



The Impact of Interactive Learning Media to Increase Interest in Learning Physical Education

Indah Verawati^{1*}, Rahma Dewi², Muhammad Reza Destya³ 

¹Sports Science, Medan State University, Medan City, Indonesia

²Sports Coaching Education, Medan State University, Medan City, Indonesia

³Sports Science, Medan State University, Medan City, Indonesia

*Corresponding author: indahverawati@unimed.ac.id

Abstrak

Minat belajar pendidikan jasmani sering kali kurang optimal karena penggunaan media pembelajaran yang kurang inovatif. Media pembelajaran interaktif menawarkan potensi untuk meningkatkan minat belajar, namun efektivitasnya perlu dianalisis lebih lanjut. Penelitian ini bertujuan untuk menganalisis dampak penggunaan media pembelajaran interaktif terhadap peningkatan minat belajar pendidikan jasmani menggunakan analisis inferensial. Jenis penelitian ini adalah eksperimen dengan desain one-group pretest-posttest. Subjek penelitian terdiri dari 40 mahasiswa yang mengambil mata kuliah permainan bola kecil. Metode pengumpulan data yang digunakan dalam penelitian ini yaitu tes dan angket minat belajar sebelum dan sesudah pemberian perlakuan (media pembelajaran interaktif) serta menggunakan instrumen berupa lembar kuesioner. Setelah data dikumpulkan kemudian dianalisis menggunakan uji statistik parametrik. Hasil penelitian menunjukkan bahwa media pembelajaran interaktif secara signifikan meningkatkan minat belajar pendidikan jasmani, dengan perbedaan skor pretest dan posttest yang mendukung hipotesis penelitian. Kesimpulan menunjukkan bahwa media pembelajaran interaktif efektif dalam meningkatkan minat belajar, memberikan implikasi bagi pendidik untuk memanfaatkan media serupa guna memperbaiki kualitas pembelajaran.

Kata Kunci: Media Pembelajaran Interaktif, Minat Belajar, Pendidikan Jasmani

Abstract

Interest in learning physical education is often less than optimal due to the use of less innovative learning media. Interactive learning media offers the potential to increase learning interest, but its effectiveness needs to be further analyzed. This study aims to analyze the impact of using interactive learning media on increasing interest in learning physical education using inferential analysis. This type of research is an experiment with a one-group pretest-posttest design. The research subjects consisted of 40 students who took the small ball game course. The data collection methods used in this study were tests and questionnaires of interest in learning before and after treatment (interactive learning media) and using instruments in the form of questionnaire sheets. After the data is collected then analyzed using parametric statistical tests. The results showed that interactive learning media significantly increased interest in learning physical education, with differences in pretest and posttest scores supporting the research hypothesis. The conclusion shows that interactive learning media is effective in increasing interest in learning, providing implications for educators to utilize similar media to improve the quality of learning.

Keywords: Interactive Media, Interest in Learning, Physical Education

1. INTRODUCTION

Physical education and sports have been side by side for a long time (Asiva Noor Rachmayani, 2022; Holis et al., 2021). The success and completeness of student learning is found in the process, the learning process and practice is the process of creating an environmental system that can create the achievement of learning goals (Annisa et al., 2023; Windayanti et al., 2023). Learning in schools has several factors, namely, learning, learning, learning strategies, media and environment which can create a system that makes

History:

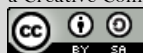
Received : August 07, 2024

Accepted : November 10, 2024

Published : November 25, 2024

Publisher: Undiksha Press

Licensed: This work is licensed under a Creative Commons Attribution 4.0 License



relationships with each other interact to improve good learning outcomes for all students with learning. Physical Education, Sports and Health (PJOK) is one of the aspects that is really needed by students in realizing national education goals to form attitudes, behavior, discipline, honesty, cooperation and improve physical fitness and health. PJOK is a learning to move through movement that is integrated with science and sports so that it can be accepted by students (Akhmad et al., 2022; Kesuma et al., 2021; Putra et al., 2021). Learning media is an important part and helps determine learning success. Teachers must have good teaching skills who can operate interesting and innovative learning media so that learning can be centered to encourage students to learn, motivation, interest, creativity, initiative, inspiration, innovation and independence can be realized as well as possible to participate in learning. The use of ideal learning media is part of the teacher's teaching method (pedagogical) abilities as stated in Government Regulation Number 74 of 2008 concerning Teachers (Moerianto et al., 2020; Rahmiati & Neviyarni, 2021). The learning process in the current era of globalization is experiencing quite big challenges, as well as the extraordinary development of science and technology (IPTEK).

The rapid development of science and technology provides innovation in learning so that students can easily accept the material being taught, especially various learning media that can be used by teaching staff to provide teaching materials for learning. Currently, the internet is used as a learning resource for students, especially in PJOK subjects at school by providing interactive learning media (Kurnia & Edwar, 2022; Maishara et al., 2023; Pamungkas, 2024). Media is a form of means of connecting information for learning. Media can be said to be interesting if it can awaken and foster students' learning motivation, as a stimulus for students to study actively and enthusiastically and students can be interested in the learning provided by teaching staff. Learning is the delivery of various forms of information and activities that have been directed to facilitate the achievement of what is known as the expected learning goal (Mea et al., 2024; Wijayanti et al., 2022). Interactive is a two-way or more communication process that consists of several communication components.

Based on the description of the statement above, it can be concluded that the definition of interactive learning media is a means of connecting and conveying information so that learning activities can communicate in two or more directions, so that there is interaction between students and educators to achieve the expected learning goals (Ananda et al., 2024; Aziz & Zakir, 2022; Hafizah, 2023; Suradika et al., 2020). In connection with learning activities, PJOK teachers have made observations of the process of learning activities carried out. Where the PJOK teacher found that there were students who were still not serious about following the material provided. Students tend to be limited in practicing movements. Students tend to feel bored with the material presented by the teacher during learning activities. With these conditions, the teacher thinks to find a way to solve the problem. The first step that needs to be completed is to increase student motivation. To increase student motivation, an interesting learning design is needed, one of which is modifying existing games. The importance of increasing student motivation in learning activities is considered to be the initial capital for achieving learning goals. Apart from that, motivation is one of the internal factors that is very important in influencing student achievement (Agustina et al., 2021; Harefa et al., 2023; Rafiola et al., 2020). Motivation is the driving force or incentive for someone to do certain things even though they basically don't like it. Direction leads a person to search, approach and interest, while intensity refers to a person's sincerity in making efforts under certain conditions. Therefore, student motivation needs special attention before taking the next step (Anger et al., 2022; Kusumawati et al., 2023).

Several studies related to student learning motivation show similar results significant analysis results show that the use of technology-based learning methods can increase students' learning motivation through the use of multimedia, learning applications and e-

learning (Safaruddin et al., 2020; R. M. Sari et al., 2021). Therefore, it is recommended that schools pay attention to the use of technology in learning to increase student learning motivation. Other research explains that the results obtained from the pretest and posttest showed that there was a difference in scores or an increase in scores before being given treatment and after being given treatment. The R Square value was 47.3%. It can be concluded that interactive learning media has a significant effect on motivation student learning in physical education, sports and health subjects. The results of the research show that the results of the sample paired t-test show that the sig (2-tailed) value from the pretest-posttest for the experimental class and the control class has value. 0.000 which is smaller than the value of 0.05. Conclusion: 1) there is a significant influence between online PJOK learning on learning motivation, 2) there is a significant influence between online PJOK learning on critical thinking, 3) there is a significant influence between online PJOK learning on learning motivation and critical thinking skills in class students (Danso et al., 2024; Segura-Robles et al., 2020).

In contrast to previous studies that only focused on the aspect of using technology or conventional learning media, this study offers novelty in the form of applying game modifications as an interactive learning media integrated with PJOK. This research is essential in order to overcome the problem of low student motivation. Without adequate motivation, students tend to find it challenging to achieve optimal learning goals. In addition, this research is relevant to the challenges of the globalization era, which requires innovation in learning to increase student engagement. This study aims to analyze the impact of game-based interactive learning media on student learning motivation in PJOK learning. Specifically, it aims to determine the effectiveness of game modifications in increasing active student involvement, increasing the attractiveness of learning, and encouraging students to be more serious in understanding and practicing the material taught. This research is expected to contribute to the development of innovative and relevant learning methods in the modern era.

Then students also provide responses and opinions about the application of interactive learning which students think is more interesting. Therefore, the research in this article can be said that interactive learning media is suitable for use in the Indonesian language learning process both in the classroom and in independent learning to improve understanding, quality and provision. learning student. Therefore, the researcher tried to conduct an experimental study on the impact of interactive media on physical education learning motivation as well as testing the theory of whether there is a significant impact or not in physical education learning.

2. METHOD

The method used in this research is quantitative research with the experimental type Pre-Experimental Design (Arib et al., 2024; R. J. Sari & Hermawan, 2023). This design was chosen to determine the cause-and-effect relationship between the independent variable (treatment) and the dependent variable (measured results) under conditions that do not yet have a control group. This study used a One Group Pretest-Posttest design, in which subjects were given an initial test (pretest), given treatment (intervention), and then a final test (posttest). This design allows researchers to observe changes that occur before and after treatment is given, even though there is no comparison from the control group. The research subjects consisted of 40 students of the Faculty of Sport Science, who were selected using a simple random sampling technique. This technique is done randomly so that each student has an equal chance of being selected as a sample. All selected students fully participated in the pretest, treatment, and posttest activities. The research data were collected using test and questionnaire methods with test instruments (pretest and posttest) and questionnaire sheets to

assess students' responses to the learning media provided. The test instrument was prepared based on a validity grid that refers to the learning indicators to be achieved. The data analysis method was carried out using quantitative descriptive statistics to see the distribution of student learning outcomes, as well as inferential statistics using paired sample t-test to determine the significant difference between pretest and post-test scores.

3. RESULTS AND DISCUSSION

Results

Research on the effectiveness of implementing interactive learning media on motivation to take elementary school subjects has been carried out in high schools in Medan City. The learning process takes place over two meetings with a time allocation of two lesson hours, each lesson consisting of 30 minutes. The instrument used in this research is in the form of test questions related to student learning motivation. The instruments used must have passed validity and reliability tests. This instrument is used as an evaluation tool to collect pretest and posttest data. Researchers will discuss the results of research on the effectiveness of implementing interactive learning media on motivation to take PJOK subjects. Based on the calculations and testing of the data above, it was found that there is an influence on how effective the application of interactive learning media is on students' motivation to take PJOK subjects during current online learning. This interactive learning media is a learning media that functions as a trigger or learning stimulus for students so that students are interested in learning and do not get bored with the learning process and students grasp the material more quickly accompanied by interactions between students and teachers previously triggered through interactive learning media. However, the availability of facilities to assist learning, such as LCDs in each class, are not utilized properly by teachers. On the other hand, when the learning process takes place, there must be motivation from students to participate in learning. Motivation can be called an urge to do something that is enjoyable when they do it, no matter that the activity is not easy to do and is actually difficult. The results of the Descriptive Analysis are presented in [Table 1](#).

Table 1. Descriptive Analysis

	N	Minimum	Maximum	Mean	Std.
Pre-Test	40	70	103	83.50	7.868
Post-Test	40	71	109	90.40	10.340
Valid N	40				

Based on the results of the data obtained, for the pre-test score the minimum score obtained was 70 and the maximum score was 103 and for the post-test score the minimum score obtained was 71 and the maximum score was 109. The pre-test average was 83.50 and for post-test namely 90.40. The pre-test and post-test results have increased. This is indicated by a significant change in the average value. The results of the Kolmogorov-Smirnov Normality Test are presented in [Table 2](#).

Table 2. Kolmogorov-Smirnov Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		31
Normal Parameters	Mean	0.0000
	Std. Deviation	6.2059

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
Most Extreme Differences	Absolute	0.113
	Positive	0.61
	Negative	-.113
Test Statistic		0.113
Asymp. Sig (2-tailed)		0.200

Data from the homogeneity test results obtained values significance from the similarity of the variance to the sig value. The homogeneity test calculation in this study used SPSS 25 on Levene Statistics. Based on the data obtained shows when the level significance is set to 0.5 then it can be concluded that the data has variants homogeneous because its significance is less than 0.5. The T-test results are presented in [Table 3](#).

Table 3. T Test Results

Paired Samples Test Paired Differences				t	df	Sig. (2-tailed)
95% Confidence Interval of The Difference Upper						
Pair	Pre-Test	Post-Test	-4.56	-4.984	30	0.000

The results of the t test were carried out with the aim of seeing the effectiveness of using interactive media, whether it was able to increase physical education learning motivation. Apart from that, the t test will also show real differences before and after implementing web-assisted interactive learning media. Based on the test results in table 3 above, the calculation of the t test results is the value significance of 0.000 or <0.05. This shows that there is a significant difference between the pre-test before using interactive learning media and the post-test after using interactive learning media.

Discussion

The results obtained from the pretest and posttest for students at the Faculty of Sports Science, Medan State University, showed that there was a difference in scores or an increase in scores before being given treatment and after being given treatment. Interactive learning media has a very good impact on students at the Faculty of Sports Science, Medan State University, they really pay attention or focus on ongoing learning and students are motivated to take part in learning, because students have never previously been given interactive learning media by lecturers at the Faculty of Sports Science, Medan State University. . Based on the significant differences in the pretest-posttest scores, the results can show that learning with the support of interactive learning media is better than previously used media such as PDF previews, Word and books. The effectiveness indicator is also measured by the production costs which are cheap and do not take a long time. During the learning process, the level of impact is measured over time, and delivering learning using interactive learning media tools is relatively faster. Based on the statement above, it can be concluded that using interactive learning media is more effective than using previous media. The effectiveness of implementing interactive learning media has a positive effect on learning by 48.3%.

This research has several advantages, such as introducing learning media that is innovative, accessible, affordable, and efficient in production. Its effectiveness is also evidenced by the significant difference between pretest and post-test scores and it's

contribution to providing alternative learning media development solutions in higher education institutions. This research provides empirical evidence that interactive learning media improves learning outcomes and builds student motivation to participate actively. This media can be a reference for lecturers in various faculties to design more exciting and practical learning. The use of interactive learning media has significant implications in education, especially at the tertiary level (Kharismatunisa, 2023; Tuma, 2021). Lecturers can utilize this media to improve the quality of learning, and institutions can develop digital-based curricula (Kharismatunisa, 2023; Winoto, 2022). In addition, this media has the potential to support online learning more effectively. However, this study has several limitations, including the scope of subjects being limited to students of the Faculty of Sports Science, State University of Medan, so that the results cannot be generalized, the limited duration of the study so that the long-term effects are unknown, and the absence of comparison with other types of interactive media. Therefore, future research should expand the research subjects to other faculties or institutions, conduct longitudinal studies to see long-term impacts, and compare various types of interactive media to determine the most influential media. Thus, future research is expected to provide more comprehensive insights into the use of interactive learning media.

4. CONCLUSIONS

This study concludes that the proposed hypothesis is accepted: interactive learning media increases physical education. The research results of the data analysis show that interactive methods affect the growing interest in learning physical education. This study provides practical implications in the form of encouragement for educators to further integrate interactive media in learning strategies to create a more engaging and valuable learning experience. However, this study has limitations: it covered a limited sample and did not explore other variables such as students' backgrounds or individual learning styles. Therefore, future researchers should research with a broader sample and consider additional factors influencing learning outcomes to gain a more comprehensive understanding.

5. ACKNOWLEDGMENTS

The researcher would like to express his thanks to all parties involved in the research, and also to the students of the Faculty of Sports Science, Medan State University.

6. REFERENCE

- Agustina, E. T., Wahyudin, A. Y., & Pratiwi, A. A. (2021). The Students' Motivation and Academic Achievement At Tertiary Level: a Correlational Study. *Journal of Arts and Education*, 1(1), 29–38. <https://doi.org/10.33365/jae.v1i1.33>.
- Akhmad, I., Suharjo, Hariadi, Dewi, R., & Supriadi, A. (2022). The Effects of Learning Strategies on Senior High School Students' Motivation and Learning Outcomes of Overhead Passing in Volleyball. *International Journal of Education in Mathematics, Science and Technology*, 10(2), 458–476. <https://doi.org/10.46328/ijemst.2291>.
- Ananda, E. R., I'zaati, L., & Susilawati, S. (2024). Kajian Literature: Peran Penting Konsep Komunikasi dalam Penggunaan Media dan Bahan Ajar Sekolah Dasar. *Journal of Education Research*, 5(1), 267–275. <https://doi.org/10.37985/jer.v5i1.502>.
- Anger, M., Wendelborn, C., Winkler, E. C., & Schickhardt, C. (2022). Neither carrots nor sticks? Challenges surrounding data sharing from the perspective of research funding

- agencies-A qualitative expert interview study. *PLoS ONE*, 17(9 September), 1–25. <https://doi.org/10.1371/journal.pone.0273259>.
- Annisa, N., Damanik, F. A., Indah, P., & Sari, W. (2023). Upaya Meningkatkan Hasil Belajar PAI Melalui Metode Diskusi Pada Siswa. *RAZIQA: Jurnal Pendidikan Islam*, 2(2), 132–142. <https://jurnal.diklinko.id/index.php/raziq/article/view/80>.
- Arib, M. F., Rahayu, M. S., Sidorj, R. A., & Afgani, M. W. (2024). Experimental Research Dalam Penelitian Pendidikan. *Innovative: Journal Of Social Science Research*, 4(1), 5497–5511. <https://j-innovative.org/index.php/Innovative/article/view/8468>.
- Asiva Noor Rachmayani. (2022). Survei Hasil Belajar PJOK Masa Pandemi Covid-19 di SMK Negeri 1 Suwawa. *Sport Science: Jurnal Sain Olahraga Dan Pendidikan Jasmani*, 22(1), 35–43. <https://doi.org/10.24036/JSOPJ.74>.
- Aziz, A., & Zakir, S. (2022). Strategi Komunikasi Kepala Madrasah Kepada Guru dan Peserta Didik dalam Meningkatkan Mutu Belajar Mengajar. *Indonesian Research Journal on Education : Jurnal Ilmu Pendidikan*, 2(3), 1030–1037. <https://doi.org/10.31004/irje.v4i4.1052>.
- Danso, A., Kekäläinen, T., Koehler, F., Nijhuis, P., Burunat, I., Neto, P., Randall, W. M., Ansani, A., Ihalainen, J., Rousi, R., Agres, K. R., Macritchie, J., Toiviainen, P., Saarikallio, S., Chastin, S., & Luck, G. (2024). *Personalised Interactive Music Systems for Physical Activity and Exercise : A Systematic Review and Meta-Analysis*.
- Hafizah, N. (2023). Media Pembelajaran Digital Generasi Alpha Era Society 5.0 Pada Kurikulum Merdeka. *Al-Madrasah: Jurnal Pendidikan Madrasah Ibtidaiyah*, 7(4), 1675. <https://doi.org/10.35931/am.v7i4.2699>.
- Harefa, D., Sarumaha, M., Telaumbanua, K., Telaumbanua, T., Laia, B., & Hulu, F. (2023). Relationship Student Learning Interest To The Learning Outcomes Of Natural Sciences. *International Journal of Educational Research & Social Sciences*, 4(2), 240–246. <https://doi.org/10.51601/ijersc.v4i2.614>.
- Holis, A. M., Gustiawati, R., & Kurniawan, F. (2021). Analisis Permasalahan Pembelajaran Pendidikan Jasmani Melalui Zoom Meeting di SMAN 1 Rengasdengklok. *Jurnal Literasi Olahraga*, 2(4), 238–242. <https://journal.unsika.ac.id/index.php/JLO/article>.
- Kesuma, I. Ny. A. A., Yoda, I. K., & Hidayat, S. (2021). Pengaruh Model Pembelajaran dan Motivasi Terhadap Hasil Belajar PJOK pada Siswa SMP. *Jurnal Penjakorab*, 8(4), 62–70. <https://doi.org/10.23887/penjakora.v8i1.31091>.
- Kharismatunisa, I. (2023). Innovation and Creativity of Islamic Religious Education Teachers in Utilizing Digital-Based Learning Media. *Scaffolding: Jurnal Pendidikan Islam Dan Multikulturalisme*, 5(3), 519–538. <https://doi.org/10.37680/scaffolding.v5i3.3700>.
- Kurnia, L., & Edwar, A. (2022). Peranan Teknologi dalam Pengembangan Materi Ilmu Pengetahuan Sosial Sekolah Dasar. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 27(2), 58–66. <http://117.74.115.107/index.php/jemasi/article/view/537>.
- Kusumawati, M. D., Fauziddin, M., & Ananda, R. (2023). The Impact of Reward and Punishment on the Extrinsic Motivation of Elementary School Students. *AL-ISHLAH: Jurnal Pendidikan*, 15(1), 183–192. <https://doi.org/10.35445/alishlah.v15i1.2856>.
- Maishara, F., Maimun, M., Saiful, S., & Hayati, E. (2023). Pemanfaatan Internet Sebagai Sumber Belajar Bagi Siswa di SMA Negeri 1 Bandar Baru Kabupaten Pidie Jaya-Aceh. *Lucerna : Jurnal Riset Pendidikan Dan Pembelajaran*, 3(2), 43–52. <https://doi.org/10.56393/lucerna.v3i2.1299>.
- Mea, F., Tinggi, S., Kristen, A., Bangsa, A., Guru, K., Guru, I., & Dinamis, K. (2024). Peningkatan Efektivitas Pembelajaran Melalui Kreativitas dan Inovasi Guru dalam

- Menciptakan Kelas yang Dinamis. *Inculco Journal of Christian Education*, 4(3), 252–275. <https://doi.org/10.59404/ijce.v4i3.190>.
- Moerianto, E., Valianto, B., & Dewi, R. (2020). *Influence Game Method and Interest on the Basis of Motion of Learning Skills State Run SDN 105345 Sidodadi* (Vol. 23, Issue UNICoSS 2019, pp. 158–161). <https://doi.org/10.2991/ahsr.k.200305.045>.
- Pamungkas, I. A. (2024). Analisis Penerapan Teknologi Pembelajaran Pada Mata Pelajaran PJOK Terhadap Hasil Belajar Siswa di Bulan Ramdhan 1445 Hijriyah. *Jurnal Inovasi Teknologi Dan Edukasi Teknik*, 3(8). <https://doi.org/10.17977/um068.v3.i8.2023.3>.
- Putra, I. M. W., Panca Adi, I. P., & Wijaya, M. A. (2021). Hubungan antara Motivasi Belajar dengan Hasil Belajar PJOK. *Indonesian Journal of Sport & Tourism*, 2(2), 59. <https://doi.org/10.23887/ijst.v2i2.34859>.
- Rafiola, R. H., Setyosari, P., Radjah, C. L., & Ramli, M. (2020). The effect of learning motivation, self-efficacy, and blended learning on students' achievement in the industrial revolution 4.0. *International Journal of Emerging Technologies in Learning*, 15(8), 71–82. <https://doi.org/10.3991/ijet.v15i08.12525>.
- Rahmiati, & Neviyarni. (2021). Teori Belajar Accelerated Learning dalam Meningkatkan Motivasi Belajar. *Jurnal Pendidikan Tambusai*, 5(1), 255–260. <https://jptam.org/index.php/jptam/article/view/941>.
- Safaruddin, S., Ibrahim, N., Juhaeni, J., Harmilawati, H., & Qadrianti, L. (2020). The Effect of Project-Based Learning Assisted by Electronic Media on Learning Motivation and Science Process Skills. *Journal of Innovation in Educational and Cultural Research*, 1(1), 22–29. <https://doi.org/10.46843/jiecr.v1i1.5>.
- Sari, R. J., & Hermawan, R. (2023). Pengaruh Metode Eksperimen terhadap Kemampuan Sains Mencampur Warna pada Anak Usia 4-5 Tahun. *Journal on Teacher Education*, 5(1), 497–506. <http://journal.universitaspahlawan.ac.id/index.php/jote/article>.
- Sari, R. M., Sumarmi, Astina, I. K., Utomo, D. H., & Ridhwan. (2021). Increasing Students Critical Thinking Skills and Learning Motivation Using Inquiry Mind Map. *International Journal of Emerging Technologies in Learning*, 16(3), 4–19. <https://doi.org/10.3991/ijet.v16i03.16515>.
- Segura-Robles, A., Fuentes-Cabrera, A., Parra-González, M. E., & López-Belmonte, J. (2020). Effects on Personal Factors Through Flipped Learning and Gamification as Combined Methodologies in Secondary Education. *Frontiers in Psychology*, 11(6), 1–8. <https://doi.org/10.3389/fpsyg.2020.01103>.
- Suradika, A., Gunadi, A. A., & Jaya, S. A. (2020). Penggunaan Youtube sebagai Media Pembelajaran Jarak Jauh pada Kelas III Sekolah Dasar Islam An – Nizomiyah. In *Prosiding SEMNASLIT LPPM UMJ* (pp. 1–10). <https://jurnal.umj.ac.id/index.php/semnaslit/article/view/8781>.
- Tuma, F. (2021). The use of educational technology for interactive teaching in lectures. *Annals of Medicine and Surgery*, 62(1), 231–235. <https://doi.org/10.1016/j.amsu.2021.01.051>.
- Wijayanti, D., Anwar, S., Khairani, K., & Sukhaimi, N. A. (2022). Implementasi Inovasi Pembelajaran Geografi Tingkat SMA Dalam Kurikulum 2013. *Journal on Education*, 4(2), 837–843. <https://doi.org/10.31004/joe.v4i2.496>.
- Windayanti, W., Afnanda, M., Agustina, R., Kase, E. B. S., Safar, M., & Mokodenseho, S. (2023). Problematika Guru Dalam Menerapkan Kurikulum Merdeka. *Journal on Education*, 6(1), 2056–2063. <https://doi.org/10.31004/joe.v6i1.3197>.
- Winoto, S. (2022). Improving curriculum and lecturers: Challenges to quality based-technology. *Journal of Social Studies Education Research*, 13(2), 221–242. <https://www.learntechlib.org/p/222902/>.