# The Effect of Learning Methods and Confidence on Learning Outcomes High Jumping Skills

**M. Sahib Saleh[1], Syahruddin[2], Muhammad Syahrul Saleh[3], Irmawati[4]**

**[1,2,3,4] Departemen Physical Education, Universitas Negeri Makassar, Jl. AP. Pettarani Makassar, Sulawesi Selatan, 90221 Indonesia**

**e-mail:** syahruddin@unm.ac.id

## Info Artikel

## Abstract

Physical education teachers must pay attention to the basics of high jump number learning materials starting from creating, supporting, hovering and landing. The phases of the primary jumping technique are expected to be carried out with various variations of learning methods to solve problems and complete learning so that students do not get bored. The purpose of the study was to determine the increase in learning outcomes for high jump skills on the material that has been taught through the application of learning methods in terms of the level of confidence. This research method is a 2X2 factorial experimental method, with the treatment variable being the direct learning method and problem-solving learning method. In contrast, the dependent variable is the result of learning high jump skills, and the attribute variable is self-confidence. The confidence variable uses a self-confidence questionnaire instrument, while the learning outcomes of high jump skills test the movement process of high jump skills. The research data were analyzed by two-way ANOVA analysis with the help of the SPSS version 20.0 computer program. The results showed that 1) Overall, learning outcomes of high jump skills through the application of problem-solving learning methods gave better results than direct learning methods, 2) There was an interaction between learning methods with confidence in learning outcomes of high jump skills, 3) For students who have high self-confidence, the results of learning high jump skills through the application of problem-solving learning methods give better results than direct learning methods, and 4) For students who have low self-confidence, the results of learning high jump skills through the application of direct learning methods are as good as problem-solving learning methods.

✉ Alamat korespondensi: Jl. AP. Pettarani Makassar, Sulawesi Selatan
E-mail            : syahruddin@unm.ac.id

## INTRODUCTION

One of the main problems in physical education in Indonesia is the ineffectiveness of teaching physical education in schools. The condition of the poor quality of physical education teaching starts at the elementary

and high school levels. This condition is caused by several factors, including the limited ability of physical education teachers and the limited resources used to support the physical education learning process (Shahruddin and Suyuti 2016).

Learning methods have a significant role in the learning process. Because it utilizes learning methods, the teaching and learning process can be carried out effectively and efficiently so that students receive knowledge and skills. The skills possessed by students cannot be separated from the teacher's role in the learning process (Wardhani et al., 2020; Arifin, 2017), and a positive reaction to the material provided is a student's success in learning activities.

Implementation and selection of skills in learning methods are essential for teachers considering that the teacher's competence primarily determines learning outcomes. For example, in using physical education learning methods, teachers use direct learning methods (MPL) and problem-solving learning methods (MPM). These two methods will facilitate the mastery of basic techniques, form a collaborative process between students and teachers, and create a controlled academic atmosphere where students are not in a stressful situation.

However, it should be noted that direct learning and problem-solving methods are adapted to the basic level of students' abilities. A direct learning method is a teaching approach that is specifically designed to support student learning processes related to

well-structured declarative knowledge and procedural knowledge that can be taught with a gradual pattern of activities with high jump techniques, including how to take the prefix, posture at a time will jump, cross the bar, advance moves and final stance.

Direct learning (direct instruction) is known as active teaching, which refers to a teaching style in which the teacher is actively involved in carrying lesson content to students and teaching it directly to the entire class (Irwanto and Setyaningsih 2020). Panjaitan even stated that direct learning methods could improve student learning outcomes (Panjaitan, 2016).

In contrast to the previous method, the problem-solving learning method is a plan designed with a problem-solving approach through stages carried out by students during the learning process (Bisri, Supriawan, and Permana 2016). The teacher has a role with a particular portion in the application of problem-solving learning methods, especially in determining what movement tasks will be done. Creative problem solving includes five steps: finding facts, finding problems, finding ideas, finding solutions, and finding acceptance (Wijayanti, 2016). The problem-solving learning method is a learning method that focuses on teaching and problem-solving skills, followed by skill strengthening (Anon, 2011). The problem-solving learning method is a learning method that aims to train students to formulate solutions to existing problems and familiarize students with analytical thinking (Bernard et al., 2018).

Based on field observations, at SMP Kartika XX-2 Wirabuana Makassar, students do not yet have adequate mastery of process skills in learning the straddle style high jump. This skill is not yet possessed because, in the initial phase, the two legs have not simultaneously rejected the body towards the top of the bar; the take-off phase, especially the swing leg, is less than optimal in pushing past the bar. The body's position is not horizontal when on the bar, and the hands are not relaxed (stiff). ). In addition, the results of interviews with several Physical Education teachers indicated that they often applied these two methods. However, it was unknown which of these two methods was most effective in improving the straddle style high jump skill learning outcomes.

In connection with the learning outcomes of high jump skills, students must have the confidence to pass the jump bar

because confidence will make it easier for students to jump without hesitation to pass the bar well. The emergence of self-confidence can be given through reinforcement by Physical Education teachers so that students do not feel afraid of the obstacles.

Confidence is essential for students. A high self-confidence student will also have a high sense of optimism in achieving something he wants to get the expected results (Fransisca, Wulan, and Supena 2020).

## METHODS

This study uses a 2x2 factorial experimental method. The independent variable is the direct learning method (MPL) and the problem-solving learning method (MPM), the dependent variable is the high jump skill learning outcome (KLT), and the attribute variable is self-confidence (PD).

Table 1. Problem Constellation

| MP (A)<br><br>PD (B) | MPL<br><br>$(A_1)$ | MPM<br><br>$(A_2)$ |
|---|---|---|
| *High (B₁)* | $A_1B_1$ | $A_2B_1$ |
| *Low (B₂)* | $A_1B_2$ | $A_2B_2$ |

The research population was 255 students of SMP Kartika XX-2 Wirabuana Makassar, and a sample of 44 male students was collected by purposive random sampling. The high jump instrument uses a high jump

skill movement process test with a reliability value of 0.85 (S. Syahruddin et al., 2020). The confident instrument has a reliability value of 0.74 (Syahruddin, 2012). Data were analyzed

using a two-way analysis of variance statistics (Gumanti, Yudiar, and Syahruddin 2016).

## FINDINGS AND DISCUSSION

### Findings

Hypothesis testing can be used for the two-way analysis of variance (Anova). The complete ANOVA calculation can be seen in Table 3. Based on Table 3, the ANOVA results show that Fobs = 26,677 (sig < 0.05). These results significantly differ in learning outcomes for high jump skills between MPL (A1) and MPM (A2).

Table 2. Description of Learning Methods and Level of Confidence

| Confidence (B) | Learning Methods (A) | | | |
| --- | --- | --- | --- | --- |
| | MPL (A1) | | MPM (A2) | |
| High (B1) | N | = 11 | N | = 11 |
| | $\sum X$ | = 423 | $\sum X$ | = 492 |
| | $\bar{x}$ | = 38.45 | $\bar{x}$ | = 44.73 |
| | s | = 2.583 | s | = 2.760 |
| Low (B2) | N | = 11 | N | = 11 |
| | $\sum X$ | = 425 | $\sum X$ | = 455 |
| | $\bar{x}$ | = 38.64 | $\bar{x}$ | = 41.36 |
| | s | = 3.171 | s | = 3.009 |
| Total | N | = 22 | N | = 22 |
| | $\sum X$ | = 848 | $\sum X$ | = 947 |
| | $\bar{x}$ | = 38.55 | $\bar{x}$ | = 43.05 |
| | s | = 2.824 | s | = 3.302 |

The learning outcomes of high jump skills using MPL (x = 38.55) were smaller than the learning outcomes of high jumping skills using MPM (x = 43.05). The research hypothesis states that the overall learning outcomes of high jump

skills using MPM (A2) give better results        than MPL (A1).

Table 3. Summary of Calculation Results of Anova 2X2

| Source | Type III Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Metode | 285.159a | 3 | 95.053 | 11.384 | 0.000 |
| Intercept | 73227.841 | 1 | 73227.84 | 008.77 | 0.000 |
| PD | 27.841 | 1 | 27.841 | 3.334ns | 0.075 |
| MP | 222.750 | 1 | 222.750 | 26.677* | 0.000 |
| PD (B) * MP (A) | 34.568 | 1 | 34.568 | 4.140* | 0.049 |
| Error | 334 | 40 | 8.350 | | |
| Total | 73847 | 44 | | | |

The results of ANOVA Table 4 obtained the value of Fobs interaction (FAB ) = 4.140 (sig < 0.049), or there is an interaction effect between learning methods (A) and self-confidence (B) on high jump skills learning outcomes.

Table 4. Summary of the calculation results of the Tukey HSD Test

| (I) Treatment Group | (J) Treatment Group | Mean Difference (I-J) | Std. Error | Sig. |
|---|---|---|---|---|
| $A_1B_1$ | $A_2B_1$ | -6.27273* | 1.23215 | 0.000 |
| $A_1B_2$ | $A_2B_2$ | -2.72727 | 1.23215 | 0.137 |

Based on Table 3, the difference test of groups A2B1 and A1B1 obtained sig = 0.000 <α 0.05, meaning that the learning outcomes of high jump skills for the high self-confidence group given the MPM (A2B1) were significantly better than those given the MPL (A1B1). While the A2B2 group with the A1B2 group obtained sig = 0.137 > 0.05, meaning that the learning outcomes of high jump skills for the low self-confidence group given MPM (A2B2) were relatively the same as those given MPL (A1B2).
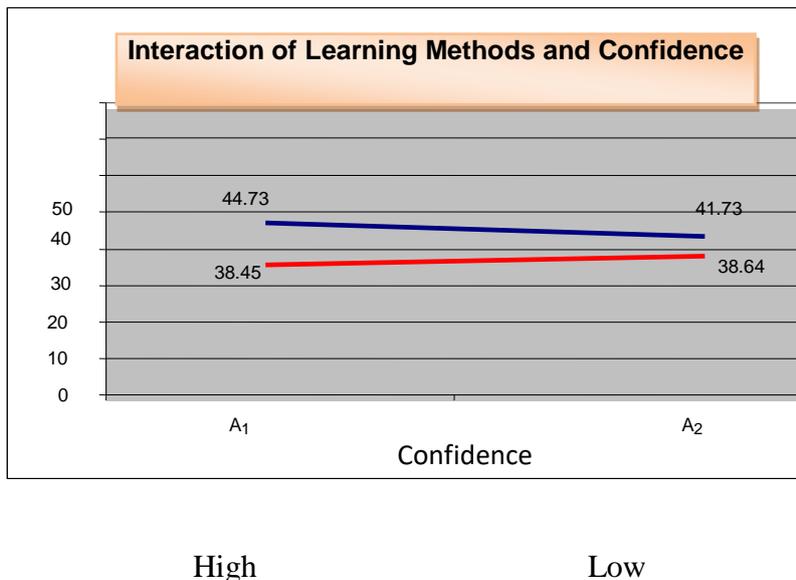
Figure 1. Interaction of Learning Methods With Confidence

Note. A1 = MPL

A2= MPM

**Discussion**

The high jump skill is a very complex motion process because, in its implementation, it goes through four stages that must be coordinated quickly and perfectly, namely prefix, pedestal, hovering, and landing. Producing high jump process skills requires appropriate, effective and efficient learning methods.

The two learning methods used in this study, namely MPL (A1) and MPM (A2), can improve high jump skills. However, in its implementation, there are differences so that the final results are significantly different, where MPM (A2) has a more significant effect than MPL (A1) on increasing high jump skills.

There is a difference in the effect because the method of application of the two groups is different. The application of MPM in the learning process, where students learn or find out for themselves how to perfect the high jump process. Students are given the freedom to find solutions to solve problems in the form of mistakes made during the stages of the high jump. By involving the process of translating information in the form of cognition, it is continued to the association stage, giving students the maturity and experience of the stages of movement in the high jump getting better, and in the end, students who find the correct motion process so that the movement that looks not stiff and tense but relaxed even in the direction of automatic motion. While in MPL, the teacher is the centre of learning, so students are less active and creative. Direct learning is a learning model from an approach that is teacher centre learning (Panjaitan, 2016). Therefore, the cognitive stages that lead to the association have not yet developed

towards maturity and movement experience, so students are minimal in the movement process. In MPL, students doing work or jumping are not done too intensively because the portion of time and repetitions given to students to make jumps is not too much because the teacher takes a more significant portion of the time for activities in the learning process, for example giving lectures, demonstrating high jump movements in the learning process. Several stages.

MPM has a more significant impact on high jump skills. In an implementation, this method is carried out intensively, namely so that many repetitions of jumps are carried out in each learning process. This happens because students are given the freedom to repeat the jump, and they do not feel pressured. So it can be said that the problem-based learning (MPM) learning model is a model that emphasizes student-centred learning (Wahidah, 2019). This model encourages students to carry out investigations, integrate theory and practice, and apply their knowledge and skills to develop specific problem-solving discoveries.

Problem-solving learning approach refers to the concept of open learning (open instruction). This means that students have the flexibility to determine the model of their movement activities, even allowing students to explore various alternative movements that can be done. Efforts to solve possible problems that arise allow students to experience directly (learning by doing) existing problem-solving methods. This

hypothesis is supported by Chen Yao Lin et al. The findings show that most teachers achieved improved learning outcomes through open approach instruction (Lin et al., 2013). Students have broad authority, play a more active role, and do not just imitate or repeat examples of normal motion in a sport.

Students' potential will be less meaningful if the teacher as a facilitator in the learning process cannot provide opportunities for students to hone and cultivate their potential, support a conducive atmosphere, and the availability of various stimuli as a condition for achieving optimal goals.

An educator must be innovative in delivering learning material, especially utilizing the media to present material for fluency in learning. An educator must be innovative in delivering learning material, especially in utilizing media to present material for smooth learning (Shahruddin, Saleh, and Saleh 2020).

In learning physical education, the goal to be achieved is to improve the health status of students. However, students are expected to be able to apply it in their daily lifestyle through physical activity (movement). As stated by Lesmana, quoted by Sahabuddin et al. that physical education is a medium for encouraging motor development, physical knowledge and reasoning abilities, appreciation of values (attitude, mental, emotional, spiritual, and social), as well as habituation of healthy lifestyles that aim to stimulate growth. and balanced development (Sahabuddin, Hakim, and Syahruddin 2020).

Physical activity in schools by providing physical education learning methods is expected to have many goals to be achieved; in addition to the element of motion, which is the main goal (instructional effect), it also lies in the mental development of students as one of the nurturing effects. In this case, one element of mental development is increasing students' self-confidence. The learning method presented by the teacher in physical education will increase students' confidence in performing various movements, including movements that are considered problematic by students, for example, crossing a jump bar. So it can be stated that the learning method and students' self-confidence in the process of high jump skills have significant interaction as the results of research (Suryani, Agustin, and Gustiana, 2019) that self-confidence contributes 28.94% to children's social skills.

After students have followed the learning process for four weeks (8 meetings) through the application of high-confidence group MPM (A2B1), it is better to improve high jump skills learning outcomes than high-confidence group MPL (A1B1). In applying MPM, the teacher has a role in determining what movement tasks will be done and the students who determine problem-solving in the implementation process. In solving problems, students are required to be proactive and creative.

Students play an active role in the MPM process when they learn to jump high. Creativity is also seen when students learn by using problem-solving learning methods, actively asking questions, looking for solutions, and being creative on how to create the perfect movement.

Improving high jump learning outcomes through MPM has a better implementation. MPM is not just a teaching method but also a method of thinking because the MPM method can use other methods, starting from looking for data to concluding (Ikmal, Eka Supriatna 2018).

Solve each problem that occurs at each stage, then fix the error. With students' active role and creativity in correcting errors that occur in the stages of the high jump, it will ultimately lead to an increase in high jump learning outcomes.

Movement automation can be created through the implementation of MPM. With movement automation, students can do motion tasks without processing information again about what is done with excellent and correct results and are supported by high self-confidence. Automation makes the resulting movement more consistent, smoother, more stable, and without stiffness and tension when doing high jumps.

A high jump is an athletic number that seeks to overcome obstacles, taking high trust from students. Without self-confidence, it is difficult for students to make good jumps even with an automatic movement due to MPM results.

MPM teaches students to face various problems individually or in groups in its application. The application of MPM also trains students to design an invention, think

and act creatively, conduct investigations and make observations. MPM also provides students with various experiences, including leading to mental maturity. Mental maturity can be used to solve problems, develop higher-order thinking skills, and develop independence and self-confidence because students are given the freedom to ask questions and study in groups or in pairs to cooperate with students to solve problems about the high jump process.

In addition, MPM is an approach that strongly emphasizes the function and presence of students in the learning process, so that teacher dominance is reduced. Students have adequate authority to solve various problems that arise during the learning process but must be supported by high self-confidence from the students themselves. Compared to MPL, although with a high level of self-confidence, it results from the lack of student time available to perform and explore the movements instructed by the teacher, so the increase is slower than MPM.

MPM has a higher work intensity because students are given the freedom to do movements. Students' active roles and creativity appear when looking for solutions to mastering the movement. Students also seem motivated and challenged in learning the stages of the high jump. While in MPL, students learn the high jump stages with less work intensity; this happens because, in MPL, the learning process is the centre of the teacher, so the active role of students is limited. Meanwhile, the application of MPM,

the centre of a student-teacher as a facilitator, causes students to be proactive and show high creativity, which leads to better understanding and experience in mastering movement skills (S. Syahruddin et al., 2020).

MPL is more towards a teacher-centred approach, meaning that teachers have a large portion in controlling the direction of learning. The teacher conveys academic content in a structured format in student activities, and it is entirely the teacher's responsibility. Students are not allowed to collaborate and cooperate; the responsibility is entirely on the teacher, and the teacher carries the assessment of right and wrong movements. In addition, MPL tends to be more rigid than MTS, and students tend not to be involved in improving learning outcomes because students tend to be bored and not focused on learning. This aligns with Reza Resah Pratama's research that self-confidence influences athlete achievement (Pratama, 2019). As well as research by Rizun and Strzelecki, 2020 quoted by Syahruddin that self-efficacy was a significant predictor of perceived usefulness and perceived ease of use, similar to previous studies, meaning that self-efficacy is a significant predictor of perceived usefulness and perceived ease of use, similar to the previous lesson (Shahruddin et al., 2021)

MPL element of repetition (drill) to perform the task of the movement is very dominant given by the teacher. In the natural learning process, the role of the teacher dominates every activity that takes place, and the position of students is generally passive.

The involvement of students in the learning process is only limited to following the teacher's instructions. Likewise, if the learning process is classical, the possibility of individual differences is less accessible and becomes neglected.

Physical education aims to foster individuals and groups to develop a harmonious, harmonious and balanced physical, mental, social and emotional development. In learning physical education, various learning methods are needed.

Before learning takes place in physical education, students must be prepared to face various stages to be considered when learning motion will be presented. One aspect of supporting the effectiveness of movement learning is related to the student's condition. Students who have good physical aspects with high self-confidence support will receive learning materials. The presentation of the learning process that is too demanding of students and does not heed their readiness is one of the inhibiting factors for achieving the expected goals of the learning process, for example, the lack of self-confidence.

Based on the results of data analysis, students who have low self-confidence indicate that between these two methods (MPM and MPL), there is no significant difference (relatively equally effective). The two learning methods with low self-confidence can allow MPM and MPL as alternative variations in the physical education learning process with teaching materials; there are elements of obstacles faced by students, including high jumps.

The direct learning model (MPL) consists of 5 stages. Namely, learning objectives are delivered, and students are prepared, demonstrating knowledge and skills, mentoring, training, checking comprehension, providing feedback, and applying a concept (Sundawan, 2016). According to Hamka, the direct learning model is effectively applied to the motion system material at SMA Negeri 1 Donri-Donri (L and Arsyad 2015).

## CONCLUSION

1. Learning outcomes of high jump skills through MPM application give better results than MPL (A2>A1).
2. There is an interaction between learning methods with confidence in learning outcomes of high jump skills (AXB).
3. Students who have high self-confidence and learn high jump skills through MPM application give better results than MPL (A2B1>A1B1).
4. For Students who have low self-confidence, learning high jump skills through MPL is as good as MPM (A1B2 = A2B2).

## ACKNOWLEDGMENTS

## REFERENCES

Anon. 2011. "Pengaruh Penggunaan Artikel Kimia Dari Internet Pada Model Pembelajaran Creative Problem Solving Terhadap Hasil Belajar Kimia Siswa SMA." *Jurnal Inovasi Pendidikan Kimia* 4(1).

Arifin, Syamsul. 2017. "Peran Guru Pendidikan Jasmani Dalam Pembentukan Pendidikan Karakter Peserta Didik." *Multilateral Jurnal Pendidikan Jasmani Dan Olahraga* 16(1). doi: 10.20527/multilateral.v16i1.3666.

Bernard, Martin, Nuni Nurmala, Shinta Mariam, and Nadila Rustyani. 2018. "Analisis Kemampuan Pemecahan Masalah Matematis Siswa SMP Kelas IX Pada Materi Bangun Datar." *SJME (Supremum Journal of Mathematics Education)* 2(2). doi: 10.35706/sjme.v2i2.1317.

Bisri, Hasim, Dedi Supriawan, and Tatang Permana. 2016. "Penerapan Metode Pembelajaran Pemecahan Masalah Untuk Meningkatkan Aktivitas Belajar Dan Hasil Belajar Siswa Pada Materi Pembelajaran Kelistrikan." *Journal of Mechanical Engineering Education* 3(1). doi: 10.17509/jmee.v3i1.3196.

Fransisca, Ria, Sri Wulan, and Asep Supena. 2020. "Meningkatkan Percaya Diri Anak Dengan Permainan Ular Tangga Edukasi." *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini* 4(2). doi: 10.31004/obsesi.v4i2.405.

Gumanti, Ary, . Yudiar, and . Syahruddin. 2016. *Metode Penelitian Pendidikan*.

Ikmal, Eka Supriatna, Andika Triansyah. 2018. "Pengaruh Metode Problem Solving Terhadap Pembelajaran Passing Bawah Bola Voli." *Jurnal Pendidikan Dan Pembelajaran Khatulistiwa* 7(3):1–8.

Irwanto, Edi, and Puji Setyaningsih. 2020. "Metode Pembelajaran Langsung Dan Metode Pembelajaran Teams Games Tournament (TGT) Pada Hasil Pembelajaran Pasing Bawah Bola Voli." *Jurnal Pendidikan Kesehatan Rekreasi* 6(1).

L, Hamka, and Muhammad Nur Arsyad. 2015. "Keefektifan Penerapan Model Pembelajaran Langsung Pada Materi Sistem Gerak Di SMA Negeri 1 Donri-Donri." *Jurnal Bionature* 16(1).

Lin, Cheng Yao, Jerry Becker, Yi Yin Ko, and Mi Ran Byun. 2013. "Enhancing Pre-Service Teachers' Fraction Knowledge through Open Approach Instruction." *Journal of Mathematical Behavior* 32(3). DOI: 10.1016/j.jmathb.2013.03.004.

Panjaitan, Dedy Juliandri. 2016. "Meningkatkan Hasil Belajar Siswa Dengan Metode Pembelajaran Langsung." *Jurnal Mathematic Paedagogic* 1(1).

Pratama, Reza Resah. 2019. "Pengaruh Gizi, Motivasi Dan Percaya Diri Terhadap Prestasi Atlet Sepakbola Universitas Sriwijaya." *Journal Of Sport Education (JOPE)* 1(2). doi: 10.31258/jope.1.2.37-42.

Sahabuddin, Sahabuddin, Hikmad Hakim, and Syahruddin Syahruddin. 2020. "Kontribusi Motor Educability Terhadap Kemampuan Senam Ritmik Alat Simpai Pada Siswa Sekolah Dasar." *Jurnal SPORTIF : Jurnal Penelitian Pembelajaran* 6(2). doi: 10.29407/js_unpgri.v6i2.14564.

Sundawan, Mohammad Dadan. 2016. "Perbedaan Model Pembelajaran Konstruktivisme Dan Model Pembelajaran Langsung." *Jurnal Logika*.

Suryani, Ratih, Mubiar Agustin, and Asep Deni Gustiana. 2019. "Hubungan Antara Rasa Percaya Dri Dengan Keterampilan Sosial Anak Taman Kanak-Kanak." *Edukid* 14(2). doi:

10.17509/edukid.v14i2.20029.

Syahruddin, S., and A. Suyuti. 2016. "Pengaruh Gaya Mengajar Latihan Dan Gaya Mengajar Komando Terhadap Keterampilan Passing Atas Bola Voli." *Jurnal Pedagogik Olahraga*.

Syahruddin, Muhammad Syahrul Saleh, and M. Sahib Saleh. 2020. "The Effect of Instructional Media and Motivation on Student's Skill of Dribbling in Indoor Hockey Games."

Syahruddin, Syahruddin, Mohd Faiz Mohd Yaakob, Abdul Rasyad, Arif Wahyu Widodo, Sukendro Sukendro, Suwardi Suwardi, Ahmad Lani, Liliana Puspa Sari, Mansur Mansur, Razali Razali, and Asry Syam. 2021. "Students' Acceptance to Distance Learning during Covid-19: The Role of Geographical Areas among Indonesian Sports Science Students." *Heliyon* 7(9):e08043. doi: 10.1016/j.heliyon.2021.e08043.

Syahruddin, Syahruddin, Muhammad Syahrul Saleh, M. Sahib Saleh, and Irmawati Irmawati. 2020. "Effect Of Direct Learning Method And Problem Solving Learning Method On High Jump Of Skills." *Jp.Jok (Jurnal Pendidikan Jasmani, Olahraga Dan Kesehatan)* 3(2):165–76. doi:

10.33503/jp.jok.v3i2.793.

Wahidah, Wahidah. 2019. "Meningkatkan Kemampuan Berpikir Kritis Peserta Didik Pokok Bahasan Partisipasi Dalam Usaha Pembelaan Negara Mata Pelajaran Pendidikan Kewarganegaraan Melalui Penerapan Model Pembelajaran Berbasis Masalah (PBM) Di Kelas IX B SMP Negeri 2 Salambabaris." *Jurnal Socius* 8(2). doi: 10.20527/jurnalsocius.v8i2.7222.

Wardhani, Puspita Indra, Agusta Aulia Urrochman, Anisa Nur Alimah, Ida Fatmawati, Ika Rifngatin, Nur Baiti Sukma Dewi, Rizki Hendrawan Wibisono, Rossy Andriani, and Sendy Pratiwi. 2020. "Penerapan Permainan Origami Untuk Meningkatkan Kreativitas Siswa Di MIM Pepe, Klaten." *Buletin KKN Pendidikan* 1(2). doi: 10.23917/bkkndik.v1i2.10773.

Wijayanti, Septiana. 2016. "Penggunaan Pendekatan Realistic Mathematics Education (RME) Sebagai Upaya Peningkatan Kreativitas Dalam Pemecahan Masalah Matematika Siswa Kelas X.7 SMA Negeri 1 Pulokulon." *Magistra* 28(95).