Vol. 6 No. 2, Desember 2025
e-ISSN: 2775-6254
p-ISSN: 2716-1900

SPORT-MU: JURNAL PENDIDIKAN OLAHRAGA
https://ejurnal.unmuhjember.ac.id/index.php/sportmu/index
DOI: 10.32528/sport-mu.v6i2.3866

Efforts to Improve Manipulative Movement Learning Outcomes Through Differentiated Learning Strategies in Big Ball Games for Fifth Grade Students

Upaya Peningkatan Hasil Pembelajaran Gerak Manipulatif Melalui Strategi Pembelajaran Berdiferensiasi dalam Permainan Bola Besar untuk Siswa Kelas Lima

Rifki Ramadhoni[1], Mashud[2*]
[1,2]Program Magister Pendidikan Jasmani, Program Pascasarjana, Universitas Lambung Mangkurat, Indonesia
*Corresponding Author: mahsud@ulm.ac.id

Abstract

This classroom action research aimed to improve learning outcomes in manipulative movement skills within large ball games among fifth-grade students of SD Negeri 017 Long Kali through the implementation of a differentiated instruction model. The study was conducted in two cycles, each consisting of the stages of planning, action implementation, observation, and reflection. The research subjects were 10 fifth-grade students. Data were collected using psychomotor skill observation sheets and documentation of learning outcomes. A skill test was administered through the activity of hitting a ball over the net as an indicator of manipulative movement mastery in the game context. Data were analyzed both quantitatively and qualitatively. The results showed a significant improvement in students' manipulative skills, with mastery learning increasing from 60% in the first cycle to 85% in the second cycle. The application of the differentiated learning model also enhanced students' active participation, teamwork, and motivation during the learning process. These findings indicate that the differentiated instruction model is effective in improving manipulative movement learning outcomes in large ball games in elementary school physical education.

Keywords: differentiated instruction model, manipulative movement, large ball games, physical education, learning outcomes

Abstrak

Penelitian tindakan kelas ini bertujuan untuk meningkatkan hasil belajar dalam keterampilan gerakan manipulatif pada permainan bola besar di kalangan siswa kelas lima SD Negeri 017 Long Kali melalui penerapan model pembelajaran diferensiasi. Penelitian ini dilakukan dalam dua siklus, masing-masing terdiri dari tahap perencanaan, pelaksanaan tindakan, pengamatan, dan refleksi. Subjek penelitian adalah 10 siswa kelas lima. Data dikumpulkan menggunakan lembar observasi keterampilan psikomotorik dan dokumentasi hasil belajar. Uji keterampilan dilakukan melalui aktivitas memukul bola melintasi jaring sebagai indikator penguasaan gerakan manipulatif dalam konteks permainan. Data dianalisis secara kuantitatif dan kualitatif. Hasil menunjukkan peningkatan signifikan dalam keterampilan manipulatif siswa, dengan tingkat penguasaan belajar meningkat dari 60% pada siklus pertama menjadi 85% pada siklus kedua. Penerapan model pembelajaran diferensiasi juga meningkatkan partisipasi aktif, kerja sama tim, dan motivasi siswa selama proses pembelajaran. Temuan ini menunjukkan bahwa model pembelajaran diferensiasi efektif dalam meningkatkan hasil belajar gerakan manipulatif dalam permainan bola besar pada pendidikan jasmani sekolah dasar.

Keywords: model pembelajaran diferensiasi, gerak manipulatif, permainan bola besar, pendidikan jasmani, hasil belajar

INTRODUCTION

Physical Education, Sports, and Health (PJOK) serves not only as a medium for physical development, but also as a means of character building and students' social skills. In practice, PJOK learning must be able to develop students' cognitive, affective, and psychomotor aspects in an integrated manner. One important material in PJOK is the large ball game of volleyball, a team sport played by two teams of six people with the aim of hitting the ball into the opponent's area or making it difficult for the opponent to return the ball (Ariyani et al., 2023; Syaleh, 2017).

Volleyball requires mastery of basic techniques such as serving, passing, setting up, smashing, and blocking (Taslim, 2020). Mastering these techniques provides the foundation for students to optimally participate in the game. In the elementary school context, volleyball is taught in the form of mini volleyball, with core competencies encompassing mastery of various basic techniques and the development of values of honesty, cooperation, and sportsmanship (Widhiasto & Alsaudi, 2020). Furthermore, volleyball also supports the development of physical fitness, such as strength, agility, and coordination (Asmawi, 2020).

However, initial observations in fifth grade at SD Negeri 017 Long Kali showed that students' manipulative skills, particularly hitting the ball over the net, were still relatively low. Only around 60% of students achieved minimal learning completion. The main problems identified included unstable posture, lack of hand strength, and poor coordination. This situation indicates the need for a more effective, innovative, and enjoyable learning approach to increase student engagement and motivation (Suparman, 2020). One relevant alternative learning strategy is the differentiated learning model. This model provides space for students to choose appropriate learning methods, participate actively, and develop their potential optimally in an inclusive learning environment that respects differences. (Nuriyani, et al, 2023) The differentiated learning model is designed to suit students' learning styles, encourage individual and

DOI: 10.32528/sport-mu.v6i2.3866

group responsibility, and create a more lively, interactive, and meaningful learning atmosphere.

The effectiveness of the differentiated learning model has been proven through various studies. (Ardin, Budiana, & Stepani, 2024). A significant increase in students' interest and psychomotor learning outcomes increased with differentiated learning. Similar research by (Prima, 2023) at SDI Majalengka showed that this model was able to show an increase in 85% of students' motor scores after the implementation of differentiated learning. (Umam & Sulistiyanto, n.d.) Differentiation of exercises according to fitness levels has a positive impact on the results and motivation of learning PJOK. Based on these findings, the differentiated learning model is believed to be a strategic alternative for improving learning outcomes in basic ball game techniques, particularly manipulative movements such as hitting the ball over the net. This model not only improves motor skills but also fosters social attitudes such as cooperation, responsibility, and sportsmanship.

To address the problem of low manipulative motor skills of fifth-grade students at SD Negeri 017 Long Kali, researchers will conduct Classroom Action Research (CAR). This research aims to implement and evaluate the effectiveness of a differentiated learning model in improving learning outcomes in hitting the ball over the net, through a reflective and continuous action process. The research was conducted in two cycles with procedures that include planning, action implementation, observation, and reflection, so that improvements in student learning outcomes can be monitored systematically and measurably.

METHOD

This study used the Classroom Action Research (CAR) model of Kemmis and McTaggart. This model is used because it is simple and easy to understand the flow of the learning process to be carried out. In this model, the ACTING (action) and OBSERVING (observation) stages are combined into one stage (Pahleviannur et al., 2022: 28). This is because observations must be made during the action process to obtain data/information that can be used as a consideration (Mashud, 2022).

DOI: 10.32528/sport-mu.v6i2.3866

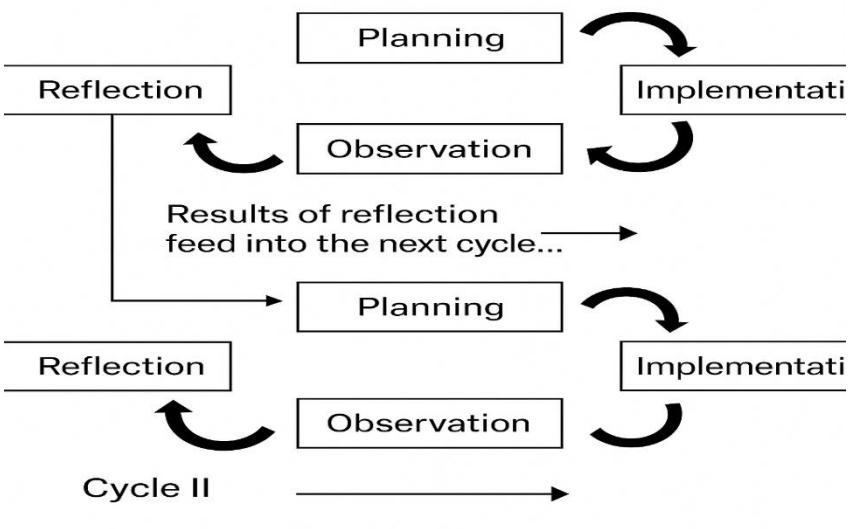

Figure 1. Kemmis and McTaggart's Action Research Model

The participants of this study were 10 fifth-grade students of SD Negeri 017 Long Kali, selected based on preliminary observations showing that most students experienced difficulties in performing manipulative movements, particularly in throwing and hitting a large ball over the net. The research was conducted during the even semester of the 2024/2025 academic year. To obtain accurate and comprehensive data, researchers use several data collection instruments, namely:

1.Test the skills of throwing and hitting a large ball over the net

Used to assess students' manipulative motor skills. Students are given the opportunity to perform two types of tasks: 1) Throwing a large ball over the net into a target area. 2) Hitting a large ball over the net using one- or two-handed techniques. Each action is scored using a psychomotor assessment sheet with a scale of 1–4 based on indicators of direction accuracy, strength, movement coordination, and consistency.

2. Learning outcome scores

The results of the practical test will be converted into numerical scores and compared against the school's Minimum Completion Criteria (KKM). Learning completion is calculated based on the percentage of students achieving scores ≥ KKM.

DOI: 10.32528/sport-mu.v6i2.3866

3. Teacher and student observations

Observation sheets are used to record student activity, enthusiasm, cooperation, and participation during the lesson. Teachers are also asked to record classroom dynamics and student responses to the differentiated learning model.

4. Student questionnaire

Used to explore students' perceptions and motivations towards physical education learning before and after the intervention. The questionnaire used a Likert scale and was analyzed descriptively.

The data analysis techniques in this study were conducted Both quantitative and qualitative approaches were used for data analysis. Quantitative data were analyzed by calculating the percentage of learning mastery and improvements in students' scores across cycles. The comparison between cycles was used to determine the effectiveness of the actions taken. Qualitative data were analyzed descriptively based on teacher observations, student responses, and visual documentation such as photos and videos. This analysis aimed to identify changes in students' behavior, motivation, cooperation, and participation during the implementation of the differentiated learning model.

Through this integrated analysis, the study provides a comprehensive understanding of the effectiveness of the differentiated learning model in improving students' manipulative motor skills in a gradual and sustained manner.

RESULTS AND DISCUSSION

Research result

This classroom action research was conducted in two cycles with the aim of improving the manipulative motor skills of fifth-grade students at SD Negeri 017 Long Kali through the application of a differentiated learning model in a large ball game. Data were obtained through observations of psychomotor motor skills, practical tests of hitting a large ball over the net, student learning motivation questionnaires, and teacher field notes. Quantitatively, there was a significant increase in two main indicators, namely the psychomotor learning outcome score and the students' cognitive test score. In the pre-action phase, the average observation score for students' manipulative skills was 15

DOI: 10.32528/sport-mu.v6i2.3866

score (out of a maximum score range of 20). After implementing two cycles of action, this score increased to 17 with a difference of 3 points. Students' cognitive scores also increased from an average of 63 % in the pre-action phase to 86 % in the post-action phase, with an increase of 23 % or an increase of 36 %.

To clarify the development of student learning outcomes at each stage, Table 1 summarizes manipulative movement observation scores and cognitive test scores from pre-cycle to cycle II. This table illustrates the gradual improvement that occurred after the intervention through the implementation of a differentiated learning model.

Table 1. Summary of Student Learning Outcomes in Skills and Knowledge Aspects in Cycle I

Stage	Motion Observation score	Cognitive Test Score (%)	Information
Pre-Cycle	15	63	Before Action
Cycle I	16	75	After Cycle I
Cycle II	17	86	After Cycle II

The development of student learning outcomes from pre-cycle to cycle II can be seen visually through the following graph:

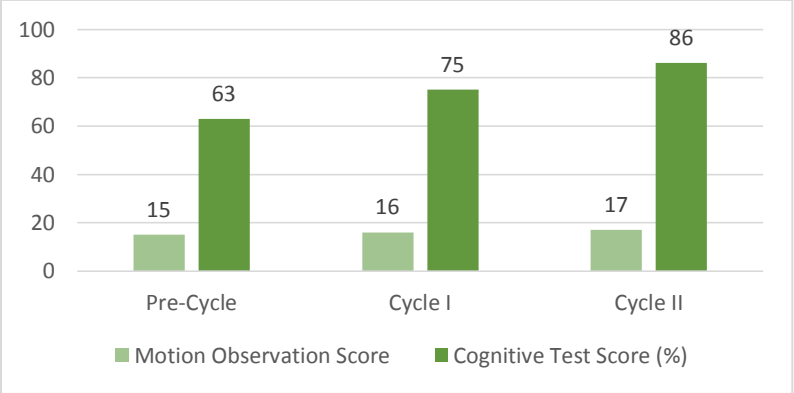

Figure 2. Graph of Classroom Action Research Results

The questionnaire results showed that 86% of students stated that the learning activities using the differentiated learning model were interesting and helped them understand movement patterns better. Qualitative data from field notes confirmed that students showed higher enthusiasm, better collaboration with peers, and increased motivation in participating in Physical Education (PJOK) learning. Teachers also noted

DOI: 10.32528/sport-mu.v6i2.3866

that variations in instructions and game patterns contributed to increased active student participation, especially for students who initially lacked confidence.

Discussion

Pre-Action (Pre-Cycle)

In the pre-action stage, the initial condition of the fifth grade students of SD Negeri 017 Long Kali showed that their skills in carrying out manipulative movements, Students' performance, particularly hitting a large ball over the net, remains relatively low. The average psychomotor skills observation score for students was only 15 out of a maximum of 20, while cognitive test results showed a score of 63 %. This indicates that more than a third of students have not met the school's Minimum Completion Criteria (KKM).

Some of the main difficulties faced by students include lack of arm strength, unstable posture during movements, and poor eye-hand coordination when hitting the ball. These conditions indicate that previous learning has not been fully able to meet students' needs in developing motor skills optimally. This finding is in line with the opinion of Suparman (2020), who stated that monotonous and less innovative learning models can reduce students' learning motivation and hinder their skill development. Furthermore, low learning outcomes also indicate that students' cognitive and psychomotor aspects have not developed in an integrated manner, even though, as explained by Ariyani (2023), PJOK learning should be designed to develop all three domains of student ability simultaneously: cognitive, affective, and psychomotor..

Cycle I

After reflecting on the pre-action conditions, the researcher began implementing a differentiated learning model in cycle I. The results of this cycle showed an increase in two main assessment aspects, namely students' psychomotor skills and cognitive knowledge. The average observation score for manipulative movement skills increased to 16 while students' cognitive scores increased to 75 %. This increase indicates that students are beginning to understand the basic concepts of manipulative movement,

DOI: 10.32528/sport-mu.v6i2.3866

especially in the activity of hitting a large ball over the net, and are starting to be able to practice it with more confidence and direction.

These results support the statement (Srie, 2024) which explains that the differentiated learning model can increase student engagement through fun and easy-to-understand activities. During the learning process, students are divided into groups according to their ability level and given the opportunity to choose a rubber or plastic volleyball to practice hitting the ball over the net according to their preferences. This approach has been proven to encourage students' intrinsic motivation, strengthen social interactions, and increasing their self-confidence. Furthermore, developing learning plans that take into account interests, abilities, and learning styles is in accordance with the principles of contextual learning as explained by Bruner (2016), which states that students will develop deeper understanding if they learn through meaningful, direct experiences.

Cycle II

Cycle II showed significantly better results than the previous cycle. The average observation score for students' manipulative movement skills increased to 17 while their cognitive scores jumped to 86 %. This improvement was not only statistically significant but also demonstrated that the differentiated learning approach significantly improved the skill of hitting a large ball over the net. These results align with findings (Naldi et al., 2023) that consistently implementing a differentiated learning model significantly improves learning outcomes for basic techniques in large ball games, particularly in the context of Physical Education (PJOK) learning at various levels of education.

In addition to improving psychomotor skills, students also demonstrated development in social aspects such as teamwork, sportsmanship, and group communication skills. This reflects the achievement of the Physical Education (PJOK) learning objectives, which emphasize not only technical aspects but also character development and positive values (Widhiasto & Alsaudi, 2020). This theory was also reinforced by Asmawi (2020), who stated that large ball games are effective in developing students' muscle strength, agility, and motor coordination in an integrated manner. The application of a differentiated learning model has been proven to improve students' overall manipulative

DOI: 10.32528/sport-mu.v6i2.3866

movement learning outcomes. This approach adapts the learning materials, processes, and products to the students' needs, interests, and ability levels, resulting in more confidence, active engagement, and motivation to try.

This study has several limitations that should be considered. First, the sample size was relatively small, only 10 fifth-grade students, so the results cannot be broadly generalized to a larger population. Second, the study was conducted at a single school, SD Negeri 017 Long Kali. Therefore, the characteristics of the learning environment, facilities, and student conditions, which may differ in other schools, could influence the replication of the results. Third, the classroom action research (CAR) design has the potential to introduce subjectivity because teachers play the dual role of both implementers and researchers, which can affect objectivity in the observation and assessment process. Furthermore, the absence of a control group means that improvements in learning outcomes cannot be entirely attributed solely to the implementation of the differentiated learning model, as other external factors may also be involved. Therefore, it is recommended that future research involve a larger sample, be conducted in various schools with different characteristics, and involve independent observers or assessors to minimize bias and increase the reliability, validity, and generalizability of the findings.

CONCLUSION

Based on the results of classroom action research conducted in two cycles on fifth-grade students of SD Negeri 017 Long Kali, it can be concluded that the implementation of the differentiated learning model is effective in improving manipulative movement learning outcomes, especially the skill of hitting a large ball over the net. The improvement in learning outcomes is reflected in the average score of manipulative skills which increased from 15 in the pre-cycle stage to 17 in cycle II. Likewise, the average value Students' cognitive abilities increased significantly from 63 % to 86 %. This increase was supported by statistical test results with a very strong level of significance ($p < 0.001$) and a large practical effect value (Cohen's $d > 1$),

DOI: 10.32528/sport-mu.v6i2.3866

indicating that the learning intervention had a real impact on improving student learning outcomes.

In addition to improving learning outcomes, learning with a differentiated learning model also creates a positive and adaptive learning environment. Students demonstrate increased active participation, higher learning motivation, and create positive learning experiences. These findings support theories in physical education that state that an active, varied, and contextual learning approach can develop students' cognitive, psychomotor, and affective aspects in an integrated manner. (Irgi Iksan Mulyana, et al., 2024)

Thus, it can be concluded that the differentiated learning model is suitable for use as an alternative effective learning strategy to improve manipulative movement skills in large ball games at elementary school level.

Suggestion

Based on the research results, it is recommended that physical education teachers consider implementing a differentiated learning model in the learning process, particularly for large ball games that emphasize manipulative movement skills. This model has been proven to increase student engagement, motivation, and overall self-confidence. Students are expected to be more enthusiastic and actively participate in learning as part of a meaningful and enjoyable learning experience..

In addition, future researchers are expected to be able to develop similar studies on other PJOK materials or at different levels of education, so that the results of this study can provide a broader contribution to the development of effective, innovative, and student-centered PJOK learning practices..

BIBLIOGRAPHY

Alfadzoli, M. L., Darumoyo, K., & Utomo, A. W. B. (2024). Upaya Meningkatkan Hasil Belajar Passing Bawah Bola Voli Menggunakan Model Pembelajaran Team Games Tournament (TGT) pada Siswa Kelas XI. DJS (Dharmas Journal of Sport), 4(1). https://doi.org/10.56667

DOI: 10.32528/sport-mu.v6i2.3866

Apriana, Y., & Nur, H. A. (2023). Model Kooperatif TipeTeam Games Tournament (TGT) untuk Meningkatkan Kemampuan Passing Bawah Bola Voli di Ekstrakurikuler MTS Pertiwi Kuningan. 3(2). https://doi.org/https://doi.org/10.52434/penjas.v3i2.41586

Ariyani, A., Disurya, R., & Nita, P. (2023). Pengembangan Media Pembelajaran Servis BawahBola Voli Menggunakan Modifikasi Bola Plastik melalui Sasaran Botol Gantung pada Siswa SD Negeri 55 Palembang. | ANTHOR: Education and Learning Journal, 2(2), 2023. https://doi.org/https://doi.org/10.31004/anthor.v2i2.110

Asmawi, M. (2020). KEMAMPUAN SERVIS ATAS PERMAINAN BOLA VOLI (Studi Eksperimen Model Pembelajaran dan Koordinasi Mata Tangan). Jurnal Segar, 8(2). https://doi.org/https://doi.org/10.21009/segar/0802.03

Bruner, M. W. (2016). Positive Youth Development in Aboriginal Physical Activity and Sport: A Systematic Review. Adolescent Research Review, 1(3), 257–269. https://doi.org/10.1007/s40894-015-0021-9

Budiharto, B. (2023). Penerapan Pembelajaran Cooperative Learning Model Ring Target untukMeningkatkan Hasil Passing Permainan Bola Voli. 3(1). https://doi.org/https://doi.org/10.51878/educational.v3i1.2062

Mashud. (2022). *Penelitian Tindakan Berbasis Project Based Learning Kelas Pendidikan Jasmani (PTK) & Kelas Olahraga (PTO)*. Sidoarjo: Zifatama Jawara.

Nurtanto, M., & Sofyan, H. (2015). Implementasi Problem-Based Learning untuk Meningkatkan Hasil Belajar Kognitif, Psikomotor, Dan Afektif Siswa di Smk. Jurnal Pendidikan Vokasi, 5(3), 352. https://doi.org/10.21831/jpv.v5i3.6489

Pahleviannur, R. S. M., Mudrikah, S., Mulyono, H., Vidriana, B., & Rizqi, M. (2022). *Penelitian Tindakan Kelas*. sokoharjo: Pradina Pustaka.

Purwanto, E. S. (2023). *Penelitian Tindakan Kelas*. Purbalingga: Eureka Media Aksara.

Riezky, G., & Yusmawati, Y. (2017). Meningkatkan Keterampilan Passing Atas Bola Voli melalui Model Pembelajaran Team Games Tournament. 1(2). https://doi.org/https://doi.org/10.21009/JSCE.01210

DOI: 10.32528/sport-mu.v6i2.3866

Suparman, S. (2020). Peningkatan Hasil Belajar PENJASKES Materi Servis Atas Bola Voli melalui Alat Bantu Bola Gantung pada siswaKelas VIII I SMP. Edudikara: Jurnal Pendidikan Dan Pembelajaran, 5(3). https://doi.org/https://doi.org/10.32585/edudikara.v5i3.191

Syaleh, M. (2017). Upaya Meningkatkan Hasil Belajar Sarvis Atas Bola Voli melalui Media Pembelajaran Lempar Pukul Bola Kertas pada Siswa Kelas VII SMP. Jurnal Prestasi, 1(1), 23–30. https://doi.org/https://doi.org/10.24114/jp.v1i1.6494

Taslim, Z. (2020). Meningkatkan Keterampilan Servis Atas Dalam Permainan Bola Voli dengan Pendekatan Pembelajaran Drill. Jurnal Pendidikan Guru Sekolah Dasar, 13(2), 140–145. https://doi.org/https://doi.org/10.33369/pgsd.13.2.140-145

Widhiasto, R. W. W., & Alsaudi, A. T. B. D. (2020). Meningkatkan Hasil Belajar Servis Bawah Bola Voli Mini melalui Pembelajaran Secara Bertahap. JIP) STKIP Kusuma Negara, 11(2). https://doi.org/https://doi.org/10.37640/jip.v11i2.158

Ardin, A., Budiana, D., & Stepani, M. R. (2024). Pengaruh Pembelajaran Berdiferensiasi Dalam Aktivitas Pendidikan Jasmani Terhadap Minat dan Hasil Belajar Siswa Sekolah Dasar. JUMPER: Jurnal Mahasiswa Pendidikan Olahraga, 5(1), 251–259.

Irgi Iksan Mulyana, Shofiyah, H., Dani Komara, & Burhan Hambali. (2024). Strategi Pembelajaran Aktif Untuk Meningkatkan Partisipasi Siswa Dalam Pendidikan Jasmani Dan Olahraga. Jurnal Ilmiah Spirit, 24(2), 112–120. https://doi.org/10.36728/jis.v24i2.3611

Naldi, W., Suryadi, S., R, G. A., Herman, T., & Dwiana, R. (2023). Pembelajaran Berdiferensiasi Berbasis Rancangan Understanding by Design (UbD) terhadap Minat Belajar Siswa Sekolah Dasar. JIIP - Jurnal Ilmiah Ilmu Pendidikan, 6(7), 5224–5231. https://doi.org/10.54371/jiip.v6i7.2374

Nuriyani, R., Waluyati, S. A., & Dahlia, D. (2023). Penerapan Pembelajaran Berdiferensiasi dalam Meningkatkan Keaktifan dan Kreativitas Belajar Peserta Didik. ASANKA : Journal of Social Science and Education, 4(2), 171–181. https://doi.org/10.21154/asanka.v4i2.7900

DOI: 10.32528/sport-mu.v6i2.3866

Umam, M. A., & Sulistiyanto, B. (n.d.). Pengaruh Strategi Pembelajaran Berdiferensiasi Terhadap Hasil Belajar Kebugaran Jasmani Pada Mata Pelajaran PJOK Siswa Kelas XII SMA N 4 Semarang. 17–26.

DOI: 10.32528/sport-mu.v6i2.3866