

## **Efforts to Improve Children's Logical Thinking Ability through Engklek Games**

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### **Abstract**

This study aims to determine and improve the logical thinking skills of children aged 5-6 years through engklek games. This research was conducted at Harapan Bangsa PAUD, Kramat Jati, Jakarta in the 2022-2023 academic year. The subjects in this study consisted of 15 group B children, consisting of 7 boys and 8 girls. The class action research method was carried out in two cycles. The data collection technique was through observation in the form of observation notes, interview notes, and documentation notes as well as guidelines for evaluating logical thinking skills. The results of this study with engklek games showed that the data acquisition in the first cycle was 52.16% and the second cycle reached 86.32%. These results indicate that the engklek game can improve the logical thinking skills of children aged 5-6 years. Children can recognize colors and sizes, classify objects based on color and size, sort objects by size, and recognize the ABCD pattern. This study concluded that the engklek game can be used as an alternative in class activities and to help improve children's logical thinking skills with varied and not boring implementation.

Keywords: Ability to think logically, Children aged 5-6 years, Engklek game.

## **1 INTRODUCTION**

Early childhood education is a required development effort for children from birth to the age of six which is carried out through providing educational stimulation to help physical and spiritual growth and development (Andriani, 2012). So that children are ready to enter further education. In essence, early childhood education displays the concept of playing while learning (Iskandar, 2021). Considering that the world of children is a world of play, educators should master how to design and compile learning materials that understand aspects of child development through the concept of learning to play in early childhood. This is in accordance with the characteristics of those who are active in exploring their environment, so play activities are part of the learning process. Learning is directed at developing and perfecting potential abilities such as intellectual, social, spiritual, emotional, motoric and language abilities (Lailan, 2017; Asfuri, 2020; Samosir, 2021). For this reason, learning in early childhood education must be designed so that children do not feel burdened in achieving their developmental tasks. Playing is an important activity for children to do, because by playing children will gain experience and knowledge (Ardiana, 2022; Putro, 2016). Ability can be interpreted as the potential of someone who can do and complete something well. Ability is behavior that is required in accordance with expected conditions (Moerad et al., 2019). Ability is knowledge about the area in which an individual works (Kurniawati, 2011) and requires skills to process information creatively in producing various new and appropriate responses (Wahyuti, Purwadi, & Kusumaningtyas, 2023). In simpler terms, a person's ability to understand an object before they come up with new ideas about that subject

Based on the results of initial observations carried out by researchers in March 2022 and the results of interviews with group B PAUD Hapan Bangsa teachers, it can be

concluded that this group is still lacking in recognizing number symbols, the difference between large and small sizes, clarifying objects based on color and shape. and size, and ordering objects from smallest to largest. Judging from the 15 students in group B PAUD Harapan Bangsa, there are still some students whose logical thinking abilities are still not optimal. This was proven by researchers in observing children's learning activities. Based on these problems at Paud Harapan Bangsa, it is necessary to make improvements and take further action to improve logical thinking skills. Efforts that can be made by educators or teachers to improve these abilities are gradual activities using media that are creative and fun for children. One of the appropriate learning activities to improve children's logical thinking skills is through the engklek game. It is hoped that the engklek game can improve children's logical thinking abilities.

Logical thinking is recognizing various differences, classifications, patterns, taking initiative, planning, and recognizing cause and effect which are described in the basic competency of recognizing the objects around them, names, colors, shapes, sizes, patterns, properties, sounds, textures, function, and other characteristics, and conveying what and how objects are around through various works (Fadlillah, 2020; Ulfah & Nuraffiyah, 2022; Purnamasari & Yusma, 2021). Logical thinking is a process that uses determination in giving reasons to come to a conclusion (Siregar, 2022). Think logically, a person's awareness, namely creating a word or concept in the process of thinking, but the ability that a person has must be given a stimulus (Susanto, 2021). The ability to think logically is a way of thinking that coherent, reasonable, and based on certain objective facts (Lisdiani, Mulyana, & Lidinillah, 2021; Aliyah & Rohmah, 2023). Logical thinking is a thinking process in drawing conclusions in the form of knowledge based on existing facts by using arguments that are in accordance with the steps in solving the problem until a conclusion is reached (Fakhriyah et al., 2023). Based on the theories above, it can be concluded that the ability to think logically is the ability to recognize, sort, classify and compare numbers, objects, colors and ABCD patterns.

According to Apriani (2013) the engklek game (in Javanese) is a traditional game of jumping on flat areas depicted on the ground, by making a picture of boxes then jumping using one foot from one box to the next. This game is called engklek or ingkling because it is done engklek, so called because it is done by doing engklek, namely walking with one foot, called staging at numbers 1, 2, 3, 6, and there is also an obrog movement, namely the movement of both feet touching the ground at numbers 4, 5, 7, 8. This game is played according to the wishes of the players and can be played in the home yard, school yard, field and so on. Rozana and Bantali (2020) states that the traditional game of engklek or sondah is a game that involves jumping over a line with one foot. Engklek is a game that has been around for generations, this game is played by walking or jumping using one foot (Fakhriyani, 2018). Engklek is a traditional game where children play on a flat surface by jumping up and down using one foot from one box to the next (Rozana & Bantali, 2020). Based on the theories above, it can be concluded that the engklek game is a traditional game with an arena in the form of squares made on flat ground, where the numbers 1-9 are written on the squares and the way to play is by jumping up and down with one foot from square to square. others by not stepping on the edge line.

Based on the problems described above, by incorporating the engklek game into one of the activities in the classroom, it is hoped that after implementing the engklek game in PAUD Harapan Bangsa Batu Ampar, children's ability to think logically can be further improved. Therefore, the author is interested in raising entitled "Efforts to improve children's logical thinking skills through the game of engklek".

## 2 RESEARCH METHODS

The method used in this research is the classroom action research method. In this classroom action research there are two activities carried out, namely the first action activity and the second observation activity. Iskandar (2009) defines Classroom Action

Research as a scientific research activity carried out rationally, systematically and empirically reflective of various actions carried out by teachers (educators), collaboration (research team) who are also researchers, from the preparation of a plan to the assessment of real actions in the classroom in the form of teaching and learning activities, to improve and enhance the learning conditions carried out. Arikunto (2006) states that Classroom Action Research is an examination of learning activities in the form of actions that are deliberately created and occur in a class simultaneously. In this classroom action research used refers to the Kemmis and Mc Tanggart model with a tool consisting of four components, namely planning, action, observation and reflection.

Table 1. Children's Logical Thinking Ability Instruments

| Developmental Aspects | Indicator  | Assessment |   |   |   |
|-----------------------|--|------------|---|---|---|
|                       |  | 1          | 2 | 3 | 4 |
| Getting to know       | 1. Children can recognize number symbols<br>2. Children can recognize the difference in size<br>3. Children can regognize shapes<br>4. Children can recornize the ABCD |            |   |   |   |
| Sorting               | 1. Children can order numbers<br>2. Children can sort objects by size  |            |   |   |   |
| Classify              | 1. Children can classifyobjects based on color, shape and size.  |            |   |   |   |
| Compare               | 1. Children can compare the sizes of objects around them   |            |   |   |   |

### 3 RESULT AND DISCUSSION

The data analyzed in this research is data on children's logical thinking abilities after conducting research. This research uses the Kemmis and Taggaart Model. From the table above it can be seen that the lowest score obtained is 8 with a percentage of 25%, the highest score is 14 with a percentage of 33.89%, and the average score is 33.89%, this does not meet the expected completion requirements of 75%. Children appear to be still underdeveloped, therefore action is needed to improve their logical thinking abilities. Based on the results of increasing children's logical thinking abilities with the engklek game in cycle I, an average of 16.69 (52.16%) was obtained, for greater clarity the researcher presents the results of the analysis of children's logical thinking abilities through the engklek game.

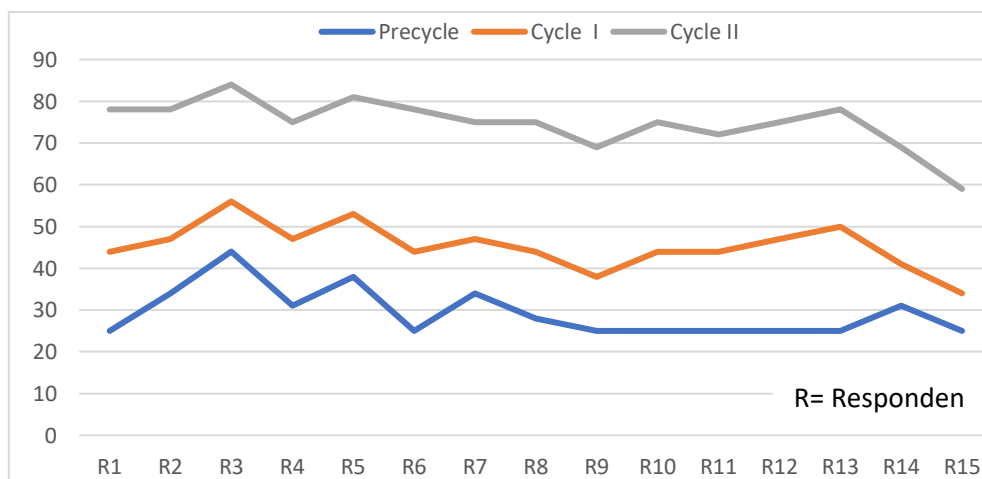


Figure 1. Graphic for Students Abilities in Precycle, Cycle I, and Cycle II

From the table above it can be seen that in cycle II the total score obtained overall was 359 with an average acquisition percentage of 86.32%, the lowest acquisition value was 19 with an acquisition percentage of 59% and the highest acquisition score was 27 with a percentage of 84% and the average acquisition a score of 27.62 with an average percentage of 86.32%, this has reached the expected achievement level of 75%. Thus, increasing children's logical thinking abilities in cycle II had reached the expected success rate of 75%, so the research was stopped in cycle II. It can be displayed in Figure 1.

#### 4 CONCLUSION

Based on the results of research conducted in two cycles, it was concluded that there was a comparison of the results of the observations that had been made. The pre-action carried out at PAUD Harapan Bangsa Batu Ampar concluded as follows: it is proven that the use of the engklek game can improve children's logical thinking abilities. As a result of observing the learning process through the engklek game, it can be seen that there was an increase in the average pre-action score of (33.89%), cycle I (52.16%) and cycle II (86.32%) there were differences in results between the pre-action values and cycle I, cycle I and cycle II. The initial ability of students in cycle I obtained the highest score (56%), the lowest score (34%) for two children, because it had not been achieved, the engklek game was continued in cycle II, the results of which increased, namely with an average of (83.3%) which means from Before pre-action, group B children's gross motor skills at PAUD Harapan Bangsa Batu Ampar experienced an increase (52.8%) by playing engklek. Therefore, the average score and learning completion had met the specified standards, namely (83.3%), so the research was not continued in cycle III.

#### 5 REFERENCES

- Aliyah, S., & Rohmah, S. (2023). Peningkatan Kemampuan Berpikir Logis Melalui E-Book Di Taman Kanak-Kanak Persatuan Guru Republik Indonesia (PGRI) Kecamatan Cikajang Tingkat Usia 5-6 Tahun. *Jurnal Pendidikan Islam Anak Usia Dini (Anaking)*, 2(1), 176-184.
- Andriani, T. (2012). Permainan tradisional dalam membentuk karakter anak usia dini. *Sosial Budaya*, 9(1), 121-136.
- Apriani, D. (2013). Penerapan Permainan Tradisional Engklek untuk Meningkatkan Kemampuan Motorik Kasar Anak Kelompok B RA Al Hidayah 2 Tarik Sidoarjo. *PAUD Teratai*, 2(1), 1-13.
- Ardiana, R. (2022). Pembelajaran Berbasis Kecerdasan Majemuk dalam Pendidikan Anak Usia Dini. *Murhum: Jurnal Pendidikan Anak Usia Dini*, 3(1), 1-12.
- Arikunto, S. (2006). *Penelitian Tindakan Kelas*. Bumi Aksara.
- Asfuri, A. (2020). Implementasi Pembelajaran Door to Door Pada Perkembangan Psikologi Belajar Anak di TKIT Raudlotul Mu'minin. *IJIP: Indonesian Journal of Islamic Psychology*, 2(1), 84-111.
- Fadlillah, M. (2020). *Buku Ajar Konsep Dasar PAUD*. Samudra Biru.
- Fakhriyah, F., Rusilowati, A., Nugroho, S. E., & Saptono, S. (2023). *Karakteristik Desain Pembelajaran Scaffolding Argumen Driven by Inquiry Berbasis Literasi Sains*. Penerbit NEM.
- Fakhriyani, D. V. (2018). Pengembangan Keterampilan Sosial Anak Usia Dini Melalui Permainan Tradisional Madura. *Jurnal PG-PAUD Trunojoyo: Jurnal Pendidikan Dan Pembelajaran Anak Usia Dini*, 5(1), 39-44.
- Iskandar, B. (2021). Bermain sambil belajar: Konsepsi guru dalam mengelola permainan anak usia dini di PAUD. *Jurnal Ilmiah Profesi Pendidikan*, 6(3), 461-466.

- Kurniawati, A. B. (2011). Hubungan Kondisi Keaksaraan Keluarga dan Motivasi Membaca Dengan Kemampuan Membaca Permulaan. *Jurnal Pendidikan Usia Dini*, 7(1), 1-16.
- Lailan, A. (2017). Model pembelajaran sentra pendidikan anak usia dini. *An-Nahdhah| Jurnal Ilmiah Keagamaan dan Kemasyarakatan*, 10(2), 191-202.
- Lisdiani, R., Mulyana, E. H., & Lidinillah, D. A. M. (2021). Pengembangan Media Neraca Lengan untuk Memfasilitasi Kemampuan Berpikir Logis Anak Usia Dini. *Edusia: Jurnal Ilmiah Pendidikan Asia*, 1(1), 75-85.
- Moerad, S. K., Susilowati, E., Savitri, E. D., Rai, N. G. M., Suarmini, N. W., Mahfud, C., & Widyastuti, T. (2019). Pendampingan Pelaksanaan Program Perilaku Hidup Bersih dan Sehat (PHBS) Anak Usia Dini-Pos PAUD Terpadu Melati Kelurahan Medokan Ayu-Rungkut Surabaya. *Sewagati*, 3(3), 90-96.
- Purnamasari, N. I., & Yusma, N. A. (2021). Mengembangkan kemampuan berpikir logis anak melalui kegiatan bermain warna. *Journal of Early Childhood Education Studies*, 1(2), 37-71.
- Putro, K. Z. (2016). Mengembangkan kreativitas anak melalui bermain. *Aplikasia: Jurnal Aplikasi Ilmu-Ilmu Agama*, 16(1), 19-27.
- Rozana, S., & Bantali, A. (2020). *Stimulasi perkembangan anak usia dini: melalui permainan tradisional engklek*. Edu publisher.
- Samosir, R. (2021). Efektivitas Permainan Tradisional Batak bagi Tumbuh Kembang Anak Usia Dini. *EDUKASIA: Jurnal Pendidikan dan Pembelajaran*, 2(2), 333-338.
- Siregar, A. K. (2022). Peningkatan Kemampuan Berpikir Kritis Mahasiswa PIAUD pada Mata Kuliah Neurosains dengan Metode Pembelajaran Accelerated Learning. *BUHUTS AL ATHFAL: Jurnal Pendidikan dan Anak Usia Dini*, 2(2), 235-251.
- Susanto, A. (2021). *Pendidikan anak usia dini: Konsep dan teori*. Bumi Aksara.
- Ulfah, F., & Nuraffiyah, C. (2022). Mengembangkan Kemampuan Berpikir Logis Melalui Media Papan Pola Pada Anak Usia 4-5 Tahun (Penelitian Tindakan di Kelas A PAUD Kober Birulwaliden Kecamatan Cilawu Garut). *Jurnal Pendidikan Islam Anak Usia Dini (Anaking)*, 1(1), 210-217.
- Wahyuti, E., Purwadi, P., & Kusumaningtyas, N. (2023). Analisis kemampuan pemecahan masalah melalui pembelajaran literasi baca tulis dan numerasi pada anak usia dini. *ENGGANG: Jurnal Pendidikan, Bahasa, Sastra, Seni, dan Budaya*, 3(2), 09-20.