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Research Article

# Stimulating Kinesthetic Abilities Through Obstacle Course Games

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**Abstract:**

**Background of study:** Kinesthetic skills are an important aspect of early childhood development, but at the Pembina Arga Makmur State Kindergarten, there are still children who have difficulty running, jumping, and throwing balls.

**Aims and scope of paper:** The purpose of this study is to understand how obstacle course activities affect the kinaesthetic abilities of Arga Makmur Kindergarten students, ages 5 to 6.

**Methods:** The research methodology utilized a two-group pretest-posttest experimental design and a quantitative method. Out of the 48 preschoolers in the population, 24 children made up the sample. They were split into two groups at random: the experimental group and the control group. An independent sample t-test was used to assess the data after it was gathered through tests and observation.

**Result:** The analysis results indicated a significance value of 0.000 < 0.05, indicating a substantial disparity in gross motor abilities between children who took part in the obstacle course and those who did not.

**Conclusion:** Obstacle course games have a positive effect on improving children's gross motor skills. Obstacle course games can be used for physical learning activities with obstacles to train early childhood skills.

Keywords: Early Childhood Education, Kinesthetic Skills, Obstacle Course Games.

## 1. INTRODUCTION

Education is the main asset for preparing high-value successors. In accordance with Chapter 1 Article 1 of the National Education System Law, education is a deliberate attempt to establish a conducive learning environment that enables children to actively learn and develop their potential (Pamungkas et al., 2022). This process begins with the cultivation of spiritual strength, religiosity, self-control, personality, and the intelligence that children require. Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, 2003, the objective of early childhood education is to provide guidance to children between the ages of 0 and 6.



This approach is carried out by providing stimulation to children to support their growth and development. Based on Regulation of the Minister of Education and Culture of the Republic of Indonesia, 2014, there are six aspects of development that include religion and morals, physical and motor skills, social-emotional, language, arts, and cognitive. Consequently, this study will be centered on the development of motor skills, with a particular emphasis on kinesthetic abilities, in children between the ages of 5 and 6. Kinesthetic ability are activities carried out to develop coordinated movements. Kinesthetic ability is motor activity that involves the use of large muscles, such as crawling, jumping, and sitting (Jacob & Watini, 2022). Kinesthetic development in early childhood is highly dependent on aspects of physical fitness to develop children's physical abilities. Gross motor skills are seen in children's ability to perform activities using their large muscles (Sartika et al., 2023).

Children between the ages of five and six should be able to perform physical movements well to train their strength, balance, agility, and flexibility (Larasati et al., 2024). In addition, children can play physical games by following the rules, and they can coordinate their foot and hand movements in imitating dance or gymnastics movements Regulation of the Minister of Education and Culture of the Republic of Indonesia (D. Wahyuni et al., 2023). Basic movements such as jumping, climbing, and running are gross motor skills that can strengthen children's physical abilities and train their movements. Therefore, modified games that involve large muscles can improve children's gross motor skill development (Nurhayati et al., 2021). This improvement is

inseparable from efforts to develop children's kinesthetic abilities, in order to ensure that kids are actively participating in all games that track their growth in gross motor abilities (Rizki & Marsheilla Aguss, 2020).

The use of modified games involving physical activity can be used as one of the efforts to stimulate children's kinesthetic abilities (Ilham Kamaruddin et al., 2023). Games that involve physical activity will affect coordination skills in moving body parts such as the legs and hands (Kurniati et al., 2023). Activities such as walking, running, jumping, balancing, and movement coordination are forms of kinesthetic abilities that can be stimulated by using physical games (I. Wahyuni & Kurniati, 2021).

However, stimulation of children's kinesthetic abilities is still not being provided optimally. Based on observations and interviews with teachers of 5-6 year old children at Arga Makmur Kindergarten regarding children's kinesthetic abilities, with indicators including jumping with one foot, skipping, running, walking on a balance beam, crawling, and creeping (Rustiana & Pamungkas, 2025).

Of the 48 children, 36 or 75% still had difficulty maintaining their balance when performing the aforementioned kinesthetic skills. Children have difficulty throwing a ball at a specific object. Additionally, children have suboptimal coordination skills, causing them to frequently fall while running. This indicates that children's kinesthetic abilities, particularly body coordination, need to be stimulated optimally (Lourenço et al., 2024).

The use of physical activities such as creative dance (Anggraemi & Manggau, 2020) , engklek (Yuisman et al., 2021), and ball games (Rohmania & Rohmawati, 2024) can be applied as a way to encourage kids' kinaesthetic skills. Children's kinesthetic capabilities can be developed through modified physical games, especially body coordination. This allows children to actively participate in all games used to observe the development of their gross motor skills.

Research conducted by (Anggraemi & Manggau, 2020) states that the use of creative dance can train body coordination skills and improve children's kinesthetic intelligence. Furthermore, research conducted by (Yuisman et al., 2021) indicates that modified games such as engklek can provide physical stimulation to children, thereby improving their kinesthetic abilities at the age of 6. Similarly, studies by (Rohmania & Rohmawati, 2024) shows that modifying games to involve physical activities such as using a ball can have a positive impact on the kinesthetic intelligence of children aged 4–5 years. Therefore, an alternate strategy for fostering children's kinaesthetic skills is the use of customized games that incorporate physical exercises (Mezzoni & Kozub, 2023).

These activities are practical solutions for developing children's kinesthetic abilities, especially their body coordination skills (Gamwell-Muscarello et al., 2025). However, in previous studies, the variety of modified games was based on the availability of accessible materials around children, such as balls or traditional games familiar to children. Therefore, this study will focus on the use of obstacle course games as a method of improving children's kinesthetic abilities bali (Bálint-Svella, 2021).

Obstacle course games are physical games that provide children with the opportunity to engage their senses and body coordination in each game (Sadaruddin et al., 2022). This is because obstacle course activities require children to perform activities that demand good coordination, such as running, jumping, and overcoming obstacles at each stage (Taftazani & Kurniawan, 2024). Therefore, obstacle course activities not only stimulate body coordination but also develop children's kinesthetic abilities.

Based on the background described above, the researcher wanted to further examine the effect of obstacle course games on the kinesthetic abilities of children aged 5-6 years at Arga Makmur Kindergarten (Ratno et al., 2024).

## 2. MATERIAL METHODS

The study utilized a quasi-experimental Two-Group Pretest-Posttest approach and a quantitative methodology. The study included 48 children separated into two groups: control and experimental. The research sample was selected randomly, involving 24 children. The research procedure involved administering treatment in six sessions to the experimental group. The following table shows the research procedure for the experimental and control groups:

**Table 1.** Nonequivalent Control Group Design

| Group | Pre-Test | Treatment | Post-Test |
|---|---|---|---|
| Eksperiment | O1 | X | O2 |
| Control | O3 | | O4 |

X= obstacle course games

In this study, data were collected by observation with the purpose of observing the effects of obstacle course games and tests used to measure skills objectively and measurably related to the aspects studied during pre-tests and post-tests. Meanwhile, statistical data analysis used prerequisite tests and hypothesis tests using SPSS 25 as a statistical calculation tool for pre-test and post-test results, involving 14 validated observations. The following are 14 achievement indicators for pre-test and post-test activities.

**Table 2.** Point of Observation

| Point Of Observation |
|---|
| Jump over the rope with two feet |
| Jumping over the rope with one foot |
| Walking on the footbridge |
| Putting the ball into the basket |
| Stand on one foot with arms outstretched |
| Kick the ball into the goal |
| Catch the ball from other |
| Throwing the ball at the block arrangement |
| Crawl through the tunnel |
| Crawl through a tunnel while holding an object |
| Run around the block without touching the block |
| Running from one place to another |
| Moving the block with one hand |
| Moves the block with both hands |

## 3. RESULTS AND DISCUSSION

### 3.1 Result

This study was conducted in the form of an experiment with six treatment sessions in the form of obstacle course games. Data collection in the form of tests on the experimental group and control group was carried out during pre-tests and post-tests in the form of ninja warrior games. In the Ninja Warrior game, children are asked to perform various kinesthetic skills such as jumping, leaping, running, throwing, catching, and moving objects (Hazizah et al., 2024). The results of the validation of the instruments used as measuring tools are as follows:

**Table 3.** The Result of The Validation Of The Instruments

| No | **r**hitung | **r**tabel | Keterangan |
|---|---|---|---|
| 1. | 0,703 | 0,632 | Valid |
| 2. | 0,734 | 0,632 | Valid |
| 3. | 0,705 | 0,632 | Valid |
| 4. | 0,861 | 0,632 | Valid |
| 5. | 0,644 | 0,632 | Valid |
| 6. | 0,779 | 0,632 | Valid |
| 7. | 0,778 | 0,632 | Valid |
| 8. | 0,949 | 0,632 | Valid |
| 9. | 0,808 | 0,632 | Valid |
| 10. | 0,861 | 0,632 | Valid |
| 11. | 0,747 | 0,632 | Valid |
| 12. | 0,662 | 0,632 | Valid |
| 13. | 0,757 | 0,632 | Valid |
| 14. | 0,699 | 0,632 | Valid |

The validity test of kinesthetic ability was conducted using Pearson's bivariate correlation (Product Moment Pearson). The validity test was performed using SPSS version 25 for Windows. Using this application, the calculated r value and significance value for each item were obtained. In this study, an item was considered valid if the calculated r value was greater than the table

r value. In this case, with a sample size of 10 children, the table r value obtained was 0.632.

During the treatment, researchers observed 14 items, including the ability to jump with one foot, jump with two feet, kick a ball, throw a ball, catch a ball with one hand, move blocks, run with balance, crawl through a tunnel, and walk on a balance beam. The following are the results of the pre-test and post-test calculations using SPSS 25 for Windows for the experimental group and the control group:

**Table 4.** Results Calculated using SPSS 25 for Windows

| N | | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Pre-Test Eksperimen | 24 | 15 | 34 | 24.38 | 4.451 |
| Post-test Eksperimen | 24 | 25 | 40 | 34.00 | 3.162 |
| Pre-test Kontrol | 24 | 19 | 36 | 27.79 | 4.064 |
| Post-test Kontrol | 24 | 23 | 34 | 28.38 | 3.228 |

From Table 4, it can be seen from the descriptive analysis results with SPSS for the initial results of the experiment 24.38, while the initial control results obtained 27.79, so that the hypothesis will be tested with an independent t-test to see the difference in results between the two classes that were given treatment and those that were not given treatment.

**Figure 1**. Independent Sample t-test Results

| | | Levene's Test for Equality of | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Differen | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| Hasil_Belajar | Equal variances assumed | .049 | .825 | 6.098 | 46 | .000 | 5.625 | .922 | 3.768 | 7.482 |
| | Equal variances not assumed | | | 6.098 | 45.981 | .000 | 5.625 | .922 | 3.768 | 7.382 |

Based on Figure 1, it can be seen that the independent data test results obtained a sig. value (2-tailed) of 0.000 < 0.05, so it can be concluded that there is a difference between the experimental class that was given the obstacle course game treatment and the control class that was not given any treatment. Thus, from the results of the hypothesis test, there is an effect on the kinesthetic abilities of children who were given the obstacle course game treatment.

**Figure 2.** Statistical Group Test Results

| | Kelas | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Hasil_Belajar | Post test_Eksperimen | 24 | 34.00 | 3.162 | .645 |
| | Post test_Kontrol | 24 | 28.38 | 3.228 | .659 |

Figure 2 shows that the results of the statistical group test indicate an effect on the experimental class that was given the obstacle course treatment. This is demonstrated by the experiment's average post-test results of 34.00, whereas the average post-test results in the control class without therapy were 28.38. Based on this research hypothesis, this study shows that obstacle course games can influence the kinesthetic abilities of children aged 5-6 years at Arga Makmur Kindergarten.

## 3.2 Discussion

Kinesthetic abilities play a fundamental role in children's ability to interact with their environment. Kinesthetic skills involve large muscle activities that are essential for walking, running, jumping, and throwing (Nurhayati et

al., 2021). These skills not only support physical health but also cognitive and emotional development by allowing children to explore their surroundings, participate in social games, and build self-confidence.

The findings of this study show that the Obstacle Course game greatly enhances kinesthetic abilities in early childhood, specifically in children attending Arga Makmur Kindergarten. Statistical analysis utilizing the t-test for independent sample revealed a significance level of 0.000 (<0.05), indicating the intervention's effectiveness (Emmers et al., 2021).

According to the results of the researcher's data analysis, there was a significant difference between children who used obstacle course games and those who did not. There was a significant increase in scores, indicating that obstacle course games are an effective activity for influencing kinesthetic abilities in 5-6 year old children at Arga Makmur Kindergarten. The obstacle course method used in this study involved a series of structured physical tasks such as maintaining balance on a beam, jumping, throwing, and crawling through a tunnel (Taftazani & Kurniawan, 2024).

This obstacle course game's exercises develop a variety of motor abilities, including locomotor abilities (running, jumping), manipulative abilities (throwing, catching), balance and coordination (walking on beams, jumping), and spatial and sequential awareness (navigating obstacles). This indicates that games involving physical activities have an impact on children's gross motor skills and coordination (Kaoci et al., 2021). Obstacle course games can improve neuromotor control through repeated sensorimotor engagement. Therefore, the findings of this study suggest that obstacle course games influence the development of kinaesthetic abilities in children aged 5 to 6 years (Ritonga et al., 2022).

### 3.2.1 Implication

This study is designed to increase instructors' knowledge of how to stimulate children's kinesthetic skills between the ages of 5-6. It is extremely important for teachers to be educated about numerous learning approaches in promoting children's development, including kinesthetic abilities related to gross motor skills, coordination, and body balance. With this study, it is hoped that teachers will have many learning alternatives to overcome children's developmental problems, especially physical development.

This research can be integrated into learning by utilizing objects around children and transforming them into obstacle course games. This approach not only leverages local wisdom through traditional games but also incorporates modern games like obstacle courses.

### 3.2.2 Research Contibution

This study directly contributes as a reference for teachers to create an ideal environment for learning and stimulate kinesthetic abilities in early childhood, especially children aged 5-6 years, using the obstacle course method. In addition, this study is also expected to provide a solution for fun learning activities to improve children's kinesthetic abilities.

### 3.2.3 Limitation

The limitations of this study include:

1. The limited population and sample size of the study, which involved children aged 5-6 years. Therefore, the effects of the obstacle course game can only be applied to a specific age group.
2. The limited time frame of the study, which could only be conducted in six treatment sessions due to the school curriculum that had to continue. This limited the researchers' ability to modify the obstacle course game to include more varied obstacles.

### 3.2.4 Suggestion

The recommendations that can be given by researchers include:

1. It is hoped that teachers can follow up on obstacle course games to improve the kinesthetic abilities of children aged 4-6 years. Thus, obstacle course games can always be used in schools to stimulate children's kinesthetic abilities.
2. Extending the duration of the treatment is another recommendation to enhance the impact of the obstacle course game on children's kinesthetic abilities, particularly in terms of gross motor development and body coordination.

## 4. CONCLUSION

According to the data analysis's conclusions, there is a notable distinction between the kinesthetic abilities of children who were given treatment using obstacle course games and children who were not given treatment using obstacle courses. This difference serves as the basis for concluding that there is a significant effect on the experimental group. Therefore, it can be concluded that games with obstacle courses can help kids between the ages of five and six develop their kinaesthetic abilities at Arga Makmur Kindergarten. Obstacle course games can be a useful tool for enhancing kinesthetic skills during the learning process, particularly gross motor skills and body coordination in children.

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## 6. AUTHOR CONTRIBUTION STATEMENT

All authors of this study contributed fully to the implementation and completion of the research. IP contributed as a field researcher tasked with collecting and processing research data. MA served as field coordinator and developed the research instrument. DW contributed to the preparation of the report, enabling this research to be published as a form of researcher integrity.

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## REFFERENCE


Anggraemi, M., & Manggau, A. (2020). Peningkatan Kemampuan Kinestetik Melalui Tari Kreasi Tk Tunas Harapan Batang Kecamatan Bontotiro Kabupaten Bulukumba. *TEMATIK: Jurnal Pemikiran Dan Penelitian Pendidikan Anak Usia Dini*, *6*(1), 34. https://doi.org/10.26858/tematik.v6i1.14437

Bálint-Svella, É. (2021). Prospective Preschool and Primary School Teachers' Knowledge and Opinion about Gamification. *Acta Didactica Napocensia*, *14*(1), 104–114. https://doi.org/10.24193/adn.14.1.8

Emmers, D., Jiang, Q., Xue, H., Zhang, Y., Zhang, Y., Zhao, Y., Liu, B., Dill, S.-E., Qian, Y., & Warrinnier, N. (2021). Early childhood development and parental training interventions in rural China: a systematic review and meta-analysis. *BMJ Global Health*, *6*(8). https://doi.org/10.1136/bmjgh-2021-005578

Gamwell-Muscarello, H. E., Needle, A. R., Meucci, M., & Skinner, J. W. (2025). Improving locomotor performance with motor imagery and tDCS in young adults. *Scientific Reports*, *15*(1), 1–12. https://doi.org/10.1038/s41598-025-86039-2

Hazizah, N., Rusdinal, R., Ismaniar, I., Handrianto, C., & Rahman, M. A. (2024). Warrior Kids Games on Improving the Self-Efficacy Abilities and Fine Motor Skills of 5–6 Years-Old Children. *Retos*, *56*, 639–647. https://doi.org/10.47197/retos.v56.104892

Ilham Kamaruddin, Wahid Dalail, Devin Mahendika, Ali Sibro Mulisi, Ervan, & Muhammad Rif'at. (2023). Developing Fine Motor Skills in Early Childhood through Plasticine Media. *Journal of Childhood Development*, *3*(2), 9–23. https://doi.org/10.25217/jcd.v3i2.3714

Jacob, A., & Watini, S. (2022). Penerapan Model Atik dalam Pengembangan Motorik Kasar pada Anak ADHD di TK Global Persada Mandiri. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, *5*, 3281–3287. https://doi.org/10.54371/jiip.v5i9.841

Kaoci, W., Taib, B., & Ummah, D. (2021). PERKEMBANGAN FISIK MOTORIK KASAR ANAK MELALUI PERMAINAN TRADISIONAL "JALAN TEMPURUNG." *JURNAL ILMIAH CAHAYA PAUD*, *3*, 11–22. https://doi.org/10.33387/cp.v3i1.2129

Kurniati, E., Zaman, B., Kurniawati, Y., Putri Adriana, N., Zeniputri, S., Wulandari, N., Kamaliyah, N., Komalasari, I., Wahyuni, I., Durrotun Nafisah, A., & Zumayyah, A. (2023). Program Bimbingan Praktik Play Pedagogy bagi Orang Tua dengan Anak Usia Dini di Lingkungan Rumah. *Murhum : Jurnal Pendidikan Anak Usia Dini*, *4*(2), 779–788. https://doi.org/10.37985/murhum.v4i2.394

Larasati, W. E., Wahyuni, D., & Astuti, M. (2024). Media benda nyata specimen: Eksperimen terhadap stimulasi sensori anak. *Edukids: Jurnal Pertumbuhan, Perkembangan, Dan Pendidikan Anak Usia Dini*, *21*(2), 113–123. https://doi.org/10.17509/EDUKIDS.V21I2.71701

Lourenço, M. A., Oliveira, T. de P., Miranda, C. S., d'Alencar, M. S., Santos, T. G. S., Deutsch, J. E., & Piemonte, M. E. P. (2024). Serious Game-Based Balance Training with Augmented Kinesthetic Feedback Enhances Aspects of Postural Control in Poststroke Patients: A Randomized Clinical Trial. *Games for Health Journal*, *14*(3), 221–232. https://doi.org/10.1089/g4h.2023.0214

Mezzoni, R., & Kozub, F. M. (2023). Sensory Obstacle Courses to Promote Movement Concepts in Elementary Physical Education. *Strategies*, *36*(2), 10–17. https://doi.org/10.1080/08924562.2023.2174228

Nurhayati, S., Zarkasih Putro, K., dan Permainan Anak Usia Dini, B., Nur Hayati, S., & Sunan Kalijaga Yogyakarta, U. (2021). GENERASI EMAS Jurnal Pendidikan Islam Anak Usia Dini Volume 4 Nomor 1, Mei 2021, BERMAIN DAN PERMAINAN ANAK USIA DINI. *Jurnal Pendidikan Islam Usia Dini*, *4 nomor 1*, 1–13. https://doi.org/10.25299/JGE.2021.VOL4(1).6985

Pamungkas, R. N. B., Rindiana, R. E., Ma'arif, R., Saputra, R., Zanuarta, R., Ramadhani, R., Hartati, S. C. Y., & Yasik, M. (2022). Journal of Physical

Education. *Revista Brasileira Atividade Física & Saúde*, *16*(3), 730–741. https://doi.org/10.26740/bimaloka.v5i2.40421

Ratno, Santoso, D. A., Sukirman, M., & Pramita, D. (2024). Improving Bodily Kinesthetic Competence Through Simple Bowling Game to Kindergarten Chlidren of Jungle School Semarang in the Academic Year 2023/2024. *Jurnal Pendidikan Anak Usia Dini*, *2*(1), 18. https://doi.org/10.47134/paud.v2i1.894

Ritonga, E. R., Hariyanti, Wahyuni, & Khadijah. (2022). Meningkatkan Kemampuan Motorik Kasar Anak Usia Dini Melalui Permainan Engklek. *CERDAS - Jurnal Pendidikan*, *1*(2), 52–60. https://doi.org/10.58794/cerdas.v1i2.208

Rizki, H., & Marsheilla Aguss, R. (2020). Analisis Tingkat Pencapaian Perkembangan Motorik Kasar Anak Usia 4-5 Tahun Pada Masa Pandemi Covid-19. *Journal Of Physical Education*, *1*, 20–24. https://doi.org/10.33365/joupe.v1i2.588

Rohmania, A., & Rohmawati, A. (2024). PENINGKATAN KECERDASAN KINESTETIK MELALUI PERMAINAN GAMES BALL PADA ANAK USIA 4-5 TAHUN DI RA DAARUL MUTTAQIN BANTUR-MALANG. *JURALIANSI: Jurnal Lingkup Anak Usia Dini*, *5*, 8–20. https://doi.org/10.35897/juraliansipiaud.v5i2.1539

Rustiana, & Pamungkas, B. (2025). *Improving Attention Abilities in Children with ADHD Characteristics through the Multisensory VAKT Method*. *4*(4), 2090–2104. https://doi.org/10.56916/jirpe.v4i4.2033

Sadaruddin, S., Intisari, I., Hajerah, H., Amri, N. A., & Mariyani, M. (2022). Kinesthetic Learning Development Methods to Train Fine Motors for Early Childhood. *Proceedings of the 1st World Conference on Social and Humanities Research (W-SHARE 2021)*, *654*, 229–234. https://doi.org/10.2991/assehr.k.220402.049

Sartika, I., Wahyuni, D., Agustini, A., Aryanti, A., Sari, L., & Larasati, W. (2023). Desain Pembelajaran Kecerdasan Kinestetik Berbasis Pendekatan Reggio Emillia pada Anak Usia Dini. *PAUDIA : Jurnal Penelitian Dalam Bidang Pendidikan Anak Usia Dini*, *12*, 188–202. https://doi.org/10.26877/paudia.v12i2.15640

Taftazani, M. A., & Kurniawan, H. (2024). Efektivitas Permainan Halang Rintang Dalam Meningkatkan Kemampuan Motorik Kasar Gangguan Spektrum Autisme. *Medical Journal of Nusantara*, *3*(1), 49–55. https://doi.org/10.55080/mjn.v3i1.719

Wahyuni, D., Sartika, I., & Atika, N. (2023). Kesiapan Implementasi Pengembangan Anak Usia Dini Holistik Integratif (PAUDHI). *Raudhatul Athfal Jurnal Pendidikan Islam Anak Usia Dini*, *7*, 73–89. https://doi.org/10.19109/ra.v7i1.20578

Wahyuni, I., & Kurniati, E. (2021). Body-Kinaesthetic Program for Toddlers During the Covid-19 Pandemic. *Proceedings of the 5th International Conference on Early Childhood Education (ICECE 2020)*, *538*(Icece 2020), 41–46. https://doi.org/10.2991/assehr.k.210322.010

Yuisman, D., Juliana, R., Adilla, U., & Mualimin, M. (2021). MENINGKATKAN KEMAMPUAN KINESTETIK MELALUI PENERAPAN MEDIA PERMAINAN TRADISIONAL ENGKLEK: Studi di Sekolah Dasar Negeri 35/II Jumbak Kecamatan Jujuhan Kabupaten Bungo. *Mikraf: Jurnal Pendidikan*, *2*(1), 1–16. https://jurnal.iim-jambi.ac.id/index.php/Mikraf/article/view/64