

# Effectiveness of Motor Learning Model Based on Local Wisdom in Improving Fundamental Skills

## Eficacia del modelo de aprendizaje motor basado en la sabiduría local para mejorar las habilidades fundamentales

\*I Ketut Yoda, \*\*Rifqi Festiawan, \*\*\*Nurul Ihsan, \*\*\*Ardo Okilanda  
\*Universitas Pendidikan Ganesha, \*\*Universitas Jenderal Sudirman, \*\*\*Universitas Negeri Padang

**Abstract.** Traditional Balinese games are considered a cultural heritage that provides many basic movement benefits but have not been well revealed, this study aims to describe the effectiveness of the Motor Learning Model Based on Local Wisdom (MLMBLW) in Improving Fundamental Skills of students in early childhood education programs in Buleleng Regency in Bali Provinces. The data analysis technique used descriptive quantitative. The sample in this study was the students in early childhood education Laboratory of Undiksha school and early childhood education Telkom School (n = 44) age 5 year taken by purposive sampling technique with active children for traditional Balinese games. Data were collected by direct observation, questionnaires, and tests. Based on the results of data analysis, the effectiveness of the MLMBLW which can be seen from the activities of students participating in learning 81.3% belongs to the very high/very active category, student learning achievement as seen from the average fundamental motor skills above 70% have moderate to high basic movement skills, and the teacher's response to the implementation is overall positive. This research is evidence that MLMBLW is effectively applied in the implementation of motor learning in early childhood students. From the results of this study, there are several things that are recommended: (1) early childhood education teachers must understand the character of students and the local wisdom used, so that the learning steps (syntax) can be implemented properly, (2) the learning model can be implemented properly, if the teacher understands how to play traditional games (local wisdom) well. Introducing culture to every child is the same as preserving the world's cultural wealth, for that reason traditional Balinese games are also important in addition to improving fitness.

**Keywords** Basic Movement Activities, Balinese Culture, Traditional Games

**Resumen.** Los juegos tradicionales balineses se consideran un patrimonio cultural que proporciona muchos beneficios básicos de movimiento, pero no han sido bien revelados, este estudio tiene como objetivo describir la efectividad del Modelo de aprendizaje motor basado en la sabiduría local (MLMBLW) en la mejora de las habilidades fundamentales de los estudiantes en programas de educación infantil en Buleleng Regency en las provincias de Bali. La técnica de análisis de datos utilizó un cuantitativo descriptivo. La muestra en este estudio fueron los estudiantes en el Laboratorio de educación infantil de la escuela Undiksha y la Escuela de educación infantil Telkom (n = 44) de 5 años de edad tomados mediante la técnica de muestreo intencional con niños activos para juegos tradicionales balineses. Los datos se recopilaron mediante observación directa, cuestionarios y pruebas. Con base en los resultados del análisis de datos, la efectividad del MLMBLW que se puede ver a partir de las actividades de los estudiantes que participan en el aprendizaje, el 81,3% pertenece a la categoría muy alta / muy activa, el logro de aprendizaje de los estudiantes como se ve a partir de las habilidades motoras fundamentales promedio por encima del 70% tienen habilidades de movimiento básico de moderadas a altas, y la respuesta del maestro a la implementación es en general positiva. Esta investigación es una evidencia de que MLMBLW se aplica de manera efectiva en la implementación del aprendizaje motor en estudiantes de la primera infancia. A partir de los resultados de este estudio, hay varias cosas que se recomiendan: (1) los maestros de educación de la primera infancia deben comprender el carácter de los estudiantes y la sabiduría local utilizada, de modo que los pasos de aprendizaje (sintaxis) se puedan implementar correctamente, (2) el modelo de aprendizaje se puede implementar correctamente, si el maestro entiende bien cómo jugar juegos tradicionales (sabiduría local). Presentar la cultura a cada niño es lo mismo que preservar la riqueza cultural del mundo, por esa razón los juegos tradicionales balineses también son importantes además de mejorar la condición física.

**Palabras clave:** Actividades básicas de movimiento, cultura balinesa, juegos tradicionales

---

Fecha recepción: 25-04-24. Fecha de aceptación: 02-06-24

Nurul Ihsan

[nurul\\_ihsan@fik.unp.ac.id](mailto:nurul_ihsan@fik.unp.ac.id)

### Introduction

The standard level of achievement of early childhood growth and development from birth to the age of six years is an actualization of the potential of all aspects of development that children are expected to achieve at each stage of their development, not a level of academic proficiency achievement harmonious personality development, achieved at the age of 13-14 years (Pan & Zhu, 2018; Polevoy, 2024), Early Childhood Education is a coaching effort learning with project children (Umar et al., 2023)

aimed at children from birth to the age of 6 (six) years which is carried out through the provision of educational stimuli for Assist in physical and spiritual growth and development so that children are prepared to enter education (Yen & Lee, 2019). The first critical period in the course of human life occurs at an early age (Lindmeier et al., 2020). Likewise, it is said that early childhood is the golden age (The golden age), its arrival is only once in human life so ECCE is a very basic and strategic education in the development of quality human resources (Serino, Ma et al., 2018). One of the important and often

forgotten elements in early childhood development in a comprehensive manner is the development of basic movement skills (fundamental motor skills). In the current phenomena, the implementation of early childhood education (Early Childhood Education Programs), ECCE teachers are only oriented towards achieving the improvement of children's abilities in academic aspects or knowledge, namely reading, writing, and numeracy (listing). This will certainly have a very bad impact on the development of ECCE children in an effort to build a superior generation in various aspects. Basic Motion Skills are a number of motion skills that involve large muscles of several parts of the body. Basic motion skills are very useful in mastering more complex motion skills throughout human life and are very helpful for children in learning skills in various games, sports, dance, and recreational activities in the form of physical activity (Hulteen et al., 2018). Basic motion skills must be developed from an early age and if this is not done it will result in the child failing in carrying out the task of movement (Suhadi et al., 2023; Suryadi et al., 2024) in the next period and even the failure of the movement occurs until adulthood (Longmuir et al., 2017). Children who have good basic movement skills will be easier and faster in learning more complex motion skills (Cooke et al., 2020), besides that good mastery of basic motion skills can also be useful in preventing obesity and benefits physiologically and psychologically as well as from general health aspects in children (Tompsett et al., 2017). Basic motion skills are not only useful for easier mastery of certain types of sports, but more importantly, mastery of basic motion skills is very useful for supporting children's daily activities (Kosmas et al., 2018).

Some research results related to basic motion skills can be described as follows, mastery of basic movements and physical activity are closely related from childhood to adolescence (Wick et al., 2017). There is a positive and significant correlation between the mastery of basic motion skills during childhood and participation after the child enters adolescence, that high achievement is very likely to be achieved by the child who actively participates in high-intensity motor activity, whereas visual movement control and balance are quite good, achievable by the child participating in low-intensity active motor activity (Campos et al., 2023). Therefore, fundamental movement skills must be mastered from an early age because it is a foundation for the quality of life in the future.

What has been almost forgotten in modern times and is very rational can be used as a learning tool in improving basic early childhood movement skills is the local wisdom of traditional games (Quintero Naranjo, 2023). Because local wisdom of traditional Balinese games is something that is closest to children's daily life and can shape children's behaviour in the future. Local wisdom rests on philosophies, values, ethics, and behaviours that

traditionally institutionalize to manage natural and human resources, formulated as a formulation of a community's worldview of natural and social phenomena that direct or remain in an area (Pic et al., 2019). Local wisdom is everything that grows and develops in a group of communities, is a cultural wealth, and is a very believed part of maintaining close relations between communities (Garzón, 2024). Local wisdom in Indonesia is a philosophy and outlook on life that is manifested in various fields of life (Noor & Sugito, 2019).

From the results of the study, it is explained that the Balinese people have a lot of potential local wisdom which is currently still relevant to modern education and learning theories (Werdistira & Purnama, 2020). Traditional Balinese games are one of the local Balinese wisdom that can be used as learning activities in early childhood which are of great benefit in building and developing children from all aspects, namely physical, mental, and social (Kusuma et al., 2021). The concept of learning in early childhood that is fundamental is learning play, because play is a child's need and can make them active children, as well as become more creative (Nilsson et al., 2018). The increasing possibilities and opportunities of performing a wide variety of physical movement activities can stimulate the development of the recognition of the basic concepts of object, space, force, time, and causation (Chan et al., 2019).

## Materials and Methods

This study is a descriptive study, with the population of all Early Childhood Education Programs students in Buleleng Regency totalling 201 Early Childhood Education Programs, spread across 9 sub-districts as follows: 1) *Gero-kgak*: 17 schools, 2) *Seririt*: 26 schools, 3) *Busungbiu*: 17 schools, 4) *Banjar*: 14 schools, 5) *Sukasada*: 20 schools, 6) *Buleleng*: 58 schools, 7) *Sawan*: 18 schools, 8) *Kubutambahan*: 15 schools, and 9) *Tejakula*: 16 schools. The samples used were students of Early Childhood Education Programs Laboratory Undiksha school and Early Childhood Education Programs Telkom Singaraja students, totalling 44 people, who were taken with purposive sampling. The data collection techniques used are observation and test methods. The data of this study is in the form of quantitative data, therefore the data processing uses quantitative descriptive methods (Fellows & Liu, 2021), which are used on data that requires narrative and quantity meaning in the content and process.

The effectiveness of the wisdom-based motor learning model is seen from the activities of students following learning and the results of the fundamental motor skills test of students. Data on student activity collected based on observations were analyzed descriptively. Student activity is determined by calculating the average percentage of students who meet the activity indicators. So the

average ideal highest percentage is 100 and the ideal lowest percentage average is 0. Activity classification criteria are arranged based on the ideal mean (Mi) and the ideal standard deviation (Ziv et al., 2020). The MMLBB model is said to be effective if it meets the following criteria. 1) Student activity in participating in learning is relatively high; 2) Basic mobility (fundamental motor skills) students are classified as medium and above at least 70%.

## Results

Some research results related to basic motion skills can be described as follows, mastery of basic movements and physical activity are closely related from childhood to adolescence (Wick et al., 2017). There is a positive and significant correlation between the mastery of basic motion skills during childhood and participation after the child enters adolescence, that high achievement is very likely to be achieved by the child who actively participates in high-intensity motor activity, whereas visual movement control and balance are quite good, achievable by the child participating in low-intensity active motor activity (Campos et al., 2023; Moral-García et al., 2021). Therefore, fundamental movement skills must be mastered from an early age because it is a foundation for the quality of life in the future.

The effectiveness of the model is seen from student activities in participating in learning, learning outcomes of students' basic movement skills (fundamental motor skills), and student responses to the implementation of MMLBB. For this reason, based on the results of the student activity questionnaire, the average percentage of student activity participating in learning using MMLBB shows that the average student activity is 81.3. After being converted into the classification of student learning activities, 81.3 is classified as very high. This means that as many as 81.3% of students have experienced and carried out the expected learning activities with MMLBB.

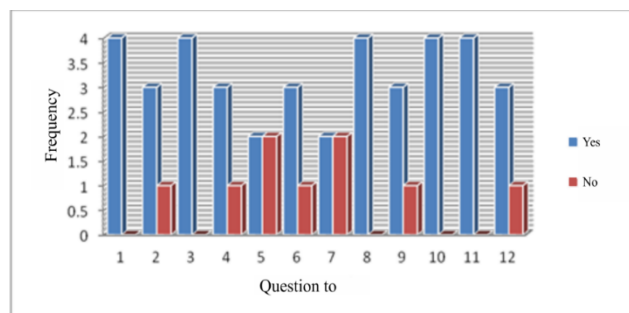


Figure 1. Student Activities Following the MMLBB Model

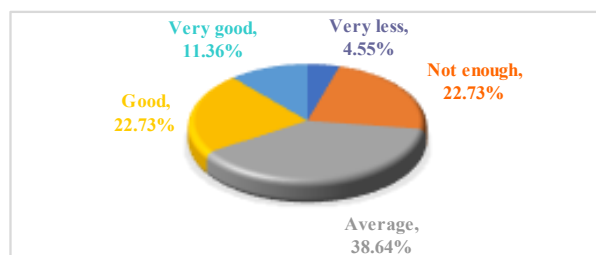


Figure 2. Diagram of Basic Motion Skills (Fundamental Motor Skills) of Early Childhood Education Programs Laboratory and Telkom Students

## Discussion

The results of data analysis show that the MMLBB model is effectively applied to ECCE mainly to improve the ability of basic motion skills. This also means that the MMLBB model is a motor learning model in ECCE that can increase student activity in participating in learning. Basic movement skills in early childhood are one of the important aspects in maintaining a balance of children's growth and development so that they grow and develop into a superior generation physically, mentally, socially, and spiritually. Basic movement skills that are not good in children will have an impact on abnormal child movements such as poor hand and foot swings when walking and running, and wrong ways of jumping or throwing that are carried over until the next period, namely adolescence and adulthood so that the child looks physically abnormal.

The application of MMLBB in Early Childhood Education Programs will be able to develop basic movement skills because MMLBB is one of the models of movement learning based on local wisdom by using traditional Balinese games to provide the widest opportunity for students to carry out movement activities according to the needs of children in a system full of happiness, joy, togetherness, mutual help, competitive carried out in the spirit of responsibility. The activity will unwittingly be well-trained (R. Dewi & Verawati, 2022). Traditional games are actually a type of sport whose existence is due to physical activity in the form of games of various tribes or ethnicities, a culture of great value especially for the life of people in childhood in their efforts to perform fantasy, recreation, and perform physical activity (Summerley, 2020).

Children's physical growth and development are not only influenced by the maturity process but also by the factors of children's experience in making movements both from the quality of the movements and their many opportunities to perform movements (Newell, 2020). An important thing that ECCE teachers should pay attention to is the characteristics of growth, development, and physical activity needed by early childhood, as well as the principles of learning in early childhood education. Generally, early childhood is very fond of play activities and they learn through the process of interaction with their environment. Because play is a child's world, early childhood

will become more active and creative so play activities are considered very appropriate in stimulating children's growth and development which has an impact on mastering basic movement skills (Collins et al., 2019).

When the Early Childhood Education Programs teacher applied the local wisdom of traditional Balinese games, all the students played cheerfully and happily, and none of them was silent. Students perform running, jumping, and using tools both when defending against the opponent's attack and attacking the opponent with a pleasant emotional overflow, even though they do not feel fatigued when playing and preschool students really enjoy the traditional game. This condition will unwittingly have a great impact on the growth of muscles, bones, and joints, which subsequently the development of fundamental motion increases to the maximum.

According to the character of early childhood is to really like play activities. Indeed, everyone is in dire need of play activities, including in early childhood (Collins et al., 2019). This is because playing is a physically and mentally involved activity that is liked by various groups, both men and women, old, adult, and young, regardless of social status, the occurrence of fun and excitement by not thinking about the final result obtained by the players.

Various of Balinese local wisdom can be used as a learning tool, one of which is traditional games. Traditional games in the archipelago have various aspects of child development that can be stimulated, especially in the motor aspects: training endurance, flexibility, sensory-motor, gross motor, and fine motor (O'Connor & Penney, 2021). In the process of children's physical growth and development, play activities are very important because the physique and movement of early childhood will develop optimally according to their potential. Thus, the most important thing that ECCE teachers must do is to provide the widest possible opportunity to play involving large muscles, because actually play activities for early childhood are an opportunity for children to prepare their physique and movements for the next lifetime.

Some of the advantages obtained from playing (Amodia-Bidakowska et al., 2020) are: (a) higher burning energy, (b) certain body organs, bones, and muscles, maximum growth, (c) increase appetite, (d) self-control ability is better trained, (e) movement skills can develop well, (f) creativity increases, (g) can train peer association, (j) growth of a spirit of sensitivity, (k) can increase self-adjustment, especially to the rules of the game, (l) improvement of intellectual abilities, and (m) the child will feel refreshed psychically and overcome saturation.

The results of this study are strongly supported by several research results related to the use of local culture in learning such as: Research on "Cooperative Learning Model Based on Local Wisdom of Bali can improve learning outcomes for Physical Education, Sport and Health Subject in Junior High School" (Yoda, 2017); "Revitalizing

Local Wisdom in Balinese Simile: Can Enhance Balinese Youth Character" (Kardana et al., 2022); "There are nine of Bali Local Wisdom Based Characters in Physics Teaching at senior high school" (Suastra et al., 2017); "Local Culture-Based Science Learning Models can Develop Basic Science Competencies in Junior High Schools" (Suastra, 2010); Improving the Quality of Learning Through the Development of a Local Genius-Oriented Model" (I. N. Dewi et al., 2021).

## Conclusion

Based on the results and discussion, it can be concluded that MMLBB is effective in improving the basic movement skills of ECCE students. Based on the conclusions stated above, the researcher recommends things like the following, a) In order for the learning steps (syntax) of the MMLBB model to be implemented properly, ECCE teachers need to have an understanding of the rules and how to perform traditional games, b) The MMLBB model can be implemented well in motion learning, if the ECCE teacher, understands the theory of motion learning and the level of development of early childhood motion, c) ECCE Teachers should continuously apply this MMLBB model to motion learning. Specifically, to develop culture and love the nation's culture, it is important to instill from an early age that traditional games also improve health and fitness, providing a long-term impact on children to develop well in motor aspect. Introducing culture to every child is the same as preserving the world's cultural wealth, for that reason traditional Balinese games are also important in addition to improving fitness

## Acknowledgements

We would like to thank all the elements who have provided support for the implementation of this research activity.

## References

- Amodia-Bidakowska, A., Laverty, C., & Ramchandani, P. G. (2020). Father-child play: A systematic review of its frequency, characteristics and potential impact on children's development. *Developmental Review*, 57, 100924.
- Campos, A. R., Abello, C. G., Campos, N. U., Castillo, M. C., Zapata-Lamana, R., Figueroa, A. T., Molina, D. R., Askins, M. C., Ortiz, C., & Cuevas, I. I. C. (2023). Characteristics and effects of school based physical activity programs for schoolchildren with autism spectrum disorder: A scoping review. *Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación*, 49, 203–213.
- Chan, C. H. S., Ha, A. S. C., Ng, J. Y. Y., & Lubans, D. R. (2019). Associations between fundamental movement skill competence, physical activity and psycho-social determinants in

- Hong Kong Chinese children. *Journal of Sports Sciences*, 37(2), 229–236. <https://doi.org/10.1080/02640414.2018.1490055>
- Collins, H., Booth, J. N., Duncan, A., & Fawcner, S. (2019). The effect of resistance training interventions on fundamental movement skills in youth: A meta-analysis. *Sports Medicine - Open*, 5(1), 17. <https://doi.org/10.1186/s40798-019-0188-x>
- Cooke, M., Press, F., & Wong, S. (2020). Educators' risk-taking in high quality early childhood education. *International Journal of Early Years Education*, 1–17. <https://doi.org/10.1080/09669760.2020.1848531>
- Dewi, I. N., Dwi, U. S., Effendi, I., Ramdani, A., & Rohyani, I. S. (2021). The Effectiveness of Biology Learning-Local Genius Program of Mount Rinjani Area to Improve the Generic Skills. *International Journal of Instruction*, 14(1), 265–282.
- Dewi, R., & Verawati, I. (2022). The effect of manipulative games to improve fundamental motor skills in elementary school students. *International Journal of Education in Mathematics, Science and Technology*, 10(1), 24–37.
- Fellows, R. F., & Liu, A. M. (2021). *Research methods for construction*. John Wiley & Sons. [https://www.google.com/books?hl=en&lr=&id=b61JEAAQBAJ&oi=fnd&pg=PR9&dq=The+data+of+this+study+is+in+the+form+of+quantitative+data,+therefore+the+data+processing+uses+quantitative+descriptive+methods.+book&ots=S4lgrp1Bm&sig=UjiGiWLNdrbs7qT24mD8\\_6cD1C0](https://www.google.com/books?hl=en&lr=&id=b61JEAAQBAJ&oi=fnd&pg=PR9&dq=The+data+of+this+study+is+in+the+form+of+quantitative+data,+therefore+the+data+processing+uses+quantitative+descriptive+methods.+book&ots=S4lgrp1Bm&sig=UjiGiWLNdrbs7qT24mD8_6cD1C0)
- Hulteen, R. M., Morgan, P. J., Barnett, L. M., Stodden, D. F., & Lubans, D. R. (2018). Development of Foundational Movement Skills: A Conceptual Model for Physical Activity Across the Lifespan. *Sports Medicine*, 48(7), 1533–1540. <https://doi.org/10.1007/s40279-018-0892-6>
- Kardana, I. N., Rajistha, I. G. N. A., & Satyawati, M. S. (2022). Revitalizing Local Wisdom in Balinese Simile: An Effort to Enhance Balinese Youth Character. *Journal of Language Teaching and Research*, 13(1), 138–144.
- Kosmas, P., Ioannou, A., & Retalis, S. (2018). Moving Bodies to Moving Minds: A Study of the Use of Motion-Based Games in Special Education. *TechTrends*, 62(6), 594–601. <https://doi.org/10.1007/s11528-018-0294-5>
- Kusuma, I., Asmawi, M., Hernawan, H., Dlis, F., Widiastuti, W., & Kanca, I. N. (2021). A Study of Learning Physical Fitness Activities Based on Traditional Balinese Sports Games for Students' Physical Fitness. *International Journal of Human Movement and Sports Sciences*, 9(5), 1029–1039.
- Lindmeier, A., Seemann, S., Kuratli-Geeler, S., Wullschleger, A., Dunekacke, S., Leuchter, M., Vogt, F., Opitz, E. M., & Heinze, A. (2020). Modelling early childhood teachers' mathematics-specific professional competence and its differential growth through professional development – an aspect of structural validity. *Research in Mathematics Education*, 22(2), 168–187. <https://doi.org/10.1080/14794802.2019.1710558>
- Longmuir, P. E., Boyer, C., Lloyd, M., Borghese, M. M., Knight, E., Saunders, T. J., Boiarskaia, E., Zhu, W., & Tremblay, M. S. (2017). Canadian Agility and Movement Skill Assessment (CAMSA): Validity, objectivity, and reliability evidence for children 8–12 years of age. *Journal of Sport and Health Science*, 6(2), 231–240.
- Moral-García, J. E., López-García, S., Urchaga, J. D., Maneiro, R., & Guevara, R. M. (2021). Relationship Between Motivation, Sex, Age, Body Composition and Physical Activity in Schoolchildren. *Apuntes Educación Física y Deportes*, 144, 1–9.
- Newell, K. M. (2020). What are fundamental motor skills and what is fundamental about them? *Journal of Motor Learning and Development*, 8(2), 280–314.
- Nilsson, M., Ferholt, B., & Lecusay, R. (2018). 'The playing-exploring child': Reconceptualizing the relationship between play and learning in early childhood education. *Contemporary Issues in Early Childhood*, 19(3), 231–245. <https://doi.org/10.1177/1463949117710800>
- Noor, A. F., & Sugito, S. (2019). Multicultural education based in local wisdom of Indonesia for elementary schools in the 21st century. *Journal of International Social Studies*, 9(2), 94–106.
- O'Connor, J., & Penney, D. (2021). Informal sport and curriculum futures: An investigation of the knowledge, skills and understandings for participation and the possibilities for physical education. *European Physical Education Review*, 27(1), 3–26. <https://doi.org/10.1177/1356336X20915937>
- Pan, Q., & Zhu, Q. (2018). Development of self-control in early childhood—A growth mixture modeling approach. *Cogent Psychology*, 5(1), 1544537. <https://doi.org/10.1080/23311908.2018.1544537>
- Pic, M., Lavega-Burgués, P., & March-Llanes, J. (2019). Motor behaviour through traditional games. *Educational Studies*, 45(6), 742–755. <https://doi.org/10.1080/03055698.2018.1516630>
- Polevoy, G. (2024). Sensitive periods of flexibility development at school age. *Retos*, 56, 1066–1074.
- Pornpimon, C., Wallapha, A., & Prayuth, C. (2014). Strategy challenges the local wisdom applications sustainability in schools. *Procedia-Social and Behavioral Sciences*, 112, 626–634.
- Quintero Naranjo, B. E. (2023). Traditional games: A pedagogical proposal to encourage Intercultural Communicative Competence. <http://repository.pedagogica.edu.co/handle/20.500.12209/19120>
- Serino, Ma, D., Peterson, Md, B. S., & Rosen, Md, T. S. (2018). Psychological Functioning of Women Taking Illicit Drugs during Pregnancy and the Growth and Development of Their Offspring in Early Childhood. *Journal of Dual Diagnosis*, 14(3), 158–170. <https://doi.org/10.1080/15504263.2018.1468946>
- Suatra, I. W. (2010). Model pembelajaran sains berbasis budaya lokal untuk mengembangkan potensi dasar sains dan nilai kearifan lokal di SMP. *Jurnal Pendidikan Dan Pengajaran*, 43(1). <http://download.garuda.kemdikbud.go.id/article.php?article=2676638&val=1324&title=Model%20Pembelajaran%20>

- Sains%20Berbasis%20Budaya%20Lokal%20Untuk%20mengembangkannya%20Potensi%20Dasar%20Sains%20dan%20Nilai%20Kearifan%20Lokal%20di%20SMP
- Suastra, I. W., Jatmiko, B., Ristiati, N. P., & Yasmini, L. P. B. (2017). Developing characters based on local wisdom of Bali in teaching physics in senior high school. *Jurnal Pendidikan IPA Indonesia*, 6(2), 306–312.
- Suhadi, S., Guntur, G., Kriswanto, E. S., & Nopembri, S. (2023). Muscular Endurance and Strength as Predominant Factors on Spike among Young Volleyball Athletes. *Retos*, 50, 349–356.
- Summerley, R. (2020). The Development of Sports: A Comparative Analysis of the Early Institutionalization of Traditional Sports and E-Sports. *Games and Culture*, 15(1), 51–72. <https://doi.org/10.1177/1555412019838094>
- Suryadi, D., Nasrulloh, A., Yanti, N., Fauzan, L. A., Kushartanti, B. W., Suhartini, B., Budayati, E. S., Arovah, N. I., Suganda, M. A., & Sutapa, P. (2024). Stimulation of motor skills through game models in early childhood and elementary school students: Systematic review in Indonesia. *Retos*, 51, 1255–1261.
- Tompsett, C., Sanders, R., Taylor, C., & Cobley, S. (2017). Pedagogical Approaches to and Effects of Fundamental Movement Skill Interventions on Health Outcomes: A Systematic Review. *Sports Medicine*, 47(9), 1795–1819. <https://doi.org/10.1007/s40279-017-0697-z>
- Umar, U., Okilanda, A., Suganda, M. A., Mardesia, P., Suryadi, D., Wahyuni, D., Widyastuti, S. R., Samodra, Y. T. J., & Kurniawan, F. (2023). Blended learning and online learning with project-based learning: Do they affect cognition and psychomotor learning achievement in physical conditions? *Retos: Nuevas Tendencias En Educación Física, Deporte y Recreación*, 50, 556–565.
- Werdistira, I. W. A., & Purnama, I. V. (2020). Local wisdom based Balinese digital storytelling through blended learning method. *Linguistics and Culture Review*, 4(1), 48–54.
- Wick, K., Leeger-Aschmann, C. S., Monn, N. D., Radtke, T., Ott, L. V., Rebholz, C. E., Cruz, S., Gerber, N., Schmutz, E. A., Puder, J. J., Munsch, S., Kakebeeke, T. H., Jenni, O. G., Granacher, U., & Kriemler, S. (2017). Interventions to Promote Fundamental Movement Skills in Childcare and Kindergarten: A Systematic Review and Meta-Analysis. *Sports Medicine*, 47(10), 2045–2068. <https://doi.org/10.1007/s40279-017-0723-1>
- Yen, S.-C., & Lee, A. Y. (2019). Jumpstart program efficacy: The impact of early childhood education advancement initiatives on low-income preschool children's literacy, agency, and social relations. *Cogent Education*, 6(1), 1592063. <https://doi.org/10.1080/2331186X.2019.1592063>
- Yoda, I. K. (2017). The development of cooperative learning model based on local wisdom of Bali for physical education, sport and health subject in junior high school. *IOP Conference Series: Materials Science and Engineering*, 180(1), 012166. <https://iopscience.iop.org/article/10.1088/1757-899X/180/1/012166/meta>
- Ziv, G., Lidor, R., & Netz, Y. (2020). Dealing with Possible Baseline Inequalities Between Experimental Groups – The Case of Motor Learning. *Journal of Motor Behavior*, 52(4), 502–513. <https://doi.org/10.1080/00222895.2019.1649996>

#### Datos de los/as autores/as:

I Ketut Yoda  
Rifqi Festiawan  
Nurul Ihsan  
Ardo Okilanda

yodaketut@undiksha.ac.id  
rifqi.festiawan@unsoed.ac.id  
nurul\_ihsan@fik.unp.ac.id  
ardo.oku@fik.unp.ac.id

Autor/a  
Autor/a  
Autor/a  
Autor/a