

Differentiated Learning Approach of Students' Independent Curriculum on Understanding Islamic Integrated Science Concepts

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ARTICLE INFO	ABSTRACT
Keywords: Differentiated Learning Approach; Independent Curriculum; Quasi-Experiment; Islamic Integrated Science Concept	Differentiated Learning was known in this era especially for independent curriculum. This study analyze the effectiveness of differentiated learning on the understanding of integrated science interpretation courses among students. The focus of the research is on learning activities that involve two different treatments: (1) learning with challenging tasks and projects, and (2) conventional learning based on PowerPoint presentations from lecturers. The method used is quantitative with quasi experiment design. This study involved two classes of students who were given different treatments. The first class is given assignments and challenging projects that require critical thinking and creativity, while the second class follows conventional learning methods by relying on material presentations from lecturers. Data were collected through pre-test and post-test students' conceptual understanding. The results of the study show that classes given assignments and challenging projects have a better understanding of concepts compared to classes that only use conventional learning methods. It can be seen from the data result that acquired 0.00 of Significance level. Therefore, it is recommended that lecturers consider the application of this learning method to improve the quality of education in higher education.
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INTRODUCTION

The development of technology accompanied by the demands of the times, the quality of effective and efficient education is needed for the realization of advanced human resources and in order to overcome the current educational problems, we must teach

students according to the times^{1 2}. The curriculum as a reference or guideline in carrying out learning is an important thing that is being discussed today. Currently, what is used is the independent curriculum³ where there is a learning approach launched by the government which we know as the differentiated learning approach⁴. The learning approach in question is to adjust to the concept of independent learning which has not been fully implemented in the classroom which is a teaching and learning strategy where children can learn according to their abilities, what they like and how they learn can determine for themselves, so that this condition is very suitable for the current era⁵.

The term differentiation is familiar in the world of education, especially in the current independent curriculum. Differentiated learning can be interpreted as a teaching and learning process by introducing and exploring the talents and interests of students or students⁶. So an educator or teacher teaches by recognizing what the potential, talents, interests and learning styles of students are. It can be said that a teacher is a facilitator for meeting student needs⁷. Each student must have different characteristics, so teachers cannot give the same treatment. However, this learning is not intended to be individualized, but rather to learning that can later accommodate the strengths and learning needs of students with independent learning strategies.

There has not been much research related to differentiated learning, but there are several related to science learning, namely based on the results of research⁸ and showing the success of how differentiated learning is applied to students using the flexibility of choosing a learning model, and what is used is project-based and produces four indicators⁹. The first

¹ Alvira Oktavia Safitri, Vioreza Dwi Yunianti, and Deti Rostika, "Upaya Peningkatan Pendidikan Berkualitas Di Indonesia: Analisis Pencapaian Sustainable Development Goals (SDGs)," *Jurnal Basicedu* 6, no. 4 (2022): 7096–7106.

² Apriyani Apriyani, "Nilai-Nilai Pendidikan Karakter Pada Tokoh Islam Ali Bin Abi Thalib Dan Relevansinya Di Era Kontemporer," *Indonesian Journal of Character Education Research* 1, no. 1 (2023): 34–47.

³ Evy Ramadina, "Peran Kepala Sekolah Dalam Pengembangan Kurikulum Merdeka Belajar," *Mozqic: Islam Nusantara* 7, no. 2 (2021): 131–42.

⁴ Vidia Pandji Yudha and Heni Puji Astuti, "Pemahaman Kurikulum Merdeka Belajar Melalui Pelatihan Mandiri Pelatform Merdeka Mengajar," *Pendas: Jurnal Ilmiah Pendidikan Dasar* 9, no. 1 (2024): 1512–20.

⁵ Nurhayani Siregar, Rafidatun Sahirah, and Arsikal Amsal Harahap, "Konsep Kampus Merdeka Belajar Di Era Revolusi Industri 4.0," *Fitrah: Journal of Islamic Education* 1, no. 1 (2020): 141–57.

⁶ Deni Rohendi, "Pembelajaran Berdiferensiasi Kurikulum Merdeka Bersama Quizizz. Refo Indonesia," 2022.

⁷ Ayu Sri Wahyuni, "Literature Review: Pendekatan Berdiferensiasi Dalam Pembelajaran Ipa," *Jurnal Pendidikan Mipa* 12, no. 2 (2022): 118–26.

⁸ Fine Reffiane, Winarto Winarto, and Santiani Santiani, "Analisis Pembelajaran Berdiferensiasi Proses Kemampuan Literasi Sainstek Mahasiswa Pada Kegiatan Kurikulum Merdeka Belajar Kampus Merdeka," *Sekolah Dasar: Kajian Teori Dan Praktik Pendidikan* 33, no. 1 (2024): 40–48.

⁹ Isma Atikah, Muhammad Ali Rifan Fauzi, and Ridlo Firmansyah, "Penerapan Strategi Diferensiasi Konten Dan Proses Pada Gaya Belajar Berbasis Model Problem Based Learning," *Pubmedia Jurnal Penelitian Tindakan Kelas Indonesia* 1, no. 2 (2024): 11–11.

indicator is the ability of lecturers to modify materials, assignments and projects, the use of technology, and continuous feedback. As much as 85% was obtained that with the application of differentiation, lecturers were able to modify the material in a variety of ways, ranging from text, video, and interactive learning. Furthermore, with the specialization of assignments given to students, it is also able to make assignments challenging things to do, and the use of technology also increases the percentage of positive student responses in terms of assignments because in it there are choices according to the abilities of each student¹⁰.

The emergence of the use of technology in the current era has a great influence on the future of children, especially when included in learning activities. When learning takes place conventionally, the average child tends to feel bored¹¹. When studying knowledge and demanding children's participation, the teacher-centered paradigm is less effective, especially in the current independent curriculum, where learning is student-centered and uses differentiated learning¹². Therefore, teachers must have creativity in using media that involve students or in this case for students. Media can be visual, auditory, audiovisual is the main category of learning media¹³.

There are several advantages of using technology in learning, including; The first is the combination of auditory and visual elements that students can directly learn the use of two senses at the same time, namely sight and hearing. Second, students see real actions related to subject matter through technology¹⁴. Third, students become motivated to learn. Fourth, students can understand the subject matter more quickly. Fifth, through technology-based learning that is presented in accordance with the children's world, it gives students the impression that they are using technology while understanding the material being studied¹⁵.

¹⁰ Aenullael Mukarromah and Meyyana Andriana, "Peranan Guru Dalam Mengembangkan Media Pembelajaran," *Journal of Science and Education Research* 1, no. 1 (2022): 43–50.

¹¹ N. Hidayat, "Urgensi Pendidikan Islam Di Era Revolusi Industri 4.0," *Jurnal Saliba* 2, no. 2 (2019): 0–15.

¹² Ellyzabeth Sukmawati et al., *Digitalisasi Sebagai Pengembangan Model Pembelajaran* (Cendikia Mulia Mandiri, 2022).

¹³ Aprista Ristyawati and Retno Saraswati, "An Effort of Political Party Simplification for the Effective Government Realization," in *IOP Conference Series: Earth and Environmental Science*, vol. 175 (IOP Publishing, 2018), 012170, <https://iopscience.iop.org/article/10.1088/1755-1315/175/1/012170/meta>.

¹⁴ Putra Maha Surya and Anis Muhammad Rizal, "Digitalisasi Pembelajaran Berbasis 3D Augmented Reality Genset 2000 kVA Dan Audio Visual Untuk Menunjang Pembelajaran Praktik Di Prodi Teknologi Bandar Udara," *Airman: Jurnal Teknik Dan Keselamatan Transportasi* 5, no. 2 (2022): 78–86.

¹⁵ Aprizal Lukman, Dwi Kurnia Hayati, and Nasrul Hakim, "Pengembangan Video Animasi Berbasis Kearifan Lokal Pada Pembelajaran Ipa Kelas v Di Sekolah Dasar," *Elementary: Jurnal Ilmiah Pendidikan Dasar* 5, no. 2 (2019): 153–66.

Researchers found that so far they still often use the lecture method or still apply the old paradigm in teaching, which is still conventional.

In this day and age, teaching students must be in accordance with the times, namely through the digitization of learning that is adjusted to a differentiated learning approach. Especially if what is taught is declarative, historical, eventual, chronological and so on or it can be said that there are a lot of memorizations, then it would be good to use the help of digital-based learning media that can contain content that is in accordance with the learning material. The learning material raised is the material on the stages of the development of science history starting from the ancient stone age, the era of the ratio mindset, the medieval era, the age of the induction mindset to the era of modern science and later the contemporary era that exists to this day. In this case, there is material on integration with Islam, namely in one of the stages of the development of the history of science in the Middle Ages, there are several special materials for Muslim scientific figures in the world, namely in the scope of medicine, there is Ibnu Sina and others¹⁶.

The novelty in this study is of course the differentiated learning approach which contains aspects of the use of technology, namely the digitization of learning which was previously still taught conventionally. With the use of technology in the form of challenging assignments related to digitalization, it can increase students' understanding of the material being studied, in which there are many materials on the history of science and its development to date. So that the purpose of this research will be to obtain data from quantitative analysis of the results of understanding the concepts of two classes, one of which is applied a differentiated learning approach with the use of technology in the form of digitalization and the other class is still using the old paradigm, which is only using power points from lecturers.

RESEARCH METHOD

The research approach used was quantitative research, that was by process data in the form of numbers that have been obtained from the results research. The use of quantitative research in its application is more is systematic and effective, because the data used in the study quantitative can be accounted for its accuracy based on calculation with test results in the form of definite numbers¹⁷. In the implementation of the research, the type of research

¹⁶ Ivayuni Listiani, "Optimalisasi Pembelajaran Berdiferensiasi Menggunakan Brain Based Learning," *Journal of Geography Education* 3, no. 2 (2022), <https://jurnal.unsil.ac.id/index.php/geoduction/article/view/6217>.

¹⁷ Sugiyono, "Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif Dan R&D," 2013.

used is a quasi-experimental research. Quasi experimental research aims to determine the effectiveness of the implementation of the differentiated learning approach to Understanding the concept of integrated science with Islam. The results in this experimental quantitative research will be presented in the form of easy sentences, language, and explanations understood to explain a phenomenon that occurs by collect data in detail and detail. The research design of experiments in this study are as follows:

Table 1. Experiment Research Design¹⁸

Experiment	<i>O</i>	<i>X₁</i>	<i>O</i>
Class	<i>Pre-test</i>	<i>Treatment</i>	<i>Post-test</i>
Control Class	<i>O</i>		<i>O</i>
	<i>Pre-test</i>		<i>Post-test</i>

The location of research in Institute of state islamic religion Ponorogo with the population of students in Grade of 2022, there were three classes. The sample that used were two classes to be a class an experiment (31 students) and control class (30 students). Research instrument that used was test of conceptual understanding about subject of islamic integrated science concept. And the analysis data using normality test, homogeneity test, and the paired sample t-test was a test of two paired samples.

Paired samples were the same subjects, but underwent different treatments. This differential test model is used to analyze the before and after research model. Paired sample t-test is one of the testing methods used to assess the effectiveness of treatment, characterized by a difference in the average before and after the treatment. The basic assumption of using this test is that the observation or research for each pair must be under the same conditions. The mean difference should be normally distributed. The variants of each variable may or may not be the same. The test was carried out using a significant 0.05 ($\alpha=5\%$) between the independent variable and the dependent variable. The basis for making a decision to accept or reject H_0 in this test is as follows. 1. If the significant value > 0.05 , then H_0 is accepted or H_a is rejected (the difference in performance is not significant). 2. If the significant value < 0.05 then H_0 is rejected or H_a is accepted (significant performance difference).

¹⁸ M. Syahrin Effendi, "Desain Eksperimental Dalam Penelitian Pendidikan," *Jurnal Perspektif Pendidikan* 6, no. 1 (2013): 87–102.

RESULT AND DISCUSSION

Effectivity Test of Differentiated Learning Implementation

After obtaining the results of the concept comprehension test, several tests were carried out to determine the significance of the difference between the two classes that applied a differentiated learning approach to classes that only used lecturer power points. Furthermore, the analysis used the Kolmogorov Smirnov normality test. This analysis aims to find out the difference in the overall score of the student concept comprehension test results and to find out whether the student's score is normally distributed or not. The results of the normality test using the IBM SPSS 20 application are as follows.

Table 2. One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test	
Kolmogorov-Smirnov Z	.792
Asymp. Sig. (2-tailed)	.558
a. Test distribution is Normal.	

The results of the SPSS 20 normality test in table 2 obtained a result of a significance level of 0.558. which can be said that the normality test has data that is normally distributed.

The next effectiveness test is the homogeneity test, this test is used to find out that the data that has been obtained has the same or homogeneous character. This test uses SPSS software in analyzing previously obtained data. The homogeneity test was carried out using the levene test, where it was known that if the significance > 0.05 , the data could be said to be homogeneous. The following is Table 3, the homogeneity test that has been obtained as follows.

Table 3. Homogeneity Test

Test of Homogeneity of Variances			
VAR00001			
Levene Statistic	df1	df2	Sig.
1.318	1	57	.256

Based on the data that has been obtained from the analysis of the SPSS software, the result is a significance value with a value of 0.256, which can be concluded to be homogeneous or identically distributed. Furthermore, the paired t-test was carried out by involving the control class and the experimental class. The method used in the t-test was carried out by involving posttest results data in the experimental and control classes. The following are the average results of the posttest as shown in the following table.

Tabel 4. Average of Posttest

Class	Experiment	Control
Average	61,24	52,17

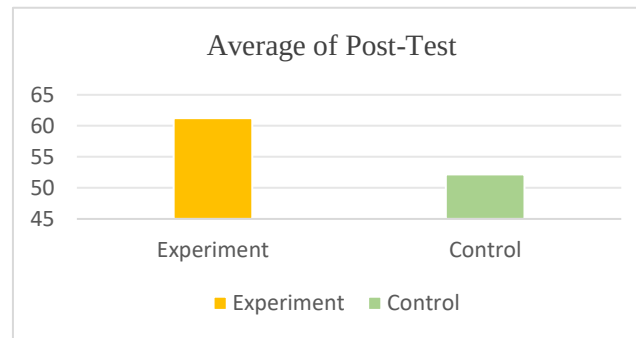


Figure 1. Diagram of average of posttest

After obtaining homogeneity data, the next is to analyze the data from the research, the test to be carried out is a hypothesis test. That is to use a paired sample t-test with the aim of finding out whether or not there is a difference in improvement in the experimental class and the control class. Based on the paired sample t-test that has been carried out using SPSS 20, the results are obtained as in the following table.

Table 5. Paired Sample T-test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 VAR00001 - VAR00002	5.49831E1	18.84487	2.45339	50.07205	59.89405	22.411	58	.000

The test results using SPSS 20 obtained a significance of 0.00 where the value < 0.05 . So it can be seen that H_0 is rejected, which means that there is a difference in the average results of students' understanding of concepts after implementing a differentiated learning approach.

Discussion

Based on the data from the research results, the comparison of posttest scores and t-test results can be said to be the experimental class that uses a differentiated learning approach has a higher value and there is a significance of both the posttest results of the experimental and control classes. This indicates that the assignment that challenges students and the use of technology starting from the differentiation process carried out from the observation stage, taking action to reflecting in improving students' understanding of concepts is one of the solutions that can be offered¹⁹. Students tend to have an interest in learning materials that are packaged in a simple, concrete, and relationship with audio-visual technology, in this case they are challenged to use plotagon applications in completing their challenging tasks. The involvement of audio visual technology in the application can increase students' interest in learning activities.

In addition, with the existence of animation videos, it will be able to make it easier for students to learn independently, they can learn anywhere and anytime because every student must have an android device/device/cellphone, if somewhere or at any time you want to learn, just open the link on the Youtube channel and there will be animation-based videos containing science history materials provided in series, starting from the stages of the development of science history from the ancient stone age to the age of now²⁰. Likewise with examples of Muslim scientific figures and Islamic concepts and what has been discovered²¹. The following is an example of the results of challenging assignments according to the request of student groups in the use of technology, animated video products using plotagon software are obtained as shown below.

¹⁹ Jon Helmi, "Kompetensi Profesionalisme Guru," *Al-Isblab: Jurnal Pendidikan* 7, no. 2 (2015): 318–36.

²⁰ Ali Fahroni, "PERAN INOVATIF GURU SERTA PENTINGNYA TEKNOLOGI INFORMASI DALAM INOVASI PENDIDIKAN," 2022, <https://osf.io/3tqkp/download>.

²¹ Khairun Nisa, Nesya Amanda, and Reksa Adya Pribadi, "Kolaborasi Pendidik Dan Peserta Didik Dalam Mewujudkan Digitalisasi Dan Penguasaan Teknologi Pada Pembelajaran Abad 21," *Jurnal Basicedu* 7, no. 3 (2023): 1433–45.



Figure 2. One of product of students

According to Hapsari, the appropriateness of the use of learning media in education is very necessary to support the effective and efficient delivery of learning materials to students²². Moreover, learning related to history in which there is a lot of discussion about chronology, an event, many scientific figures with their theories that must be understood carefully, it would be good to have switched from traditional media (which was initially with the media of books, journals, print-based) to digital learning media in accordance with the current progress and concept of independent learning. With the implementation of this differentiated learning, including the use of digital-based media of creative animation content, it is hoped that students can easily learn learning materials and can increase motivation and inspiration to penetrate into the world of entrepreneurship by creating creative content²³. Efforts that can be made to improve the quality of education, especially in history and philosophy of science courses, in which there is also integration with the concept of Islam in the environment of the Tadris Natural Sciences study program, Faculty of Tarbiyah and Teacher Training, namely by developing differentiated learning by using challenging tasks according to the times that students like, namely digitalization. The development of technology accompanied by the demands of the times, the quality of effective and efficient education is needed for the realization of advanced human resources.

²² Gita Permata Puspita Hapsari and Zulherman Zulherman, "Pengembangan Media Video Animasi Berbasis Aplikasi Canva Untuk Meningkatkan Motivasi Dan Prestasi Belajar Siswa," *Jurnal Basicedu* 5, no. 4 (2021): 2384–94.

²³ Fabiana Dini Prawingga Nesri and Yosep Dwi Kristanto, "Pengembangan Modul Ajar Berbantuan Teknologi Untuk Mengembangkan Kecakapan Abad 21 Siswa," *AKSIOMA: Jurnal Program Studi Pendidikan Matematika* 9, no. 3 (2020): 480–92.

CONCLUSION

The differentiated learning approach with challenging assignments and the use of applied technology is considered effective in increasing students' understanding of concepts related to the concept of science that is integrated with Islam, namely the world's Muslim scientific figures and how their role is to the development of science or science itself and shows a significant improvement. The results of the one-paired tailed test with a p-value of $0.00 < 0.05$ indicate that there is a significant difference in the acquisition of values between the control class and the experimental class. The one-tailed t-test showed that the increase in the value in the experimental class was better than that of the control class with a p-value of 0.000 at a significance level of $\alpha = 0.05$.

REFERENCES

- Apriyani, Apriyani. "Nilai-Nilai Pendidikan Karakter Pada Tokoh Islam Ali Bin Abi Thalib Dan Relevansinya Di Era Kontemporer." *Indonesian Journal of Character Education Research* 1, no. 1 (2023): 34–47.
- Atikah, Isma, Muhammad Ali Rifan Fauzi, and Ridlo Firmansyah. "Penerapan Strategi Diferensiasi Konten Dan Proses Pada Gaya Belajar Berbasis Model Problem Based Learning." *Pubmedia Jurnal Penelitian Tindakan Kelas Indonesia* 1, no. 2 (2024): 11–11.
- Effendi, M. Syahrin. "Desain Eksperimental Dalam Penelitian Pendidikan." *Jurnal Perspektif Pendidikan* 6, no. 1 (2013): 87–102.
- Fahrni, Ali. "Peran Inovatif Guru Serta Pentingnya Teknologi Informasi Dalam Inovasi Pendidikan," 2022. <https://osf.io/3tqkp/download>.
- Hapsari, Gita Permata Puspita, and Zulherman Zulherman. "Pengembangan Media Video Animasi Berbasis Aplikasi Canva Untuk Meningkatkan Motivasi Dan Prestasi Belajar Siswa." *Jurnal Basicedu* 5, no. 4 (2021): 2384–94.
- Helmi, Jon. "Kompetensi Profesionalisme Guru." *Al-Isblah: Jurnal Pendidikan* 7, no. 2 (2015): 318–36.
- Hidayat, N. "Urgensi Pendidikan Islam Di Era Revolusi Industri 4.0." *Jurnal Saliba* 2, no. 2 (2019): 0–15.
- Listiani, Ivayuni. "Optimalisasi Pembelajaran Berdiferensiasi Menggunakan Brain Based Learning." *Journal of Geography Education* 3, no. 2 (2022). <https://jurnal.unsil.ac.id/index.php/geoduction/article/view/6217>.
- Lukman, Aprizal, Dwi Kurnia Hayati, and Nasrul Hakim. "Pengembangan Video Animasi Berbasis Kearifan Lokal Pada Pembelajaran Ipa Kelas v Di Sekolah Dasar." *Elementary: Jurnal Ilmiah Pendidikan Dasar* 5, no. 2 (2019): 153–66.
- Mukarromah, Aenullael, and Meyyana Andriana. "Peranan Guru Dalam Mengembangkan Media Pembelajaran." *Journal of Science and Education Research* 1, no. 1 (2022): 43–50.
- Nesri, Fabiana Dini Prawingga, and Yosep Dwi Kristanto. "Pengembangan Modul Ajar Berbantuan Teknologi Untuk Mengembangkan Kecakapan Abad 21 Siswa." *AKSIOMA: Jurnal Program Studi Pendidikan Matematika* 9, no. 3 (2020): 480–92.
- Nisa, Khairun, Nesya Amanda, and Reksa Adya Pribadi. "Kolaborasi Pendidik Dan Peserta Didik Dalam Mewujudkan Digitalisasi Dan Penguasaan Teknologi Pada Pembelajaran Abad 21." *Jurnal Basicedu* 7, no. 3 (2023): 1433–45.
- Ramadina, Evy. "Peran Kepala Sekolah Dalam Pengembangan Kurikulum Merdeka Belajar." *Mozaiic: Islam Nusantara* 7, no. 2 (2021): 131–42.
- Reffiane, Fine, Winarto Winarto, and Santiani Santiani. "Analisis Pembelajaran Berdiferensiasi Proses Kemampuan Literasi Sainstek Mahasiswa Pada Kegiatan Kurikulum Merdeka Belajar Kampus Merdeka." *Sekolah Dasar: Kajian Teori Dan Praktik Pendidikan* 33, no. 1 (2024): 40–48.

- Ristyawati, Aprista, and Retno Saraswati. "An Effort of Political Party Simplification for the Effective Government Realization." In *IOP Conference Series: Earth and Environmental Science*, 175:012170. IOP Publishing, 2018. <https://iopscience.iop.org/article/10.1088/1755-1315/175/1/012170/meta>.
- Rohendi, Deni. "Pembelajaran Berdiferensiasi Kurikulum Merdeka Bersama Quizizz. Refo Indonesia," 2022.
- Safitri, Alvira Oktavia, Vioresa Dwi Yunianti, and Deti Rostika. "Upaya Peningkatan Pendidikan Berkualitas Di Indonesia: Analisis Pencapaian Sustainable Development Goals (SDGs)." *Jurnal Basicedu* 6, no. 4 (2022): 7096–7106.
- Siregar, Nurhayani, Rafidatun Sahirah, and Arsikal Amsal Harahap. "Konsep Kampus Merdeka Belajar Di Era Revolusi Industri 4.0." *Fitrah: Journal of Islamic Education* 1, no. 1 (2020): 141–57.
- Sugiyono, Dr. "Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif Dan R&D," 2013.
- Sukmawati, Ellyzabeth, S. ST, M. Keb, Heri Fitriadi, Yudha Pradana, M. Pd Dumiyati, S. Pd Arifin, M. Sahib Saleh, Hastin Trustisari, and Pradika Adi Wijayanto. *Digitalisasi Sebagai Pengembangan Model Pembelajaran*. Cendikia Mulia Mandiri, 2022.
- Surya, Putra Maha, and Anis Muhammad Rizal. "Digitalisasi Pembelajaran Berbasis 3D Augmented Reality Genset 2000 kVA Dan Audio Visual Untuk Menunjang Pembelajaran Praktik Di Prodi Teknologi Bandar Udara." *Airman: Jurnal Teknik Dan Keselamatan Transportasi* 5, no. 2 (2022): 78–86.
- Wahyuni, Ayu Sri. "Literature Review: Pendekatan Berdiferensiasi Dalam Pembelajaran Ipa." *Jurnal Pendidikan Mipa* 12, no. 2 (2022): 118–26.
- Yudha, Vidia Pandji, and Heni Puji Astuti. "Pemahaman Kurikulum Merdeka Belajar Melalui Pelatihan Mandiri Pelatform Merdeka Mengajar." *Pendas: Jurnal Ilmiah Pendidikan Dasar* 9, no. 1 (2024): 1512–20.