



## Evaluation of the Impact of Primary School Teachers' Self-Training Program on the Merdeka Teaching Platform

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### **Abstract**

The purpose of this study is to see the impact of the elementary school teacher self-training program on the teaching independence platform seen from the Behavior dimension and the outcome dimension. The research methodology uses quantitative with comparative statistics. The evaluation model used is the Kirck Patrick evaluation model which includes 4 levels of evaluation, namely reaction, learning, behavior, and result levels. However, in this study only focused on levels 3 and 4 because they wanted to see the impact of teacher self-training and the results felt directly by schools. the research sample was 30 elementary school teachers. Data collection used questionnaires. The results of the research at the behavior level there is a significant difference in the average score after teacher self-training. The group of teachers who participated in the training program had a greater average than the teachers who did not participate in the training program. In addition, a positive impact also occurs at the result level in the form of an impact felt directly by the school where teaching is the quality of digitization-based learning and adapting to 21st century needs.

**Keywords:** *Impact Evaluation; Teacher Self-Training; Teaching Platform*

### **Introduction**

The development of industry 4.0 has made science undergo a rapid transformation in all fields including education (Iskandar, 2022). Digitalization of education is the potential for optimal learning that can be done through the curriculum. The government developed a policy by making changes to the curriculum, namely by launching an independent curriculum (Maison et al., 2021). A curriculum that focuses on student needs and provides opportunities for students to develop their talents and interests (Magdalena et al., 2023). The independent curriculum also gives teachers the freedom to determine their own teaching tools according to the conditions of their students (Fadhli, 2017). In implementing an independent curriculum, it must be supported by providing training for teachers, providing learning resources and innovative teaching tools (Nugraha, 2022).

The merdeka Mengajar platform provides equal opportunities for all teachers in Indonesia to be able to learn and improve their competencies whenever and wherever they are (Ambrosino & Rivera, 2020; El Firdoussi et al., 2020; Stadlinger et al., 2021), because the learning features in the merdeka

Mengajar platform provide various self-training facilities to obtain various quality training materials (Harto & Misbah, 2021). With these learning features, it is hoped that teachers can develop the quality of their competence in carrying out learning. PMM is presented in the form of web-based and android-based, so that users can access it via smartphone or computer (Kurniawan, 2019).

The current problem is that teacher competence in Indonesia is still low so that it has not been able to produce quality human resources (Akbar & Noviani, 2019). This situation causes a learning crisis that has an impact on the low quality of education (Akhmadal Badawi et al., 2020; Ariyana et al., 2018; Djami et al., 2019). However, a key issue that needs to be addressed is the inequality in educational access and support in these areas (Jacob & Watini, 2022). Remote and disadvantaged areas often have limited technological infrastructure, including low or no internet connectivity (Dwiqi et al., 2020; Restiana & Pujiastuti, 2019). This hinders teachers' ability to access digital resources and online training offered by initiatives such as PMG. Therefore, measures to improve infrastructure and internet access are necessary to ensure that teachers in remote areas can also keep up with the necessary competencies (Farina Tazijan et al., 2022; Masyhura & Ramadan, 2021; Yusmina et al., 2022).

PMG programs in other schools have been evaluated by several researchers before. These evaluation studies generally used the CIPP model (Firdaus & Anriani, 2022; Iriani & Soeharto, 2015; Widayanto et al., 2021). The analysis of these studies concluded that almost 90% of the PMG program was well implemented (Holisoh et al., 2022; Lukum, 2015). The PMG program at Gunung Putri Elementary School in Bogor can be continued although with some notes that must be considered to improve program implementation in the future. The results of these studies generally show the level of success in the context, input, proses and produc dimensions. Looking at the context dimension shows approximately 80% success rate (Abdul et al., 2018).

One of the efforts that can be made to improve the quality of learning is to conduct an evaluation. A program will not be able to know how well it affects the people involved if an evaluation is not conducted. For this reason, it is necessary to evaluate the PMG program in primary schools in Gunung Putri Sub-district, Bogor, in the hope that improvements can be made in its continued implementation. Several evaluations of the PMG program have been conducted in several schools in Indonesia. In general, research on PMG evaluation uses the context, input, process and product method approaches. There has been very little further evaluation of the outcome or impact of the program.

Some opinions on outcome evaluations Evaluations that ask questions about what has changed as Outcome evaluations provide information on how well your program achieved its objectives. Lukumm (2015) argues that outcome evaluation is considered necessary to be carried out for the following reasons; program improvement and improvement, accountability for resource use, effective resource allocation, developing an effective evidence base, improving services, and providing evidence related to what has been done. Based on this, the researcher will conduct research on the outcome evaluation of the Elementary School Teacher Independent Training (PMG) program with the Merdeka Belajar Platform in Gunung Putri District, Bogor.

## **Method**

The research method used is comparative research with a quantitative approach to determine whether there is a significant difference between the performance of teachers who participated in the PMG program and teachers who did not participate in the PMG program (Edi et al., 2017; Mansur, 2018). The PMG program evaluation research design used is a 2-level evaluation at the Kirkpatrick Level, namely the behavior level and the result level. The aim is to answer the problem formulation of PMG. The development of this model will describe the competency criteria of trainees at SD Gunung Putri Bogor that need to be assessed and evaluated.

In this study, researchers will use the saturated / census sampling technique (Febrianti, 2020; Nurrohmah et al., 2018). According to Elya et al. (2019). In this study, all populations were used as samples because they were less than 100. The sample used in the study were teachers in Gunung Putri Bogor elementary school who were divided into two groups of teachers. The first group is teachers who have participated in the PMG program and the second group is a group of teachers who have not participated in the PMG program. In their work, both groups get the same tasks and workload, namely providing good services as teachers and educators. So that the total sample amounted to 30 elementary school teachers who had been determined.

The questionnaire instrument used for the behavior level, and for the result level using data in the form of documentation from educational institutions in elementary schools that are used as places for this research. The instrument grids can be seen below.

Table 1. Questionnaire Instrument Grid

Level of Evaluation	Aspect/Subject	Indicator	Item Number	Total
Behaviour	Attitude/performance of PMG participants when teaching in schools and teachers who did not participate in the PMG program	Conduct teacher self-training appropriately and thoroughly	1,2,3,4	4
		Complete teacher self-training on time.	5,6,7	3
		Arrive and return to the teacher self-training venue on time	8,9,10,11	4
		Conducting teacher self-training earnestly	12,13,14	3
		Conduct teacher self-training with a sense of responsibility	15,16,17	3
		Conduct teacher self-training with persistence and perseverance	18,19,20,21	4
		Conduct teacher self-training with high curiosity	22,23,24	3
		Conduct teacher self-training with good cooperation	25,26,27	3
		Carry out teacher self-training with good confidence.	28,29,30	3
		Carry out teacher self-training according to competencies	31	1
Result	Impact on the organization or school	Improved performance quality within a certain period	Document	
		Increased satisfaction in providing learning services	Document	

At the behavioral level, the questionnaire instrument is used to obtain data so that later the results can be compared. So that the data analysis technique used at this level which is considered suitable is comparative analysis. Comparative quantitative analysis is tested using a t-test of two independent samples (Independent samples t-test). The analysis technique used at the result level evaluation is descriptive analysis. Description and analysis is a depiction of data from research findings into narrative text. The data obtained is categorized according to the subject matter made in the form of a matrix so that it is easy to see the patterns of relationship of one data with other data. Through data description, it will be easier to understand and analyze what happened to the program, then plan further work based on the results of the analysis.

## Result and Discussion

### Behavior Level Evaluation

This study has collected data on respondents using a questionnaire. A total of 30 respondents from elementary school teachers have filled out the questionnaire. The respondents are two different groups, namely: the respondent group consists of 15 teachers who have attended teacher self-training on the independent teaching platform and the respondent group consists of 15 teachers who have not attended teacher self-training on the independent teaching platform. The data obtained were analyzed using quantitative methodology with comparative techniques; this was done to compare the averages of two sample groups using the t-test statistical test so that the significance of the two sample averages studied could be tested. The results of data recapitulation from two groups can be seen in the following table.

Table 2. Recapitulation of respondents' questionnaire scores

No	Respondent's Initials	Total score of the non-training group	No	Respondent's Initials	Total score of the group that participated in the training
1	A1	114	1	B1	124
2	A2	115	2	B2	124
3	A3	115	3	B3	125
4	A4	118	4	B4	126
5	A5	118	5	B5	128
6	A6	119	6	B6	128
7	A7	120	7	B7	129
8	A8	120	8	B8	129
9	A9	121	9	B9	130
10	A10	121	10	B10	130
11	A11	123	11	B11	132
12	A12	125	12	B12	133
13	A13	127	13	B13	135
14	A14	127	14	B14	136
15	A15	136	15	B15	139

The table above shows that the data obtained from the responses of the teachers who served as respondents. Where the respondent's name uses initials to maintain the confidentiality of the data and the respondent's identity. Expressed by the initials A1 to A15 for data on the names of teacher respondents who did not participate in teacher self-training using the independent teaching platform and the initials of the names of respondents B1 to B15 for teacher respondents who participated in teacher self-training with the independent teaching platform. The data above presents that the scores of the data responded by the group of teachers who did not participate in the training are sorted from the smallest score to the largest score, namely 114 to 136. Meanwhile, the scores of the teacher respondent group who participated in the training have scores sorted from 124 to 139. When viewed, the score results from the two groups are quite different. Looking at the score results from the data, it can be concluded that the group of teachers who participated in teacher self-training with an independent teaching platform had good response satisfaction.

Next, the data in Table 2 above is tested for prerequisite analysis, where the results of normality testing using the help of the SPSS version 16.0 application seen in the Kolmogorov-Smirnov test have different normality test values from the two groups tested. The result is that the Kolmogorov-Smirnov value of the group of teachers who did not attend the training was 0.865. Meanwhile, the Kolmogorov-Smirnov value of the group of teachers who attended the training was 0.911. When compared with the

significance level, it shows that the Kolmogorov-Smirnov value obtained from both groups is greater than 0.05. This means that the data from both groups are normally distributed.

Other tests were carried out on the data of the two groups to determine the homogeneity of the data. Through the help of the SPSS version 16 application, where the data has a value reviewed from Levene Statistic with a significance value obtained of 0.443. When compared with the significance value, it shows that 0.443 is greater than 0.05. This proves that the data obtained is homogeneous or has the same variant. After the data can be confirmed to be normal and homogeneous, the next process is testing the significance of the data with the independent sample t-test. This is done to determine whether the average of the two samples has a significant average difference. The test results are presented in the following table.

Table 3. Results of t-test with SPSS 16.0

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	.607	.443	-4.263	28	.000	-8.20000	1.92362
Equal variances not assumed			-4.263	25.894	.000	-8.20000	1.92362

Based on the test results in the table above, the independent t-test can be seen from the significance value. Where the significance value of the data of the two groups of teacher response results is obtained 0.0000001. These results if interpreted are smaller than the significance value of 0.05. This can be interpreted that there is a significant difference in the average value between the response results of teachers who take part in independent training on the independent teaching platform and teachers who do not take part in teacher self-training with the independent teaching platform.

Another thing is that the results of the t-test analysis using SPSS version 16.0 above can be concluded that there are differences in the average value of the application of teacher learning between the two sample groups. If it is explained in detail that the group of teachers who participated in the teacher self-training program with the independent teaching platform has a higher average value than the group of teachers who did not participate in the teacher self-training program on the independent teaching platform.

### Result Level Evaluation

The findings for the evaluation of the results by reviewing and analyzing the components of the questionnaire given to the two groups tested in this study. This was done to find out in detail the percentage picture of the results after the respondents participated in the teacher self-training on the independent teaching platform. The scores on each aspect or indicator of the evaluation achievement criteria in each group were analyzed in detail. So, finally it can compare the percentage of scores on each aspect of the indicators in the two sample groups. The results of the analysis can be seen in the following table.

Table 4. Analysis on the instrument grid

Evaluation Criteria	Indicator	Instrument Item Number
Efficiency in teaching	Perform work precisely and thoroughly	1,2,3,4
Ethos in completing work	Doing work with persistence never gives up	5,6,7
	Doing good cooperation work	8,9,10
	Doing work earnestly	11,12,13
	Perform work with a sense of responsibility	14,15,16
Work discipline	arrive at and return to the teaching place on time	17,18,19,20
Learning motivation	Perform work with high curiosity	21,22,23
Productivity in teaching	Complete work on time	24,25,26,27
Skills in teaching	Carry out work according to competence	28
Confidence in teaching	Carry out work with good confidence	29,30,31

The table is a breakdown of the items contained in each indicator. The percentage of each indicator is calculated based on the acquisition of scores from the number of items in the indicator. The two sample groups of respondents have different percentage scores from each indicator. The following is a graph of the average score on each indicator in each research sample group:

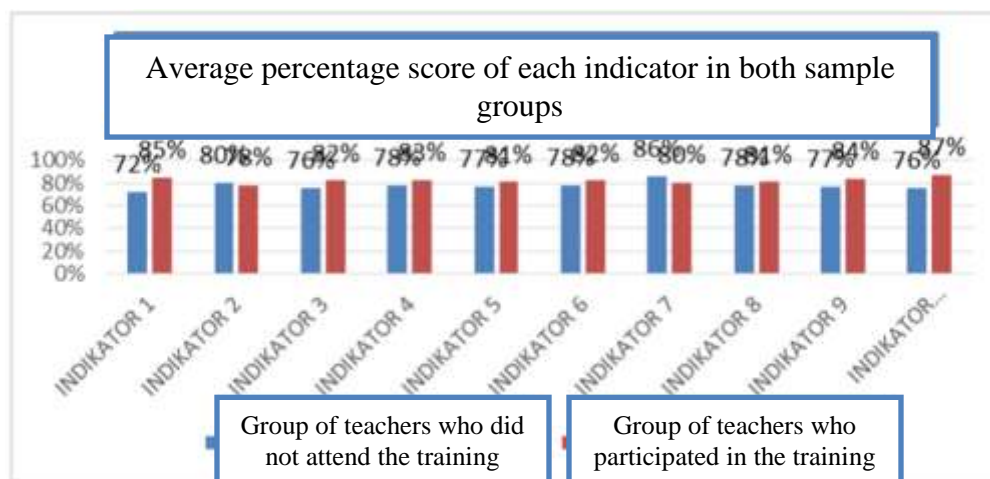


Fig. 1. Diagram of the Average Percentage Score of Each Indicator in the Sample Group

The diagram is obtained based on the questionnaire analysis of 30 respondents who are divided into two sample groups. Percentage comparison can be seen in the bar chart values. In the first indicator, namely doing work precisely and thoroughly consisting of items 1, 2, 3 and 4, the group of technicians who did not participate in the teacher self-training program on the independent teaching platform had an average percentage score of 72%, smaller than the group of technicians who participated in the teacher self-training program which was 85%. The second indicator (Doing work persistently and never giving up) consisting of items 5, 6, and 7, the group of teachers who did not participate in the training program had an average percentage score of 85%, greater than the group of technicians who participated in the training program, which was 80%.

The third indicator (Doing work with good cooperation) consisting of items 8, 9, 10 and 11, the group of teachers who did not participate in the training program had an average percentage score of 76%, smaller than the group of teachers who participated in the training program which was 82%. The fourth indicator (Doing work seriously) consisting of items 12, 13 and 14, the group of teachers who did not participate in the training program had an average percentage score of 78%, smaller than the group of

teachers who participated in the training program, which was 83%. The fifth indicator (Doing work with a sense of responsibility) consisting of items 15, 16, and 17, the group of teachers who did not participate in the training program had an average percentage score of 77%, smaller than the group of teachers who participated in the training program, which was 81%.

The sixth indicator (Arriving and returning to work on time) consisting of items 18, 19, 20, and 21 of the group of teachers who did not participate in the training program had an average percentage score of 78%, smaller than the group of teachers who participated in the training program which was 82%. The seventh indicator (Doing work with high curiosity.) consisting of items 22, 23 and 24, the group of teachers who did not participate in the training program had an average percentage score of 86%, greater than the group of teachers who participated in the training program, which was 80%. The eighth indicator (Completing work on time) consisting of items 25, 26 and 27, the group of teachers who did not participate in the training program had an average percentage score of 78%, greater than the group of teachers who participated in the training program, which was 81%.

The ninth indicator (Carry out work according to competence). Consisting of items 28, 29 and 30, the group of teachers who did not participate in the training program had an average percentage score of 77%, smaller than the group of teachers who participated in the training program which was 84%. The tenth indicator (Carry out work with good confidence.) consisting of item 31, the group of teachers who did not participate in the training program had an average percentage score of 76%, smaller than the group of teachers who participated in the training program, which was 87%.

## **Conclusion**

Based on the results of the analysis, it can be concluded that 80% of the average percentage score on the aspects/indicators of performance evaluation achievement criteria of the sample group of teachers who participated in the teacher self-training program on the independent teaching platform is higher than the group of teachers who did not participate in the training program. This can be seen in the comparison of the bar charts of each indicator in the two sample groups. The superiority of the average percentage score in the group of teachers who participated in the training program was in eight out of ten indicators.

In the end, however, in one indicator, the group of teachers who participated in the training program received a smaller average percentage score than the group of teachers who did not participate in the training program. The indicator is (Doing work with high curiosity). The comparison of the average percentage is 85% for the group of teachers who did not participate in the training program and 80% for the group of teachers who participated in the training program. This can be used as a new finding in the teacher self-training program on the teaching independence platform as a form of advice and follow-up for program organizers.

## **References**

- Abdul, K., Shahed, F. H., Mohamed, Abdul Rashid, M. M. R., & Ismai, S. A. M. M. (2018). Evaluation of the teacher education programs in EFL context : A testimony of student teachers ' perspective. *International Journal Of Instruction*, 12(1), 127–146. <https://doi.org/10.29333/iji.2019.1219a>.
- Akbar, A., & Noviani, N. (2019). Tantangan dan Solusi dalam Perkembangan Teknologi Pendidikan di Indonesia. *Prosiding Seminar Nasional Pendidikan Program Pascasarjana Universitas Pgris Palembang*, 2(1), 18–25.
- Akhmadal Badawi, T. T., Harapan, E., & Destiniar, D. (2020). Pengaruh Kemampuan Manajerial Kepala Sekolah dan Penggunaan Media Pembelajaran oleh Guru terhadap Prestasi Belajar Siswa. *Jurnal*

- Manajemen Pendidikan: Jurnal Ilmiah Administrasi, Manajemen Dan Kepemimpinan Pendidikan*, 2(1), 22–42. <https://doi.org/10.21831/jump.v2i1.30936>.
- Ambrosino, C. M., & Rivera, M. A. J. (2020). Using ethological techniques and place-based pedagogy to develop science literacy in Hawai'i's high school students. *Journal of Biological Education*. <https://doi.org/10.1080/00219266.2020.1739118>.
- Ariyana, Y., Pudjiastuti, A., Bestary, R., & Zamromi, Z. (2018). Buku Pegangan Pembelajaran Keterampilan Berpikir Tingkat Tinggi Berbasis Zonasi. *Direktorat Jendral Guru Dan Tenaga Kependidikan*, 1–87.
- Djami, R. M. K., Shihab, R. M., & Wardah. (2019). Pengaruh Kualitas Layanan, Biaya Pendidikan Dan Fasilitas Pendidikan Terhadap Keputusan Konsumen Dengan Brand Image Sebagai Variabel Intervening Dalam Memilih Program Studi Pada Fakultas Ekonomi Universitas Kristen Artha Wacana Kupang. *Jurnal Ekonomi & Bisnis*, 4(1), 869–880.
- Dwiqi, G. C. S., Sudatha, I. G. W., & Sukmana, A. I. W. I. Y. (2020). Pengembangan Multimedia Pembelajaran Interaktif Mata Pelajaran IPA Untuk Siswa SD Kelas V. *Jurnal Edutech Undiksha*, 8(2), 33. <https://doi.org/10.23887/jeu.v8i2.28934>.
- Edi, S., Suharno, S., & Widiastuti, I. (2017). Pengembangan Standar Pelaksanaan Praktik Kerja Industri (Prakerin) Siswa Smk Program Keahlian Teknik Pemesinan Di Wilayah Surakarta. *Jurnal Ilmiah Pendidikan Teknik Dan Kejuruan*, 10(1), 22. <https://doi.org/10.20961/jiptek.v10i1.14972>.
- El Firdoussi, S., Lachgar, M., Kabaili, H., Rochdi, A., Goujdami, D., & El Firdoussi, L. (2020). Assessing Distance Learning in Higher Education during the COVID-19 Pandemic. *Education Research International*, 2020. <https://doi.org/10.1155/2020/8890633>.
- Elya, M. H., Nadiroh, N., & Nurani, Y. (2019). Pengaruh Metode Bercerita dan Gaya Belajar terhadap Kemampuan Berbicara Anak Usia Dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 4(1), 312. <https://doi.org/10.31004/obsesi.v4i1.326>.
- Fadhli, M. (2017). Manajemen Peningkatan Mutu Pendidikan. *Tadbir: Jurnal Studi Manajemen Pendidikan*, 1(2), 215. <https://doi.org/10.29240/jsmp.v1i2.295>.
- Farina Tazijan, Rofiza Aboo Bakar, & Nor Fazlin Mohd Ramli. (2022). The Drive of Digital Literacy Skills in the 21st Century. *International Journal of Practices in Teaching and Learning (IJPTL)*, 2(1), 1–7.
- Febrianti, F. A. (2020). Implementasi Model Pembelajaran Kooperatif Tipe Numbered Head Together (NHT) Dalam Meningkatkan Kemampuan Berpikir Kritis Siswa Pada Pembelajaran IPS. *Journal Civics & Social Studies*, 3(2), 42–52. <https://doi.org/10.31980/2655-7304.v3i2.696>.
- Firdaus, H., & Anriani, N. (2022). Evaluasi Program Praktek Kerja Industri Pada Sekolah Menengah Kejuruan Menggunakan Model CIPP. *Jurnal Ilmiah Profesi Pendidikan*, 7(4), 2253–2260. <https://doi.org/10.29303/jipp.v7i4.1011>.
- Harto, M., & Misbah, M. (2021). Kajian Literatur Inovasi Pembelajaran Sains Di Masa Pandemi Covid. *Vidya Karya*, 35(2), 78. <https://doi.org/10.20527/jvk.v35i2.10591>.
- Holisoh, A., Anriani, N., & Nurhalimah, N. (2022). Evaluasi Pelaksanaan Prakerin (Prektek Kerja Industri) di Salah Satu SMK di Tangerang dengan Pendekatan Goal Oriented Evaluation Model. *Gema Wiralodra*, 13(2), 799–805. <https://doi.org/10.31943/gw.v13i2.297>.



- Iriani, D. S., & Soeharto, S. (2015). Evaluasi Pelaksanaan Praktik Kerja Industri Siswa Kompetensi Keahlian Jasa Boga SMK N 3 Purworejo. *Jurnal Pendidikan Teknologi Dan Kejuruan*, 22(3), 274. <https://doi.org/10.21831/jptk.v22i3.6835>.
- Iskandar, A. (2022). Optimalisasi Link and Match Melalui Revitalisasi Pendidikan Vokasi dan Pelatihan Vokasi. *Jurnal Kewarganegaraan*, 6 No. 3(3), 4773–4791.
- Jacob, A. M., & Watini, S. (2022). Penerapan Model Atik dalam Pengembangan Motorik Kasar pada Anak ADHD di TK Global Persada Mandiri. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, 5(9), 3281–3287. <https://doi.org/10.54371/jiip.v5i9.841>.
- Kurniawan, L. Y. (2019). *Konsep Dasar Pembiayaan Pendidikan*. 5.
- Lukum, A. (2015). Evaluasi Program Pembelajaran Ipa Smp Menggunakan Model Countenance Stake. *Jurnal Penelitian Dan Evaluasi Pendidikan*, 19(1), 25–37. <https://doi.org/10.21831/pep.v19i1.4552>.
- Magdalena, I., Tsabitah, J. F., Istikharah, M., & Wahdania. (2023). Perumusan Tujuan Pembelajaran Menggunakan Rumus ABCD di SD 01 Cipondoh Kota Tangerang. *Jurnal Pendidikan Seroja*, 4(2), 55. <http://jurnal.ut.ac.id/index.php/jp/search/authors/view?givenName=MeryNoviyanti&familyName=&affiliation=UniversitasTerbuka&country=ID&authorName=MeryNoviyanti>.
- Maison, Kurniawan, D. A., & Anggraini, L. (2021). Perception, Attitude, and Student Awareness in Working on Online Tasks During the Covid-19 Pandemic. *Jurnal Pendidikan Sains Indonesia (Indonesian Journal of Science Education)*, 9(1), 108–118. <https://doi.org/10.24815/jpsi.v9i1.18039>.
- Mansur, N. (2018). Melatih Literasi Matematika Siswa dengan Soal PISA. *Prisma*, 1, 140–144.
- Masyhura, N., & Ramadan, Z. H. (2021). Implementation of Digital Literacy in Elementary Schools. *International Journal of Elementary Education*, 5(4), 639. <https://doi.org/10.23887/ijee.v5i4.39480>.
- Nugraha, T. S. (2022). Kurikulum Merdeka untuk Pemulihan Krisis Pembelajaran. *Inovasi Kurikulum*, 19(2), 250–261. <https://ejournal.upi.edu/index.php/JIK>.
- Nurrohmah, I., Sensuse, D. I., & Santoso, H. B. (2018). The expert-judgement validation and finalization of proposed interaction design process maturity instrument: Case study: E-commerce in Indonesia. *Proceedings of the 2nd International Conference on Informatics and Computing, ICIC 2017, 2018-Janua*, 1–6. <https://doi.org/10.1109/IAC.2017.8280647>.
- Restiana, N., & Pujiastuti, H. (2019). Pengukuran Technological Pedagogical Content Knowledge untuk Guru Matematika SMA di Daerah Tertinggal. *Mosharafa: Jurnal Pendidikan Matematika*, 8(1), 83–94. <https://doi.org/10.31980/mosharafa.v8i1.407>.
- Stadlinger, B., Jepsen, S., Chapple, I., Sanz, M., & Terheyden, H. (2021). Technology-enhanced learning: a role for video animation. *British Dental Journal*, 230(2), 93–96. <https://doi.org/10.1038/s41415-020-2588-1>.
- Widayanto, L. D., Soeharto, S., Sudira, P., Daryono, R. W., & Nurtanto, M. (2021). Implementation of the Education and Training Program seen from the CIPPO Perspective. *Journal of Education Research and Evaluation*, 5(4), 614. <https://doi.org/10.23887/jere.v5i4.36826>.
- Yusmina, Y., Rusdin, R., & Hamlan, H. (2022). Analisis Sosial Kepemimpinan Kepala Sekolah dalam Meningkatkan Mutu Pendidikan di SMP Al-Azhar Mandiri Kota Palu. *Jurnal Integrasi Manajemen Pendidikan*. <https://doi.org/10.24239/jimpi.v1i1.900>.