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The Application of Seesaw in Improving Student Learning Activities

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ABSTRACT

The purpose of this study is to ascertain how using the Seesaw application affects students' learning engagement in Islamic Religious Education courses. The low level of learning activity among eighth-grade students at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency, serves as the backdrop for this study. Students are typically passive when it comes to asking questions, responding to them, and taking part in discussions. The study employs a Pre-Experimental One Group Pretest–Posttest Design and quantitative methodology. Purposive sampling was used to choose 35 eighth-grade students from class VIII A for the research sample. The data was gathered using a learning activity questionnaire with 25 statements on a four-point Likert scale. The Shapiro-Wilk normality test and paired sample t-test were employed in SPSS version 27 to evaluate the findings. Using a pretest average of 56.66 and a posttest mean of 83.8, as well as a t-value of 58.718 > t-table 2.032 ($p < 0.05$), the study's findings demonstrated a significant increase in students' learning activity following the deployment of Seesaw. In addition to promoting creative Islamic education learning in the digital age, the Seesaw application has been shown to be successful in raising students' motivation and learning activity.

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INTRODUCTION

Education is a procedure that is held to gain proficiency, so that something that was previously unknown becomes understood by humans.[1] The world of education is not simple, but consists of various aspects of human life. Therefore, the direction of a nation's development is greatly influenced by the quality of its education.[2] Education is also a step taken by an individual or a group of people in guiding students to achieve full maturity, both physical and psychological. Through education, a person is formed to have a balance in living life values based on a sense of responsibility.[3] As a formal educational institution, schools play a crucial role in supporting the

[1] Syarnubi Syarnubi, "Hakikat Evaluasi Dalam Pendidikan Islam," *Jurnal PAI Raden Fatah* 5, no. 2 (2023): hlm. 469, doi:10.19109/pairf.v5i2.
[2] Baldi Anggara et al., "Pengembangan Program Pembinaan Baca Tulis Al-Qur'an Bagi Mahasiswa Fakultas Ilmu Tarbiyah dan Keguruan UIN Raden Fatah Palembang," *Edukasi Islami: Jurnal Pendidikan Islam* 12, no. 04 (2023): hlm. 3262, doi:10.30868/ei.v12i04.5346.
[3] Masnun Baiti et al., "Pendidikan Agama dalam Keluarga Terhadap Anak Usia Dasar: Kontekstualisasi Pemikiran Nurcholis Majid," *Cendekia: Media Komunikasi Penelitian dan Pengembangan Pendidikan Islam* 14, no. 02 (2022): hlm. 321, doi:https://doi.org/10.37850/cendekia.

continuity of students' busy activities.[4] So, education is one of the basic needs of individuals in general, because through education can be created a glorious period that is able to revive the nation's civilization.[5] The purpose of education is to be able to guide students to develop individual thinking, consideration, and moral reasoning in line with their stages and levels of development.[6] Thus, education makes people try to master the future and control themselves with their ingenuity, dhikr, and creativity.[7]

At this time, education is now considered a basic necessity that has become an integral part of every individual's life[8]. Therefore, education has a major role in advancing the ability of excellent human resources.[9] Therefore, education also plays a role as the main pillar in building the nation's civilization and becomes a tool to maintain and inherit the values of people's lives. Entering the 21st century or the digital era, educators are sought to be more responsive, think critically, innovatively, creatively, and be able to work together, in order to be in harmony with today's technological dynamics and learning trends.[10] So it can be concluded that education now is very important in improving the quality of future generations, so education is the main thing in building future generations who have life values with a sense of responsibility, as a teacher in the current digital era must be able to adapt to the times and provide new innovations in learning.

Artistically planned, innovative, and interactive learning is one step toward the achievement of collaborative education and encourages active student participation.[11] In this situation, teachers can use digital technology-based learning media that matches the latest trends in the teaching process.[12] Currently, technology-based learning media has become a fairly relevant conversation in the world of education.[13] martiThe presence of technology makes a great contribution to increasing creativity and the success of the learning process, because it can help humans perform tasks that are difficult to do without the help of tools.[14] Learning media is a machine used to devote processes for recipients in the educational process.[15] So that learning media can be able to stimulate students' ways of thinking will encourage an active learning process,[16] and of course bring various benefits in the world of education.[17] Therefore, learning media is very useful for the success of students' learning.[18] Students deserve to participate in the continuation of student activities to learn again.[19] So this is the conclusion, learning media that utilizes technology can foster the active participation of students in

[4] Achmad Fadil, "Hubungan Gaya Mengajar Guru Fikih terhadap Prestasi Belajar Siswa," *Jurnal Intelektualita: Keislaman, Sosial dan Sains* 11, no. 2 (2022): hlm. 237, doi:10.19109/intelektualita.v11i2.14668.

[5] Rohmadi Rohmadi dan Muarifah Novarini Yupi Novarini Yupi, "Konsep Pendidikan Islam Inklusif Perspektif KH. Abdurrahman Wahid," *Moderatio: Jurnal Moderasi Beragama* 3, no. 2 (2023): hlm. 148, doi:10.32332/moderatio.v3i2.7532.

[6] Nyayu Soraya et al., "The Values of Moral Education of the Malay Community," *Islamic Education: Journal of Islamic Education* 11, no. 1 (2022): p. 92.

[7] Nur Aini, Ali Imran, and Ahmad Syarifuddin, "The Application of the Quantum Tahfiz Method in Improving the Memorization of the Qur'an for Santriwati," *Pai Raden Fatah Palembang* 4, no. 4 (2022): p. 445, doi:10.19109/pairf.v4i4.

[8] Nada Dabbagh dan Helen Fake, "Learning technologies and student engagement in online learning environments," *Online Learning Journal* 24, no. 3 (2020): 1–20.

[9] Torrey Trust dan Jill Whalen, "Digital tools for student engagement and active learning," *Journal of Digital Learning in Teacher Education* 37, no. 1 (2021): 5–16.

[10] Andi Sadriani, M. Ridwan Said Ahmad, dan Ibrahim Arifin, "Peran Guru Dalam Perkembangan Teknologi Pendidikan di Era Digital," *Seminar Nasional Dies Natalis 62* 1 (2023): hlm. 33, doi:10.59562/semnasdies.v1i1.431.

[11] Jessie S Barrot, Ian I Llenares, dan Leo S Del Rosario, "Students' online learning challenges during the pandemic and their engagement," *Education and Information Technologies* 26, no. 6 (2021): 7321–38.

[12] Tutut Handayani et al., "Pelatihan Pengembangan Media Pembelajaran Menggunakan Aplikasi Canva di Madrasah Ibtidaiyah," *Taawun* 3, no. 01 (2023): hlm. 87, doi:10.37850/taawun.v3i01.377.

[13] D. U. Martin, F., & Bolliger, "Engagement matters: Student perceptions on the importance of engagement strategies in online learning," *Online Learning Journal* 22, no 1 (2018): hlm. 205.

[14] Julita dan Pebria Dheni Purnasari, "Pemanfataan Teknologi Sebagai Media Pembelajaran Dalam Pendidikan Era Digital," *Journal of Educational Learning and Innovation (ELIa)* 2, no. 2 (2022): hlm. 228, doi:10.46229/elia.v2i2.460.

[15] Septi Nurfadhillah, *Learning Media* (West Java: CV. Jejak, 2021), p. 15.

[16] Florence Martin dan Doris U Bolliger, "Engagement matters: Student perceptions on the importance of engagement strategies in online learning," *Online Learning Journal* 22, no. 1 (2018): 205–22.

[17] Ekalias Noka Sitepu, "Digital-Based Learning Media," *Mahesa* 1, no. 1 (2021): p. 246, doi:10.34007/ppd.v1i1.195.

[18] Christine Greenhow dan Cathy Lewin, "Social media and education: Reconceptualizing the boundaries of formal and informal learning," *Learning, Media and Technology* 47, no. 1 (2022): 1–15.

[19] Nur Wahyuni and Inka Dwi Ramadhani, "Edukasia – Journal of Education The Role of Teachers in Utilizing Technology as a Learning Media to Increase Student Learning Activity" 1, no. September (2024): p. 54.

the learning and training process. [20] Nevertheless, active participation in learning can be demonstrated through a variety of student activities, both those that are easily recognized directly and those that are more hidden and difficult to observe.[21] In addition, student learning activity can be interpreted as participation in the learning process that takes place. This activeness is one of the important elements in ensuring the success of learning.[22] A student is considered active if he shows behavior such as often asking questions to teachers and friends, being willing to do assignments from the teacher, being able to answer questions, feeling happy when given an assignment, and other similar behaviors.[23] Learning activeness refers to a circumstance or initiative that motivates students to take an active role in education. This engagement can be observed through activities such as listening to the teacher's explanation, participating in discussions, and completing assignments or reports.[24]Thus, it can be concluded that student learning activity has various forms, ranging from those that seem obvious such as often asking questions to the teacher,[25] to more hidden forms such as just listening to explanations but trying to understand them themselves because they feel challenged.[26] rahimIn other words, it is not enough to learn one-sided, for example, only the teacher is actively explaining, but students must also actively participate in learning activities.[27] Based on the definition in the Great Dictionary of the Indonesian Language, the word active means the condition of a person who is serious or enthusiastic in doing business or work.[28] In learning activities, the form of effort can be seen from the extent to which students respond to the explanations given by the teacher, these activities include all actions involving mental and physical elements, where the process of thinking and acting are integrated into a whole unit.[29]

Indicators of student learning activity include (1) Participating in learning tasks, (2) Solving problems, (3) Asking questions to colleagues or educators, (4) Exploring data or knowledge, (5) Conducting discussions with groups, (6) Evaluating personal abilities, (7) Doing problem-solving exercises, and (8) Applying the knowledge that has been gained. Therefore, educators are asked to play an active role in motivating students to learn.[30] It can be concluded that student participation in various activities shows the student's learning activities, such as doing assignments, asking questions, discussing, and looking for information. Therefore, teachers have an important role in encouraging and helping students to be more actively involved in learning activities. Thus, student activeness can be interpreted as a form of activity that shows students' efforts in responding to the material presented by the teacher. Related to this, active learning is based on Jean Piaget's theory of constructivism, in the book *The Origins of Intelligence in Children*, Jean Piaget stated that:

> *"This definition applies to intelligence as well. Intelligence is assimilation to the extent that it incorporates all the given data of experience within its framework."*[31]

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[20] M Bond, "Facilitating student engagement through digital learning technologies: A systematic review," *Educational Technology Research and Development* 68, no 4 (2020): hlm. 191.

[21] Ida Hindasah et al., "Efektivitas Pemanfaatan Seesaw untuk Meningkatkan Keaktifan Belajar," *Jurnal Edutech* 19, no. 3 (2021): hlm. 272.

[22] Xiaoming Zhai dan Hsiao-Hang Chu, "Technology integration in education: A meta-analysis of learning outcomes," *Computers \& Education* 168 (2021): 104211.

[23] Silvia Agustin, Sumardi Sumardi, dan Ghullam Hamdu, "Kajian Tentang Keaktikan Belajar Siswa Dengan Media Teka Teki Silang Pada Pembelajaran IPS SD," *Pedadidaktika: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar* 8, no. 1 (2021): hlm. 174, doi:10.17509/pedadidaktika.v8i1.32917.

[24] Rahma Daniatun et al., "Ludopoli Media on Social Arithmetic Materials in Boosting Student Activity," *Mosharafa: Journal of Mathematics Education* 11, no. 1 (2022): hlm. 15, doi:10.31980/mosharafa.v11i1.683.

[25] Johan Holmberg, "Digital portfolio assessment and its impact on student participation," *Assessment \& Evaluation in Higher Education* 47, no. 5 (2022): 725–39.

[26] Ebrahim Rahimi dan Jan van den Berg, "Collaborative digital learning environments and student activity in secondary schools," *Computers in Human Behavior* 139 (2023): 107508.

[27] Laura A Schindler, Gary J Burkholder, dan Oussama Morad, "Computers in education: A meta-analysis of the impact of digital learning tools on student engagement," *Computers \& Education* 113 (2017): 198–211.

[28] Christine Redecker, "Digital competence frameworks and educational innovation," *European Journal of Education* 54, no. 4 (2019): 567–82.

[29] Putri Dewi Anggraini and Siti Sri Wulandari, "Analysis of the Use of Project Based Learning Model in Increasing Student Activity," *Journal of Office Administration Education (JPAP)* 9, no. 2 (2021): p. 295, doi:10.26740/jpap.v9n2.p292-299.

[30] Ajeng Fitria, Enung Nurlaela, and PPG Prejabatan, "Tgt Type Cooperative Learning Model Assisted by Media Group Card to Increase the Learning Activity of Elementary School Students," *Pendas : Scientific Journal of Basic Education* 9, no. 1 (2023): p. 1006.

[31] Jean Piaget, *The Origins of Intelligence in Children* (New York: International Universities Press, 1952), hlm. 6.

In Jean Piaget's perspective, the learning process takes place actively through two main mechanisms, namely assimilation and accommodation, which are part of cognitive adaptation. Students do not only absorb information just like that, but associate new information with the knowledge structure they already have. Another opinion is that the theoretical concept developed by Jean Piaget is that the learning process is a mental activity that takes place using two core stages, namely, assimilation and accommodation. Assimilation is the process when a person incorporates new knowledge or experience into an existing knowledge framework. In this case, students group new stimuli and experiences into the structure of knowledge they already have. The initial information collected by the researcher went through a deepening and interview which was carried out in May 2025 with grade VIII students at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency, according to Mrs. Martini as a teacher of religion subject in grade VIII said that:

> *"The majority of grade VIII students have not shown optimal involvement in learning activities, especially in grade VIII A. When teachers deliver material, the majority of students only become passive listeners, rarely ask questions, and are not enthusiastic in participating in class discussions. Even some of the students seem unfocused and often don't complete the assignment seriously."*[32]

Then, when the researcher made observations in class, the learning process still seemed monotonous and had not utilized technology optimally. The learning tools used are still in the package book, while the learning methods applied are only limited to lectures and group discussions. The lack of use of technology-based learning media in schools is one of the factors that floats the increase in student activity. Meanwhile, there are currently many applications available that help the teaching and learning process in a reciprocal manner.[33] Thus, new learning media is needed that is more in line with the general nature of today's students, namely the generation that is familiar with technology. Such is the importance of unifying digital media in learning to answer these needs. So there is an application that can be used to support learning, namely *Seesaw*. In the learning process, the existence of learning media has an important role, especially when the delivery of material is felt to be unclear. In these conditions, media can function as a tool to bridge students' knowledge of the material presented.[34] The use of technology in backing up education.[35] Learning media itself has many forms, one of which can be applied through *the Seesaw* application.[36]

Based on the description above, this research has an important urgency in improving the quality of the learning process, especially in increasing students' learning activity in the digital era. The low level of student participation in classroom learning shows the need for innovative learning media that can stimulate students to be more actively involved in learning activities. The integration of technology in education is no longer an option but a necessity in order to create effective, interactive, and student-centered learning. Therefore, the application of the Seesaw application is considered important to be implemented as a digital learning medium that can facilitate communication, collaboration, and reflection in the learning process so that students become more active and motivated to participate in learning activities.

The novelty of this research lies in the utilization of the Seesaw application as a digital portfolio-based learning media to increase students' learning activity, particularly in Islamic Religious Education subjects for grade VIII students at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency. While previous studies generally focused on the use of digital media in improving learning outcomes or student motivation, this study specifically examines the role of the Seesaw

[32] "Results of an Interview with Mrs. Martini as a Class VIII Islamic Religious Education Teacher at Muhammadiyah 3 Gunung Raja Junior High School, Muara Enim Regency, at 10:00 WIB on May 5, 2025.

[33] "Results of Initial Observation in Class VIII of SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency, at 11:00 WIB on May 5, 2025.

[34] Dewi Fitri Yeni et al., "The Effect of the Use of Digital Learning Media on Student Learning Outcomes," *Edu Journal Innovation in Learning and Education* 1, no. 2 (2023): p. 95, doi:10.55352/edu.v1i2.571.

[35] Benedicta Dwi Adventyana et al., "Media Pembelajaran Digital sebagai Implementasi Pembelajaran Inovatif untuk Sekolah Dasar," *Jurnal Pendidikan dan Konseling (JPDK)* 5, no. 1 (2023): hlm. 3952, http://journal.universitaspahlawan.ac.id/index.php/jpdk/article/view/11640.

[36] Dan Hasanah, U., Zulela dan Edwita, "Effectiveness of Seesaw as a digital learning innovation to improve student information literacy," *Journal of Elementary School Teacher Education*, 4, No 2 (2020): hlm. 120.

application in increasing students' learning activity through interactive assignments, digital portfolios, and feedback mechanisms involving teachers, students, and parents. Thus, this research is expected to provide new insights into the implementation of technology-based learning media in supporting active learning in junior secondary education.

Seesaw is an educational platform created to enrich the learning experience through the creation of digital portfolios.[37] Therefore, it can be concluded that the *Seesaw application* is expected to support increased active participation or activeness of students in classroom training, as well as to strengthen the interaction between teachers and parents.[38] In addition, *the Seesaw* app can enrich teaching by giving teachers the ability to organize diverse assignments, assess students' work to the maximum and provide positive suggestions as well as nurture students,[39] on the other hand, get the opportunity to understand their own progress through visualization of the work they have done, which helps them identify strengths and areas for improvement. Parents also benefit by having access to their children's work, which allows them to be more involved in their children's educational process.[40] Thus, it is concluded that this *Seesaw* application is an effective educational tool to encourage student activity through digital portfolios, so that this application makes it easier for students to express learning results, as well as allows teachers to give feedback, and involves parents in monitoring children's development so that collaboration is created that supports the learning process.[41] Based on the related exposure, the researcher was led to conduct research on the application of *the Seesaw* application to see if *Seesaw* can increase student activity with the title "The Application of *the Seesaw Application* in Increasing the Learning Activity of Class VIII Students at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency".

RESEARCH METHODS

This study uses a quantitative approach through *the Pre-Experimental* method, using *the One Group Pretest Posttest Design*, where the researcher provides *treatment* in the form of the use of *the Seesaw* application in the learning process, then compares the level of student activity before and after the treatment is given. Through this design, researchers can measure the influence of the use of *the Seesaw* application on student activity in a structured and systematic manner. According to Sugiyono, *the One Group Pretest Posttest* design is a form of *Pre-experimental* that involves a group of subjects. In this design, there is an initial test before the treatment is administered. In this approach, the outcome of the action can be more precisely determined because the outcome can be compared to the condition before the treatment was given.[42]

In taking samples, this study involves *the Purposive Sampling* technique, which is a selectively determined sample selection method, taking into account special criteria relevant to the purpose of the research.[43] This study took a sample of 35 students of class VIII A at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency. This research uses questionnaires, which are effective data collection techniques if the researcher understands which factors to assess and what is expected of the respondents.[44] Thus, the researcher distributed a questionnaire to students before and after the implementation of *the Seesaw* application to find out the level of student learning activity. The questionnaire in this study was prepared in a closed form, using the *calculation of the Likert* scale with each choice given a score ranging from 4 to 1, because the four-point scale was chosen so that the

[37] Durotul Yatimah et al., *Pemanfaatan Platform Digital Pembelajaran Kreatif dan Inovatif* (Madiun: CV. Bayfa Cendekia Indonesia, 2024), hlm. 115.

[38] Stephen Hegedus dan Sarah Dalton, "Digital portfolios as tools for reflective learning and student engagement," *Educational Technology Research and Development* 71, no. 2 (2023): 623–40.

[39] Yu Tang dan Khe Foon Hew, "Mobile learning and student engagement: Evidence from secondary education," *Computers \& Education* 182 (2022): 104463.

[40] Yatimah et al., *op. cit.*, hlm. 115., p. 115.

[41] Emma Garcia dan Elaine Weiss, "Interactive learning technologies and classroom participation," *Educational Technology Research and Development* 69, no. 5 (2021): 2487–2505.

[42] Sugiyono Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (Bandung: Alfabeta, 2024), hlm. 74.

[43] *Ibid.*, hlm. 85.

[44] *Ibid.*, hlm. 146.

response of the students or objects observed was more decisive and not in a neutral position. The data analysis technique in this research uses validity tests, reliability tests, normality tests, and data hypothesis tests (t-tests).

RESULTS AND DISCUSSION

This research was conducted at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency using a sample of class VIII A totaling 35 students. This research was carried out for three weeks by conducting *a pretest* and *posttest*, or before and after the application of *the Seesaw application* to make it easier for researchers to answer existing problems. This research was carried out in various stages, namely by preparation, implementation, and reporting of results. The purpose of this study is to find out whether there is a difference in the level of student learning activity before and after the *application of the Seesaw* application. In the preparation stage, which was carried out on October 1, 2025, the researcher asked for permission from the school, to conduct research at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency and met with PAI teacher Mrs. Martini and consulted for research schedules and learning tools to be used such as teaching modules. The implementation stage in the 3-week research started on October 2, 2025 until October 20, 2025, this research was carried out in 3 meetings.

Based on the results of data collection through *pretest* and *posttest* questionnaires, an analysis was then carried out to determine the level of student learning activity before and after the implementation of *the Seesaw* application. With this aim to see the extent of the changes that have occurred and identify the application of *the Seesaw* application to increase student learning activity. The following discussion will describe in detail the results of the research, starting from the initial conditions before using the application to the results after its application.

1. *Student Learning Activity Level Before Applying the Seesaw Application in Class VIII at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency*

This study was conducted to analyze the application of *the Seesaw application* to the learning activity of grade VIII A students using questionnaire instruments or pretest *questionnaires* conducted before the implementation of *the Seesaw* application and *posttest* conducted after implementing *the Seesaw* application. The researcher distributed a questionnaire to 35 students containing 25 statements. Before the questionnaire is given to students, it is first tested so that a valid, reliable and can be used for research is obtained.

a. Validity Test

The validity test in this study is to use the correlation of the product moment with the sum of n = 35 so that the r-table of significance is 5% = 0.334.

Table. 9 Validity Test Results[45]

Statement to-	r-count	r-table	Verdict
1	0,606	0,334	Valid
2	0,573	0,334	Valid
3	0,661	0,334	Valid
4	0,624	0,334	Valid
5	0,536	0,334	Valid
6	0,687	0,334	Valid
7	0,699	0,334	Valid
8	0,516	0,334	Valid
9	0,574	0,334	Valid
10	0,608	0,334	Valid
11	0,578	0,334	Valid
12	0,622	0,334	Valid

[45] Data on the Validity Test of the Student Learning Activity Questionnaire Using SPSS version 27

13	0,590	0,334	Valid
14	0,635	0,334	Valid
15	0,638	0,334	Valid
16	0,536	0,334	Valid
17	0,516	0,334	Valid
18	0,447	0,334	Valid
19	0,561	0,334	Valid
20	0,460	0,334	Valid
21	0,535	0,334	Valid
22	0,500	0,334	Valid
23	0,510	0,334	Valid
24	0,576	0,334	Valid
25	0,650	0,334	Valid

Based on the validity test using SPSS version 27 on 25 statements that have been tested, the results were obtained that all statements were declared valid to be used as research tools.

b. Reliability Test

Cronbach's Alpha formula was used in the reliability assessment of this study. This instrument is considered to have a high level of reliability and is suitable for use in the study if Cronbach's Alpha score is higher than 0.70. On the other hand, this instrument is considered less reliable or unreliable if the value is less than 0.70.

Table. 10 Reliability Test Results[46]

Reliability Statistics	
Cronbach's Alpha	N of Items
.915	25

The table shows that *Cronbach's Alpha* is worth .915 which means it is worth more than 0.70. Thus, the instruments in the study are reliable because this measuring instrument has a high level of reliability so it is suitable for use in research. Student learning activity before applying *the Seesaw* application in grade VIII A at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency, as for finding out the learning activity of students before applying *the Seesaw application*, the researcher provides *a pretest,* which is a statement consisting of 25 items, then the student learning activity is obtained in the statement can be clarified in the table below, namely:

Table. 11 Pretest Scores (X) of Students Before Seesaw Application Implementation [47]

No	Student Name	Nilai *Pretest*
1	Azka Naftan Ramadhan	55
2	Ayyub Kholid Ristiawan	56
3	Or Rapiu	58
4	Ayudhiya Salsabila	54
5	Betri Anisa	57
6	Brayen Axza Govel	59
7	Danugrah	53
8	Danu Ferdinan Wijaya	56
9	Derli Melinda	58
10	Egi Jeneri	55
11	Enjel Pratiwi	57

[46] Reliability Test Data for Student Learning Activity Questionnaire Using SPSS version 27
[47] Student Learning Activity *Prestest* Score Data

12	Fadila Sari	60
13	Firando Saputra	54
14	Squirrelly	59
15	Haikal Pratama	55
16	Intan Lestari	58
17	Julyan Syarif Alpari	57
18	Kyla Atthya	56
19	Muhammad Al Pajri	54
20	Muhammad Deki Irawan	59
21	Queena Windi Azahra	53
22	Riski Aditian	55
23	Rachel Trisilia	57
24	Rafa Habsi Anugrah	60
25	Revaldi Shaputra	58
26	Ricardo Rohim	56
27	Rafka Aditya	59
28	Sesa Kaisarani	55
29	"Sit back and call each other	54
30	Puspita Anggraini	57
31	Sabil Dahusnu	58
32	Princess Julita's Tipani	60
33	Via Marcellia	60
34	Yumi Kalzu	55
35	Zahra Agustin	56
Quantity		1.983
Red (Average)		56,66

Based on the results of *the pretest of* grade 8a students at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency before the implementation of *the Seesaw application*, a total score of 1,983 was obtained with an average of 56.66. These results show that students' learning activity is still not suitable. Most students are not active when studying, such as asking questions, answering, or participating in discussions. So, it can be concluded that before using the Seesaw application, students' learning activity was still low and needed to be improved.

2. *The level of student learning activity after applying the application Seesaw in grade VIII at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency*

To find out the learning activity of students after applying *the Seesaw* application in grade VIII A at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency, the researcher provided *a Posttest*, which is a questionnaire or questionnaire consisting of 25 statements, after the application of *the Seesaw* application is as follows:

Table. 12 Posttest Scores (Y) Students After Seesaw Application Implementation [48]

No	Student Name	Nilai *Posttest*
1	Azka Naftan Ramadhan	85
2	Ayyub Kholid Ristiawan	88
3	Or Rapiu	83

[48] Posttest Score Data on Student Learning Activity

4	Ayudhiya Salsabila	85
5	Betri Anisa	81
6	Brayen Axza Govel	88
7	Danugrah	80
8	Danu Ferdinan Wijaya	82
9	Derli Melinda	83
10	Egi Jeneri	80
11	Enjel Pratiwi	83
12	Fadila Sari	90
13	Firando Saputra	86
14	Squirrelly	84
15	Haikal Pratama	81
16	Intan Lestari	83
17	Julyan Syarif Alpari	82
18	Kyla Atthya	82
19	Muhammad Al Pajri	86
20	Muhammad Deki Irawan	85
21	Queena Windi Azahra	85
22	Riski Aditian	82
23	Rachel Trisilia	83
24	Rafa Habsi Anugrah	86
25	Revaldi Shaputra	80
26	Ricardo Rohim	81
27	Rafka Aditya	85
28	Sesa Kaisarani	82
29	"Sit back and call each other	85
30	Puspita Anggraini	82
31	Sabil Dahusnu	83
32	Princess Julita's Tipani	90
33	Via Marcellia	85
34	Yumi Kalzu	85
35	Zahra Agustin	82
Quantity		2933
Red (average)		83,8

Based on the results of *the posttest* after applying the *Seesaw* application, a total score of 2,933 was obtained with an average of 83.8. These results explain that the application of *the Seesaw* application stands out positively for increasing student learning activity, because the activities take place to be more interesting, interactive, and encourage students to participate more actively in teaching activities.

3. *Differences in the Level of Student Learning Activity Before and After the Implementation of the Seesaw Application in Grade VIII at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency*

In this research, an initial measurement *(Pretest)* was carried out on one group of participants to see the condition of the students before receiving treatment. After being given treatment, a re-measurement *(Posttest)* was carried out using the same instrument. The difference between *the Pretest* and *Posttest* results will describe the extent of the treatment given to the variable.

a. Normality Test

In the normality test itself, it can be seen from the significance value obtained, where if the result of the significance value > 0.05, the distribution meets normality or is distributed normally. Meanwhile, if the result of the significance value is < 0.05, then the data distribution does not meet the assumption of normality.

Table. 13 Normality Test Results[49]

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Say.	Statistic	df	Say.
Pretest	.128	35	.159	.946	35	.088
Posttest	.163	35	.019	.930	35	.029
a. Lilliefors Significances Corrections						

With the help of SPSS version 27 in the initial stage *of the Pretest* showed a significance value of 0.088 which means that it is normally distributed due to 0.008 > 0.005. In the final stage or *Posttest* , it shows a significance value of 0.029 which means that it is normally distributed because it is 0.029 > 0.005.

b. Data Hypothesis Test (t-test)

A useful hypothesis test to analyze a data on student learning activity is carried out using statistical analysis with a *paired T-Test (Paired Sample T-Test).* The test criteria are if sig. (2-tailed) < 0.05, there is a significant difference in student learning activity before and after the *application of the Seesaw* application. The calculation of the hypothesis test using SPSS version 27 is as follows:

Table 14 *Paired Samples Test Results*[50]

Paired Samples Test									
	Paired Difference						t	df	Say. (2-tailed)
	Mean		Std. Deviations	Hours Error Means	95% Confidences Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-27.14286	2.73477	.46226	-28.08229	-26.20343	-58.718	34	.000

From the table above, it proves that sig. 0.000 < 0.05 then Ha is accepted, which means that there is an increase in the application of *the Seesaw* application to student learning activity and obtains a calculated value, which is 58,718, then the researcher compares the table value. Furthermore, to be able to find the value of the ttable, namely by calculating the value of df, which is n-1, it can be known that df=35-1 so df is known as 34. The next stage by knowing df 34, the researcher switched to the t-value table of 2,032. Then compare the value of the tcount greater than the ttable which is 2,032 < 58,718. Because the tcal value is greater than the ttable value, the hypothesis (Ho) is rejected which states that there is no increase in student learning activity after the *application of the Seesaw* application in grade VIII at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency, and the hypothesis (Ha) is accepted which explains that

[49] Data on Normality Test of *Pretest* and *Posttest* Results of Students Using SPSS version 27
[50] Paired Samples Test Data Using SPSS version 27

there is an increase in student learning activity after the *application of the Seesaw* application in grade 8 at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency.

CONCLUSION

The results of the study show that before the implementation of the *Seesaw application*, the level of learning activity of grade VIII A students was still low. This can be seen from the pretest score with a total of 1,983 and an average of 56.66, which describes students who are still passive, lack the courage to ask questions, answer, and express opinions. After the implementation of *the Seesaw* application, there was a clear increase in the level of student activity. Posttest scores increased to a total of 2,933 with an average of 83.8. Students are seen to be more active, more enthusiastic, and more engaged in discussions, assignments, and learning interactions through *Seesaw*'s features. Learning becomes more engaging and encourages direct student engagement. Thus, the results of the *Paired Sample T-Test* showed that the t-count value of 58,718 was greater than the t-table of 2,032 and the significance of 0.000 < 0.05. This study shows that there is a significant difference between the scores before and after the implementation of *the Seesaw* application, so it can be concluded that the *Seesaw application* has succeeded in increasing the learning activity of grade VIII A students at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency. Based on the results of the study, it can be concluded that the implementation of the Seesaw application significantly increased the learning activity of grade VIII A students at SMP Muhammadiyah 3 Gunung Raja, as indicated by the increase in the average score from 56.66 to 83.8 and the Paired Sample T-Test results showing t-count (58.718) > t-table (2.032) with a significance of 0.000 < 0.05. This finding shows that the Seesaw application contributes positively to improving student learning activity through technology-based learning. Future research is recommended to examine the use of Seesaw in different subjects, educational levels, or with larger samples.

Based on the results of the study, it can be concluded that the implementation of the Seesaw application significantly increased the learning activity of grade VIII A students at SMP Muhammadiyah 3 Gunung Raja, as indicated by the increase in the average score from 56.66 to 83.8 and the Paired Sample T-Test results showing t-count (58.718) > t-table (2.032) with a significance of 0.000 < 0.05. This finding shows that the Seesaw application contributes positively to improving student learning activity through technology-based learning. Future research is recommended to examine the use of Seesaw in different subjects, educational levels, or with larger samples.

LIMITATIONS

This study has several limitations that should be considered when interpreting the results. First, the research used a pre-experimental design (One Group Pretest–Posttest Design) without a control group, so external factors outside the use of the Seesaw application may also have influenced the increase in students' learning activity. Second, the sample was limited to 35 students of class VIII A at SMP Muhammadiyah 3 Gunung Raja, Muara Enim Regency, which means the findings may not be fully generalizable to other classes, schools, or educational contexts. Third, the data were collected mainly through questionnaires using a Likert scale, which rely on students' self-reported responses and may contain subjective bias. In addition, the study focused only on learning activity and did not examine other learning outcomes such as academic achievement, motivation, or long-term learning impacts. Therefore, future research is recommended to involve larger and more diverse samples, include control groups, and examine broader learning variables to obtain more comprehensive results.

AUTHOR CONTRIBUTION

AE contributed to the conceptualization of the study, research design, data collection, data analysis, and drafting of the original manuscript. TH contributed to supervision of the research process, validation of the methodology, and critical review and editing of the manuscript. HUH contributed to the manuscript review and approved the final version of the manuscript. All authors

read and approved the final version of the manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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