ETDC Indonesian Journal of Research and Educational Review
Volume 3, No. 4, 2024, pp 65 - 74
e–ISSN 2809-3682
p–ISSN 2809-7505
https://doi.org/10.51574/ijrer.v3i4.2188

# UTILIZATION OF DIGITAL PLATFORM-BASED LEARNING MEDIA: INTEREST AND LEARNING ACHIEVEMENT IN PHYSICAL EDUCATION AT STATE ELEMENTARY SCHOOL

**Muh. Ilham Aksir[1], Hasyim[2], Muhammad Akbar Syafruddin[3]**
[1, 2, 3] Universitas Negeri Makassar, Indonesia

**Article Info**

***Article history:***

*Received July 20, 2024*
*Revised September 09, 2024*
*Accepted September 19, 2024*

***Keywords:***

*Digital Platform;*
*Interest;*
*Learning Achievement;*
*Learning Media;*
*Physical Education.*

**ABSTRACT**

This study's objective is to ascertain how the utilization of digital animation video platforms as a learning medium enhances the engagement and academic achievements of Physical Education students in grade V at Tanggul Patompo I Elementary School, located in Makassar City. This study employs an experimental design, utilizing a pre-test and post-test design. The study's variables include student interest and learning achievement in the context of physical education. In this study, the instrument used was a questionnaire containing statements that would be used to reveal students' interests and learning achievement when implementing physical education. The study provided a digital platform to facilitate the learning process. The sample in this study consisted of one class of 30 students. The results of the study showed that the N-Gain test of interest data had the lowest percentage increase of 75.51%, the highest percentage increase of 94.87%, and the average percentage increase of 84.5%. Meanwhile, the N-Gain test of learning outcome data showed the lowest percentage increase of 55.56%, the highest percentage increase of 8.24%, and an average percentage increase of 68.9%. Therefore, it is concluded that animation video platform-based learning media are quite effective in improving the learning achievement of physical education students in grade V at Tanggul Patompo Elementary School I, Makassar City.



***Corresponding Author:***

Muh. Ilham Aksir,
Universitas Negeri Makassar, Indonesia
Email: muh.ilham.aksir@unm.ac.id

## 1. INTRODUCTION

Physical education, sports, and health are some of the important components of education that are systematically planned to achieve national education goals (Suherman et al., 2019). The objectives of education, as stated in Law Number 20 of 2003, are to develop the potential of students to become individuals who are pious and devoted to God Almighty, have noble character, are faithful, healthy, brave, creative, independent, and become democratic and responsible citizens. Physical education concentrates on enhancing physical development and motor skills through play activities, traditional games, and sports facilities (Siedentop & Van der Mars, 2022; Syafruddin et al., 2022). Students can improve their fitness, physical development, movement skills, play, and

exercise through directed and planned physical education. The implementation of physical education and health education can also shape the character of students in terms of values such as enthusiasm for life, honesty, cooperation, hard work, self-confidence, and so on (Muhtar et al., 2020).

Additionally, students receive instruction on the importance of sustainability and healthy living. The objectives of physical education are inseparable from the national education objectives to be achieved, namely improving cognitive abilities (cognitive thinking), affective (feelings or emotions), and psychomotor (motor abilities) (Syafruddin & Asri, 2022). The objectives of physical education can be achieved by teachers through the use of media in learning (Kwon & Block, 2017; Syafruddin, 2023). Learning media is anything that can be used to convey learning messages so that it can stimulate students' attention, interest, thoughts, and emotions in learning activities to achieve learning goals. Learning media can effectively facilitate communication between students and teachers, thereby fostering an ideal learning environment (Chang et al., 2020; Calderón et al., 2021).

Learning media aids in the delivery of learning, serving a variety of purposes: (1) it reduces verbalization, resulting in a clearer message; (2) it helps overcome limitations of time, space, energy, and sensory power; (3) it fosters a passion for learning; (4) it fosters children's creativity in learning independently based on their talents and interests; and (5) it provides students with the same stimulation. Learning media serves as a crucial tool in achieving the various objectives of the learning process. Therefore, as part of their role as facilitators, PJOK teachers must utilize learning media that is tailored to the learning environment (Afif & Komari, 2024). Teachers are expected to be able to facilitate student learning facilities by using media in the learning process (Adi et al., 2018).

In practice, there are still some teachers who lack innovation, creativity, and commitment to technology. Tafonao (2018) identified several reasons why teachers fail to utilize learning media, as noted by Wulandari et al. (2023). (1) Teachers assume that using media requires a long preparation; (2) Media can only be used for entertainment while learning must be serious; (3) Media is not available at school; readiness is needed to create learning media; and (4) Teachers are not aware of the importance of using media in the learning process to be able to provide students with new perspectives in increasing interest, especially in PJOK learning.

Interest in learning is a desire accompanied by deliberate attention and activity to produce satisfaction in behavioral changes that include knowledge, attitudes, and skills (Renninger et al., 2014; Harackiewicz et al., 2016). One component that can influence a person's efforts is interest. When faced with challenges, a strong interest can motivate individuals to exert more effort, remain focused, and resist giving up easily. If students have a strong interest, they will desire to learn, and they will quickly accept and remember the material (Willingham, 2021). Therefore, teachers have an important role in raising students' interest by utilizing learning media that are presented during the process of teaching theory and practice, because if the delivery of learning materials

does not match the interests of students, then students will not follow the learning process properly.

Student activity during the learning process has the potential to emerge and support learning achievement. Student learning achievement refer to the abilities that students acquire through their participation in learning activities (Usman et al., 2024). Learning achievement will later be a reflection of the extent to which students, teachers, and the learning process see learning success. The learning process for physical education, sports, and health involves delivering theory and practice in various settings, such as yards and fields (Murphy et al., 2021). The delivery of theories related to learning is sometimes less noticed by students because it is considered boring and confusing (White et al., 2021). Meanwhile, the delivery of material related to PJOK learning can take place in class or prior to practice, serving as an initial explanation related to student understanding, thereby necessitating an intriguing and enjoyable material delivery approach.Therefore, the objective of the research is to investigate the effectiveness of using digital animation video platform-based learning media to enhance interest and improve PJOK learning achievement for grade V students in elementary school.

## 2. METHOD

This research is experimental research. The method used in this study is the pre-test and post-test design. The variables in this study include student interest and learning achievement in the context of physical education. The interest in this study refers to the students' inclination towards interest, attention, activity, environment, and tools and facilities. The study's population consisted of all students from one class at Tanggul Patompo Elementary School in Makassar City, which is 362 students. The study's sample comprised one class, or 30 students.

In this study, the instrument used was a questionnaire containing statements that would be used to reveal students' interests and learning achievement when implementing physical education. A questionnaire consists of a few statements that are used to gather information from respondents, such as reports about their personality or knowledge (Hale et al., 2024). The treatment provided involves the use of a digital platform to facilitate the learning process. The data in this study were collected using a Likert scale. The compilation of this measurement scale considers factors that influence interest, such as attention, interest, feelings of pleasure, activity, trainers, facilities, family, and environment. Meanwhile, learning outcome data is obtained based on physical education learning scores. Hake's N-Gain effectiveness interpretation categorization was used to figure out how well using digital platform-based learning media to improve PJOK students' interest and learning achievement worked (Guntara, 2021). Data analysis uses descriptive and inferential.

## 3. RESULTS AND DISCUSSION

### Results

The research data was obtained from questionnaires filled out by respondents and student learning achievement. We describe the interest data and learning achievement before analysis to simplify the presentation of research data. Students' interest in physical education learning is reviewed from the factors of attention, interest, feeling of pleasure, activities, coaches, facilities, family, and environment. The results of the descriptive analysis of interest data and learning achievement are presented in the following Table 1.

***Descriptive Test***

**Tabel 1**. Descriptive Test

| Variable | N | Min. | Max. | Median | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| Pre-test Interest | 30 | 111 | 121 | 116 | 116 | 2,779 |
| Post-test Interest | 30 | 148 | 158 | 153 | 153,03 | 2,798 |
| Pre-test Learning Achievement | 30 | 73 | 83 | 78 | 78 | 2,792 |
| Post-test Learning Achievement | 30 | 88 | 98 | 93 | 92,9 | 2,741 |

Table 1 displays the data analysis of student interests and learning achievement in physical education. The following results have been determined.

1. The descriptive test results for the pre-test data of student interest showed that the lowest score was 111, the highest score was 121, the median value was 116, the mean value was 116, and the standard deviation value was 2.779.
2. The post-test data of student interest were known to have the lowest score of 148; the highest score was 158; a median value of 153; a mean value of 153.03; and a standard deviation value of 2.798.
3. The pre-test data for student learning achievement revealed the lowest score of 73, the highest score of 83, a median value of 78, a mean value of 78, and a standard deviation value of 2.792.
4. The descriptive test results for post-test data on student learning achievement showed the lowest score of 88, the highest score of 98, a median value of 93, a mean value of 92.9, and a standard deviation value of 2.741.

***Normality Test***

**Table 2**. Normality Test

| Data | Sig. | α | Information |
|---|---|---|---|
| Pre-Test Interest | 0,466 | > 0.05 | Usual |
| Post-Test Interest | 0,475 | > 0.05 | Usual |
| Pre-Test Learning Achievement | 0,504 | > 0.05 | Usual |
| Post-Test Learning Achievement | 0,554 | > 0.05 | Usual |

In the results of the prerequisite test, it is known that the value of sig. pre-test data of interest was 0.466; the value of sig. post-test data of interest was 0.475; the value of sig. pre-test data for learning achievement was 0.504; and the value of sig. as presented in Table 2. The value of the post-test data for learning achievement was 0.554. Since all the data from the normality test exceeded the significance level of 0.05, we can conclude that they are all normally distributed.

***Homogeneity Test***

**Table 3**. Homogeneity Test

| Data | Sig. | α | Information |
|---|---|---|---|
| Interest | 0,815 | > 0.05 | Homogeneous |
| Learning Achievement | 0,894 | >0.05 | Homogeneous |

Based on Table 3, the homogeneity test results for the post-test and pre-test data on interest and learning achievement in students' physical education indicate Sig. values of 0.815 and 0.894, respectively. Since the sig. value is greater than 0.05, all the data are identical or homogeneous.

***Hypothesis Test***

The hypothesis test aims to answer questions based on the problem formulation that has been prepared previously. The results of the hypothesis test, which were derived from data analysis, are as follows. Results of hypothesis test 1 as presented in Table 4.

**Table 4.** Hypothesis Test 1

| Data | N | Mean | Mean Difference | Sig. |
|---|---|---|---|---|
| Pre-Test Interest | 30 | 116 | 37,033 | 0,001 |
| Post-Test Interest | 30 | 153,03 | | |

Table 4 presents the results of the homogeneity test, comparing the pre-test and post-test data on students' interest in physical education learning. It reveals that the mean value for the pre-test data was 116, while the mean value for the post-test data was 153.03, with a mean difference of 37.033 and a significance level of 0.001. Based on the results of the data analysis, it can be concluded that the learning medium is based on the platform Animated Video and was able to increase the interest in learning PJOK of grade V students at SDN Tanggul Patompo I Makassar City. The following results of hypothesis test 2 are presented in Table 5.

**Table 5**. Hypothesis Test 2

| Data | N | Mean | Mean Difference | Sig. |
|---|---|---|---|---|
| Pre-Test Learning Achievement | 30 | 78 | 14,93 | 0,001 |
| Post-Test Learning | 30 | 92,9 | | |

Table 5 presents the results of the homogeneity test of pre- and post-test data on student learning achievement in physical education. It reveals that the mean value for the pre-test data is 78, while the mean value for the post-test data is 92.9. The mean difference between the two data sets is 14.93, with a statistical significance of 0.001. Based on the results of the data analysis, it can be concluded that the learning medium is based on the platform Animated Video and is able to improve the learning achievement.

***N-Gain Test***

**Table 6**. Results N-Gain Test

| Data | Min. (%) | Max. (%) | Mean (%) | Information |
|---|---|---|---|---|
| Interest | 75,51 | 94,87 | 84,5 | Effective |
| Learning Achievement | 55,56 | 88,24 | 68,9 | Quite Effective |

Table 6 presents the results of the analysis of the N-Gain test and data on student interest and learning achievement in physical education learning.

1. The N-Gain test of interest data yielded the lowest percentage increase of 75.51%, the highest percentage increase of 94.87%, and an average percentage increase of 84.5%. Based on these results, it can be concluded that learning media based on the animation video platform is effective in increasing the interest in learning PJOK students.
2. The N-Gain test of learning outcome data revealed the lowest percentage increase at 55.56%, the highest percentage increase at 8.24%, and an average percentage increase of 68.9%. Based on these results, it can be concluded that learning media based on the animation video platform is quite effective in improving the learning achievement of PJOK students.

**Discussion**

This study examines the effective utilization of digital platform-based learning media in enhancing interest and improving the academic performance of physical education students at SDN Tanggul Patompo I in Makassar City. The results indicated that the N-Gain test interest data exhibited a minimum percentage increase of 75.51%, a maximum percentage increase of 94.87%, and an average percentage increase of 84.5%. The N-Gain test revealed a minimum percentage increase of 55.56%, a maximum percentage increase of 8.24%, and an average percentage increase of 68.9%.

The use of technology-based media in education is a significant innovation that is expected to overcome various problems in the learning process, especially in increasing student involvement in their studies (Tokareva et al., 2019). A strong interest in learning is an important sign of academic success, as motivated students are typically more actively involved in learning activities, show better information retention, and achieve higher academic performance (Harackiewicz et al., 2016). Technology-based media, including learning management systems (LMS), educational software, instructional

films, and e-learning platforms, provide many benefits that are not present in traditional learning approaches. Its main advantage is flexibility.

Students can access course materials, complete assignments, and engage in online conversations at any time and from any location. This flexibility allows students to learn at their desired pace and schedule, thereby reducing stress and increasing comfort in the learning process. Zhang et al. (2021) showed that this flexibility increases student engagement and motivation, as it allows them to have greater autonomy in managing their time and learning environment. In addition to flexibility, technology-based media provides a significant level of engagement (Okoye et al., 2021). Students can engage in a more stimulating and enjoyable learning experience through instructional videos, interactive simulations, and educational apps (Zeng et al., 2020).

Digital platform-based learning media allows students to understand complex concepts through visualization and live demonstrations. Mayer (2019) asserts that this interactivity increases engagement in learning and facilitates increased understanding and retention of educational content. Learning personalization is an important element in the use of technology-based media (Wiliyanti et al., 2024). Adaptive technology adapts learning materials to suit each student's specific requirements and abilities (Purnawanto, 2023). In a personalized learning environment, students can learn at their own pace, receive tailored feedback, and address their weaknesses more effectively. Personalized learning increases student happiness and motivation, as learners feel more tailored attention and support that meets their individual needs (Huang et al., 2012).

The use of technology-based media also increases collaboration and social engagement. Collaborative platforms, such as online discussion forums, virtual study groups, and shared projects, foster a dynamic and supportive learning environment (Rosé & Ferschke, 2016). Students can engage with peers, share ideas, and collaborate on group assignments without time or spatial limitations. Researchers found that online collaboration increases active engagement and fosters a sense of belonging in the learning community, thereby increasing student motivation in learning (Kahu et al., 2024).

Nonetheless, despite the many advantages provided, the integration of technology-based media in higher education faces various challenges (Zulfikhar et al., 2024). The main obstacle is inadequate technological infrastructure, especially in areas that do not have adequate internet connections. The lack of digital competence among educators and students is a considerable obstacle (Fernández-Batanero et al., 2022). The success of technology integration in education is highly dependent on the readiness of the infrastructure and the capacity of users to adapt to changes (Johnson et al., 2016).

Therefore, while technology-based media has significant potential to increase student engagement in learning, successful implementation requires careful planning, adequate training, and strong infrastructure support. Higher education institutions should formulate comprehensive strategies for incorporating technology into the curriculum, offering training for educators and students, and guaranteeing equitable access to technological resources (Löfström & Nevgi, 2007; Alenezi, 2023). The study offers significant insights for the formulation of more effective and adaptive learning systems

in response to technological advancements. By understanding the advantages and barriers associated with technology-based media, educational institutions can improve their decision-making in the design and implementation of new and engaging learning programs, thereby increasing students' general interest and achievement in learning.

## 4. CONCLUSION

The study concludes that the use of digital platform-based learning media effectively increases interest and improves the learning achievement of physical education students at SDN Tanggul Patompo I Makassar City. The study's results reveal that the N-Gain test of interest data has the lowest percentage increase of 75.51%, the highest percentage increase of 94.87%, and an average percentage increase of 84.5%. Meanwhile, the N-Gain test of learning outcome data shows the lowest percentage increase of 55.56%, the highest percentage increase of 8.24%, and the average percentage increase of 68.9%.

The study's findings suggest that using digital animation video platforms as learning media enhances the engagement and academic performance of Physical Education students. In addition, further research is recommended on a wider scale.

## REFERENCES

Adi, S., Soenyoto, T., & Sulaiman, S. (2018). The Implementation of Media in Teaching and Learning of Physical, Sport, and Health Education Subject. *Journal of Physical Education and Sports*, *7*(1), 13-21.

Afif, M., & Komari, A. (2024). Development of PJOK Learning E-Module Based on Play Activities on Physical Freshness Materials for Grade 2 Junior High School. *Journal of Education, Teaching and Learning*, *9*(1), 108-111.

Alenezi, M. (2023). Digital learning and digital institution in higher education. *Education Sciences*, *13*(1), 88.

Calderón, A., Scanlon, D., MacPhail, A., & Moody, B. (2021). An integrated blended learning approach for physical education teacher education programmes: teacher educators' and pre-service teachers' experiences. *Physical Education and Sport Pedagogy*, *26*(6), 562-577.

Chang, K. E., Zhang, J., Huang, Y. S., Liu, T. C., & Sung, Y. T. (2020). Applying augmented reality in physical education on motor skills learning. *Interactive Learning Environments*, *28*(6), 685-697.

Guntara, Y. (2021). Normalized gain ukuran keefektifan treatment. *Universitas Sultan Ageng Tirtayasa*, 1-3.

Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2022). Digital competences for teacher professional development. Systematic review. *European Journal of Teacher Education*, *45*(4), 513-531.

Hale, S., Herdi, H., & Dilliana, S. M. (2024). Pengaruh Intellectual Capital dan Partisipasi Anggota terhadap Keberhasilan Koperasi Kredit Sube Huter. *Jurnal Accounting UNIPA*, *3*(1), 18-26.

Harackiewicz, J. M., Smith, J. L., & Priniski, S. J. (2016). Interest matters: The importance of promoting interest in education. *Policy insights from the behavioral and brain sciences*, *3*(2), 220-227.

Huang, Y. M., Liang, T. H., Su, Y. N., & Chen, N. S. (2012). Empowering personalized

learning with an interactive e-book learning system for elementary school students. *Educational technology research and development*, *60*, 703-722.

Johnson, A. M., Jacovina, M. E., Russell, D. G., & Soto, C. M. (2016). Challenges and solutions when using technologies in the classroom. In *Adaptive educational technologies for literacy instruction* (pp. 13-30). Routledge.

Kahu, E. R., Thomas, H. G., & Heinrich, E. (2024). 'A sense of community and camaraderie': Increasing student engagement by supplementing an LMS with a Learning Commons Communication Tool. *Active Learning in Higher Education*, *25*(2), 303-316.

Kwon, E. H., & Block, M. E. (2017). Implementing the adapted physical education E-learning program into physical education teacher education program. *Research in developmental disabilities*, *69*, 18-29.

Löfström, E., & Nevgi, A. (2007). From strategic planning to meaningful learning: diverse perspectives on the development of web-based teaching and learning in higher education. *British Journal of educational technology*, *38*(2), 312-324.

Mayer, R. E. (2019). How multimedia can improve learning and instruction. *Impact (2514-6955)*.

Muhtar, T., Supriyadi, T., & Lengkana, A. S. (2020). Character development-based physical education learning model in primary school. *International Journal of Human Movement and Sports Sciences*, *8*(6), 337-354.

Murphy, F., Marron, S., & Coulter, M. (2021). Primary field experiences: Critical for primary generalist physical education teachers?. *European Physical Education Review*, *27*(4), 761-778.

Purnawanto, A. T. (2023). Pembelajaran berdiferensiasi. *Jurnal Pedagogy*, *16*(1), 34-54.

Okoye, K., Rodriguez-Tort, J. A., Escamilla, J., & Hosseini, S. (2021). Technology-mediated teaching and learning process: A conceptual study of educators' response amidst the Covid-19 pandemic. *Education and Information Technologies*, *26*, 7225-7257.

Renninger, K. A., Hidi, S., Krapp, A., & Renninger, A. (2014). *The role of interest in learning and development*. Psychology Press.

Rosé, C. P., & Ferschke, O. (2016). Technology support for discussion based learning: From computer supported collaborative learning to the future of massive open online courses. *International Journal of Artificial Intelligence in Education*, *26*, 660-678.

Siedentop, D., & Van der Mars, H. (2022). *Introduction to physical education, fitness, and sport*. Human kinetics.

Suherman, A., Supriyadi, T., & Cukarso, S. H. I. (2019). Strengthening national character education through physical education: An action research in Indonesia. *International Journal of Learning, Teaching and Educational Research*, *18*(11), 125-153.

Syafruddin, A. (2023). Peran teknologi pendidikan terhadap perubahan pembelajaran pendidikan jasmani. *Jurnal Teknologi Pendidikan*, *3*(2), 36-44.

Syafruddin, M. A., & Asri, A. (2022). Pendidikan Jasmani Dan Olahraga Dalam Membangun SDM Di Era Revolusi Industri 4.0. *Gelora: Jurnal Pendidikan Olahraga Dan Kesehatan IKIP Mataram*, *9*(2), 61-67.

Syafruddin, M. A., Jahrir, A. S., & Yusuf, A. (2022). Peran Pendidikan Jasmani Dan Olahraga Dalam Pembentukan Karakter Bangsa. *Jurnal Ilmiah STOK Bina Guna Medan*, *10*(2), 73-83.

Tafonao, T. (2018). Peranan media pembelajaran dalam meningkatkan minat belajar mahasiswa. *Jurnal komunikasi pendidikan*, *2*(2), 103-114.

Tokareva, E. A., Smirnova, Y. V., & Orchakova, L. G. (2019). Innovation and communication technologies: Analysis of the effectiveness of their use and

implementation in higher education. *Education and Information Technologies*, *24*(5), 3219-3234.

Usman, A., Anggreni, J., Hudain, M. A., & Hanafi, S. (2024). Interest, Emotional Intelligence, and Intellectual Intelligence on PJOK Learning Achievement in Middle School Students. *ETDC: Indonesian Journal of Research and Educational Review*, *3*(3), 118-127.

White, R. L., Bennie, A., Vasconcellos, D., Cinelli, R., Hilland, T., Owen, K. B., & Lonsdale, C. (2021). Self-determination theory in physical education: A systematic review of qualitative studies. *Teaching and Teacher Education*, *99*, 103247.

Wiliyanti, V., Buana, L. S. A., Haryati, H., Rusmayani, N. G. A. L., Dewi, K. A. K., & Novita, F. (2024). Analisis Penggunaan Media Berbasis Teknologi Dalam Meningkatkan Minat Belajar Mahasiswa. *Jurnal Review Pendidikan Dan Pengajaran (JRPP)*, *7*(3), 6790-6797.

Willingham, D. T. (2021). *Why don't students like school?: A cognitive scientist answers questions about how the mind works and what it means for the classroom*. John Wiley & Sons.

Wulandari, A. P., Salsabila, A. A., Cahyani, K., Nurazizah, T. S., & Ulfiah, Z. (2023). Pentingnya media pembelajaran dalam proses belajar mengajar. *Journal on Education*, *5*(2), 3928-3936.

Zeng, J., Parks, S., & Shang, J. (2020). To learn scientifically, effectively, and enjoyably: A review of educational games. *Human Behavior and Emerging Technologies*, *2*(2), 186-195.

Zhang, K., Wu, S., Xu, Y., Cao, W., Goetz, T., & Parks-Stamm, E. J. (2021). Adaptability promotes student engagement under COVID-19: the multiple mediating effects of academic emotion. *Frontiers in psychology*, *11*, 633265.

Zulfikhar, R., Mustofa, M., Hamidah, E., Sapulete, H., Sitopu, J. W., & Sari, M. N. (2024). Dampak Integrasi Teknologi dalam Pembelajaran Terhadap Prestasi Akademis Mahasiswa Perguruan Tinggi. *Journal on Education*, *6*(4), 18381-18390.