



Enhancing Locomotor Skills Through Team-Based Games with Creative Media in Elementary Physical Education Classes

Ananda Alfath^{1ABCDE}, Meirizal Usra^{1ACD} and Wahyu Indra Bayu^{1ACDE}

¹Universitas Sriwijaya

Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

DOI: 10.17309/jltm.2025.6.2.05

Abstract

Background. Locomotor movement is a fundamental component of motor development in early elementary school. However, low student engagement and limited Physical Education, Sports, and Health (PJOK) learning facilities often restrict the effective development of locomotor skills.

Objectives. This study aimed to evaluate the effectiveness of creative media-based team games in improving locomotor skills among second-grade elementary school students.

Material and Methods. The research used a Classroom Action Research (CAR) design implemented over two cycles, each consisting of two actions. The participants were 28 students of class 2B from SD Negeri 02 Indralaya Utara. Data collection included observation, interviews, documentation, and the Test of Gross Motor Development-2 (TGMD-2).

Results. The intervention led to a notable improvement in locomotor performance. The students' average score increased from 29.89 (62.27%) at baseline to 44.46 (92.63%) at the end of Cycle 2, indicating substantial progress following the implementation of creative media-based team games.

Conclusions. Creative media-based team games are effective in enhancing locomotor skills and fostering an engaging, active learning environment. The findings provide practical guidance for teachers in designing evidence-based instructional strategies to support locomotor development in early elementary education.

Keywords: locomotor skills, physical education, creative media, team games, motor development, classroom action research.

Introduction

Education plays a crucial role in human life because it contributes directly to developing individual potential and quality. In the Indonesian education system, Physical Education, Sports, and Health (PJOK) holds an equal position with other subjects in achieving national education goals. PJOK emphasizes movement-based learning through physical activities, games, and sports to enhance students' physical, mental, and emotional development (Shidiq et al., 2022). Central to this process are basic movement skills—locomotor, non-locomotor, and manipulative—that form the foundation for students' physical abilities (Muzakki & Saputra, 2020). Among these, locomotor movements such as walking, running, and jumping are essential for supporting physical competence and quality of life (Simahate & Munip, 2020; Bednarczuk et al., 2025).

Despite their importance, many elementary students still show low locomotor skills, which can hinder both learning

and daily activities. Locomotor competence is closely linked to lower limb strength, speed, balance, and self-confidence (Gråstén et al., 2022). Observations at SD Negeri 02 Indralaya Utara revealed that some students lacked interest in PJOK motor skills lessons, reflecting low motor proficiency. This issue may stem from factors such as limited facilities, unpleasant learning experiences, or difficulties in understanding material. Yet, motor skill development is vital because strong motor abilities support sensory functions and cognitive growth, thereby influencing students' motivation and learning outcomes.

Improving locomotor skills requires supportive external factors, including appropriate facilities, creative media, and effective teacher–student interaction (Saleh & Ramdhani, 2020; Nur et al., 2018; Zain & Putra, 2020). Teachers' professional competence and managerial skills also play a significant role in creating engaging learning environments (Ellis et al., 2023). One promising strategy is the use of educational games, which not only strengthen psychomotor skills but also integrate cognitive and affective aspects (Anggraini,

2021; Agung, 2021). Recent studies confirm the effectiveness of play-based learning and media in improving locomotor skills (Musampa, 2022; Syahbani et al., 2024; Arlini et al., 2024). However, these studies primarily focused on individual practice and used limited media, leaving gaps in the implementation of more varied and collaborative approaches.

Previous studies on improving locomotor skills in elementary students have largely emphasized individual practice and relied on limited types of learning media. While these approaches demonstrated positive outcomes, they do not fully address the need for collaborative, engaging, and varied game-based models that reflect the social and interactive nature of elementary school learning. Therefore, this study aims to design and implement an innovative creative media-based team game model in PJOK as an alternative solution to enhance locomotor skills. The study specifically seeks to analyze the current condition of students' locomotor skills, to develop a creative team game model that integrates diverse learning media suited to elementary school characteristics, and to examine the practicality and potential effectiveness of the model in PJOK learning. Accordingly, the research is guided by the following questions: (1) what is the current condition of elementary school students' locomotor skills in PJOK learning, (2) how can a creative media-based team game model be designed to suit the characteristics and needs of elementary students, and (3) to what extent is the developed model practical and potentially effective in improving students' locomotor skills?

Materials and Methods

This study employed a Classroom Action Research (CAR) approach, conducted systematically in cycles. Each cycle consisted of four stages: planning, implementation, observation, and reflection, carried out once a week. The CAR approach was expected to contribute to improving the quality of PJOK learning, particularly in developing students' locomotor skills.

The research was conducted at SD Negeri 02 Indralaya Utara, Ogan Ilir Regency, South Sumatra. The classroom action research was implemented over a period of several weeks, with one cycle carried out each week.

The subjects of this study were 28 students from grade 2B, consisting of 14 boys and 14 girls, aged 6 to 8 years old.

The selection of subjects was based on initial observation results, which indicated that the students' locomotor skills were still relatively low. Thus, the entire class was included as research participants.

Data were collected using a test technique to measure students' locomotor skills through the Test of Gross Motor Development-2 (TGMD-2), which focuses on locomotor skills such as running, galloping, hopping, leaping, horizontal jumping, and sliding. The TGMD-2 instrument has been shown to possess high validity and reliability, indicating consistency and accuracy in measurement (Apriyani et al., 2018). Assessments were carried out using a checklist-based scoring sheet, where each student was given two trials for each skill. A score of 1 was given if the skill criterion was achieved, and a score of 0 if it was not.

The collected data were analyzed using a quantitative approach. Raw scores from each locomotor skill test were

converted into standard scores based on TGMD-2 guidelines and categorized according to the established descriptive classification. Furthermore, the mean scores and percentages were calculated for each cycle to evaluate the improvement in students' locomotor skills.

Results

This study aimed to improve the locomotor skills of grade 2B students at SD Negeri 02 Indralaya Utara through the implementation of group games supported by creative media in Physical Education (PE). Data were collected from 28 students through a series of tests and observations across each action cycle.

Table 1. Initial Test Results

Initial Data	Raw Score	Mean	Percentage (%)
Total	837	29.89	62.27

Based on Table 1, the total raw score obtained by the students was 837, with a mean score of 29.89 or 62.27%. These results indicate that the students' locomotor ability was still at a low level.

Table 2. Cycle 1 Action 1 Results

C1A1	Raw Score	Mean	Percentage (%)
Total	955	34.11	71.06

In Cycle 1 Action 1, the raw score increased to 955, with a mean of 34.11 or 71.06%. This shows an improvement of 118 points from the baseline, with a mean increase of 4.22 or 8.79%.

Table 3. Cycle 1 Action 2 Results

C1A2	Raw Score	Mean	Percentage (%)
Total	1,065	38.04	79.25

In Cycle 1 Action 2, the raw score rose to 1,065, with a mean score of 38.04 or 79.25%. This indicates an improvement of 110 points, with a mean increase of 3.93 or 8.13%. The students began to demonstrate better understanding and became more accustomed to locomotor concepts and practices.

Table 4. Cycle 2 Action 1 Results

C2A1	Raw Score	Mean	Percentage (%)
Total	1,165	41.61	86.69

In Cycle 2 Action 1, the raw score further increased to 1,165, with a mean score of 41.61 or 86.69%. This shows an improvement of 100 points compared to the previous cycle, with a mean increase of 3.57 or 7.44%.

Table 5. Cycle 2 Action 2 Results

C2A2	Raw Score	Mean	Percentage (%)
Total	1,245	44.46	92.63

In Cycle 2 Action 2, the raw score reached 1,245, with a mean of 44.46 or 92.63%. This represents an improvement of 80 points, with a mean increase of 2.85 or 5.94%.

Overall, the findings demonstrate significant improvement in each cycle. From the baseline mean score of 29.89 (62.27%), the students' scores increased to 44.46 (92.63%)

by the end of Cycle 2 Action 2. These results indicate that the implementation of group games supported by creative media was effective in enhancing the locomotor skills of grade 2B students at SD Negeri 02 Indralaya Utara.

Discussion

Based on the findings of this study, several factors were identified as contributing to the low level of locomotor skills among grade 2B students at SD Negeri 02 Indralaya Utara. The main problems included a lack of understanding of basic movement concepts, limited awareness of the importance of physical activity, and low interest in physical education. In fact, physical education plays a crucial role in enhancing students' overall quality of life—physically, mentally, and emotionally (Salim et al., 2023; Firdaus & Nurrochmah, 2021; Adji & Wibowo, 2023). Initial data showed that the average locomotor skill score of students was still low, reaching only 29.89 or 62.27%. This situation was further worsened by inadequate facilities, less engaging teaching methods, and low learning motivation, as confirmed by previous studies (Fauzan et al., 2022).

Through the implementation of creative media and game-based learning strategies, students' locomotor skills improved significantly in each cycle. In cycle 1 action 1, the average score increased to 34.11 (71.06%) after the use of creative media, which made the learning process more effective (Erwansyah & Ferianto, 2016; Muslim, 2021). The improvement continued in cycle 1 action 2, with the average score rising to 38.04 (79.25%), where the application of games successfully enhanced motivation and provided enjoyable motor stimulation (Mudzakir, 2020; Zenith et al., 2020).

In cycle 2 action 1, the average score further increased to 41.61 (88.69%) through the implementation of the group-based "Locomotor Circuit" game model, which encouraged students' coordination, cooperation, and interaction (Waluyo et al., 2024; Sudarmono, 2016; Rani et al., 2025). The highest improvement was observed in cycle 2 action 2, with the average score reaching 44.46 (92.63%) after the circuit was enhanced with more challenging variations of stations and obstacles. This finding demonstrates the effectiveness of consistent and structured practice in improving locomotor competence (Chen et al., 2024; Liu et al., 2025).

Overall, the study results indicate that the application of group games integrated with creative media in physical education effectively improved students' locomotor skills, motivation, teamwork, and provided enjoyable learning experiences. Students became more active, confident, and cooperative throughout the learning process. Nevertheless, this study was limited to a single class, and therefore, its findings cannot be generalized to a broader population. Future studies are recommended to involve larger and more diverse samples to obtain more representative results.

Conclusions

Based on the results obtained through several cycles, this study concludes that the implementation of group games supported by creative media in physical education effectively improves the locomotor skills of grade 2B students at SD Negeri 02 Indralaya Utara. The findings show a consistent

increase in average locomotor skill scores across cycles, supported by step-by-step treatments and observations. Beyond locomotor development, this approach also enhanced students' creativity, learning enthusiasm, self-confidence, active participation, and teamwork during the learning process.

Thus, this model can serve as an effective alternative to address the low locomotor ability of elementary school students while improving the overall quality of physical education. These results highlight the importance of competent PE teachers and confirm that game-based learning tailored to students' characteristics provides enjoyable and meaningful experiences that foster holistic development—physically, mentally, and emotionally.

Informed Consent

Informed consent was obtained from all participants. For studies involving minors, consent was obtained from a parent or legal guardian, and assent was obtained from the participants when appropriate.

Data Availability

The data are not publicly available due to ethical or privacy restrictions; anonymized data may be provided upon reasonable request.

Conflict of Interest

The authors declare no conflicts of interest.

References

- Shidiq, A.A. P., Cahayani, P.M., Waluyo, & Iwandana, D.T. (2022). Tingkat Kreativitas Guru dalam Mengatasi Keterbatasan Prasarana Sarana Pembelajaran PJOK. *Gelanggang Olahraga: Jurnal Pendidikan Jasmani Dan Olahraga (JPJO)*, 6(1), 27-35. <https://doi.org/10.31539/jpjo.v6i1.4480>
- Muzakki, A., & Saputra, S.Y. (2020). Hubungan Antara Body Mass Index dengan Physical Fitness Pada Mahasiswa PGSD. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, 8(1), 88-95. <https://doi.org/10.22219/jp2sd.v8i1.12414>
- Simahate, S., & Munip, A. (2020). Latihan Gerak Locomotor Sebagai Upaya Mengembangkan Motorik Kasar Anak Down Syndrome. *ThufuLA: Jurnal Inovasi Pendidikan Guru Raudhatul Athfal*, 9(2), 236-248. <https://doi.org/10.21043/thufula.v8i2.7656>
- Bednarczuk, G., Bandura, W., Rutkowska, I., & Starczewski, M. (2025). Balance Level and Fundamental Motor Skills of Youth with Visual Impairments: Pilot Study. *Journal of clinical medicine*, 14(10), 3483. <https://doi.org/10.3390/jcm14103483>
- Gråstén, A., Huhtiniemi, M., & Jaakkola, T. (2022). School-Aged Children's Actual Motor Competence and Perceived Physical Competence: A 3-Year Follow-up. *Medicine & Science in Sport and Exercise*, 54(6), 1020-1027. <https://doi.org/10.1249/mss.0000000000002870>
- Saleh, M.S., & Ramdhani, S. (2020). Survei Sarana Dan Prasarana Pendidikan Jasmani Dan Tingkat Kesegaran

- Jasmani Siswa Kelas VIII SMP PGRI Barembeng Kabupaten Gowa. *Journal Coaching Education Sports*, 1(1), 51-64. <https://doi.org/10.31599/jces.v1i1.86>
- Nur, H.W., Nirwandi, & Asmi, A. (2018). Hubungan Sarana Prasarana Olahraga Terhadap Minat Siswa Dalam Pelaksanaan Pembelajaran Pendidikan Jasmani Olahraga Dan Kesehatan Di Sma N 1 Batipuah Kabupaten Tanah Datar. *Jurnal Menssana*, 3(2), 93-102. <https://doi.org/10.24036/jm.v3i2.82>
- Zain, M.S., & Putra, D.S. (2020). Analisis Lingkungan Belajar, Metode Mengajar, Kurikulum Fisika, Relasi Guru Dengan Siswa, Dan Disiplin Sekolah. *Jurnal Pendidikan Fisika*, 8(1), 30-41.
- Ellis, R., Mahaly, S., & Papalia, I. (2023). *Peningkatan Kapasitas Guru Melalui Pembelajaran Kompetensi Sosial Emosional Di SMP Al Hilal Haya*. German Für Gesellschaft (J-Gefüge), 2(2), 120-127.
- Anggraini, Y. (2021). Analisis Persiapan Guru dalam Pembelajaran Matematika di Sekolah Dasar. *Jurnal Basicedu*, 5(4), 2415-2422. <https://doi.org/10.55904/educenter.v1i5.171>
- Agung, L. (2021). Menggunakan Permainan Tradisional Gedrik Dalam Meningkatkan Hasil Belajar Gerak Lokomotor Siswa Kelas 2 Sd Islam Siti Hajar Kota Madiun. *Jurnal Buana Pedagogi Olahraga*, 1(1), 12-21. <https://doi.org/10.36456/jbpo.v1i1.5192>
- Musampa, R. (2022). Peningkatan Hasil Belajar Gerak Lokomotor melalui Alat Bantu Pembelajaran Sederhana. *Kalam Cendekia: Jurnal Ilmiah Kependidikan*, 10(2), 246-251.
- Syahbani, N., Prianto, A., Agustina, & Ahadih (2024). Upaya Peningkatan Hasil Belajar Gerak Lokomotor Melalui Pendekatan Bermain Pada Siswa Kelas IV MIN 1 Muaro Jambi. *Journal of Indonesian Professional Teacher : JIPT*, 1(2), 1-11.
- Arlini, Sujarwo, & Novitasari, E. F. (2024) Model Pembelajaran Gerak Dasar Lokomotor Berbasis Permainan Kartu Gambar Pada Siswa Kelas 2 Sekolah Dasar. *JPJA: Jurnal Pendidikan Jasmani dan Adaptif*, 1(7), 8-16
- Salim, M.A., Priambodo, A., & W, A.R. (2023). Upaya Meningkatkan Minat Belajar PJOK Peserta Didik Menggunakan Pendekatan Etnopedagogi. *Journal on Education*, 06(01), 5605-5614.
- Firdaus, M.A., & Nurrochmah, S. (2021). Survei Keterampilan Gerak Dasar Lokomotor, Nonlokomotor, dan Manipulatif Siswa Putri Kelas VII. *Sport Science and Health*, 3(5), 235-253. <https://doi.org/10.17977/um062v3i52021p235-253>
- Adji, B.S., & Wibowo, S. (2023). Peningkatan Hasil Belajar Gerak Dasar Lokomotor Pada Siswa Sekolah Dasar Melalui Modifikasi Permainan Tic Tac Toe. *Jurnal Ilmiah STOK Bina Guna Medan*, 11(2), 141-152.
- Fauzan, K.T., Marlina, R., & Syafei, M.M. (2022). Tingkat Motivasi Belajar Siswa Putri terhadap Pembelajaran Penjas Kelas VII SMPN 1 Kutawaluya. *Jurnal Ilmiah Wahana Pendidikan*, 8(November), 64-73.
- Erwansyah, A.A., & Ferianto, B. (2016). Pengaruh Permainan Lompat Kardus terhadap Hasil Belajar Lompat Jauh Gaya Menggantung dalam Pembelajaran PJOK. *Jurnal Pendidikan Olahraga Dan Kesehatan*, 04(02), 355-362.
- Muslim, A. (2021). Penggunaan Media Pembelajaran Terhadap Keberhasilan Mapel PJOK pada Kelas IV SD Negeri 01 Banjarsari. *Jurnal Kualita Pendidikan*, 2(3), 187-191. <https://doi.org/10.51651/jkp.v2i3.143>
- Mudzakir, D.O. (2020). Pengaruh Permainan Olahraga Tradisional Terhadap Motivasi Belajar Dalam Pembelajaran Penjas Di Sekolah Dasar. *Jurnal Pendidikan Jasmani Kesehatan Dan Rekreasi*, 10(1), 44-49. <https://doi.org/10.35194/jm.v10i1.941>
- Zenith, D., Hanim, Z., & Sjamsir, H. (2020). Efektivitas Permainan Tradisional Dalam Pengembangan Keterampilan Gerak Manipulatif Anak Usia 4-5 Tahun di PAUD Arsa Muda Desa Loa Raya. *Jurnal Pendidikan Dan Pengajaran*, 4(2), 143-160.
- Waluyo, Nugroho, D., Putro, BN, Syaifullah, R., Mukholid, A., Sabarini, SS, & Liskustyawati, H. (2024). Mengoptimalkan Hasil Pembelajaran Gerak Dasar Lokomotor Melalui Model Bermain "Sirkuit Gerak" Untuk Siswa Kelas 3. *Jurnal Ilmu Keolahragaan*, 15(4), 549-558. <https://doi.org/10.21009/GJIK.154.12>
- Sudarmono, M. (2016). Pengembangan Model Permainan Basketball and Football Combination Untuk Pembelajaran Penjasorkes Siswa Sekolah Dasar. *Journal of Physical Education Health and Sport*, 3(1), 7-14.
- Rani, C., Pratiwi, D.E., Hidayat, Y.A., Humaira, S.S., & Suyono, S. (2025). Keberhasilan Praktik Bermain pada Pembelajaran Penjas di SD Negeri 105287 dalam Menciptakan Pembelajaran yang Aktif dan Kreatif. *ALACRITY : Journal of Education*, 5(1), 75-84. <https://doi.org/10.52121/alacrity.v5i1.538>
- Chen, D., Zhao, G., Fu, J., Shun, S., Su, L., He, Z., Chen, R., Jiang, T., Hu, X., Li, Y., & Shen, F. (2024). Effects of structured and unstructured interventions on fundamental motor skills in preschool children: a meta-analysis. *Frontiers in public health*, 12, 1345566. <https://doi.org/10.3389/fpubh.2024.1345566>
- Liu, B., Yan, Y., Jia, J., & Liu, Y. (2025) Can active play replace skill-oriented physical education in enhancing fundamental movement skills among preschool children? A systematic review and meta-analysis. *BMC Public Health*, 25, 1399. <https://doi.org/10.1186/s12889-025-22398-9>

Покращення локомоторних навичок учнів початкової школи через командні ігри з використанням креативних медіа на уроках фізичної культури

Ананда Альфат^{1ABCDE}, Меїрізал Усра^{1ACD}, Вах'ю Индра Баю^{1ACDE}

¹Університет Шривіджая

Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; Е – збір коштів

Реферат. Стаття: 5 с., 5 табл., 28 джерел.

Історія питання. Локомоторні рухи є фундаментальним компонентом моторного розвитку дітей молодшого шкільного віку. Проте низька зацікавленість учнів та обмежені можливості для проведення занять з фізичної культури, спорту і здоров'я (РЮК) часто ускладнюють формування цих навичок.

Метою дослідження було оцінити ефективність використання командних ігор на основі креативних медіа для покращення локомоторних навичок учнів початкової школи.

Матеріали і методи. У дослідженні застосовано дизайн педагогічного дослідження у формі класно-урочного експерименту (Classroom Action Research, CAR), реалізований у двох циклах, кожен з яких складався з двох дій. У вибірку увійшли 28 учнів класу 2B SD Negeri 02 Indralaya Utara. Збір даних здійснювали за допомогою спостережень, інтерв'ю, аналізу документації та тесту TGMD-2 (Test of Gross Motor Development-2).

Результати. Запроваджена методика забезпечила суттєве покращення локомоторних навичок. Середній показник підвищився з 29.89 (62.27%) на початку дослідження до 44.46 (92.63%) наприкінці другого циклу, що свідчить про високу результативність командних ігор на основі креативних медіа.

Висновки. Використання командних ігор із застосуванням креативних медіа є ефективним засобом розвитку локомоторних навичок і створює більш зацікавлене та активне навчальне середовище. Отримані результати можуть слугувати практичними рекомендаціями для вчителів щодо розробки доказових стратегій навчання моторному розвитку в початковій школі.

Ключові слова: локомоторні навички, фізична культура, креативні медіа, командні ігри, моторний розвиток, класно-урочне дослідження.

Information about the Authors:

Alfath, Ananda: anandaalfath28@gmail.com; Department of Physical Education and Health, Faculty of Teacher Training and Education, Sriwijaya University, Palembang – Prabumulih KM 32 Street, indralaya, Ogan Ilir, South Sumatra, Indonesia.

Usra, Meirizal: meirizalusra@fkip.unsri.ac.id; <https://orcid.org/0000-0003-0598-3416>; Department of Sport Education, Faculty of Teacher Training and Education, Sriwijaya University, Srijaya Negara Street, Bukit Besar, Palembang, South Sumatra, 30139, Indonesia.

Bayu, Wahyu Indra: wahyu.indra@fkip.unsri.ac.id; <https://orcid.org/0000-0002-0650-8783>; Department of Sport Education, Faculty of Teacher Training and Education, Sriwijaya University, Srijaya Negara Street, Bukit Besar, Palembang, South Sumatra, 30139, Indonesia.

Cite this article as: Alfath, A., Usra, M., & Bayu, W. I. (2025). Enhancing Locomotor Skills Through Team-Based Games with Creative Media in Elementary Physical Education Classes. *Journal of Learning Theory and Methodology*, 6(2), 94-98. <https://doi.org/10.17309/jltm.2025.6.2.05>

Received: 15.07.2025. Accepted: 16.08.2025. Published: 30.08.2025

This work is licensed under a Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0>)