

The Effect of Using WhatsApp Group and Google Classroom Platforms for Interests and Learning Outcomes of Fourth-Grade Students

Umroh, S.¹, Rismiyanto² & Ismaya, E. A.³

^{1,2,3}Teacher Training and Education Faculty, Muria Kudus University, Kudus, 59327 Central Java, INDONESIA

*Corresponding author: firdarossy@gmail.com

To Cite This Article: <https://doi.org/10.53797/icccmjssh.v3i1.5.2024>

Received 16 December 2023, Revised 30 December 2023, Accepted 13 January 2024, Available online 15 January 2024

Abstract: Society is deeply sad about the Coronavirus Disease (Covid-19) outbreak. The Indonesian government implements a learning-from-home policy, namely online learning. This research is a type of quantitative research, as for the sampling technique using a purposive sampling technique. This study's samples were Public Elementary School No. 1 Tridonorejo and Public Elementary School No. 3 Purworejo, Bonang District. The data collection methods in this study are questionnaires and tests. The final analysis test uses a regression, f-test, t-test, and coefficient of determination. This study aimed to determine the influence of the WhatsApp Group and Google Classroom learning platforms on the interests and learning outcomes of fourth-grade students of Public Elementary School in Bonang district, Demak Regency. The results showed a significant difference between learning using WhatsApp Group and Google Classroom on students' interest in learning on the Social Studies subject fourth-grade Public Elementary School in Bonang District, Demak Regency, was known to have a Sig. (2-tailed) value of $0.016 < 0.05$, it can be concluded that H_0 was rejected and H_a was accepted. This study suggests that teachers use innovative learning media such as WhatsApp Group and Google Classroom to increase student interest and learning outcomes.

Keywords: WhatsApp group, Google Classroom, student's interest and learning outcomes

1. Introduction

The Coronavirus disease (COVID-19) outbreak that has hit worldwide has resulted in rule changes. Therefore, various countries implement large-scale social distancing to reduce the transmission of the virus (Singh & Thurman, 2019). According to Hoi et al. (2021), online learning and working from home is one way to prevent the spread of Covid 19 because working and learning from home will reduce mobility and interaction with others.

The teachers choose the right learning media to improve student learning outcomes. In today's learning, teachers can take advantage of WhatsApp Group media. WhatsApp groups have pedagogical, social and technological benefits. This application provides support in the implementation of online learning (Susilo & Sofiarini, 2021). WhatsApp groups allow users to make specific announcements, share ideas and learning resources, and support online discussions.

Susilawati & Supriyatno (2020) state that using WhatsApp Messenger as an integrated mobile learning group investigation method is effectively applied in the learning process to improve students' critical thinking skills. The learning design includes starting, grouping, planning, presenting, organizing, investigating, evaluating, and ending. Overall, students are interested and motivated to follow learning using WhatsApp combined with investigation methods. Teachers can also take advantage of Google Classroom. Learning media. This app allows teachers to explore knowledge and education that students process (Suswandari & Purba, 2022).

Sustiningsih (2021) provide innovation for education, especially at the elementary school level, using the WhatsApp Group application media. This study was conducted to determine the effect of the WhatsApp Group application on student interest and learning outcomes in fourth-grade elementary school social studies subjects.

The comparison that will be used later is the Google Classroom application. Teachers and students use Google Classroom to measure student interest and learning outcomes during teaching and learning activities. With the use of Google Classroom media, it is hoped that there will be an increase in student interest and learning outcomes (Susilowati,

2021). The following is a frame-of-mind chart from this study about the effect of using the WhatsApp Group application and Google Classroom on student interest and learning outcomes.

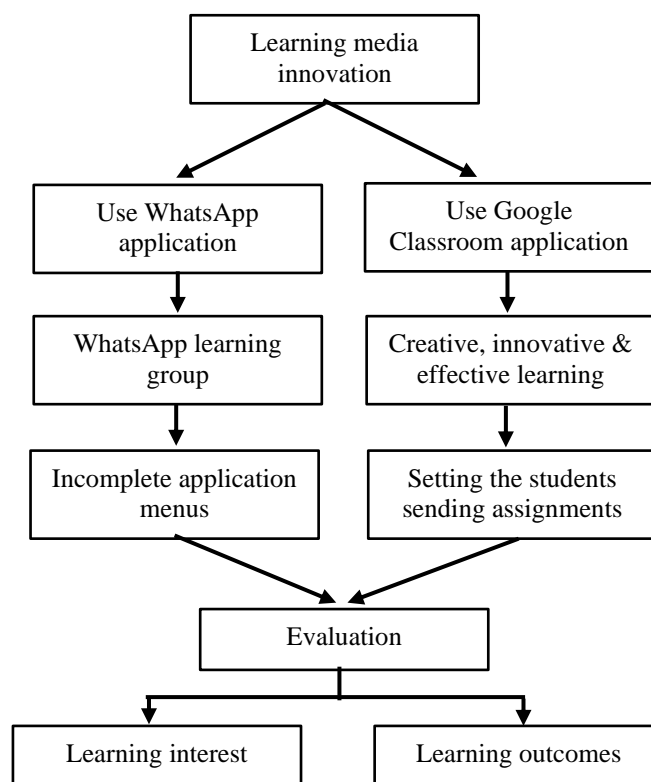


Fig. 1 - Conceptual framework.

Based on observations on fourth-grade students of Public Elementary School in Bonang District conducted on October 11, 2021, it was found that in learning Theme 4, subtheme 1, Various Jobs, some students still need help understanding the material. Learning outcome data shows the lowest score of 6:1 and the highest score of 86, with an average grade point average of 70.8. Students who achieve the Minimal Completeness Criteria (KKM) are 10 students or 50% of 20 students who achieve complete learning. This is because students need help understanding when doing online quizzes. After all, students need more understanding with parents about using information technology using the internet network. Students feel less guided by teachers because of a lack of teacher assistance or face-to-face guidance.

The research objective was to determine the effect of using the WhatsApp group and Google Classroom learning platforms on the interests and learning outcomes of the fourth-grade social studies students of Public Elementary Schools in Bonang.

2. Literature Review

The internet and technology, especially the WhatsApp application, are now permeating the realm of education. Education is inextricably linked to human existence (Castro et al., 2019). Education is an effort to enhance the potential of pupils by teaching, directing, and training them to develop themselves in order to continue their life (Murillo-Zamorano et al., 2019). At the moment, education and technology are inextricably linked. Technology is increasingly employed as a medium for learning. According to Agustian & Salsabila (2021), various applications are employed as mediators and learning medium, including Zoom, Google Classroom, Google Meetings, and WhatsApp.

WhatsApp is a popular tool for communicating remotely, and users may also build groups for friendship between communities in different locations. WhatsApp is a messaging software that is commonly used as a learning tool (Coleman & O'Connor, 2019). WhatsApp is a popular application for long-distance communication. Teachers and students in the world of education can create WhatsApp groups to communicate with one another (Rosenberg & Asterhan, 2018). WhatsApp is an extremely successful learning medium since it is easily available to anyone, and it also offers a variety of features that make it easy to send learning materials such as voice notes, videos, images, and documents. WhatsApp's use as a learning tool began with the outbreak of the deadly virus Covid-19 (Madge et al., 2019).

According to Qamar et al. (2019), the WhatsApp application can be used as a learning medium and to facilitate interaction between teachers and students because it has many features that allow students to access assignments and ask questions directly to the teacher or classmates. Darman (2020), conducted research on analytical studies on the usage of

WhatsApp in online learning of upper secondary students' moral creed. According to Rukmana & Inayah (2023), WhatsApp can be employed as a practical learning media in online learning.

Google Classroom is one of Google's features or services that allows teachers and students to interact and engage in online teaching and learning activities (Hussaini et al., 2020). The usage of Google Classroom makes it easier for teachers to manage to study and deliver knowledge to students in an appropriate and accurate manner (Ketut Sudarsana et al., 2019). Pratama et al. (2020) indicated that there is a substantial difference between online learning and traditional learning in the influence of online learning on the learning outcomes of primary school children.

3. Methodology

This type of research is experimental quantitative research in this study using experimental methods. This study was designed One-Shot Case Study. That is a design where a group is given treatment, and then the results are observed (Yin, 2003). This study aimed to investigate the relationship and causation between the experimental group given a treatment and the control group not given a treatment. The research design used a One-Shot Case Study.

The research design used was designed One-Shot Case Study. That is a design where a group is given treatment, and the results are observed in a non-equivalent pretest posttest control group design. Pretest and posttest were given to both the experiment and control groups. The following is the research design.

Table 1 - Research design.

Group	Threatment	Post-test
Experiment	X	Test
Control	Y	Test

Balding (2006) suggests that population is a generalization area consisting of objects/subjects with certain qualities and characteristics that researchers apply to study and then draw conclusions. The population studied was all fifth-grade elementary school students in the Gajah Mada Cluster, Bonang District, Demak Regency, comprising 6 public schools, and students totalled 132. The following is the number of the research population.

The sample is part of the number and characteristics possessed by the population (Buchstaller & Khattab, 2013). Sampling must truly represent the existing population; in other words, the sample must be representative. The sampling technique is sample selection is done using a purposive sampling technique. Klar & Leeper (2019) states that purposive sampling is a sampling technique for data sources using certain considerations.

Table 2 - Research samples.

No.	School	Samples	Application
1	Public Elementary School No. 1 Triodnorejo	20	WhatsApp Group
2	Public Elementary School No. 3 Purworejo	20	Google Classroom

The research variables consist of 2 (two), namely the independent variable and the dependent variable. Independent variables influence or cause changes or the emergence of the dependent (bound) variable (Rogers & Revesz, 2019). The independent variable is in the form of a WhatsApp group, and the dependent variable is Google Classroom.

The data collection method in this study is the test method. The test was carried out after the treatment was given to the experimental and control classes. Implementation of the test. The test was carried out twice, namely pre-test and post-test. The research instrument was a multiple-choice test with 25 questions. Data analysis techniques include instrument testing (validity test, reliability test, differential power test and item difficulty level test).

4. Results

The results of the pretest are used as data to measure the initial abilities of students' learning achievements, and the data from the posttest results are used to determine the final ability level of students after carrying out learning activities in terms of learning outcomes in the control class and the experimental class. The results of data analysis are show in Table 3.

Table 3 - Data description.

No.	Variable	Cronbach's Alpha	Description
1	Learning outcomes	0.926	Reliable
2	Interest	0.931	Reliable

Based on Table 3, there is an increase in learning outcomes in the control and experimental classes obtained from the difference in pretest and posttest scores. The increase in the average value of the experimental class was higher than the control class. This is because the experimental class uses the Google Classroom application.

The t-test determines the effect of each independent variable on the dependent (related) variable. Proof is done by comparing the calculated t value with the table t. The test criteria used are: a) If $t_{\text{count}} < t_{\text{table}}$, then the null hypothesis (H_0) is accepted, and b) If $t_{\text{count}} > t_{\text{table}}$, then the null hypothesis (H_0) is rejected.

In addition, the t-test can also be seen from the magnitude of the probability compared to 0.05 (Significance level $\alpha = 5\%$). Table 4 shows the independent sample t-test. The test criteria used: a) If the probability < 0.05 , then H_0 is rejected, and b) If the probability > 0.05 , then H_0 is accepted.

Table 4 - Descriptive data analysis.

Descriptives				
			Statistic	Std. Error
Learning interest & learning outcomes	Experiment	Mean	81.50	1.923
		95% Confidence Interval for Mean	Lower Bound	77.48
			Upper Bound	85.52
		5% Trimmed Mean	81.67	
		Median	80.00	
		Variance	73.947	
		Std. Deviation	8.599	
		Minimum	65	
		Maximum	95	
		Range	30	
		Interquartile Range	13	
		Skewness	-.381	.512
		Kurtosis	-.210	.992
	Control	Mean	75.25	1.559
		95% Confidence Interval for Mean	Lower Bound	71.99
			Upper Bound	78.51
		5% Trimmed Mean	75.28	
		Median	75.00	
		Variance	48.618	
		Std. Deviation	6.973	
		Minimum	60	
		Maximum	90	
		Range	30	
		Interquartile Range	9	
		Skewness	-.227	.512
		Kurtosis	.635	.992

Based on the output in Table 4 in the "Equal variances assumed" section, it is known that the value of Sig. (2-tailed) is $.026 < 0.05$, then as the basis for decision-making in the independent sample t-test, it can be concluded that H_0 is rejected and H_a is accepted. Thus, there is a significant (real) difference between the average learning outcomes of students in the experimental class and control classes.

Based on the output table "Independent Samples Test" in the "Equal variances assumed" section, it is known that the value of Sig. (2-tailed) is $.026 < .05$, then as the basis for decision-making in the independent sample t-test, it can be concluded that H_0 is rejected and H_a is accepted. Thus, there is a significant difference between the average interest in learning students before and after learning with WhatsApp Group media. This means WhatsApp Group influences students' learning interest in the fourth-grade Social Studies chapel at Public Elementary School No. 1 Tridonorejo, Bonang District.

This research was conducted at Public Elementary School No. 3 Purworejo, Bonang District. The results of the descriptive analysis showed that students' interest in learning was included in the medium category with a value of 31.50. The frequency distribution of student interest in learning is 3 people or 15% in the low category, as many as 6 people or 30% in the medium category, 11 students or 55% in the high category. The mean student interest in learning is 31.50, which is located in the medium category, and the frequency distribution is most in the high category with 55%.

This research was conducted at Public Elementary School No. 1 Tridonorejo, Bonang Demak, as a control class. The material used in this study is the material of Various Jobs. The control class was treated with WhatsApp Group

media. Student learning outcomes using WhatsApp Group show that the frequency distribution of students who get grades 85 – 100 there are 2 students or 10%; students who get grades 75 – 84 get 13 students or 65%; students who get grades at intervals 65 – 74 there are 5 students or 25%. The average learning outcome of the control class students was 75.25. Based on the output table "Independent Samples Test" in the "Equal variances assumed" section, it is known that the value of Sig. (2-tailed) is $0.026 < 0.05$, then as the basis for decision-making in the independent sample t-test, it can be concluded that H_0 is rejected and H_a is accepted. Thus, it can be concluded that there is a significant difference between the average student learning outcomes before and after learning with WhatsApp Group media. This means the WhatsApp Group influences student learning outcomes in the Grade 4 social studies chapel at Public Elementary School No. 1 Tridonorejo, Bonang District.

Table 5 - Independent sample t-test.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning interest	Equal variances assumed	2.771	.104	2.324	38	.026	3.100	1.334	.399	5.801
	Equal variances not assumed			2.324	32.276	.027	3.100	1.334	.384	5.816

5. Discussion

The learning using WhatsApp Group, at the initial stage, before the research is carried out, first observe the learning process, especially the material "Various Jobs". Based on initial observations, the social studies learning material "Various Jobs" was obtained through teacher-centred learning activities. In class, students only record what is explained by the teacher and written on the board, do student worksheet, and develop ideas in their minds in adjusting the existing problems; this results in lower student learning outcomes (Hasan & Anam, 2023). In addition, some students tend to be silent in class, and only a few are active in learning.

During online learning, teachers give assignments through WhatsApp Groups. Teachers prepare materials and assignments given to parents through WhatsApp groups. Here, students only do assignments from the teacher, without any interaction. At the same time, tasks are given through WhatsApp Group. Students' open assignments can be from student worksheet or assignments given through Groups. The use of WhatsApp Group in learning affects learning outcomes (Mawarni et al., 2020). The use of WhatsApp media can control student learning activities by utilizing videos sent via WhatsApp Group to improve students' interest and learning achievement.

Before the research, observe the learning process, especially the material "Various Jobs". Based on initial observations, data were obtained that social studies learning material "Various Jobs" learning activities centred on teachers. During online learning, students initially find it difficult before learning to use Google Classroom. However, after being applied in learning activities, most students become enthusiastic because experimental classes that use Google Classroom media emphasize students expressing ideas, expressing opinions, and exploring material on the internet to answer questions during the discussion process (Gon & Rawekar, 2017).

After the learning process is complete, the post-test or final test with student learning results on the material "Various Work" obtained the frequency of students who obtained scores of 85 – 100 there were 9 students or 45%, students who got scores 75 – 84 obtained 8 students or 40%, students who got grades at intervals of 65 – 74 there were 3 students or 15%. There were 17 students, including the complete category and 3 incomplete students.

Based on the post-test results obtained show that there is an increase in test results in the experimental class. This can be seen when the pre-test obtained an average value of 74.50 and the post-test results obtained 81.50. Based on the output table "Independent Samples Test" in the "Equal variances assumed" section, it is known that the value of Sig. (2-tailed) is $.000 < 0.05$, then as the basis for decision-making in the independent sample t-test, it can be concluded that H_0 is rejected and H_a is accepted. Thus, a significant (real) difference exists between the average student learning outcomes before and after learning with Google Classroom media. This means that Google Classroom influences student learning outcomes in the Grade 4 social studies chapel at Public Elementary School No. 3 Purworejo, Bonang District.

Using Google Classroom also improves students' problem-solving skills. This is reinforced by Baguma et al. (2019) in developing problem-solving skills so students can use today's rapidly growing technology, namely Google Classroom. Through learning with Google Classroom, students find it helpful to understand the learning material.

Based on the output table "Independent Samples Test" in the "Equal variances assumed" section, it is known that the value of Sig. (2-tailed) is $0.006 < 0.05$, then as the basis for decision-making in the independent sample t-test, it can be concluded that H_0 is rejected and H_a is accepted. Thus, there is a significant (real) difference between the average learning interest of students in the experimental class and control classes. The results showed that the use of Google Classroom, on average, has a learning interest superior to learning with WhatsApp Group.

Based on the output table "Independent Samples Test" in the "Equal variances assumed" section, it is known that the value of Sig. (2-tailed) is $0.016 < 0.05$, then as the basis for decision-making in the independent sample t-test, it can be concluded that H_0 is rejected and H_a is accepted. Thus, there is a significant (real) difference between the average learning outcomes of students in the experimental class and control classes.

6. Conclusion

The conclusion is that learning Google Classroom Application influences social studies learning outcomes in fourth-grade elementary school students in the Bonang District, Demak Regency. This platform can increase student interest in learning so that student learning outcomes also increase.

Acknowledgement

The authors would like to thank the fellow authors and organizations whose intellectual properties were utilized for this study.

Conflict of Interest

The authors declare no conflicts of interest.

References

- Agustian, N., & Salsabila, U. H. (2021). Peran teknologi pendidikan dalam pembelajaran. *Islamika*, 3(1), 123-133. <https://doi.org/10.36088/islamika.v3i1.1047>
- Baguma, R., Bagarukayo, E., Namubiru, P., Brown, C., & Mayisela, T. (2019). Using WhatsApp in Teaching to Develop Higher Order Thinking Skills--A Literature Review Using the Activity Theory Lens. *International Journal of Education and Development Using Information and Communication Technology*, 15(2), 98-116. Scribbr. <https://eric.ed.gov/?id=EJ1220764>
- Balding, D. J. (2006). A tutorial on statistical methods for population association studies. *Nature reviews genetics*, 7(10), 781-791. <https://doi.org/10.1038/nrg1916>
- Buchstaller, I., & Khattab, G. (2013). Population samples. *Research methods in linguistics*, 74-95.
- Castro, R. (2019). Blended learning in higher education: Trends and capabilities. *Education and Information Technologies*, 24(4), 2523-2546. <https://doi.org/10.1007/s10639-019-09886-3>
- Coleman, E., & O'connor, E. (2019). The role of WhatsApp® in medical education; a scoping review and instructional design model. *BMC medical education*, 19, 1-13. <https://doi.org/10.1186/s12909-019-1706-8>
- Darman, F. D. (2020). The usability of whatsapp messenger as online teaching-learning media. *Journal of Information Technology and Its Utilization*, 3(2), 48-52.
- Gon, S., & Rawekar, A. (2017). Effectivity of e-learning through WhatsApp as a teaching learning tool. *MVP Journal of Medical Sciences*, 19-25. <https://doi.org/10.18311/mvpjms.v4i1.8454>
- Hasan, K., & Anam, R. S. (2023). The Influence of Using WhatsApp Media on Motivation and Science Learning Outcomes during Online Learning. *Edumaspul: Jurnal Pendidikan*, 7(1), 1963-1971. <https://doi.org/10.33487/edumaspul.v7i1.5958>
- Hoi, S. C., Sahoo, D., Lu, J., & Zhao, P. (2021). Online learning: A comprehensive survey. *Neurocomputing*, 459, 249-289. <https://doi.org/10.1016/j.neucom.2021.04.112>
- Hussaini, I., Ibrahim, S., Wali, B., Libata, I., & Musa, U. (2020). Effectiveness of Google classroom as a digital tool in teaching and learning: Students' perceptions. *International Journal of Research and Innovation in Social Science (IJRISS)*, 4(4), 51-54.

- Ketut Sudarsana, I., Bagus Made Anggara Putra, I., Nyoman Temon Astawa, I., & Wayan Lali Yogantara, I. (2019, March). The use of Google classroom in the learning process. In *Journal of Physics: Conference Series* (Vol. 1175, p. 012165). IOP Publishing. <https://doi.org/10.1088/1742-6596/1175/1/012165>
- Klar, S., & Leeper, T. J. (2019). Identities and intersectionality: a case for Purposive sampling in Survey-Experimental research. *Experimental methods in survey research: Techniques that combine random sampling with random assignment*, 419-433. <https://doi.org/10.1002/9781119083771.ch21>
- Madge, C., Breines, M. R., Dalu, M. T. B., Gunter, A., Mittelmeier, J., Prinsloo, P., & Raghuram, P. (2019). WhatsApp use among African international distance education (IDE) students: transferring, translating and transforming educational experiences. *Learning, Media and Technology*, 44(3), 267-282. <https://doi.org/10.1080/17439884.2019.1628048>
- Mawarni, I. T. A., Ratnasari, N., Handayani, A. N., Muladi, M., Wibowo, E. P. A., & Untari, R. S. (2020, September). Effectiveness of whatsapp in improving student learning interests during the covid-19 pandemic. In *2020 4th International Conference on Vocational Education and Training (ICOVET)* (pp. 248-252). IEEE. <https://doi.org/10.1109/ICOVET50258.2020.9230031>
- Murillo-Zamorano, L. R., Sánchez, J. Á. L., & Godoy-Caballero, A. L. (2019). How the flipped classroom affects knowledge, skills, and engagement in higher education: Effects on students' satisfaction. *Computers & Education*, 141, 103608. <https://doi.org/10.1016/j.compedu.2019.103608>
- Pratama, H., Azman, M. N. A., Kassymova, G. K., & Duisenbayeva, S. S. (2020). The Trend in using online meeting applications for learning during the period of pandemic COVID-19: A literature review. *Journal of Innovation in Educational and Cultural Research*, 1(2), 58-68. <https://doi.org/10.46843/jiecr.v1i2.15>
- Qamar, K., Riyadi, S., & Wulandari, T. C. (2019). Utilization of whatsapp application as discussion media in blended learning. *Journal of Education and Learning (EduLearn)*, 13(3), 370-378. <https://doi.org/10.11591/edulearn.v13i3.8412>
- Rogers, J., & Revesz, A. (2019). Experimental and quasi-experimental designs. In *The Routledge handbook of research methods in applied linguistics* (pp. 133-143). Routledge.
- Rosenberg, H., & Asterhan, C. S. (2018). "WhatsApp, teacher?"-student perspectives on teacher-student WhatsApp interactions in secondary schools. *Journal of Information Technology Education: Research*, 17, 205-226. <https://doi.org/10.28945/4081>
- Rukmana, A. H., & Inayah, R. (2023). The Analyzing Of Whatsapp Application As One Of The Learning And Information Medias In Educational Context. *Project (Professional Journal of English Education)*, 6(6), 1095-1099. Scribbr. <https://www.journal.ikipsiliwangi.ac.id/index.php/project/article/view/8493>
- Singh, V., & Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). *American Journal of Distance Education*, 33(4), 289-306. <https://doi.org/10.1080/08923647.2019.1663082>
- Susilowati, E. (2021). Comparison of WhatsApp and Google Classroom Group Online Learning Models to Student Learning Outcomes. *Journal of Medives: Journal of Mathematics Education IKIP Veteran Semarang*, 5(1), 61-73. <https://doi.org/10.31331/medivesveteran.v5i1.1436>
- Susilawati, S., & Supriyatno, T. (2020). Online learning through WhatsApp group in improving learning motivation in the era and post pandemic COVID-19. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, 5(6), 852-859. Scribbr. <https://edunesia.org/index.php/edu/article/view/139>
- Susilo, A., & Sofiarini, A. (2021). Use of WhatsApp group as learning media in higher education during the COVID-19 pandemic. *Edunesia: Jurnal Ilmiah Pendidikan*, 2(2), 400-410. Scribbr. <http://repository.uin-malang.ac.id/6923/>
- Suswandari, M., & Purba, Y. O. (2022). The Effectiveness of Online Learning through WhatsApp Groups. *AL-ISHLAH: Jurnal Pendidikan*, 14(4), 6275-6284. <https://doi.org/10.35445/alishlah.v14i4.1478>
- Sustningsih, M. (2021). Efektivitas Google Classroom Terhadap Hasil Belajar Tematik Siswa SD. *JIRA: Jurnal Inovasi dan Riset Akademik*, 2(8), 1251-1258.
- Yin, R. K. (2003). Designing case studies. *Qualitative research methods*, 5(14), 359-386.