors and know various sizes, namely small, medium, and large. In addition to their cognitive abilities, this number shell can help children in training fine motor physicality, namely taking, grasping, and putting down.

Methodology

To understand mathematical concepts, some people still need learning media such as number shells. In order to find out whether number mussels are effective as a medium for learning to count, a study was conducted. This research uses a qualitative method through classroom action research. Classroom Action Research is a translation of Classroom Action Research, which is a research conducted in the classroom. The place of this research was carried out at PAUD Hidayatul Mustafid, Jl. Raya Pakuhaji Kp. Pisangan, Sarakan Village, Sepatan District, Tangerang-Banten Regency. The implementation time is on Friday, November 24, 2023. The subject in this study is class B2 with 10 students, namely 3 students and 7 students. The data collection method uses observation, documentation, and evaluation. Data was obtained during the learning process, such as children being able to recognize numbers, count, mention the order of numbers, know summation, know the basic colors, and know the size of the shells (Juanda, 2016)

number. This analysis technique is carried out through the KKO Bloom Revision which was developed into an instrument in research.

Results and Discussion

The observation research was carried out directly at PAUD Hidayatul Mustafid, Jl. Raya Pakuhaji Kp. Pisangan, Sarakan Village, Sepatan District, Tangerang-Banten

Regency in class B2 with a total of 10 students. The media used is an educational game called number shells which is used as a learning to count in the classroom.

Number shells are shells that are used as educational game tools with the most attractive design possible and numbers are drawn on each shell to form the numbers one to 0. One is depicted on the smallest shell, two is depicted on the largest shell than one, and so on until 0 is depicted on the largest shell. To make it interesting, the mussels are given basic colors, namely blue, yellow, and red.

In addition to the clams, the number clams need a board to place them. The board is made of cardboard coated with hvs. After that, the board is painted to make it more attractive. Behind the board is placed box paper for laying shells.

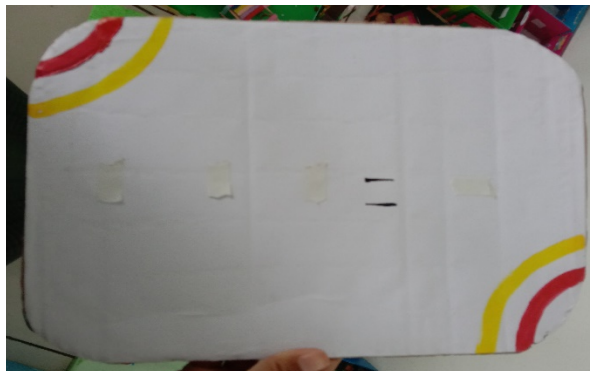


Figure 1. Front View Clamshell Board

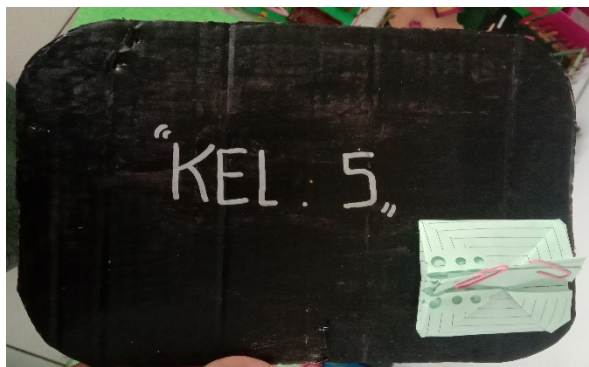


Figure 2. Rear view clamshell board

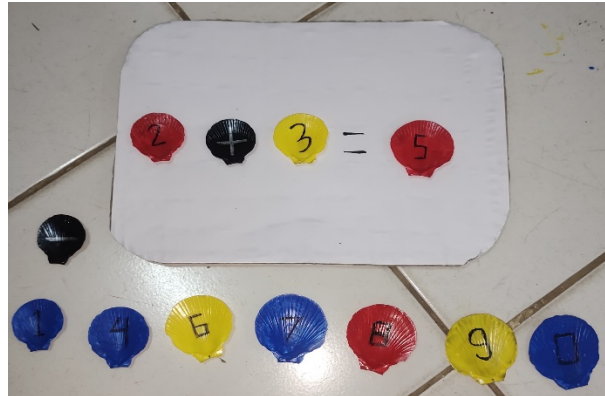


Figure 3. Number Scallops

As for the way to play, the teacher will ask for addition or subtraction and place it on the shellfish board. The child who knows the fastest and most correct answer is ordered to move forward. After the future, the child will take the shellfish which will be the answer. If it is true, the child will be applauded by the teacher and his friends. But if it is wrong, the teacher will appoint another child. This game is done repeatedly with different questions until all children can answer them.



Figure 4. The Teacher is Explaining How to Play Number Clams

In addition to counting, teachers can ask about what sizes and colors are found in the shells. The child can mention it together with his friends.



Figure 5. Teacher Asking for Scallop Colors and Sizes

In this game, there are 10 children who actively participate in answering questions given by the teacher.



Figure 6. The Teacher is Pointing to the Child Who Can Answer the Questions Fastest



Figure 7. The Child is Taking Shellfish as an Answer

This activity was carried out for research on data analysis techniques using the Revised KKO Bloom which was developed into an instrument in research. These instruments will be described in tables 1 to 10.

Table 1. Instruments of the First Child's Research Results

Name :Kia
Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10				√
		1.2 The child is able to analyze the difference in the size of the clams			√	
		1.3 Children are able to analyze the color of the number shell with their friends			√	
		1.4 Children can calculate the sum of 1-10				√

		1.5 The child is able to analyze which shell will be the answer				√
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√
		2.2 The child is able to place the number scallop onto the addition board				√
3.	Collaborative	3.1 Children are able to apply counting in daily life				√
		3.2 Children are able to prove the results of counting with their friends				√
		3.3 The child is able to name his favorite color			√	
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find				√
		4.3 The child is able to pick up the clams without feeling difficult				√
		4.4 The child is able to grasp the clams without falling				√

Table 2. Second Child Research Results Instrument

Name : Azzam
 Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10				√
		1.2 The child is able to analyze the difference in the size of the clams				√
		1.3 Children are able to analyze the color of the number shell with their friends				√
		1.4 Children can calculate the sum of 1-10				√
		1.5 The child is able to analyze which shell will be the answer			√	
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher			√	
		2.2 The child is able to place the number scallop onto the addition board			√	

3.	Collaborative	3.1 Children are able to apply counting in daily life				√
		3.2 Children are able to prove the results of counting with their friends				√
		3.3 The child is able to name his favorite color				√
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find			√	
		4.3 The child is able to pick up the clams without feeling difficult				√
		4.4 The child is able to grasp the clams without falling				√

Table 3. Third Child Research Results Instrument

Name : Kibty
Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10			√	
		1.2 The child is able to analyze the difference in the size of the clams				√
		1.3 Children are able to analyze the color of the number shell with their friends			√	
		1.4 Children can calculate the sum of 1-10			√	
		1.5 The child is able to analyze which shell will be the answer				√
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√
		2.2 The child is able to place the number scallop onto the addition board			√	
3.	Collaborative	3.1 Children are able to apply counting in daily life			√	
		3.2 Children are able to prove the results of counting with their friends			√	
		3.3 The child is able to name his favorite color			√	
4.	Communicative	4.1 Children are able to participate in playing with number shells				√

		4.2 Children are able to separate the number shells so that they are easy to find				√
		4.3 The child is able to pick up the clams without feeling difficult				√
		4.4 The child is able to grasp the clams without falling				√

Table 4. Fourth Child Research Results Instrument

Name : Shanum

Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10			√	
		1.2 The child is able to analyze the difference in the size of the clams				√
		1.3 Children are able to analyze the color of the number shell with their friends			√	
		1.4 Children can calculate the sum of 1-10			√	
		1.5 The child is able to analyze which shell will be the answer			√	
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√
		2.2 The child is able to place the number scallop onto the addition board			√	
3.	Collaborative	3.1 Children are able to apply counting in daily life			√	
		3.2 Children are able to prove the results of counting with their friends			√	
		3.3 The child is able to name his favorite color				√
4.	Communicative	4.1 Children are able to participate in playing with number shells			√	
		4.2 Children are able to separate the number shells so that they are easy to find				√
		4.3 The child is able to pick up the clams without feeling difficult			√	

		4.4 The child is able to grasp the clams without falling			√	
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Table 5. Instrument of the Fifth Child's Research Results

Name : Ajeng
Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10				√
		1.2 The child is able to analyze the difference in the size of the clams				√
		1.3 Children are able to analyze the color of the number shell with their friends			√	
		1.4 Children can calculate the sum of 1-10				√
		1.5 The child is able to analyze which shell will be the answer				√
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√
		2.2 The child is able to place the number scallop onto the addition board			√	
3.	Collaborative	3.1 Children are able to apply counting in daily life				√
		3.2 Children are able to prove the results of counting with their friends				√
		3.3 The child is able to name his favorite color			√	
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find			√	
		4.3 The child is able to pick up the clams without feeling difficult				√
		4.4 The child is able to grasp the clams without falling				√

Table 6. Instrument of the Sixth Child's Research Results

Name : Maulana
Class : B2

No.	Indicators	Ability	Research
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			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10				√
		1.2 The child is able to analyze the difference in the size of the clams			√	
		1.3 Children are able to analyze the color of the number shell with their friends			√	
		1.4 Children can calculate the sum of 1-10				√
		1.5 The child is able to analyze which shell will be the answer			√	
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher			√	
		2.2 The child is able to place the number scallop onto the addition board			√	
3.	Collaborative	3.1 Children are able to apply counting in daily life				√
		3.2 Children are able to prove the results of counting with their friends				√
		3.3 The child is able to name his favorite color			√	
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find			√	
		4.3 The child is able to pick up the clams without feeling difficult				√
		4.4 The child is able to grasp the clams without falling				√

Table 7. Instrument of the Seventh Child's Research Results

Name : Farel
Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10				√
		1.2 The child is able to analyze the difference in the size of the clams				√
		1.3 Children are able to analyze the color of the number shell with their friends				√

		1.4 Children can calculate the sum of 1-10				√
		1.5 The child is able to analyze which shell will be the answer				√
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√
		2.2 The child is able to place the number scallop onto the addition board			√	
3.	Collaborative	3.1 Children are able to apply counting in daily life				√
		3.2 Children are able to prove the results of counting with their friends				√
		3.3 The child is able to name his favorite color			√	
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find				√
		4.3 The child is able to pick up the clams without feeling difficult				√
		4.4 The child is able to grasp the clams without falling				√

Table 8. Eighth Child Research Results Instrument

Name :Aisha

Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10				√
		1.2 The child is able to analyze the difference in the size of the clams			√	
		1.3 Children are able to analyze the color of the number shell with their friends			√	
		1.4 Children can calculate the sum of 1-10				√
		1.5 The child is able to analyze which shell will be the answer				√
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√

		2.2 The child is able to place the number scallop onto the addition board				√
3.	Collaborative	3.1 Children are able to apply counting in daily life			√	
		3.2 Children are able to prove the results of counting with their friends				√
		3.3 The child is able to name his favorite color			√	
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find				√
		4.3 The child is able to pick up the clams without feeling difficult			√	
		4.4 The child is able to grasp the clams without falling				√

Table 9. Instrument of the Ninth Child's Research Results

Name : Keysha

Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10				√
		1.2 The child is able to analyze the difference in the size of the clams			√	
		1.3 Children are able to analyze the color of the number shell with their friends				√
		1.4 Children can calculate the sum of 1-10				√
		1.5 The child is able to analyze which shell will be the answer			√	
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√
		2.2 The child is able to place the number scallop onto the addition board				√
3.	Collaborative	3.1 Children are able to apply counting in daily life				√
		3.2 Children are able to prove the results of counting with their friends				√

		3.3 The child is able to name his favorite color				√
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find				√
		4.3 The child is able to pick up the clams without feeling difficult				√
		4.4 The child is able to grasp the clams without falling			√	

Table 10. Instrument of Tenth Children's Research Results

Name : Syifa

Class : B2

No.	Indicators	Ability	Research			
			1.	2.	3.	4.
1.	Critical Thinking	1.1 Children are able to name the numbers 1-10			√	
		1.2 The child is able to analyze the difference in the size of the clams				√
		1.3 Children are able to analyze the color of the number shell with their friends				√
		1.4 Children can calculate the sum of 1-10				√
		1.5 The child is able to analyze which shell will be the answer				√
2.	Creative	2.1 Children are able to use number shells well and in accordance with the example given by the teacher				√
		2.2 The child is able to place the number scallop onto the addition board				√
3.	Collaborative	3.1 Children are able to apply counting in daily life			√	
		3.2 Children are able to prove the results of counting with their friends				√
		3.3 The child is able to name his favorite color			√	
4.	Communicative	4.1 Children are able to participate in playing with number shells				√
		4.2 Children are able to separate the number shells so that they are easy to find			√	
		4.3 The child is able to pick up the clams without feeling difficult				√

		4.4 The child is able to grasp the clams without falling				√
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Information:

1: not good

2 : good enough

3: good

4: Very good

Based on the tables above, it can be summarized into the following tables.

Table 11. Research Summary Table

It	Child Name	Research Results
1.	Kia	Excellent
2.	Anonymous	Excellent
3.	Kibty	Excellent
4.	Shanum	Good
5.	Anonymous	Excellent
6.	Maulana	Excellent
7.	Farel	Excellent
8.	Aisha	Excellent
9.	Keysha	Excellent
10.	Syifa	Excellent

So it can be concluded that number shells are an effective educational tool game to be applied as a medium in early childhood education in learning to count. Because from the table there are more very good children and there is no child who cannot play it.

Conclusion

Number shells are shells that are used as educational game tools with the most attractive design possible and numbers are drawn on each shell to form the numbers one to 0. Number shells are used as a medium for learning to count, recognize colors, and recognize sizes. This learning is effective for early childhood children aged 5-6 years because number shells can improve cognitive, artistic, and fine motor skills in children.

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