JPES 15 (2) (2026)

Journal of Physical Education and Sports

http://journal.unnes.ac.id/sju/index.php/jpes

Development Of A Volleyball Physical Education Learning Model Based on Social Emotional Learning to Improve Vocational High School Students Learning Outcomes

Wahyudin[1]✉ , Setya Rahayu[2]

[1] Universitas Negeri Semarang, Indonesia; wahyudin1903@students.unnes.ac.id
[2] Universitas Negeri Semarang, Indonesia; setyarahayu@mail.unnes.ac.id

Article Info

History Articles
Received:
February 2026
Accepted:
February 2026
Published:
June 2026

Keywords:
Learning Model, Volleyball, Social Emotional Learning, Research and Development, Learning Effectiveness.

Abstract

Research on the development of a volleyball PJOK learning model based on Social Emotional Learning (SEL) for Vocational High School students. The study used the Research and Development (R&D) method, following the Borg and Gall model, including the stages of needs analysis, product development, expert validation, and small- and large-scale trials. The research subjects consisted of 3 PJOK teachers and 90 students from 3 vocational high schools in Indramayu Regency. Data were collected through observation, questionnaires, and learning outcome tests, and analysed using descriptive statistics, paired-samples t-tests, N-Gain, and effect sizes. The results of the needs analysis showed an initial completeness level of only 40%. The results of expert validation showed a very feasible category with a percentage of 83.00%–85.00%. Teacher responses were in the very practical category (83.33%–85.00%), while student responses were in the practical category, with an average of 75.28% in small-scale trials and 74.28% in large-scale trials. The effectiveness test results showed an increase in learning outcomes, with N-Gain values of 0.46 (medium) and 0.70 (high), and effect sizes of 0.70 and 2.95. Thus, the SEL-based volleyball PJOK learning model was declared feasible, practical, and effective.

✉ Address correspondence:
Universitas Negeri Semarang, Kampus Sekaran, Gunungpati, Semarang
E-mail: (wahyudin1903@students.unnes.ac.id)

p-ISSN 2252-648X
e-ISSN 2502-4477

INTRODUCTION

Physical Education, Sports, and Health (PJOK) is an integral part of the education system, playing a crucial role in students' holistic development by encompassing physical, cognitive, social, and emotional aspects. PJOK learning not only aims to improve physical fitness and motor skills but also to shape character, foster social values, and cultivate lifelong, active, and healthy lifestyle habits (Griggs & Fleet, 2021). However, in school education practice, PJOK is often viewed as a supporting subject. Hence, its implementation tends to focus solely on mastering technical skills and pays less attention to students' social and emotional development.

Numerous studies have shown that Physical Education (PJOK) plays a strategic role, comparable to that of other subjects, in supporting student development. Adamčák et al. (2023) reported that PJOK teachers view this subject as having the same level of importance as academic subjects. Schools are also effective environments for promoting healthy lifestyles and developing social skills through structured physical activity(Wibowo et al., 2021; Cintado-Carmona et al., 2023). Therefore, PJOK learning strategies are needed that are not only oriented towards movement outcomes but also able to integrate the development of students' social and emotional competencies.

Sports games are a contextual and meaningful approach to learning Physical Education (PJOK). Volleyball, as a subject in PJOK, emphasizes teamwork, communication, sportsmanship, and discipline. In addition to improving strength and coordination, volleyball training can develop students' social skills and character values (Made et al., 2022; Feng et al., 2023). The application of varied learning methods in volleyball has also been shown to increase student engagement and accommodate differences in learning styles (Pavlović et al., 2023).

Physical Education (PJOK) learning through volleyball should not only emphasize mastery of basic techniques but also serve as a vehicle for students' mental and social development. Innovative and enjoyable learning allows students to gain active, reflective, and meaningful learning experiences, fostering values of cooperation, responsibility, and critical thinking skills (Herdaphasa et al., 2023; Benny et al., 2024). This aligns with Law Number 20 of 2003 concerning the National Education System, which positions students as active subjects in the learning process through interactions with educators and the learning environment.

As a team sport, volleyball demands technical skills, physical abilities, and psychological preparedness in an integrated manner. Success in this game is determined not only by mastery of techniques and physical condition, but also by psychological factors such as motivation, self-confidence, mental toughness, and a positive motivational climate created by teachers and the team, as explained in Self-Determination Theory (Musa et al., 2021; Chen, 2024; Jakšić et al., 2024; Cəfərova, 2025). Furthermore, teamwork, managing interpersonal dynamics and conflicts, and disciplined training play a crucial role in improving game effectiveness and student performance (Doroshenko et al., 2023; Miguel-Ortega et al., 2023; Mulyk et al., 2024). Participation in volleyball also provides physical and mental health benefits and encourages positive social interactions (Astuti et al., 2023; Garbuzov et al., 2021).

The development of physical education and health education (PJOK) should be supported by a learning model grounded in modern educational theory. The constructivist approach emphasizes that students construct knowledge and skills through direct learning experiences, thus encouraging deeper cognitive processing

(Jeong et al., 2022). An effective learning model must also be adaptive to student characteristics and equipped with continuous assessment and feedback to optimize the learning (ŞEN, 2022; Mentari et al., 2021; Darmawan et al., 2024). One relevant approach to support this goal is Social Emotional Learning (SEL).

Initial observations through interviews with ten physical education (PJOK) teachers at several vocational schools in Indramayu Regency indicate that volleyball instruction still faces various challenges. 80% of teachers still use conventional, teacher-centered learning models, while 20% have never implemented Social-Emotional Learning (SEL)-based models. Learning tends to be oriented toward technical skills, resulting in inadequate integration of students' social and emotional development.

These conditions have resulted in low student learning outcomes. The completion rate for volleyball learning is only 40%, while 60% of students have not yet met the Learning Objective Achievement Criteria (KKTP). Furthermore, approximately 30% of teachers reported a decline in student motivation in physical education (PJOK) lessons. Limited learning time encourages teachers to prioritize technical aspects, often neglecting the social, emotional, and reflective dimensions. Consequently, PJOK lessons have not fully developed students' self-awareness, empathy, cooperation, and social responsibility.

This situation highlights a gap between the ideal goals of Physical Education and Health (PJOK) in the Independent Curriculum, which emphasize balanced physical, social, and emotional development, and the realities of on-field learning. However, volleyball naturally demands teamwork, effective communication, leadership, and emotional management. Without adequate emotional regulation and social skills, students are at risk of conflict and low collaboration in learning (Wang, 2022).

The Social Emotional Learning (SEL) approach is considered effective in helping students recognize, understand, and manage emotions, as well as build positive social relationships. Based on the Collaborative for Academic, Social, and Emotional Learning (CASEL) framework, SEL encompasses five core competencies: self-awareness, self-management, social awareness, relationship-building skills, and responsible decision-making (Durlak et al., 2022; Wahyudin, 2025). Various studies have shown that implementing SEL can improve students' emotional regulation, interpersonal relationship quality, psychological well-being, and academic achievement (Romine, 2023; McCabe & Best, 2023; Setiawati et al., 2024).

Based on the description, developing a PJOK learning model for volleyball game material grounded in Social Emotional Learning (SEL) is important and relevant for vocational school students to improve learning outcomes comprehensively, across motor, social, and emotional skills.

METHODS

This study uses a Research and Development (R&D) design to develop a volleyball learning model based on Social and Emotional Learning (SEL) for Vocational High School (SMK) students. The model development refers to the Borg and Gall model as the main framework for systematic development (Firman & Mirnawati, 2023), with stages simplified by Sugiyono. (2019), including potential. It needs analysis, data collection, product design, expert validation, and design revision. Subsequently, small-scale and large-scale product trials were conducted, followed by revisions until the final product was obtained. The final stage was mass production, once the product was deemed feasible, practical, and effective.

The trial involved three physical education teachers and 90 students from three public vocational high schools in

Indramayu Regency. Data were collected through observation, interviews, questionnaires, and learning outcome tests. The research instruments included cognitive tests, affective assessments based on the five SEL core competencies, and a psychomotor assessment rubric. Validity was assessed through expert judgment and Pearson's Product-Moment correlation, while reliability was assessed using Cronbach's Alpha. Data analysis was conducted descriptively and inferentially using t-tests, N-Gain, and effect size (Cohen's d).

RESULTS AND DISCUSSION

This research is a research and development (R&D) project using the Borg & Gall model, aiming to develop a PJOK volleyball learning model based on Social Emotional Learning (SEL) for vocational high school students. The results of the preliminary study, based on observations, interviews with 10 PJOK teachers, and analysis of learning outcomes, indicate that learning remains conventional, with mastery and understanding of concepts that are not optimal, and with social and emotional development that remains limited. However, there is potential in strong student interest, the alignment of volleyball game characteristics with the SEL approach, the availability of infrastructure, and teacher readiness to adopt learning innovations.

The product design stage in the research and development (R&D) of the Borg & Gall model resulted in a Social Emotional Learning (SEL)-based volleyball PJOK learning model equipped with learning guides, teaching modules, and Student Worksheets (LKPD). The product was developed based on an analysis of the needs and characteristics of vocational high school students to support structured, meaningful learning and to encourage students' physical, social, and emotional engagement. This product was then validated and tested to determine its feasibility and effectiveness.

Table 1. Percentage of Expert Validators

validation	Score Earned	Max Score	%
Volleyball Game Expert	68	80	85.00
Sports Psychologist	83	100	83.00
Physical Education Learning Expert	85	100	85.00

The expert validation results for the learning product in Table 1 indicate a very good level of feasibility. Validation by volleyball experts resulted in a feasibility percentage of 85.00%; by sports psychology experts, 83.00%; and by physical education, health, and fitness experts, 85.00%. Based on the established assessment criteria, all validation results were in the "Very Feasible" category, and the learning product was declared suitable for use and proceeded to the trial phase.

After being declared highly suitable by experts, responses from SMKN 1 Sindang's PJOK teachers were collected through a questionnaire administered after the implementation of the learning product, which assessed the clarity of the material, the suitability of the model, the ease of implementation, and the benefits of the learning product for PJOK learning. A summary of the teacher responses is presented in the following table.

Table 2. Teacher Response Results

Teacher	Score Earned	Max Score	%
SMKN 1 Sindang	50	60	83.33

Based on Table 2, the teacher's response scores 50 out of 60 (83.33%), which, according to the assessment criteria, falls within the "Very Practical" category.

In line with the teacher's response, which placed the "Very Appropriate" category, the student responses from 30 students at SMK Negeri 1 Sindang, obtained

through a questionnaire after the implementation of the learning model, also showed positive results. The percentage of student responses ranged from 66.67% to 88.33%, with an average of 75.28%, which was included in the "Practical" category. The majority of students gave assessments in the "Very Practical" and "Practical" categories, with no responses in the "Less Practical" category

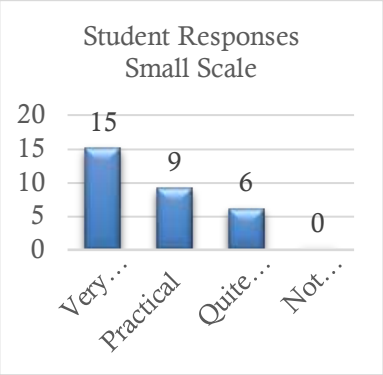

Figure 1. Small-Scale Student Responses

Based on Figure 1, the results of the small-scale trial show that the majority of students responded in the "Very Practical" category (15 students), followed by the "Practical" (9 students) and "Quite Practical" (6 students) categories, and there were no responses in the "Less Practical" category. These findings indicate that the developed learning model is easy to use and well accepted by students, and it is therefore deemed practical at the small-scale trial stage.

Furthermore, to complement the positive student responses, a learning completion analysis was conducted in a small-scale trial at SMK Negeri 1 Sindang. This analysis aimed to determine the percentage of students who completed the learning after participating in the model.

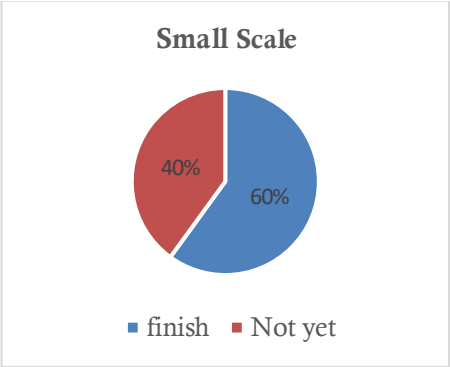

Figure 2. Small-Scale Learning Outcomes

Based on Figure 2, the small-scale trial results indicate that 60% of students have completed learning, while 40% have not. This finding indicates that the majority of students have met the completion criteria after participating in learning using the developed model.

Descriptive analysis of results from a large-scale trial showed improvements in student learning outcomes after implementing the learning model. The average pre-test score of 72.33 increased to 75.90 in the post-test, with a lower standard deviation, indicating more homogeneous score variation. The distribution of pre-test scores ranged from 65.00 to 79.00, while post-test scores increased to 70.00 to 82.00, indicating a shift in learning outcomes toward improvement after the model implementation.

Before conducting the hypothesis testing, the pre-test and post-test data met the requirements for parametric analysis. The Shapiro–Wilk normality test showed that the data were normally distributed (Sig. > 0.05), and the Levene's homogeneity test indicated homogeneous variance (Sig. > 0.05). Based on the results of the paired-samples t-test, a significant difference was found between the pre-test and post-test scores (Sig. = 0.00), indicating that the application of the learning model significantly improves student learning outcomes.

Table 3. N-Gain Results

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Ngain-score	30	.24	.71	.4636	.10789
Ngain-persen	30	24.32	70.59	46.3565	10.78935
Valid N (listwise)	30				

Based on Table 3, the average N-Gain was 0.46 (46.36%), which falls within the moderate category. Students' N-Gain values ranged from 0.24 to 0.71, indicating that the implementation of the learning model was able to provide a moderate level of improvement in learning outcomes.

An effect size test using Cohen's d was conducted to determine the extent of the learning model's influence on student learning outcomes on a small scale. The results of the analysis are presented in Table.

Table 4. Cohen's D effect size results

Effect Size Cohen's D		
Total	2250	2170
Rata rata	75	72
SD	3.45	4.18
SD pool		3.83
Cohen's D		0.7

(Based on Table 4, the average post-test score (75) was higher than the pre-test score (72), with a Cohen's d of 0.7, which falls within the moderate to large effect size category. These results indicate that the application of the Social Emotional Learning (SEL)-based volleyball PJOK learning model has a real and meaningful influence on improving student learning outcomes.

Based on the results of small-scale trials, which showed positive results, this research was continued to the large-scale trial stage.

Teacher response testing was conducted to determine the practicality of the developed learning products through a teacher response questionnaire. The test results are presented in the following table.

Table 5. Teacher Response Results

Teacher	Score Earned	Max Score	%
SMKN 1 Indramayu	51	60	85.00
SMK NU Kaplongan	59	60	81. 67

Based on Table 5, teacher responses to the learning product fall into the "Very Practical" category. Teachers at SMKN 1 Indramayu scored 51 out of 60 (85.00%), while teachers at SMK NU Kaplongan scored 49 out of 60 (81.67%). These results indicate that the developed product is considered easy to use, clear, and feasible to implement in the learning process.

Student responses were used to determine the level of practicality of the learning product from the perspective of direct users. The response results showed a range of 66.67%-88.33% for assessments, with the majority of students giving assessments in the "Very Practical" and "Practical" categories. The average student response score was 74.28%, which falls within the "Practical" category, indicating that the learning product is easy to use and can be implemented effectively by students.

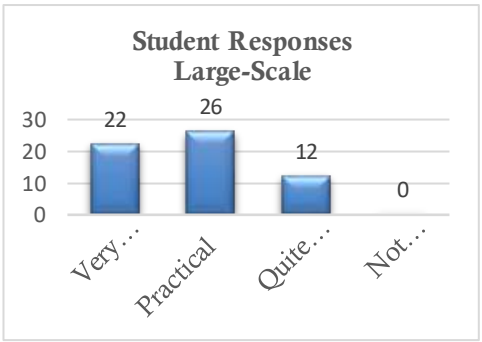

Figure 3. Large-Scale Student Responses

Based on Figure 3, a large-scale trial involving 60 students showed a positive response, with the majority rating the learning model as "Practical" (26 students) or "Very Practical" (22 students). A total of 12 students provided an assessment in the "Quite Practical" category, and there were

no responses in the "Less Practical" category, indicating that the learning model is easy to use, well-accepted, and suitable for large-scale implementation.

Student learning outcomes in large-scale trials at SMK Negeri 1 Indramayu and SMK NU Kaplongan were analysed by level of completion to determine achievement of the completion criteria after implementing the developed learning model.

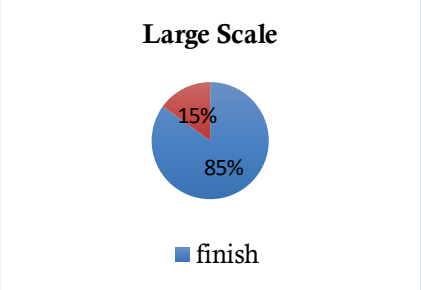

Figure 4. Large-Scale Learning Outcomes

Based on the large-scale trial diagram, 85% of students completed the trial, while 15% did not. These results indicate that the majority of students met the completion criteria after participating in learning using the developed product.

Descriptive analysis of the large-scale trial results showed improvements in student learning outcomes after implementing the learning model. The average pre-test score of 72.65 increased to 87.65 in the post-test, with pre-test scores ranging from 63.00 to 79.00 and post-test scores ranging from 73.00 to 96.00, indicating a significant improvement in learning outcomes after implementing the model.

Before conducting the hypothesis testing, the pre-test and post-test data met the requirements for parametric analysis. The Kolmogorov-Smirnov normality test showed that the data were normally distributed (Sig. > 0.05), and Levene's test for homogeneity of variance indicated homogeneity of variance (Sig. > 0.05). A paired-samples t-test revealed a significant difference between pre- and post-test scores (Sig. = 0.00), indicating that implementing the learning model significantly improved student learning outcomes in the large-scale trial.

Table 6. Large-Scale N-Gain Results

Descriptive Statistics					
	N	*Min*	*Max*	*Mean*	*Std. Deviation*
Ngain_score	60	.47	.94	.7017	.10189
Ngain_persen	60	47.06	93.75	70.1736	10.18909
Valid N (listwise)	60				

Based on Table 6, the average N-Gain was 0.70 (70.17%), which falls within the high category. Students' N-Gain values ranged from 0.47 to 0.94, indicating that the application of the developed learning model was able to provide significant improvements in learning outcomes.

An effect size test using Cohen's d was conducted to determine the magnitude of the learning model's influence on student learning outcomes at scale. The results of the analysis are presented in the table.

Table 7. Results of Large-Scale Cohen's D Effect Size

Effect Size Cohen's D		
Total	5259	4320
Rata-rata	88	72
SD	6.28	4.13
SD Pool	5.31	
Cohen's D	2.95	

Based on Table 7, the average post-test score (88) was higher than the pre-test score (72), with a Cohen's d value of 2.95, which falls within the very large effect size category. These results indicate that the application of the developed learning model has a very strong and meaningful influence on improving student learning outcomes.

Discussion

The results of the needs and problem analysis indicate that physical education (PE) learning in volleyball instruction at vocational high schools in Indramayu Regency is still predominantly based on conventional approaches. Most PE teachers

have not yet systematically integrated the Social Emotional Learning (SEL) approach, resulting in low initial student learning outcomes, with mastery at only 40%. This condition suggests that instruction emphasising technical drills without strengthening social and emotional skills has not been effective in optimising student engagement.

These findings are consistent with studies in physical education, which emphasize that monotonous, technique-oriented instruction tends to reduce students' motivation and interest in physical activity (Griggs & Fleet, 2021; Cintado-Carmona et al., 2023). Furthermore, classroom observations revealed that a considerable proportion of students had not yet developed a comprehensive understanding of volleyball, including technical skills, team roles, and game strategies. Herdaphasa et al. (2023).argue that weak conceptual understanding of volleyball often occurs when instruction focuses solely on technical practice without incorporating game contexts and teamwork.

Based on these issues, this study developed a volleyball learning model for physical education that integrates the Social Emotional Learning (SEL) approach, encompassing self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. Theoretically, integrating SEL into learning has been shown to enhance both academic achievement and students' social-emotional development **(Mahoney et al., 2021; Durlak et al., 2022).** In the context of physical education, this approach is particularly relevant, as physical activities and team sports provide natural opportunities to foster cooperation, communication, empathy, and emotional regulation.

Volleyball, as a team sport, possesses characteristics that align closely with SEL principles. Therefore, the developed learning model not only emphasises the mastery of basic technical skills but also incorporates instructional steps that promote social interaction, emotional reflection, and group responsibility. The development of instructional materials, including teaching guides, learning modules, and student worksheets, is also consistent with constructivist learning principles, which hold that students construct understanding through direct experience and social interaction.

Expert validation results indicate that the developed learning model falls into the "highly feasible" category. This finding confirms that the instructional design, volleyball content, and integration of the SEL approach are aligned with established principles of physical education learning. Borg and Gall, as cited in **Sugiyono (2019)**, emphasise that expert validation is a critical stage in educational research and development, ensuring product quality and feasibility prior to field implementation.

Teacher responses in both small-scale and large-scale trials indicate that the learning model is highly practical and easy to implement. Teachers reported that the instructional steps were clear, systematic, and suitable for real classroom conditions. In addition to improving students' volleyball skills, the SEL approach helped teachers foster cooperation, sportsmanship, and emotional regulation. These findings are consistent with **Adamčák et al. (2023) and Hunter et al. (2022)**, who highlight that physical education teachers tend to favour practical instructional models that support holistic student development.

Student responses further indicate that the learning model is easy to understand, enjoyable, and effective in increasing active participation and comfort in teamwork. This aligns with experiential learning theory, which emphasises that learning becomes more meaningful when students are actively involved in the learning process **(Kong, 2021; Chan et al., 2021).** Moreover, the application of SEL in physical education has been shown to enhance

student participation and promote positive social relationships **(Olive et al., 2021**).

The effectiveness test results demonstrate a significant improvement in learning outcomes, particularly in the large-scale trial, which showed a large effect size. These findings indicate that the SEL-based volleyball learning model becomes more effective when implemented consistently and sustainably. **Durlak et al. (2022)** emphasise that systemic implementation of SEL can produce a strong impact on student learning outcomes.

The novelty of this study lies in the development of a physical education volleyball learning model that systematically integrates the Social Emotional Learning (SEL) approach. Unlike previous studies that primarily focused on technical and tactical aspects, this study demonstrates that strengthening social and emotional competencies significantly improves student learning outcomes. This learning model aligns with character education goals, the Pancasila Student Profile, and the principles of the Merdeka Curriculum, which emphasise student-centred learning and the development of 21st-century skills.

CONCLUSION

The authors declare that this research received no external funding and was conducted independently.

REFERENCES

Adamčák, Š., Marko, M., & Bartík, P. (2023). Teachers' Preferences of Teaching Primary Physical Education: Curriculum Preferences. Pedagogy of Physical Culture and Sports, 27(1), 63–70. https://doi.org/10.15561/26649837.2023.0108

Astuti, Y., Zulbahri, Z., Lawanis, H., Erianti, E., & Damrah, D. (2023). Self-Confidence Conceptual Model Development in Volleyball Learning Courses. Retos, 50, 1084–1090. https://doi.org/10.47197/retos.v50.100423

Benny Korain, L., Vendyansyah, N., & Xaverius Ariwibisono, F. (2024). Aplikasi Pencarian Tempat Penyewaan Lapangan Bola Basket Di Kota Malang Berbasis Android Dengan Metode Location Based Service. Jati (Jurnal Mahasiswa Teknik Informatika), 7(5), 3191–3198. https://doi.org/10.36040/jati.v7i5.7646

Cəfərova, A. (2025). The role of self-determination theory in shaping sport motivation among female volleyball players. SW, 92(3), 141–144. https://doi.org/10.69682/arti.2025.92(3).141-144

Chen, L. (2024). Coaches behaviour towards motivational climate and performance satisfaction of college volleyball players in Guangdong China. International Journal of Education and Humanities, 14(3), 221–225. https://doi.org/10.54097/3bc52s71

Cintado-Carmona, R., Carballares, D. R., Suárez-Manzano, S., & Fernández, P. D. (2023). Importance of Physical Education in the Development of School-Age Children. Sustain. Sport. Sci. J., 2(1), 33–44. https://doi.org/10.61486/zmnm7930

Darmawan, E., Thamrin, N. R., & Suwarto, G. P. (2024). LMS-DRIVEN HOTS READING MODEL FOR HIGHER EDUCATION ENHANCEMENT. English Review: Journal of English Education, 11(3), 1021–1032. https://doi.org/10.25134/erjee.v11i3.9198

Doroshenko, E., Шевяков, О., Melnyk, M., Oliinyk, M., Oliinyk, I., & Vaniuk, D. (2023). Modern Psychological Technologies for Correcting Conflict Situations in Limited Coalitions (Based on Volleyball Material). Journal of Learning Theory and Methodology, 4(3), 75–80. https://doi.org/10.17309/jltm.2023.3.01

Durlak, J. A., Mahoney, J. L., & Boyle, A. E. (2022). What we know, and what we need to find out about universal, school-based social and emotional learning programs for children and adolescents: A review of meta-analyses and directions for future research. Psychological Bulletin, 148(11–12), 765–782. https://doi.org/10.1037/bul0000383

Feng, M., Zhang, Q., & Yang, K. (2023). Application of Diversified Teaching Strategies in the Intelligent Physical Education Platform: Enhancing Course Interactivity and Engagement. International Journal of Education and Humanities, 10(1), 229–233. https://doi.org/10.54097/ijeh.v10i1.11141

Firman, & Mirnawati. (2023). How to develop scientific writing techniques teaching materials with the development of the Borg & Gall model. 090029. https://doi.org/10.1063/5.0148011

Garbuzov, S., Matsko, A., Chernysheva, L., Satosova, N., & Avanesov, V. (2021). Formation of the psychological component of the personality of the setter of the student volleyball team. International Journal of Human Movement and Sports Sciences, 9(6), 1291–1298. https://doi.org/10.13189/saj.2021.090624

Griggs, G., & Fleet, M. (2021). Most People Hate Physical Education and Most Drop Out of Physical Activity: In Search of Credible Curriculum Alternatives. Education Sciences, 11(11), 701. https://doi.org/10.3390/educsci11110701

Herdaphasa, Y., Hariyanto, E., Winarno, M. E., & Tomi, A. (2023). Survei Keterampilan Passing Pada Permainan Bola Voli Siswa Kelas VIII di SMP Negeri 1 Bagor Kabupaten Nganjuk. Sport Science and Health, 5(4), 435–446. https://doi.org/10.17977/um062v5i42023p435-446

I Gusti Made, S., I Putu, P. A., & I Gede, S. (2022). Implementasi Model Pembelajaran Project Based Learning untuk Meningkatkan Hasil Belajar pada Materi Permainan Bola Besar (Sepak Bola-Teknik Dasar Passing). Jurnal Ilmiah Pendidikan Profesi Guru, 5(3), 546–553. https://doi.org/10.23887/jippg.v5i3.52232

Jakšić, D., Trbojević, J., & Manojlović, M. (2024). Assessing motivational factors in young Serbian athletes: A validation study of the Sport Motivation Scale-II. Psychology in Russia: State of Art, 17(3), 3–21. https://doi.org/10.11621/pir.2024.0301

Jeong, H., Taylor, A., Floeder, J. R., Lohmann, M., Mihalas, S., Wu, B., Zhou, M., Burke, D. A., & Namboodiri, V. M. K. (2022). Mesolimbic dopamine release conveys causal associations. Science, 378(6626). https://doi.org/10.1126/science.abq6740

McCabe, E. M., & Best, N. C. (2023). The Significance of Social Development Support in Schools: The Critical Role of School Nurses. NASN School Nurse, 38(2), 62–64. https://doi.org/10.1177/1942602X221128227

Mentari, S., Andayani, E. S., Sulikah, S., & Nagari, P. M. (2021). Online-Based Simple Cooperative Learning Design (SCL-D) for Accounting. Dinamika Pendidikan, 16(1), 12–23. https://doi.org/10.15294/dp.v16i1.27450

Miguel-Ortega, Á., Fernández-Landa, J., Calleja-González, J., & Mielgo-Ayuso, J. (2023). Stress levels and hormonal coupling and their relationship with sports performance in an elite women's volleyball team. Applied Sciences, 13(20), 11126. https://doi.org/10.3390/app132011126

Mulyk, K., Skaliy, A., Mukazhanov, N., Ostrowski, A., Paievskyi, V., & Abdula, A. (2024). Influence of volleyball and sports and health tourism on the physical, mental and social state of schoolchildren and students. Slobozhanskyi Scientific and Sport Bulletin, 28(1), 31–37. https://doi.org/10.15391/snsv.2024-1.004

Musa, R., Majeed, A., Suhaimi, M., Abdullah, M., Razman, M., Abdelhakim, D., & Osman, N. (2021). Identification of high-performance volleyball players from anthropometric variables and psychological readiness: A machine-learning approach. Proceedings of the Institution of Mechanical Engineers Part P: Journal of Sports Engineering and Technology, 237(4), 317–324. https://doi.org/10.1177/17543371211045451

Pavlović, S., Pelemiš, V., Marković, J., Dimitrijević, M., Badrić, M., Halaši, S., Nikolić, I., & Čokorilo, N. (2023). The Role of Motivation and Physical Self-Concept in Accomplishing Physical Activity in Primary School Children. Sports, 11(9), 173. https://doi.org/10.3390/sports11090173

Romine, R. (2023). Academic Success of Collegiate Athletes and Social and Emotional Learning. Journal of Higher Education Athletics & Innovation, 2(1), 39–46. https://doi.org/10.15763/issn.2376-5267.2023.2.1.39-46

Semarang, U. N. (2025). Penerapan Social Emotional Learning (SEL) dalam Pembelajaran Pendidikan Jasmani : Systematic Literature Review. 1(1), 399–413.

ŞEN, E. Ö. (2022). Perspectives of Mathematics Instructors on The Flipped Learning Model. Cukurova University Faculty of Education Journal, 51(1), 566–589. https://doi.org/10.14812/cuefd.884167

Setiawati, N. A., Ramadhita, S. U., Zanwar, A., & Noviandina, N. (2024). Teknik Relaksasi Untuk Kecemasan Dan Stres Pada Remaja: Kajian Sistemik. PJP, 1(4), 14. https://doi.org/10.47134/pjp.v1i4.2581

Sugiyono. (2019). Metode Penelitian Pendidikan. ALFABETA, cv.

Wang, C. (2022). Comprehensively Summarizing What Distracts Students from Online Learning: A Literature Review. Human Behavior and Emerging Technologies, 2022. https://doi.org/10.1155/2022/1483531

Wibowo, R., Budiman, D., Sumarno, G., Stephani, M. R., & Putri, W. (2021). Is Physical Activity Level in Physical Education Lesson Related to Fundamental Movement Skills at Elementary Schools? International Journal of Human Movement and Sports Sciences, 9(4A), 31–37. https://doi.org/10.13189/saj.2021.091306