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The Application of The Movement Education Model to Improve The Basic Movement Skills of Students with Mild Intellectual Disabilities

Kiki Rahayu Widianingsih[1], Suherman Slamet[2]✉, Wulandari Putri[3]

Elementary School Teacher Education Physical Education, Faculty of Sport and Health Education, University of Education Indonesia, Indonesia[123]

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Abstract

This study aims to examine the effectiveness of the Movement Education Model in improving basic movement skills among students with mild intellectual disabilities. The research employed a quasi-experimental design using a one-group pretest-post-test model, involving six students from Special Education Schools Satria Galdin, Bandung Regency. The intervention was conducted over 12 sessions, applying the Movement Education Model based on four core components: body awareness, space, effort, and relationships. Basic motor skills were assessed using the Test of Gross Motor Development–3 (TGMD-3), with data analyzed using a paired sample t-test. Results showed a significant improvement in students' basic motor skills (pre-test mean = 72.00; post-test mean = 113.83; sig. = 0.001), indicating that the Movement Education Model is effective in developing locomotor and manipulative abilities. These findings support the use of exploratory, individualized, and adaptive physical education models to enhance gross motor development in students with mild disabilities. The study recommends wider implementation of this model in Special Education Schools to support inclusive and equitable physical education practices.

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✉ Correspondence Author:
E-mail: suhermanslamet@upi.edu

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INTRODUCTION

Education plays a fundamental role in shaping personality and developing the full potential of individuals towards a better direction. The educational process is not only limited to the transfer of knowledge, but also includes the development of moral, social, emotional values, and balanced life skills. Education is an important means to develop students into individuals who are independent, creative, and contribute to society. According to (Alfurqan, 2021), education is a lifelong human need, because without education humans will find it difficult to develop and can experience backwardness. Education cannot be separated from human life because it functions to shape intelligence, character, and skills that are useful in everyday life. Therefore, quality and inclusive education must reach all levels of society, including those with special needs.

Law Number 20 of 2003 concerning the National Education System stipulates that national education aims to develop the potential of students to become people who are faithful, pious, have noble character, are healthy, capable, and responsible. It also explains that education is inclusive, reaching all citizens including children with special needs. This is a strong legal basis for the implementation of fair and equitable education for all students. One form of implementation of inclusive education is the establishment of Special Schools which provide educational services for children with special needs. Children with intellectual disabilities are one of the groups in special education that require different learning approaches and strategies, especially in terms of motor skills. Special School not only aims to provide academic education, but also emphasizes the social, emotional, and physical development of children.

By (Tarigan, 2016), emphasized that children with special needs have the same rights to obtain educational services at every level. However, in practice, children with mild mental retardation still face obstacles in mastering basic motor skills. They often show slower development than children of the same age, especially in gross motor aspects which include walking, running, jumping, and throwing. Children with mild mental retardation, as explained by (Desiningrum, 2016), are children with below-average intelligence and have limitations in social adjustment. This affects their ability to understand instructions, participate actively, and develop motor skills. This condition requires an appropriate learning approach that supports overall development.

Agustin (Agustin, 2017) in (Devi I & Kumaat A, 2019), stated that children with mild mental retardation have challenges in the development of motor skills, both fine and gross. This problem is caused by sensory and motor limitations, decreased organ function, and learning disabilities that impact their ability to engage in physical activity. Therefore, adaptive physical education learning must be designed specifically. Unfortunately, physical education learning in Special School often still uses a conventional approach that is less suited to the characteristics of students. This results in low student participation in physical activities, which then impacts their basic movement skills. This condition indicates the need for a more innovative learning strategy that is relevant to the real conditions of students.

Adaptive physical education is a form of adjustment from regular physical education, which aims to accommodate the needs of students with certain disabilities. This physical education not only develops aspects of fitness and physical skills, but also increases independence, self-confidence, and social skills. Therefore, the learning strategies used must be able to overcome the motoric barriers experienced by students with mild mental retardation. One relevant strategy is the movement education model. According to (Mahendra, 2015), the movement education model is a learning model in physical education that emphasizes the concept and components of movement. This model not only supports psychomotor development, but also stimulates the cognitive and affective aspects of students. Children are invited to explore movements, not imitate or memorize certain movements.

The movement education model has four main components: body awareness, effort, space, and relationship. By (Nugraha et al., 2018), explained that body awareness teaches children to know their bodies, effort focuses on the quality of effort in moving, space emphasizes spatial orientation, and relationship relates to movement interactions with objects and other individuals. All of these components are designed to develop basic movement skills comprehensively.

By (Parwata, 2021), emphasized that the movement education model can improve children›s learning experiences because learning is exploratory and individual. Children are given the opportunity to find movements according to their abilities, not directed to imitate uniformly. This approach is very relevant for children

with mild mental retardation who have varying characteristics and abilities.

In the context of developing basic motor skills,(Gallahue & Donnelly, 2007), stated that locomotor skills such as walking and running, non-locomotor skills such as bending and turning, and manipulative skills such as throwing and catching must be taught systematically. This is important so that children can develop motor skills that are the basis for active participation in everyday life.

By (Maryani, 2023), divides basic movement skills into three main categories: locomotor, non-locomotor, and manipulative. These three types of skills support each other and must be developed in a balanced manner. Children with mild mental retardation require an approach that is not only technical, but also pays attention to their mental and emotional readiness in carrying out physical activities.

Previous studies such as (Yuniar & Nanik, 2015), proved that traditional games can improve the locomotor skills of children with mild mental retardation. Likewise, (Selvi & Saipul, 2018) found that play-based learning models are in accordance with the characteristics of Special School students. However, research on the effectiveness of movement education models is still limited, especially in the context of physical education in Special School.

By Putri & Damri (2020) also emphasized that a game-based approach can improve gross motor skills. However, the game approach alone is not always systematic and not all children get a balanced learning experience. This is where the movement education model has an advantage, because it integrates exploration, conceptual structure, and individual focus simultaneously.

One of the advantages of the movement education model is its ability to adapt to the development of age and the needs of each student. By (Lesmana, 2018), stated that in elementary school physical education learning, basic movement patterns are the main material that must be guided and developed appropriately. Movement-based learning allows the learning process to be more enjoyable and meaningful for children with intellectual disabilities.

Well-developed basic movement skills will also have an impact on increasing children›s participation in social activities and increasing self-confidence. Physical activity that is carried out in a structured manner and according to individual abilities can form the foundation for an active and healthy lifestyle. This is important as part of the long-term goals of adaptive physical education.

Based on the description, it can be concluded that the movement education model has great potential to be applied in improving the basic movement skills of students with mild mental retardation. However, empirical research on the effectiveness of this model in the context of Special School is still very limited. Therefore, this study aims to systematically test the effect of the movement education model on improving the basic movement skills of students with mild mental retardation, as a scientific and practical contribution to the development of adaptive physical education in Indonesia.

This study contributes new insights to the field of adaptive physical education by providing empirical evidence on the effectiveness of the Movement Education Model specifically for students with mild intellectual disabilities in the context of a Special School in Indonesia. Unlike previous studies that primarily utilized conventional or game-based physical education approaches, this research applies a structured Movement Education Model that integrates four core components body awareness, space, effort, and relationshipsin a systematic and individualized learning framework. The use of the TGMD-3 instrument adds a quantitative dimension to the measurement of basic movement skills, addressing gaps in prior studies that relied heavily on observational or qualitative data. Furthermore, this research highlights the model's capacity to foster not only motor development but also cognitive and affective growth, offering a comprehensive, child-centered pedagogical approach. As such, this study positions the Movement Education Model as a promising and practical alternative for inclusive and adaptive physical education practices within Special Schools.

METHOD

This study used a quantitative approach with a quasi-experimental design method to determine the effect of the movement education model on improving basic movement skills of students with mild mental retardation (Sugiyono, 2018). The design used is a one group pretest-posttest design, where one group of subjects is given an initial test (pretest), continued with treatment, and ended with a final test (posttest) to determine changes in ability after the intervention.

The study was conducted at Special School Satria Galdin, located in Ciparay District, Bandung Regency. The population of the study was

all students with mild mental retardation registered at the school, totaling 30 people. Sampling was carried out using purposive sampling technique (Sugiyono, 2017), with inclusion criteria, namely students who have been diagnosed as mild mental retardation by the school, are in grade V, are physically healthy, and are able to actively participate in physical learning activities. Based on these criteria, 6 students were obtained as research subjects.

The instrument used to measure basic motor skills is was the Test of Gross Motor Development–3 (TGMD-3). This test consists of two main subtests, namely locomotor skills (including abilities such as running, jumping, and stepping) and ball skills (such as throwing and catching). This instrument was chosen because it is suitable for measuring gross motor skills in children, especially in the context of adaptive physical education, and has been proven to have high validity and reliability (Cronin & Allen, 2017; Ulrich, 2019). Before being used in primary data collection, the instrument had been tested on subjects with similar characteristics, and validated by physical education experts and special needs teachers to ensure the appropriateness of the content.

The treatment in this study was conducted over a total of 12 sessions, which included 1 session for the pre-test, 10 sessions for treatment, and 1 session for the post-test. The intervention given was in the form of learning using a movement education model, which consists of four main components, namely: (1) body awareness or body awareness; (2) space or mastery of space; (3) effort or movement effort; and (4) relationships or relationships with objects or other individuals. All learning activities are designed in the form of fun, gradual, exploratory games that are adjusted to individual abilities. The teacher acts as a facilitator who motivates students to explore movement through direct experience, without pressure or rigid instructions.

Before and after treatment, all subjects were given the same basic motor skills test. Data obtained from the pretest and posttest results were then analyzed quantitatively. Data normality testing was carried out using the Shapiro-Wilk Test, because the number of samples was less than 50. This test aims to ensure that the data is normally distributed before further testing is carried out. Furthermore, the data were analyzed using a paired sample t-test to determine whether there was a significant difference between the pretest and posttest results(Ghozali, 2018). The entire analysis process was carried out with the help of IBM SPSS Statistics software version 25 with a significance level of 0.05 (Fadluloh et al., 2024).

RESULTS AND DISCUSSION

Table 1. Descriptive Statistics Basic Movement Skills Test

Variables	N	Pre-Test	Post-Test
		(Mean± sd)	(Mean± sd)
Basic Movement Skills	6	72.00± 5,138	113.83± 10,028

From the **Table 1**, it can be explained that the mean pre-test data for basic movement skills is 72.00. The mean post-test data for basic movement skills is 113.83. The standard deviation obtained for the pre-test for basic movement skills is 5.138 and the standard deviation for the post-test for basic movement skills is 10.028. From the comparison of the mean (average) of the pre-test and post-test for movement skills, it shows an increase in the results obtained.

Based on the results of the normality test shown in Table 4.4, the significance value (sig.) for the pretest was 0.986 and for the posttest was 0.851. Both values are greater than 0.05, so it can be concluded that the data from both measurements are normally distributed.

Thus, the data meets the assumption of normality and is suitable for analysis using parametric statistical tests, namely the paired sample t-test to see the difference between the pretest and posttest scores of students' basic movement skills.

From the data above, it can be seen that the significant value or sig. (2-tailed) is $0.001 < 0.05$, which means that Ho is rejected and Ha is accepted. This means that there is an influence on improving the basic movement skills of students with mild mental retardation through learning the movement education model and it is stated that the hypothesis is accepted.

The improvement of basic motor skills of mildly mentally retarded students after the implementation of the movement education model proves that the exploratory approach that emphasizes understanding movement is very effective for students with special needs. In this study, the increase in scores from 72.00 to 113.83 after 12 treatments showed a positive response from students to learning activities designed according to their potential and abilities.

The movement education model that emphasizes four main elements, namely body awareness, effort, space, and relationships, provides a comprehensive stimulus for children's gross motor development. This model is flexible and allows students to explore movement inde-

pendently, so that children do not feel burdened by certain movement standards (Parwata, 2021). This is in accordance with the principle of adaptive learning that facilitates the individual needs of students with special needs.

Students with mild intellectual disabilities have obstacles in intellectual function and social behavioral adjustment, which also affect their ability to develop basic motor skills(Papadopoulos et al., 2018). Therefore, a learning model that emphasizes fun, gradual activities and does not require uniform end results is very important. Movement education meets these criteria, because the focus is not on perfect movement results, but on the movement learning process that is appropriate to the development of each individual.

This finding also strengthens the results of previous studies that used a game-based approach as a physical learning intervention for children with mild mental retardation, such as those conducted by (Yuniar & Nanik, 2015), and (Putri & Damri, 2020). However, the approach in this study provides additional advantages because it is based on the concept of movement and develops not only motoric aspects, but also cognitive and affective aspects simultaneously (Hastie et al., 2021; Mahendra, 2015).

Locomotor aspects such as walking, running, jumping, and manipulative skills such as throwing and catching a ball are very important to develop early on. These skills are an important foundation for physical activity throughout life(Barnett et al., 2023). In the context of physical education, mastery of these skills will affect children's readiness to participate in social activities, group games, and other physical activities outside the classroom.

Statistically, the results of the paired sample t-test showed a significant value (0.001 <0.05), which means that there is a real effect of the treatment given. This shows that the movement education model approach is not just a method innovation, but is able to provide measurable results that are relevant to the needs of students. This strengthens the argument that the physical education curriculum for Special School needs to be adjusted with a more flexible and contextual approach (Wuang et al., 2020).

Success in improving these basic motor skills can also be seen as an important foundation for improving the quality of life of children with intellectual disabilities. With developed motor skills, students will be more confident, socially active, and independent in daily activities. By (Lubans et al., 2019), stated that good basic motor skills contribute to an active and healthy lifestyle, which has a direct impact on long-term mental and physical health.

Furthermore, the development of this movement education model can be a practical reference for physical education teachers, especially in Special School, who have so far been limited in the use of appropriate learning approaches. Adopting this model allows teachers to be more creative and focused in developing learning strategies that are not only interesting but also based on inclusive and humanistic pedagogical principles (Hastie et al., 2021).

The results of this study indicate that the movement education model can be an alternative effective learning method in improving basic movement skills of students with mild mental retardation. This finding is useful for enriching adaptive physical education strategies and supporting a more inclusive curriculum in Special School. Therefore, it is recommended that Special Schools integrate this model into their routine physical education programs, as well as provide training to teachers so that they are able to apply it optimally according to student needs.

CONCLUSION

Based on the results of the study, it can be concluded that the application of the movement education model significantly improves basic movement skills in students with mild mental retardation. This approach has proven effective because it is exploratory and child-centered, so it can stimulate the development of gross motor skills as a whole. Learning that combines body awareness, mastery of space, movement effort, and relationships between elements has been proven to create a more adaptive and inclusive learning environment. The significant increase in post-test scores compared to the pre-test is evidence that this strategy can be used as an alternative to relevant physical education learning for children with special needs, especially in Special Schools Thus, the movement education model is worthy of being widely applied in adaptive physical education practices to support optimal child growth and development.

REFERENCES

Agustin, R. (2017). Pengaruh Modifikasi Permainan Menendang Bola Terhadap Koordinasi Gerak Manipulatif Anak Tunagrahita Ringan Siswa Smplb-C Alpha Kumara Wardhana Ii Surabaya. Jurnal Kesehatan Olahraga, 7(3), 40–44.

Alfurqan, M. (2021). Pendidikan sebagai Kebutuhan Sepanjang Hayat. Penerbit Edukasi Press.

Barnett, L. M., Salmon, J., & Hesketh, K. D. (2023).

Longitudinal Associations Between Fundamental Motor Skills and Physical Activity. Journal of Science and Medicine in Sport, 26(2), 98–105.

Cronin, L. D., & Allen, J. (2017). Development and initial validation of the Life Skills Scale for Sport. Psychology of Sport and Exercise, 28, 105–119. https://doi.org/10.1016/j.psychsport.2016.11.001

Devi I, & Kumaat A. (2019). Pengaruh Latihan Dribble Bola Terhadap Mata-Tangan Anak Tuna Grahita. 167–174.

Fadluloh, F. M., Sartono, H., Kusumah, W., & Mulyana, M. (2024). Athletes ' Perception of Parental Support and Achievement Motivation : A Correlational Study with Early Age Individual Sport Athletes in Swimming. 412–421. https://www.ejournal.unma.ac.id/index.php/ijsm/article/view/11454

Gallahue, D. L., & Donnelly, F. C. (2007). Developmental Physical Education for All Children (4th ed.). Human Kinetics.

Ghozali, I. (2018). Aplikasi Analisis Multivariate dengan Program IBM SPSS 25. Badan Penerbit Universitas Diponegoro.

Hastie, P. A., Casey, A., & Templin, T. (2021). Student-Centered Approaches in Adapted Physical Education. Routledge.

Lesmana, D. (2018). Pendidikan Jasmani di Sekolah Dasar. Pustaka Pendidikan.

Lubans, D. R., Morgan, P. J., Cliff, D. P., Barnett, L. M., & Okely, A. D. (2019). Fundamental Movement Skills and Physical Activity in Children. Sports Medicine, 49(11), 1671–1690.

Mahendra, A. (2015). Model Pembelajaran Pendidikan Jasmani. Departemen Pendidikan Jasmani FPOK UPI.

Maryani, Y. (2023). Pengembangan Keterampilan Gerak Dasar Anak Usia Dini. Jurnal Pendidikan Olahraga Dan Kesehatan, 11(1), 23–30.

Nugraha, E., Sulaeman, R., & Aji, G. (2018). Model Gerak Edukatif dalam Pembelajaran PJOK. Jurnal Pendidikan Jasmani Indonesia, 5(2), 100–108.

Papadopoulos, N., Rieger, A., & McGinley, J. (2018). Motor proficiency and academic performance in children with and without intellectual disabilities. International Journal of Disability, Development and Education, 65(4), 370–384.

Parwata, I. M. (2021). Penerapan Model Movement Education pada Anak Berkebutuhan Khusus. Jurnal Pendidikan Khusus, 9(1), 45–52.

Psikologi anak berkebutuhan khusus. (n.d.).

Putri, N. E., & Damri, D. (2020). Efektivitas Permainan Lompat Katak untuk Meningkatkan Kemampuan Motorik Kasar bagi Siswa Tunagrahita Ringan. Tarbawi : Jurnal Ilmu Pendidikan, 16(2), 120–125. https://doi.org/10.32939/tarbawi.v16i2.639

Selvi, R., & Saipul, A. (2018). Model Pembelajaran Berbasis Permainan pada Siswa SLB. Jurnal Pendidikan Jasmani Dan Adaptif, 6(1), 41–47.

Senam, A., & Gerak, P. (2021). Jurnal Ilmiah Pro Guru , Vol . 7 No . 3 , Juli 2021 ISSN : 2442 – 2525 , E _ ISSN : 2721-7906 Penerapan Model Pendidikan Gerak (Movement Education) Dalam Memahami Dan Mempraktikkan Aktivitas Senam Muhammad Safi ' i SMP Negeri 9 Probolinggo . Jalan H . O. 7(3).

Sugiyono. (2017). Statistika untuk Penelitian. Alfabeta.

Sugiyono. (2018). Metode Penelitian Kuantitatif, Kualitatif dan R&D. Alfabeta.

Tarigan, R. (2016). Pendidikan Inklusif dan Anak Berkebutuhan Khusus. Pustaka Pelajar.

Ulrich, D. A. (2019). Test of Gross Motor Development (TGMD-3). Pro-Ed.

Wuang, Y. P., Lin, Y. H., & Su, C. Y. (2020). Gross Motor Development and Its Correlation with Academic and Social Competency in Children with Intellectual Disabilities. Research in Developmental Disabilities, 99, 103580.

Yuniar, N., & Nanik, R. (2015). Pengaruh Permainan Tradisional terhadap Keterampilan Lokomotor Anak Tunagrahita. Jurnal Pendidikan Khusus, 4(2), 112–118.