

Project Based Learning and Physical Activity for Cognitive Ability Stimulation in Early Childhood Education: Study Literature



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ABSTRACT: Project-based learning is a learning approach model that allows students to carry out learning using their own approach with the help of the teacher. Physical activity in early childhood is physical movement carried out by the body's muscles and supporting systems. This research aims to determine Project Based Learning and Physical Activity to Stimulate Cognitive Abilities in Early Childhood Education. This type of research uses literature study. The database in this study with article criteria comes from Sinta. In this study, 3 articles were used as references for researchers to carry out reviews. Characteristics of the 3 articles, 1). Publications from the last 9 years, 2). The articles reviewed are related to the focus of this research. Then the procedure for searching for articles needed in this research is based on Google web: 1). Google scholar and 2). Google Chrome. The analysis of this research focuses on Project Based Learning and Physical Activity to Stimulate Cognitive Abilities in Early Childhood Education. It was concluded that Project Based Learning and Physical Activity are closely related to stimulating cognitive abilities in early childhood education.

KEYWORDS: Project Based Learning, physical activity, early childhood education

I. INTRODUCTION

The Father of Indonesian National Education Ki Hajar Dewantara defined the meaning of education as the demands in the life of children's growth, while the meaning of education is to guide all the natural strengths that exist in children, so that they as humans and as members of society can achieve the highest safety and happiness. its height. Education is a humanistic process which is hereafter known as humanizing humans (Pristiwanti et al., 2022) . Therefore, we should be able to respect the human rights of every human being. Students in other words, students are not human machines that can be controlled at will, but they are a generation that we need to help and care for in every change towards maturity so that they can form independent human beings who think critically and have good moral attitudes. For this reason, education not only forms people who are different from other people who can carry out eating and drinking activities, dress and have a house to live in, this is what is called humanizing humans (Ibrahim, 2015).

Early childhood education is the basic level of education. Education at this time is a coaching effort aimed at children from birth to six years of age, which is carried out through providing stimulation (Saputra, 2018) . In early childhood education institutions, educators are required to develop children's potential, so that later children will be able to face creative problems to lead to stimulants of early childhood cognitive abilities (Heikka et al., 2013) . Teachers also don't just provide knowledge to their students, they also have to pay attention to the special things within the students, because if these things are developed, then it will be something special for the child and there is a lot of potential in the child and everything needs to be developed. , one of which is the potential for creativity and stimulant of cognitive abilities (Schwartz et al., 2022).

Early Childhood Education is a stimulus and stimulation effort carried out for newborn children up to the age of six Golden Age which is carried out by providing educational stimuli to help the growth and development of children, both physically and spiritually so that children are ready to enter further education (Khalifaoui et al., 2021) . Early childhood education functions to foster, grow and develop all the potential of early childhood optimally so that basic behavior and abilities are formed according

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to the stage of development so that they are ready to enter further education (Supriani & Arifudin, 2023) . Continuity between supervisors (parents), educators (tutors) in providing education from an early age. In practice, play groups must of course apply the basic principles of learning that must be fulfilled, one of the principles is playing while learning (Nurdiani, 2013). The principle of playing while learning really prioritizes playing activities rather than learning, meaning that learning activities in early childhood education (PAUD) are dominated by activities that are fun and exciting for children and vice versa, not activities that are boring for children or even painful for children (Maghfiroh & Suryana, 2021).

Project-Based Learning (PBL) is a learning approach in which children learn through active participation in relevant, real-life based projects or assignments. Project-based learning is an approach that is often used because problem solving is carried out by the person concerned (Suparman et al., 2021). Project-based learning is a good approach to use in solving learning problems because this approach focuses on students thinking critically to solve the problems they face (Amin et al., 2020). Learning using project-based learning is a good approach in overcoming educational learning problems (Prabandaru et al., 2020).

It was further stated that project-based learning is a learning approach model that allows students to carry out learning using their own approach with the help of the teacher, of course (Nurtanto et al., 2020) . Project-based learning provides a real or situational context for learning. Students are introduced to problems that are similar to situations in the real world, this helps young children link academic concepts with practical experience, stimulates cognitive stimulant thinking in a broader context. In problem-based learning , young children are invited to think critically and creatively to find solutions to problems given using a learning approach (Kokotsaki et al., 2016) . This process stimulates cognitive abilities such as analysis, synthesis, evaluation of learning approaches and young children learn not only to understand facts, but also to apply their knowledge to overcome concrete challenges (Hayati & Syaikh, 2020) Although young children may not have fully mastered verbal skills, project-based learning can stimulate their cognitive abilities through collaboration and communication. Simple group activities can help them share ideas, work together, and build mutual understanding (Kaldi et al., 2011) .

In the context of project-based learning, young children are invited to think creatively in finding solutions to given problems. This can involve various types of creative activities, such as drawing, role playing, or making simple models, and this stimulation stimulates their cognitive abilities in generating new ideas. Project-based learning helps develop children's cognitive abilities to think flexibly and find alternative solutions. This stimulates adaptive thinking, where children learn that problems can have more than one solution (Harjanty & Muzdalifah, 2022) .

Project-based learning encourages young children to become active learners, and not only receive information, but also apply, process and produce something as a result of learning (Genc, 2015) . Project-Based Learning can be an effective way to stimulate early childhood cognitive abilities, while also building a foundation for understanding more complex academic concepts in the future.

And in physical activity, early childhood children are also able to carry out activities that lead to stimulation of cognitive abilities. Physical activity is physical movement carried out by the body's muscles and supporting systems. Physical activity is any body movement produced by skeletal muscles that requires energy expenditure (Sholihin & Sugiarto -, 2015) . The physical activity of playing is very popular with every young child and this can be seen from the fact that most of the time spent by children is playing and this indirectly has a significant influence on children's development and stimulation of cognitive abilities in early childhood (Pratiwi , 2017) .

The individual physical development of each early childhood child includes four aspects: namely; The nervous system which greatly influences the development of intelligence and emotions, the muscles which influence the development of strength and motor abilities, the endocrine glands which cause the emergence of new behavioral patterns (Nugraha, 2015) . Older children will be physically healthy if they are physically active and to be physically active, older children need a combination of health-related fitness attributes (e.g. cardiovascular endurance, heart rate, and blood pressure response to exercise and body composition) and fitness related to performance (e.g. motor skills) and physical activity carried out by young children can increase the stimulation of their cognitive abilities (Khomaeny et al., 2020) .

II. RESEARCH MATERIALS AND METHODS

This research uses a *literature review method*. Literature review is a process of finding out and studying research results that have been published by researchers relating to previous scientific work regarding the reasons why researchers decided to choose certain themes or titles that collect from several previous studies (Primawanti & Ali, 2022) . The data collection technique in this research uses web-based internet by focusing on articles that are relevant to this research. The data used is a type of secondary data, meaning that researchers do not go directly into the field.

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Please note that the procedure for searching for articles relevant to this research uses the Synta database with the help of the *Google Chrome engine* and *Google Scholar*. The article search system uses keywords originating from the title of this research. As many as 15 articles were found during the article search process, but of the 15 articles found, only 3 articles were used as references by researchers for conducting reviews. This is because 12 articles were not included in this study. The researcher also emphasized that all data used for this research was sourced from the national or SINTA *data base* with provisions for the last 6 years so that its existence is still relevant today.

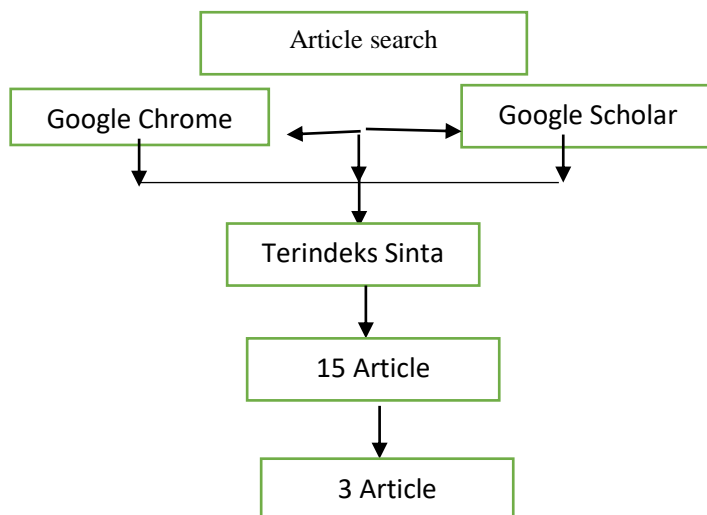


Figure 1. Research Framework

III. DISCUSSION

Table 1 below is three (3) articles that are the main reference or source for the author in completing this research, because the database in the research comes from the articles listed in the table below which are used as references for reviewing. Third (3) the article has several components or criteria that need to be included in the table below, namely 1). Author's name, 2). Article title, 3). Journal name, 4). The research results include, a. the variable being measured, b. number of samples and c. The following statistical tests are used in detail in 3 articles relevant to this research as follows:

Table 1. List of articles used as references

No	Author's Name and Year of Publication	Title	Journal Name	Research result
1	(Sari et al., 2017)	Implementation of Project Based Learning for Early Age Children	Motoric Journal (Media of teaching oriented and children)	The research results show: <i>Project Based Learning</i> for early childhood children develops a project either individually or as a group to produce a product. The topic in the project approach must be concrete, close to the child's personal experience, interesting, and have emotional and intellectual potential. Implementation of Project Based Learning in early childhood, divided into 3, namely: total project learning, partial project learning and occasional project learning
2	(Rehny & Sari, 2023)	Efforts to Develop Cognitive Abilities in the Science Process Using the Kindergarten	Journal of Innovation, Early Childhood Creativity (JIKAD)	The results of this research indicate that teacher activity at meeting II reached the criteria of being very active. The children's activities at meeting

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		Group A Project Based Learning Model		It reached the criteria of being very active and the results of the children's cognitive development achievements at meeting II with a score of 86% were in the category of developing as expected.
3	(Rubiyatno, 2014)	The Role of Sports Activities for Children's Growth and Development	Journal of Sports Education	The results of the research show that sports activities or physical activities, even though they are only unstructured activities such as walking, cycling, playing jump rope and running around, by carrying out movement activities like these, children's motor and cognitive abilities will be better and their growth and development will be optimal. .

Early childhood education plays a very important role in the basic formation of children's cognitive abilities. One approach that can be used to stimulate children's cognitive abilities is Project Based Learning (PBL) (Handayani & Sinaga, 2022) (Handayani & Sinaga, 2022). Project Based Learning provides opportunities for children to develop their creativity through problem solving and exploring ideas. Early childhood children learn to work together and collaborate with their friends, developing social and emotional skills (Wahyuni & Hasriani, 2023) .

Teachers act as facilitators who guide children through the project, providing support when needed. The application of Project Based Learning in early childhood education can be a positive step in stimulating children's cognitive abilities, preparing them to understand the world around them better (Hardiyanti & Rosnaeni, 2023) . By ensuring the relevance of the project, the active role of the teacher, and the support of parents, Project Based Learning can be an effective tool in creating a meaningful and deep learning environment for young children.

Project Based Learning stimulates children's creativity by providing projects that are challenging and require creative thinking. Through these activities, children can explore new ideas and think outside conventional boundaries. Project Based Learning is designed to develop various cognitive skills, such as problem solving, critical thinking, and abstract thinking skills (Rosmana et al., 2022), Children learn through in-depth practical experiences. Project Based Learning ensures that learning occurs in a real or relevant context for young children (Ramli & Jayanti, 2023) . This makes learning more meaningful and can be connected to everyday life in early childhood.

Project Based Learning often involves questions and research. This helps foster an inquisitive attitude in children, encouraging them to continue asking questions and looking for answers (Junita et al., 2021) . Project Based Learning can end with an exhibition of children's work (Sukmana & Amalia, 2021) . This provides an opportunity for them to share their knowledge and experience. Young children may have limited understanding of concepts, so it is necessary to simplify complex concepts. Early childhood children's gross and fine motor skills are still developing, so PBL projects must be adapted to their physical abilities. Project Based Learning (PBL) can be an effective approach to stimulate cognitive abilities in early childhood. By providing interesting and relevant learning experiences (Nurhayanti et al., 2021). Project Based Learning helps develop various cognitive skills, creativity and critical thinking abilities in young children (Prasetyaningtyas et al., 2021) .

Physical activity has an important role in stimulating cognitive abilities in early childhood education (Fitriani & Adawiyah, 2018) . Early childhood children are experiencing a phase of rapid brain development, and involvement in physical activity can provide a number of positive benefits, both physical and cognitive (Pradika et al., 2022). Physical activity helps improve children's concentration and attention, and through body movements, they learn to focus on the tasks or instructions given (Jauhari et al., 2019) .

Physical activity, especially involving gross and fine motor movements, contributes to the development of children's motor skills, which are also related to cognitive abilities (Ermona & Wirjatmadi, 2018) . Physical activities that involve challenges and games can stimulate creative thinking and problem-solving abilities in young children. Physical activities such as running, playing ball, or playing in the park can provide physical stimulation and diverse sensory experiences (Zahari et al., 2022) .

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Challenges can arise from space or physical resource limitations. The solution may involve creativity in designing physical activities that suit the available environment. Maintaining consistency in providing physical activity is a challenge, but can be overcome by creating a regular schedule and supporting the participation of young children. Physical activity has a significant positive impact on the cognitive development of early childhood. By providing an environment that supports movement and physical activity, we can stimulate brain development and increase children's readiness for further learning. The integration of physical activity with a holistic educational approach can provide long-term benefits for children's development in various aspects of early childhood life.

IV. CONCLUSION

From the results of the article review, the researcher drew the conclusion that *Project Based Learning* and Physical Activity are closely related to stimulating cognitive abilities in early childhood education.

REFERENCES

- 1) Amin, S., Utaya, S., Bachri, S., Sumarmi, S., & Susilo, S. (2020). Effect Of Problem Based Learning On Critical Thinking Skill And Enviromental Attitude. *Journal For The Education Of Gifted Young Scientists*, 8(2), Article 2. <https://doi.org/10.17478/Jegys.650344>
- 2) Ermona, N. D. N., & Wirjatmadi, B. (2018). Hubungan Aktivitas Fisik Dan Asupan Gizi Dengan Status Gizi Lebih Pada Anak Usia Sekolah Dasar Di Sdn Ketabang 1 Kota Surabaya Tahun 2017. *Amerta Nutrition*, 2(1), 97. <https://doi.org/10.20473/Amnt.V2i1.2018.97-105>
- 3) Fitriani, R., & Adawiyah, R. (2018). Perkembangan Fisik Motorik Anak Usia Dini. *Jurnal Golden Age*, 2(01), Article 01. <https://doi.org/10.29408/Goldenage.V2i01.742>
- 4) Genc, M. (2015). The Project-Based Learning Approach In Environmental Education. *International Research In Geographical And Environmental Education*, 24(2), 105–117. <https://doi.org/10.1080/10382046.2014.993169>
- 5) Handayani, A., & Sinaga, S. I. (2022). Penerapan Model Project Based Learning Dalam Meningkatkan Kemampuan Berpikir Kritis Anak Usia Dini. *PAUD Lectura: Jurnal Pendidikan Anak Usia Dini*, 6(01), 146–154. <https://doi.org/10.31849/Paud-Lectura.V5i03.10670>
- 6) Hardiyanti, N., & Rosnaeni, R. (2023). Meningkatkan Kreativitas Anak Usia 5-6 Tahun Pada Pembelajaran Project Based Learning. *JURNAL PEMIKIRAN DAN PENGEMBANGAN PEMBELAJARAN*, 5(2), Article 2. <https://doi.org/10.31970/Pendidikan.V5i2.694>
- 7) Harjanty, R., & Muzdalifah, F. (2022). Implementation Of STEAM Project-Based Learning In Developing Early Childhood Cooperation. *Atfaluna: Journal Of Islamic Early Childhood Education*, 5(1), Article 1. <https://doi.org/10.32505/Atfaluna.V5i1.4093>
- 8) Hayati, M., & Syaikhu, A. (2020). Project-Based Learning In Media Learning Material Development For Early Childhood Education. *AL-ATHFAL : JURNAL PENDIDIKAN ANAK*, 6(2), 147–160. <https://doi.org/10.14421/Al-Athfal.2020.62-05>
- 9) Heikka, J., Waniganayake, M., & Hujala, E. (2013). Contextualizing Distributed Leadership Within Early Childhood Education: Current Understandings, Research Evidence And Future Challenges. *Educational Management Administration & Leadership*, 41(1), 30–44. <https://doi.org/10.1177/1741143212462700>
- 10) Ibrahim, R. (2015). Pendidikan Multikultural: Pengertian, Prinsip, Dan Relevansinya Dengan Tujuan Pendidikan Islam. *ADDIN*, 7(1), Article 1. <https://doi.org/10.21043/Addin.V7i1.573>
- 11) Jauhari, M. T., Santoso, S., & Anantanyu, S. (2019). Asupan Protein Dan Kalsium Serta Aktivitas Fisik Pada Anak Usia Sekolah Dasar. *Ilmu Gizi Indonesia*, 2(2), Article 2. <https://doi.org/10.35842/Iggi.V2i2.86>
- 12) Junita, N. P., Ilyas, S. N., & Alriani, I. (2021). Penerapan Model Project Based Learning (Pjbl) Untuk Meningkatkan Kemampuan Motoric Halus Peserta Didik Kelompok B TK IT Mumtazah Kota Bengkulu. *JURNAL PEMIKIRAN DAN PENGEMBANGAN PEMBELAJARAN*, 3(4), Article 4.
- 13) Kaldi, S., Filippatou, D., & Govaris, C. (2011). Project-Based Learning In Primary Schools: Effects On Pupils' Learning And Attitudes. *Education 3-13*, 39(1), 35–47. <https://doi.org/10.1080/03004270903179538>
- 14) Khalfaoui, A., García-Carrión, R., & Villardón-Gallego, L. (2021). A Systematic Review Of The Literature On Aspects Affecting Positive Classroom Climate In Multicultural Early Childhood Education. *Early Childhood Education Journal*, 49(1), 71–81. <https://doi.org/10.1007/S10643-020-01054-4>
- 15) Khomaeny, E. F. F., Ulfah, M., & Hamzah, N. (2020). Pengaruh Aktivitas Fisik Dan Lingkungan Alamiah Bagi Daya Tahan Tubuh Anak Usia Dini. *Awlady : Jurnal Pendidikan Anak*, 6(2), Article 2. <https://doi.org/10.24235/Awlady.V6i2.6206>

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- 16) Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-Based Learning: A Review Of The Literature. *Improving Schools*, 19(3), 267–277. <https://doi.org/10.1177/1365480216659733>
- 17) Maghfiroh, S., & Suryana, D. (2021). *Media Pembelajaran Untuk Anak Usia Dini Di Pendidikan Anak Usia Dini*. 5.
- 18) Nugraha, B. (2015). Pendidikan Jasmani Olahraga Usia Dini. *Jurnal Pendidikan Anak*, 4(1), Article 1. <https://doi.org/10.21831/jpa.v4i1.12344>
- 19) Nurdiani, Y. (2013). Penerapan Prinsip Bermain Sambil Belajar Dalam Mengembangkan Multiple Inteligencia Pada Pendidikan Anak Usia Dini (Study Kasus Di PAUD Daarul Piqri Kelurahan Leuwigajah Cimahi Selatan). *Empowerment : Jurnal Ilmiah Program Studi Pendidikan Luar Sekolah*, 2(2), Article 2. <https://doi.org/10.22460/Empowerment.V2i2p85-93.601>
- 20) Nurhayanti, D., Hajerah, H., & Zainuddin, I. (2021). Penerapan Model Project Based Learning Dalam Meningkatkan Kemampuan Membilang Anak 1- 10 Dengan Media Kongkrit Pohon Angka Pada Kelompok A Di TK Tunas Bangsa Indramayu Jawa Barat. *JURNAL PEMIKIRAN DAN PENGEMBANGAN PEMBELAJARAN*, 3(4), Article 4.
- 21) Nurtanto, M., Fawaid, M., & Sofyan, H. (2020). Problem Based Learning (PBL) In Industry 4.0: Improving Learning Quality Through Character-Based Literacy Learning And Life Career Skill (LL-LCS). *Journal Of Physics: Conference Series*, 1573(1), 012006. <https://doi.org/10.1088/1742-6596/1573/1/012006>
- 22) Prabandaru, R. D., Lismadiana, L., & Nanda, F. A. (2020). Problem-Based Learning Approach To Improve Service Skills Of Badminton In Physical Education Learning. *International Journal Of Education And Learning*, 2(1), 14–24. <https://doi.org/10.31763/ijele.V2i1.74>
- 23) Pradika, R. R. T. A., Sari, A. D., & Suminar, I. T. (2022). Hubungan Aktivitas Fisik Dengan Kejadian Obesitas Pada Anak Usia Sekolah: Literature Review. *Citra Delima Scientific Journal Of Citra Internasional Institute*, 6(1), Article 1. <https://doi.org/10.33862/Citradelima.V6i1.277>
- 24) Prasetyaningtyas, W. E., Pentury, H. J., & Anggraeni, A. D. (2021). Implementing 21st Century Skills In Project Based Learning To Develop Young Learners Literacy. *Jurnal Pkm (Pengabdian Kepada Masyarakat)*, 4(3), Article 3. <https://doi.org/10.30998/jurnalpkm.V4i3.6901>
- 25) Pratiwi, W. (2017). Konsep Bermain Pada Anak Usia Dini. *Tadbir: Jurnal Manajemen Pendidikan Islam*, 5(2), Article 2.
- 26) Primawanti, E. P., & Ali, H. (2022). Pengaruh Teknologi Informasi, Sistem Informasi Berbasis Web Dan Knowledge Management Terhadap Kinerja Karyawan (Literature Review Executive Support Sistem (ESS) For Business). *Jurnal Ekonomi Manajemen Sistem Informasi*, 3(3), 267–285. <https://doi.org/10.31933/jemsi.V3i3.818>
- 27) Pristiwanti, D., Badariah, B., Hidayat, S., & Dewi, R. S. (2022). Pengertian Pendidikan. *Jurnal Pendidikan Dan Konseling (JPDK)*, 4(6), Article 6. <https://doi.org/10.31004/jpdk.V4i6.9498>
- 28) Ramli, A. F., & Jayanti, D. (2023). Project Based Learning Untuk Meningkatkan Motorik Halus Anak Usia Dini TKN Nilla Gading Rompegading. *JURNAL PEMIKIRAN DAN PENGEMBANGAN PEMBELAJARAN*, 5(2), Article 2. <https://doi.org/10.31970/Pendidikan.V5i2.595>
- 29) Rehny, Z., & Sari, N. P. (2023). Upaya Mengembangkan Kemampuan Kognitif Pada Proses Sains Menggunakan Model Project Based Learning Kelompok A TK. *Jurnal Inovasi, Kreatifitas Anak Usia Dini (JIKAD)*, 3(2), Article 2. <https://doi.org/10.20527/jikad.V3i2.9132>
- 30) Rosmana, P. S., Iskandar, S., Janah, R. M. M., Thifana, A. R., Susanti, R., & Marini, F. P. (2022). Pengaruh Pembelajaran Project Based Learning Pada Sekolah Dasar Di Masa Pandemi. *Jurnal Pendidikan Tambusai*, 6(1), 3678–3684. <https://doi.org/10.31004/jptam.V6i1.3438>
- 31) Rubiyatno, R. (2014). Peranan Aktivitas Olahraga Bagi Tumbuh Kembang Anak. *Jurnal Pendidikan Olah Raga*, 3(1), Article 1. <https://doi.org/10.31571/jpo.V3i1.138>
- 32) Saputra, A. (2018). Pendidikan Anak Pada Usia Dini. *AT-TA'DIB: JURNAL ILMIAH PRODI PENDIDIKAN AGAMA ISLAM*, 192–209.
- 33) Sari, A. Y., Rodiyah, Sujati, & Zulfah, U. (2017). Implementasi Pembelajaran Project Based Learning Untuk Anak Usia Dini. *Motoric*, 1(1), Article 1. <https://doi.org/10.31090/paudmotoric.V1i1.547>
- 34) Schwartz, M., Ragnarsdóttir, H., Toren, N. K., & Dror, O. (2022). Towards A Better Understanding Of Preschool Teachers' Agency In Multilingual Multicultural Classrooms: A Cross-National Comparison Between Teachers In Iceland And Israel. *Linguistics And Education*, 101125. <https://doi.org/10.1016/j.linged.2022.101125>
- 35) Sholihin, A. D., & Sugiarto -. (2015). Analisis Aktivitas Fisik Dan Aktivitas Belajar Pada Mahasiswa Fakultas Ilmu Keolahragaan Universitas Negeri Semarang Dalam Memanfaatkan Waktu Luang. *Journal Of Sport Science And Fitness*, 4(4), Article 4. <https://doi.org/10.15294/jssf.V4i4.10095>

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- 36) Sukmana, I. K., & Amalia, N. (2021). Pengaruh Model Pembelajaran Project Based Learning Terhadap Peningkatan Motivasi Belajar Dan Kerja Sama Siswa Dan Orang Tua Di Era Pandemi. *EDUKATIF : JURNAL ILMU PENDIDIKAN*, 3(5), Article 5. <https://doi.org/10.31004/edukatif.v3i5.1068>
- 37) Suparman, Juandi, D., & Tamur, M. (2021). Review Of Problem-Based Learning Trends In 2010-2020: A Meta-Analysis Study Of The Effect Of Problem-Based Learning In Enhancing Mathematical Problem-Solving Skills Of Indonesian Students. *Journal Of Physics: Conference Series*, 1722(1), 012103. <https://doi.org/10.1088/1742-6596/1722/1/012103>
- 38) Supriani, Y., & Arifudin, O. (2023). PARTISIPASI ORANG TUA DALAM PENDIDIKAN ANAK USIA DINI. *Plamboyan Edu*, 1(1), 95–105.
- 39) Wahyuni, S., & Hasriani, H. (2023). Upaya Meningkatkan Perilaku Prosocial Anak Usia Dini Menggunakan Model Project Based Learning. *JURNAL PEMIKIRAN DAN PENGEMBANGAN PEMBELAJARAN*, 5(2), Article 2. <https://doi.org/10.31970/pendidikan.v5i2.496>
- 40) Zahari, Q. F., Prashanti, N. A. S., Salsabella, S., Jumiatmoko, J., Hafidah, R., & Nurjannah, N. E. (2022). Kemampuan Fisik Motorik Anak Usia Dini Dengan Masalah Obesitas. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 6(4), 2844–2851. <https://doi.org/10.31004/obsesi.v6i4.1570>



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