The effect of play approach in throwing and catching learning towards self-regulated elementary school students

Iman Sulaiman Zamzami[1abcde)]*, Samsudin, Samsudin[2abc)], Shela Ginanjar[1bcd)]

[1]Department of Sports Health Education, Faculty of Sports Science and Health,
Universitas Negeri Jakarta, Indonesia
[2]Department of Doctoral Physical Education, Faculty of Sports Science and Health,
Universitas Negeri Jakarta, Indonesia
[3]Department of Physical Education Health and Recreation, Faculty of Sports Science and Health,
Universitas Negeri Jakarta, Indonesia

ABSTRACT

The play approach is considered a learning strategy that aligns with the characteristics of elementary school students because it promotes active, exploratory, and meaningful physical activity. This approach has the potential to enhance students' self-regulation in the learning process. This study aims to determine the effect of using the play approach in physical education on students' self-management skills in throwing and catching in fifth grade at SDN 1 Kayuambon. The research method uses an experimental design with a randomized pretest-posttest control group. The study population included all 120 students in Class V at SDN 1 Kayuambon. Sixty students were randomly selected and divided into two groups: an experimental group of 30 students who received instruction using the Play approach and a control group of 30 students who received conventional instruction. Research instruments were used to measure student self-management aspects, and data were analyzed using paired and independent t-tests. The results showed a significant increase in self-management in the experimental group, with values of $t = -10.027$ and $p = 0.000$; the control group did not show a significant increase, with values of $t = 0.858$ and $p = 0.398$. The independent t-test results showed significant differences between the two groups ($t = 3.359$; $p = 0.001$), indicating that the play approach is more effective than conventional learning models in improving student self-management. In conclusion, the Play approach to physical education has a better influence on improving student self-management than conventional learning. Further research is suggested to apply the Play approach to other physical education materials, such as physical fitness, gymnastics, and swimming, and to investigate its impact on aspects of physical fitness, cooperation, and student discipline.

Keywords: play approach; throwing; catching; learning; self-regulated

Corresponding Author: Iman Sulaiman Zamzami, Department of Sports Coaching Education, Faculty of Sports Science and Health, Universitas Negeri Jakarta, Indonesia

✉ email: isulaiman@unj.ac.id

Authors' Contribution : a – Study Design; b – Data Collection; c – Statistical Analysis; d – Manuscript Preparation; e – Funds Collection

INTRODUCTION

Education is a human need for physical and mental development. Changes in education encompass various components, including innovative curricula and learning strategies (Metzler & Colquitt, 2021; Valério et al., 2021). Improving the quality of education is crucial for sustainable development (Aliriad et al., 2024, 2025). Physical education should utilize models that enhance student motivation and achievement, and its implementation needs to be tailored to the specific circumstances of each school to maximize learning outcomes.
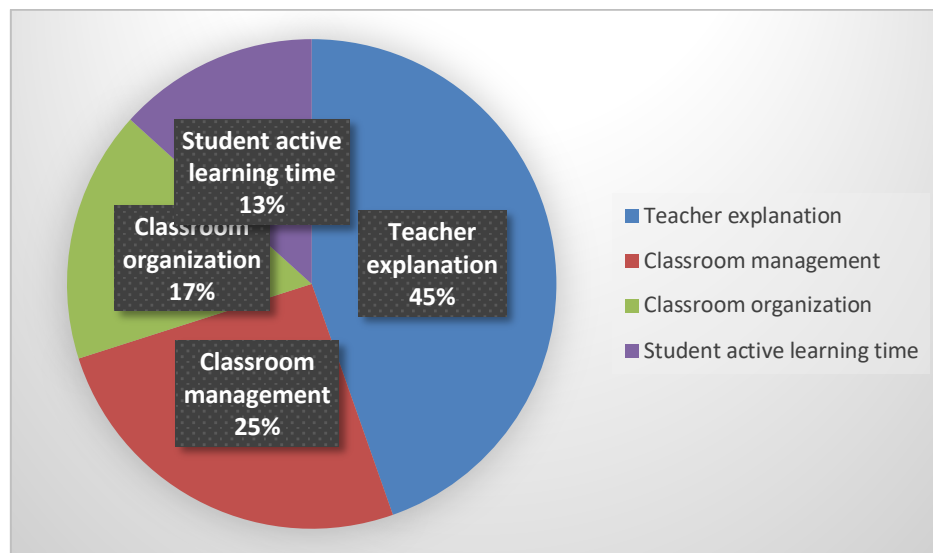

Figure 1. Time Distribution in Physical Education Class (Kanan & Gzagzah, 2007)

Based on figure 1, this will not work well if physical education teachers continue to use conventional models in their teaching. This process, in which students are not trained in self-regulation skills, aligns with expert opinion (Kanan & Gzagzah, 2007), where nearly 45% of classroom time is consumed by teacher explanations. This needs to be avoided as it can have negative consequences (Ginanjar & Julianti, 2024; Ginanjar & Tarigan, 2018) and does not provide opportunities for students to learn independently. This inadequate process of cultivating self-regulation can be a major reason why adolescents fail to reach their intellectual potential (Ginanjar et al., 2022, 2025; Ginanjar, Rihatno, et al., 2023). This focus on fostering independence aligns with the Pancasila Student Profile, where physical education is the spearhead for improving students' character development in schools. This situation illustrates the use of conventional models in physical education instruction, and therefore physical education teachers must be more innovative and proactive in resolving emerging problems. In this regard, it is recommended that physical education learning should make children feel happy and joyful (Bardid et al., 2016), namely by using a playful approach. Through fun games, students have the freedom to perform motor skills optimally (Ginanjar, Samsudin, & Rihatno, 2024b; Ginanjar, Samsudin, Resmana, et al., 2024; Samsudin et al., 2024). This playful approach allows students to learn interesting material and has an impact on increasing learning motivation. Moreover, the throwing-catching material is often considered uninteresting and boring. It is important to realize that every student enjoys being involved in creative learning, but when learning is not fun, this can decrease student interest and motivation (Setia et al., 2020). Therefore, the playful approach is considered appropriate to students' interests and needs, especially in the throwing-catching material, because it can optimize learning in elementary school.

METHOD

The purpose of this study is to see the effect of the use of the Play Approach in physical education learning at Kayuambon 1 Elementary School on the Self-Regulated aspect, because the use of the Play Approach is seen as fun for students. The research methodology used is Experimental Designs with Random Assignment sampling. In this study consists of two independent variables, namely the Play Approach and Conventional and the Dependent Variable is Self-Regulated. This research will be conducted at Kayuambon 1 Elementary School. The population in this study are grade V students of Kayuambon 1 Elementary School which consist of 4 classes, the total population is 120 people. Based on this statement, the author took grade V.A and V.C students of Kayuambon 1 Elementary School. The sampling technique used was Simple Random Sampling, so that 60 students were randomly selected and divided into two groups, where 30 students learned with the Play Approach and 30 students learned with the conventional model. Seeing the variables to be studied, the research design used was *Randomized Pretest and Posttest Control-Group Design* (Creswell, 2018).

Procedural Research

Before starting the research, the students communicated with the Physical Education Teacher and the Kayuambon 1 Elementary School regarding the implementation of the research. After agreeing, the students were asked to fill out the provided ethics form with the knowledge of their parents. At the beginning of the introduction, the student group used as the research sample was informed about the activities to be carried out. Furthermore, in the initial test stage, samples in the experimental group and the control group were asked to fill out the Self-Regulated questionnaire (Brown et al, 1999) for ± 30 minutes. After that, the treatment was carried out where the experimental group carried out the throw-catch material with a Play Approach on Mondays and Thursdays while the control group carried out the throw-catch material using a conventional model on Tuesdays and Fridays. The number of meetings designed was 12 meetings or ± 2 months of research duration. In the process of providing this treatment, learning media in the form of a tailed ball was also used in the experimental and control classes to obtain better results in the regular throw-catch material. In the final stage, samples in the experimental group and the control group were asked to fill out the Self-Regulated questionnaire (Brown et al, 1999) and reliability 0.91, for ± 30 minutes. The indicators of the questionnaire used can be seen in Table 1.

Table 1. The Indicator of Self-Regulated Questionaire

No	Indicator	Question
1	Receiving	1, 8, 15, 22, 29, 36, 43, 50, 57
2	Evaluating	2, 9, 16, 23, 30, 37, 44, 51, 58
3	Triggering change	3, 10, 17, 24, 31, 38, 45, 52, 59
4	Searching for options	4, 11, 18, 25, 32, 39, 46, 53, 60
5	Formulating a plan	5, 12, 19, 26, 33, 40, 47, 54, 61
6	Implementing the plan	6, 13, 20, 27, 34, 41, 48, 55, 62
7	Assessing the plan's effectiveness	7, 14, 21, 28, 35, 42, 49, 56, 63

The data obtained is then interpreted and communicated to the school and used to motivate students to be healthier during physical education programme.

Data Analysis

Data processing and analysis were conducted using Microsoft Excel and IBM SPSS Statistics 26 software, with the following steps: 1) Tabulating the Self-Regulated scores. 2) Presenting descriptive statistics of pretest and posttest scores. 3) Conducting normality and homogeneity tests. 4) Conducting tests using the Paired and Independent t-Test.

RESULTS

Table 2. The Result of Normality and Homogeneity

Group	N	Sum	Mean	Std. Deviation	Variance
Experiment_Pretest_SRQ	30	6271.00	209.0333	18.99815	360.930
Experiment_Posttest_SRQ	30	6822.00	227.4000	21.65020	468.731
Control_Pretest_SRQ	30	6181.00	206.0333	18.99815	360.930
Control_Posttest_SRQ	30	6285.00	209.5000	13.66786	186.810

Based on Table 2, it can be seen how the use of the Play Approach on the throw-catch material affects Self-Regulated, the test of which uses the Self-Regulated questionnaire at Kayuambon 1 Elementary School. For the experimental group, the Pretest obtained a score 6271 with an average 209.03, Std. Deviation 18.99 and Variance 360.93 and the Posttest obtained a score 6822 with an average 227.40, Std. Deviation 21.65 and Variance 468.73. For the control group, the Pretest obtained a score 6181 with an average of 206.03, Std. Deviation 18.99 and Variance 360.93 and at the time of the Posttest obtained a score of 6285 with an average of 209.50, Std. Deviation 13.66 and Variance 186.81 More complete results can be seen in figure 2.
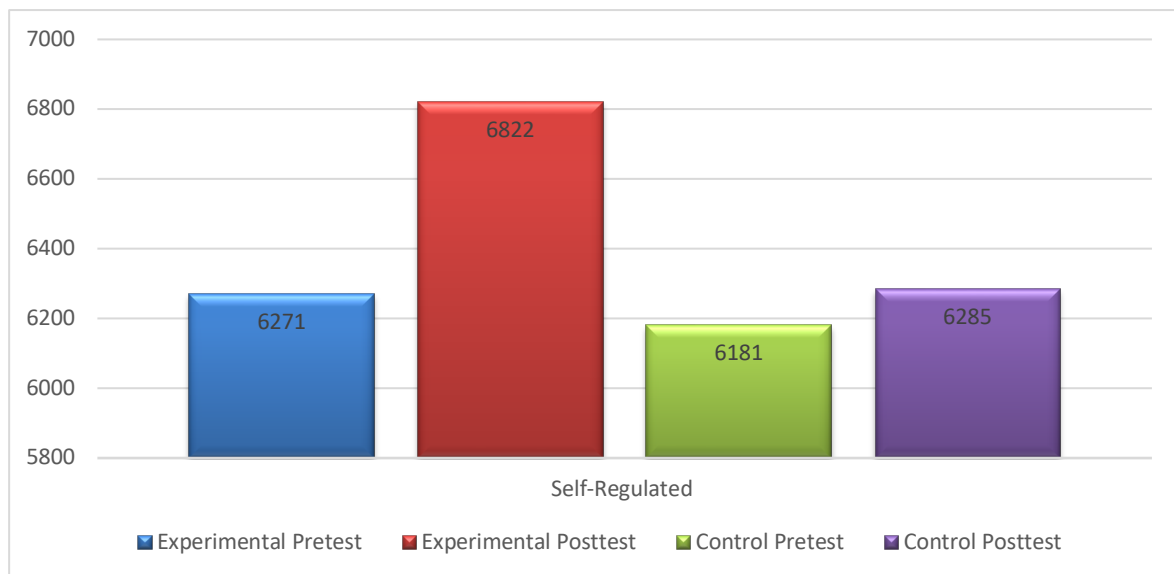

Figure 2. The Result of *Self-Regulated*

Table 3. The Result of Normality and Homogeneity

Group	Normality	Sig.
Experimental Pretest	0.095	0.200
Experimental Posttest	0.115	0.200
Control Pretest	0.094	0.200
Control Posttest	0.123	0.200
Group	**Homogeneity**	**Sig.**
Experiment X Control	7.310	0.009

Based on Table 3, the results of the Self-Regulated normality test for each group. For the Experimental group that learned using the Play Approach, the Pretest score obtained a statistical value 0.095, *P Value* 0.200 and the Posttest obtained a statistical value 0.115, *P Value* 0.199. Meanwhile, for the Pretest control group, the statistical value 0.094 with *P Value* 0.200 and the Posttest obtained a statistical value 0.123 with *P Value* 0.200. This means that the data in the experimental and control groups were normally distributed.

Table 4. The Result of Paired and Independent

Group	Paired	Sig.
Experimental Pretest X Posttest	-10.027	0.000
Control Pretest X Posttest	0.858	0.398
Group	**Independent**	**Sig.**
Experiment X Control	3.359	0.001

Based on Table 4, it can be seen that the results of the Paired test in the experimental group who learned using the Play Approach obtained a t value -10.027, *P Value* 0.000 and for the control group obtained a t value 0.858, *P Value* 0.398. This means that there is an increase in Self-Regulated in students who learn with the Play Approach in the experimental group and there is no increase in Self-Regulated in the control class who learn using the conventional model. Meanwhile, the results of the Independent test obtained a t value 3.359, *P Value* 0.001. This means that physical education learning on the material of throwing and catching using the Play Approach has a better influence than the conventional model on the Self-Regulated aspect of students at Kayuambon 1 Elementary School.

DISCUSSION

This can be seen in the results of a study showing that the levels of Physical Fitness and Self-Regulation of students at Kayuambon 1 Elementary School increased after being taught throw and catch using a play approach (Saepito et al., 2020). This playful approach to throw and catch material stimulates students' understanding and independence in learning, especially when they explore the material independently.
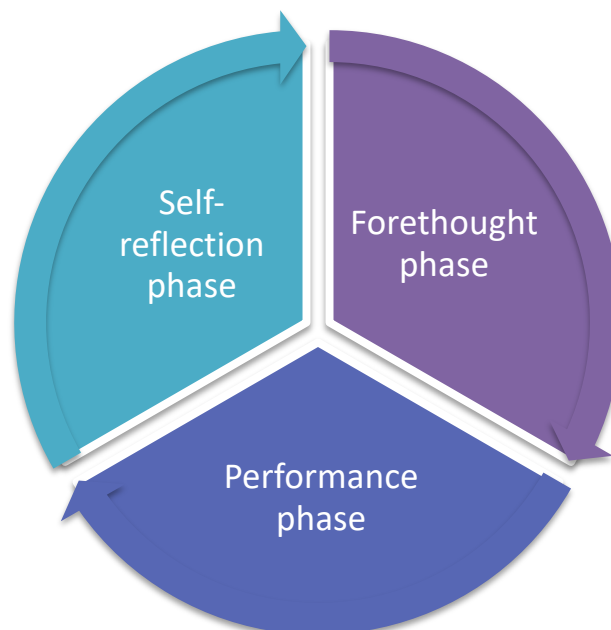

Figure 3. The Three Phases of Self-Regulated Learning (Zimmerman, 2000)

Based on Figure 3, the advantage students gain when learning using a playful approach to throw and catch is the enjoyable learning environment, where students are guided to carry out a series of learning activities that resemble real learning through simple games (Barba-Martín et al., 2020). This occurs because in each lesson (before and during the lesson), each student is actively engaged in learning. Therefore, in the actual throw and catch material, students are more enjoyable, cheerful, and still able to demonstrate seriousness in their learning. In fact, it is not uncommon for students to have different approaches to throw and catch learning than other students. The conventional model with a teacher-centered approach in learning to throw and catch has no effect on the Self-Regulated students at Kayuambon 1 Elementary School. This can be seen in the results of research showing that the level of Self-Regulated students at Kayuambon 1 Elementary School did not increase after being given learning to throw and catch using the conventional model (Rahman et al., 2020; Renshaw et al., 2016).

The conventional model with a teacher-centered approach carried out in this throw and catch material always makes students confused and also under pressure and often students feel anxious about the learning given by the teacher. This condition also makes the ability to understand and independent learning when students explore the material independently cannot be done well. The play approach in learning to throw and catch has a better effect on Self-Regulated students of Kayuambon 1 Elementary School when compared to the Conventional Model. This can be seen in the results of research showing that the level of Physical Fitness and Self-Regulation of students at Kayuambon 1 Elementary School increased after being given throw and catch learning using a play approach when compared to the conventional model (Heemsoth et al., 2022). The group of students who learned using a play approach in learning throw and catch were students who were always involved in an active and enjoyable learning process. This is in contrast to the group who learned using the conventional model with a teacher-centered approach who appeared passive and learned in anxious and stressed conditions (García-López et al., 2019). Students who learned using a play approach appeared to be better able to understand and show a positive learning spirit when exploring the material when compared to students who learned with the conventional model. Groups of students learning to throw and catch using the conventional model with a teacher-centered approach appear unfocused on the material and are engaged in passive, one-way learning (Ginanjar, Samsudin, & Rihatno, 2024a; Ginanjar, Widyawan, et al., 2023), this leads to students being unmotivated to learn effectively, which often leads to nervousness and anxiety. This leads to students appearing to not enjoy learning and tending to feel pressured to achieve good results, or even appearing reluctant to learn to throw and catch using the conventional model (Dervić et al., 2018; Murphy et al., 2021). A fun learning environment, where students are guided to carry out a series of learning activities that resemble real learning using simple games, allows students to enjoy the actual material of throwing and catching more, be more cheerful, but still demonstrate a serious commitment to their learning (Thohirudin, 2018).

CONCLUSION

The play approach implemented at Kayuambon 1 Elementary School in the throw and catch material is able to stimulate a better level of student understanding and also independence in learning, especially when students explore the material independently. Another advantage obtained by students when learning using the play approach in this throw and catch learning is a fun learning situation, where students are directed to be able to carry out a series of learning activities that resemble real learning using simple games. This occurs because in every lesson (before or during the lesson) each student is seen actively in learning, so that in the actual throw and catch material students enjoy it

more, are happy but still able to show seriousness in their learning when compared to the conventional model. For further research, it is highly recommended to explore this play approach in other physical education materials such as physical fitness, gymnastics and swimming because the study is still very lacking. And it is necessary to investigate its impact on physical fitness, cooperation and student discipline as a result of its use.

ACKNOWLEDGEMENTS

ETHICS STATEMENT

This research followed ethical standads and received approval from LPPM UNJ with the reference number: 769/UN39.14/PT.01.05/VI/2025, Approval in 24 Juni 2025.

CONFLICT OF INTEREST

The authors state that there is no conflict of interest in this study.

REFERENCES

Aliriad, H., Adi, S., Manullang, J. G., Endrawan, I. B., & Satria, M. H. (2024). Improvement of Motor Skills and Motivation to Learn Physical Education Through the Use of Traditional Games. *Physical Education Theory and Methodology*, *24*(1), 32–40. https://doi.org/10.17309/tmfv.2024.1.04

Aliriad, H., Da'i , De Benny, M., Priadana, W., Moch, C., Wigantara, R., De Muchammad, &, & Arifianto, R. (2025). Improving primary school children's motor skills: a physical education approach using circuit games with auditory sequencing. *Edu Sportivo: Indonesian Journal of Physical Education*, *6*(1), 15–29. https://doi.org/10.25299/es:ijope.2025.vol6(1).19149

Barba-Martín, R. A., Bores-García, D., Hortigüela-Alcalá, D., & González-Calvo, G. (2020). The application of the teaching games for understanding in physical education. Systematic review of the last six years. In *International Journal of Environmental Research and Public Health* (Vol. 17, Issue 9). MDPI AG. https://doi.org/10.3390/ijerph17093330

Bardid, F., Huyben, F., Lenoir, M., Seghers, J., De Martelaer, K., Goodway, J. D., & Deconinck, F. J. A. (2016). Assessing fundamental motor skills in Belgian children aged 3-8 years highlights differences to US reference sample. *Acta Paediatrica, International Journal of Paediatrics*, *105*(6), e281–e290. https://doi.org/10.1111/apa.13380

Creswell, W. J. (2018). *Research-Design_Qualitative-Quantitative-and-Mixed-Methods-Approaches* (Vol. 4).

Dervić, D., Glamočić, D. S., Gazibegović-Busuladžić, A., & Mešić, V. (2018). Teaching Physics With Simulations: Teacher-Centered Versus Student-Centered Approaches. *Journal of Baltic Science Eduation*, *17*(2), 288–299. www.compadre.org/physlets.

García-López, L. M., Gutiérrez, D., Sánchez-Mora, D., & Harvey, S. (2019). Teachers' use of teaching games for understanding in Central Spain. *Physical Education and Sport Pedagogy*, *24*(5), 463–477. https://doi.org/10.1080/17408989.2019.1628931

Ginanjar, S., & Julianti, E. (2024). Pengaruh pembelajaran pendidikan jasmani menggunakan model TGFU terhadap disiplin diri siswa MTS Al-Musyawarah, Lembang. *Jurnal Olahraga Pendidikan Indonesia (JOPI)*, *3*(2), 93–104. http://jopi.kemenpora.go.id/index.php/jopi

Ginanjar, S., Rihatno, T., & Widyawan, D. (2023). The Sport Education Models On Physical Activity Of Jumping Rope Performance In Elementary School. *JUARA: Jurnal Olahraga*, *8*(3), 521–530. https://doi.org/10.33222/juara.v5i1.1000

Ginanjar, S., Samsudin, Resmana, D., & Anugrah, S. M. (2024). Comparing project-based learning with conventional models: Enhancing students' enjoyment of physical education. *Edu Sportivo Indonesian Journal of Physical Education*, *5*(1), 64–81. https://doi.org/10.25299/es:ijope.2024.vol5(1).15183

Ginanjar, S., Samsudin, & Rihatno, T. (2024a). Pelatihan Sport Education Model guna Meningkatkan Teacher' Sense of Efficacy Guru Pendidikan Jasmani Sekolah Dasar di Kecamatan Lembang, Kabupaten Bandung Barat. *PERDULI: Jurnal Pengabdian Kepada Masyarakat*, *5*(2), 50–60.

Ginanjar, S., Samsudin, & Rihatno, T. (2024b). The Research Of Sport Education Model In Physical Education Program: A Systematic Literature Review. *JUARA: Jurnal Olahraga*, *9*(3), 769–785. https://doi.org/10.33222/juara.v9i3.4197

Ginanjar, S., Samsudin, & Rihatno, T. (2025). The Comparison Of Self-Regulated Student During Sport Education Model And Conventional In Physical Fitness Program. *The 2nd International Conference on Sport Science, Physical Education and Health (ICSSPEH 2024)*, 53–65. https://doi.org/10.2991/978-2-38476-354-2_6

Ginanjar, S., & Tarigan, B. (2018). *Project-Based Learning in Physical Education - Can Improve Creativity Students and Which One Better Than Conventional Approach?* 647–651. https://doi.org/10.5220/0007067306470651

Ginanjar, S., Widyawan, D., & Faruqi, H. (2023). Systematic Literature Review: Sports in Early Childhood in Indonesia. *International Journal of Human Movement and Sports Sciences*, *11*(5), 1140–1149. https://doi.org/10.13189/saj.2023.110523

Ginanjar, S., Widyawan, D., & Prabowo, E. (2022). *Literature Review: Model Discovery Learning Pada Pembelajaran Pendidikan Jasmani Di Sekolah Menengah Atas*. *11*(2). http://journal.ikippgriptk.ac.id/index.php/olahragahal265-276

Heemsoth, T., Boe, L., Bükers, F., & Krieger, C. (2022). Fostering pre-service teachers' knowledge of 'teaching games for understanding' via video-based vs. text-based teaching examples. *Physical Education and Sport Pedagogy*, *27*(1), 77–90. https://doi.org/10.1080/17408989.2020.1850668

Metzler, M., & Colquitt, G. T. (2021). *Instructional Models for Physical Education 4th Edition*. Scottsdale, AZ: Holcomb Hathaway.

Murphy, L., Eduljee, N. B., & Croteau, K. (2021). Teacher-Centered versus Student-Centered Teaching. *Journal of Effective Teaching in Higher Education*, *4*(1), 18–39. https://doi.org/10.36021/jethe.v4i1.156

Rahman, Z. A., Kamal, A. A., Nor, M. A. M., & Latif, R. A. (2020). The effectiveness of teaching games for understanding to promote enjoyment in teaching games of physical education lesson. *Jurnal Sains Sukan Dan Pendidikan Jasmani*, *9*(1), 23–32. https://doi.org/10.37134/jsspj.vol9.1.4.2020

Renshaw, I., Araújo, D., Button, C., Chow, J. Y., Davids, K., & Moy, B. (2016). Why the Constraints-Led Approach is not Teaching Games for Understanding: a clarification. *Physical Education and Sport Pedagogy*, *21*(5), 459–480. https://doi.org/10.1080/17408989.2015.1095870

Saepito, Y., Keraf, M. K. P. A., & Aipipidely, D. (2020). Dukungan Sosial Guru dengan Regulasi Diri dalam Belajar pada Siswa SMK. In *Journal of Health and Behavioral Science* (Vol. 2, Issue 3).

Samsudin, Asmawi, M., Wiradihardja, S., & Ginanjar, S. (2024). The Collaboration of the Teaching Games for Understanding Model with Tag-Games to Improve Long Jump Skills in Elementary School Students. *International Journal of Human Movement and Sports Sciences*, *12*(6), 953–962. https://doi.org/10.13189/saj.2024.120607

Setia, C., Cahyadi, A., Nahdatul, U., Cirebon, U., Education, P., & Lampung, U. (2020). *Kinestetik : Jurnal Ilmiah Pendidikan Jasmani LEARNING MODEL OF DRIBBLING FUTSAL BALL GAME*. *4*(2).

Thohirudin, M. (2018). Regulasi diri untuk menggapai prestasi akademik siswa. *Prosiding bimbingan konseling*, 171–176.

Zimmerman, B. P. (2000). Attaining self-regulation a social cognitive. In *Handbook of Self-Regulation* (pp. 13–38).