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The Effectiveness of Critical Thinking Ability in Elementary School Students Through the Discovery Learning Model in Social Science Subjects

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Abstract: *Through the discovery learning model, this study aims to determine the effectiveness of students' critical thinking skills in developing their self-understanding of the social environment and knowledge in the 21st-century learning era. The research results demonstrated that the learning model applied in research was suitable for developing students' critical thinking skills, as it created an active way of learning for students by finding themselves and investigating themselves. The results obtained would be loyal and long-lasting in memory, and students would not easily forget. This study employed a quasi-experimental method through a nonequivalent control group design using a quantitative research approach. In this study, the results of homogeneity calculations and significant value hypotheses (Sig 2-tailed) revealed a substantial implication of 0.000, meaning that Ho was rejected because 0.000 < 0.05 and Ha was accepted. It can be concluded that the discovery learning model could improve critical thinking skills in elementary school students.*

Keywords: *Critical Thinking, Elementary School, Discovery Learning.*

Abstrak: Tujuan dalam penelitian ini untuk mengetahui keefektifan kemampuan siswa berpikir kritis dalam mengembangkan diri siswa untuk memahami lingkungan sosial dan pengetahuan di era pembelajaran di abad 21 melalui model Discovery Learning. Hasil Penelitian menunjukan model pembelajaran yang diterapkan dalam penelitian merupakan model yang tepat dalam mengembangkan kemampuan berfikir kritis siswa karena mengembangkan cara belajar siswa aktif dengan menemukan sendiri, menyelidiki sendiri, maka hasil yang diperoleh akan setia dan tahan lama dalam ingatan, tidak akan mudah dilupakan siswa. Penelitian ini menggunakan metode quasi eksperimen melalui rancangan nonequivalent control group desaign dengan mengunakan pendekantan jenis penelitian kuantitatif. Hasil perhitungan homogenitas dan hipotesis nilai signifikan (sig 2-tailed) dalam penelitian ini menunjukkan hasil imlikasi yang signifikan sebesar 0,000 dengan Ho ditolak karena 0,000<0,05 dan menyatakan Ha diterima, maka dapat disimpulkan bahwa model pembelajaran discovery learning dapat meningkatkan kemampuan berfikir kritis pada siswa di sekolah dasar.

Kata Kunci: Berfikir Kritis, Sekolah Dasar, Discovery Learning.

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INTRODUCTION

Thinking critically in learning activities is a competency needed to construct knowledge. Critical thinking is a problem-solving process that aims to help students make decisions about what to do and believe that develops through meaningful experiences in the form of opportunities to express opinions orally and in writing (Wijaya, 2020). Critical thinking skills are also critical to be owned and developed by students because they make them memorize concepts and involve cognitive aspects such as application, analysis, synthesis, and evaluation. It aligns with the discovery learning model, which encourages students to seek or determine relevant sources of knowledge in their own way, and critical thinking skills are essential competencies of the 21st century (Lutfi Rohmawati, 2020).

The causes of the low critical thinking skills of elementary school-level students include the use of inappropriate learning models in the process of learning activities carried out and the use of a learning model chosen by the teacher that does not motivate students to be active in learning activities, resulting in students tending to be passive and having low critical thinking skills. Since the model used in learning is less attractive and even boring for students, teachers can use the discovery learning model to encourage student activity (Dari & Ahmad, 2020).

Additionally, critical thinking provides benefits to students, especially in the 21st century. The rapid advancement of technology and global developments makes students not only sufficiently understand theory in the learning process, but they must also involve the process of processing information and solving problems through a process of critical thinking in the classroom, school environment, and society (Rini et al., 2021). Here, teachers must be careful in choosing learning models and designing learning programs and strategies to make their learning attractive, actual, and functional for students. In fact, the selection and application of learning models, methods, and media have an impact on the achievement of learning objectives (Wiguna et al., 2023). Critical thinking ability is also one of the higher-order thinking skills. Currently, learning activities demand learning material to arrive at a stage that emphasizes students' ability to estimate, predict, design, predict, apply, and remember (Wangi et al., 2022). Nevertheless, based on interviews with school principals and initial observations, it was found that learning by stimulating students' critical thinking skills could still be carried out in the school where the researchers targeted the research, so this matter became interesting for a more in-depth study.

In this regard, the discovery learning model will make students find the results of problems independently without any help from anyone, so it is vital to encourage students to be more active and creative, while critical thinking will help students solve problems and feel confident in doing a job in answering a question. Questions with the right result to find a solution to the problem independently make students remember the material they have learned longer (Azmy & Yustitia, 2023). Discovery learning models will also be able to provide opportunities for students (Rosdiana, 2022) to think, find, argue, and cooperate through scientific learning activities, training students to improve critical thinking skills and problem-solving skills and gain knowledge of important concepts that will enhance student learning outcomes.

If the teacher still uses the monotonous lecture method in the learning process, in which the teacher explains and mentions various social facts concerning the learning material, the ability to think critically will not be optimally achieved (Lusmianingtyas & Sriyanto, 2022). In the global era, students' critical thinking skills are needed to improve competitive abilities, overcome daily problems, and prepare students' emotional maturity. Critical thinking is also necessary for moral and spiritual knowledge because students can learn a series of facts in the process of instilling concepts, repetition, and mastery in depth (Wijaya, 2019).

Therefore, student-centered learning strategies involve bringing study groups into a problem to find answers to questions in a procedure that can be explained through discovery learning related to the discovery of the results of students' creative thinking skills systematically and critically (Pratiwi & Mawardi, 2020). Discovery learning steps, according to Brunner, are: a) finding goals; b) carrying out identification of student characteristics (initial abilities, interests, and learning styles); c) selecting learning materials; d) determining topics that students must learn; e) developing learning materials for students to study; f) organizing learning topics from simple to complex, from concrete to abstract; and g) assessing student processes and outcomes (Aisyiah et al., 2020). Specifically, in learning social sciences, the discovery learning model can be applied, which is constructivist learning, i.e., constructing new knowledge by developing existing knowledge in previous students. Social science is also a development of integrated cognitive, affective, and skill elements. Elements of social science skills (Permatasari et al., 2022) are several skills and dimensions of thinking and communicating. These consist of five levels: interpret, apply, analyze, synthesize, and evaluate.

In the discovery learning model, students, according to Amrullah et al. (2022), are treated by using a learning model, starting with stimulation about what will be learned. Then, students are given instructions to identify problems and provide answers according to their knowledge (problem statement). The teacher then provides learning data to be managed by students (data processing), and then the teacher, together with students, does proofing on learning (verification) and drawing learning conclusions (generalization).

Further, the learning model used by the teacher must be able to influence students' critical thinking skills in solving problems; the results of literature studies conducted by researchers (Aprilianingrum & Wardani, 2021) uncovered that the discovery learning model could improve students' critical thinking skills in learning social sciences in elementary schools.

Thus, in theory (Septiyowati & Prasetyo, 2021), the discovery learning model can be used to improve students' critical thinking skills, which can be measured by increasing students' abilities in analyzing arguments, asking questions, answering questions, solving problems, and concluding problems, as well as increasing students' ability to evaluate and assess observations.

The learning done to produce quality human beings certainly requires much struggle. One of them is carrying out quality processes in learning activities in schools (Basariah et al., 2022). Based on observations and initial interviews conducted at school, the Sukdah teacher tried to create interactive learning, and students were given a stimulus to form question-and-answer activities so that they more quickly accepted the learning goals to be achieved. Study results (Hariyanto et al., 2022) showed that critical thinking and social thinking skills contributed to developing students' character when applying discovery learning models. Those studies can be a reference for readers about the contribution of students' critical thinking skills and social skills to developing students' character. Still, further research is needed to find out other impacts affecting students' character.

Nonetheless, the learning method employed by the previous teacher did not fully work well in each lesson because if the teacher did not start by appointing students to ask questions about material that they had not understood, students were only silent and tended to be passive, which impacted the boring and less attractive learning process (Wijaya et al., 2021). It then resulted in students' critical thinking skills being low. Through this research, the researchers hope to provide input and recommendations to teachers on improving students' critical thinking skills so that learning objectives can be achieved properly. This study also aims to provide feedback to teachers on stimulating students' critical thinking and learning through more innovative learning methods in preparing for learning challenges in the 21st century.

RESEARCH METHODS

The study used a quasi-experimental method through the nonequivalent control group design, using a quantitative research-type approach. Experimental research tries to find the effect of causation between the independent and dependent variables, where the independent variable is controlled and manipulated (differentiated by treatment). This research method was employed to find the effect of certain treatments on others under controlled conditions (Wardhani et al., 2022). This research was conducted at Margaluyu State Elementary School, Serang City, in Class V, which consisted of 30 students. Moreover, the subjects in this study were limited to social science lessons.

The research design consisted of a group of research subjects selected from the population and given a pre-test and treatment. Then, the subjects were given a post-test to measure the effect of the treatment on the group. Instruments received by the subjects had the same weight (Wijaya & Marini, 2022). The difference in the results obtained in the pre-test value with the post-test value would show the value in the results of the treatment given (Buana & Anugraheni, 2020). The schematic is more clearly depicted in the table below.

Table 1. Nonequivalent control group design scheme

Class	Pre-test	Treatment	Post-test
Experiments	Using discovery learning models to improve critical thinking skills.		
	O1	X	O2
Control	Not using the discovery learning model in improving critical thinking skills.		
	O3	Y	04

Description:
O1: The results of the pre-treatment experiment
O2: The results of the post-test post-treatment experiment
O3: The results of the pre-treatment control pre-test
O4: The results of the post-treatment control post-test
X: Treatment in the experiment
Y: Without treatment on control

Then, data analysis was carried out to provide an overview of the data collected from the research results (Pratama & Mardiani, 2022). It was intended to draw conclusions and test hypotheses. The data analyzed were obtained from the pre-test and post-test results. The steps in analyzing the data are presented as follows:

Table 2. Research statistics test

Data Analytics	A Statistical Test Used
Post-test	Test Normality
	Homogeneity Test
	Initial Ability Similarity Test (To Test)
Post-test	Normality Test
	Testing Differences in Final Ability (Mann-Whitney)

Table 3. Data collection instrument

Data	Collection method	Instrument's shape	Number of instruments	Instrument validity
Critical thinking ability instrument	Test	Multiple choice	10	Validity test Reliability test
Instruments knowledge of social and environmental material	Non-Test	Questionnaire	5	Validity test Reliability test

In complementing the results of the research conducted, the researchers also triangulated the data through interviews and observations of teachers and students. They conducted a literature review related to students' critical thinking skills using the discovery learning method in social studies learning, and the data were used to complete the validity of the research results as secondary data.

RESULTS AND DISCUSSION

The research took place at Margaluyu State Elementary School, Serang City, among Class V students, involving 30 respondents. Based on extracting data from the results of interviews and observations made, it was found that the teacher had formed a learning model of discovery learning with activities that trained students in making assumptions, carrying out track, dialogue, linking known insights with current insights, and making conclusions based on analysis, to problems. In measuring thinking skills, information was obtained from answers to questions about the extent to which students could apply critical thinking in their thinking activities (Edo, 2022). This study obtained student answers about the aspects regarding the understanding of the material presented by the teacher, as illustrated in the table below:

Table 4. Results of the observation sheet

Aspect	Description	Presentation	Criteria
(1) Clarity	Students understand the material explained by the teacher.	80%	Good
(2) Accuracy and thoroughness	Students can work on assignments according to the stages.	75%	Good
(3) Precise	Students can complete assignments on time.	80%	Good
(4) Linkages	Students can associate the material with the surrounding environment.	80%	Good
(5) Depth	Students can observe, apply, analyze, and draw conclusions.	75%	Good
(6) Breadth	Students have confidence in discussions and are active.	75%	Good
(7) Logical	Students understand a concept or statement and can apply that understanding in a new context.	75%	Good

From the results of the observation sheets above, it can be seen that students gained a good understanding of the subject matter conveyed by the teacher. The data above also show that the teacher actively involved students and facilitated their use of higher-order thinking skills. It aligns with the theory that teachers need to emphasize learning conditions in a safe and comfortable atmosphere so that students can learn actively, find/investigate formulas based on the material being studied with the help of the teacher, and train students to remember the material learned so that learning runs effectively and optimally (Wayudi et al., 2020). With these learning conditions, it is expected that they will encourage students to carry out critical, logical, and creative thinking processes, and the process of solving problems will be better.

Before being tested on 30 students, tests in the form of questions were assessed first on 10 students in Class V to evaluate their level of eligibility by using a validity test, and testing the validity of the items was also carried out by experts. To calculate the validity, a test was performed with the help of the SPSS version 26 application. The standard for measuring the validity of the items in this study refers to opinions (Cholifah & Fada, 2022), stating that it is stated to be valid if the r-count is greater than the r-table, with the provision of a significance level of 5% (0.05). Aside from testing the validity of the items, a literature review of expert opinions was also conducted. In testing the validity of the questions, results were obtained stating that the questions were valid or feasible to be tested in student class groups.

Table 5. Research results

Class	Data	Total Students	Minimum	Maximum	Average	Percent	Std. Deviation
Experiments	Pre-test	30	52	80	55.25	52.72%	8.256
	Post-test	30	65	95	85.25	72.52%	9.686
Control	Pre-test	30	42	76	54.84	48.38%	8.130
	Post-test	30	62	92	76.48	66.72%	8.408

Based on the table above, the average value of the post-test results in the experimental group was 85.25, greater than the control group's value of 76.48. It undoubtedly indicates that the experimental class had a higher standard deviation than the control class, showing more diverse experimental class values.

Table 6. Normalized gain results

Interpretation of Normalized Gain	Control		Experiments	
	Fi	Percentage (%)	Fi	Percentage (%)
High	5	16.67	6	20
Low	17	56.67	22	73.33
Medium	7	23.33	2	6.67
Total	30	100	30	100

From the table above, it can be illustrated that the quality of increasing students' critical thinking skills in social science subjects through the discovery learning model revealed the medium category. These results exposed differences in students' critical thinking abilities between the experimental class using the discovery learning model and the control class using conventional learning models. Thus, it can be concluded that students in the experimental class could better understand learning and were more active. Meanwhile, students in the control class were more passive in learning, and most students

needed help finding concepts or principles based on their mental processes in this learning. For students who are used to obtaining knowledge directly from the teacher without involving themselves actively in the learning process, this learning can cause frustration (Iskandar & Maeshalina, 2020).

The success obtained in this study was based on several factors. First, the teacher's discovery learning model does not immediately provide the final results or conclusions from the material presented, but students are given the opportunity to search and find the results of the data themselves. This can result in a more meaningful learning process that makes it easier for students to remember and understand the material being studied; of course, the learning model effectively improves students' critical thinking skills.

Table 7. Hypothesis test calculation results

Model		Unstandardized Coefficients		Coefficients			Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	36.255	6.685		2.261	.002		
	Post_Test	.619	.134	.721	4.822	.000	1.000	1.000
a. Dependent variable: Critical thinking skills								

According to the calculation results on the test based on homogeneity through the calculation of the SPSS application version 26 for OS, the results of Sig. 0.000 ≤ α (0.05) denote a change in elementary school students' critical thinking skills with the discovery learning model homogeneously. The significant value (Sig 2-tailed) obtained in the calculation table above also indicates a significant difference of 0.000, with Ho being rejected because 0.000 <0.05 and stating that Ha was accepted. Hence, it can be concluded that the discovery learning model could improve students' critical thinking skills in elementary school.

The above calculations also suggest that the research results corroborate with the results of research conducted before (Winarni et al., 2020) (Baaijen and Galbraith, 2018), stating that the learning model with discovery can improve students' abilities and thinking skills because the stages in the discovery model can enable students to associate and develop knowledge based on their own basis, becoming an analysis of students' thinking processes in finding solutions to problems encountered both in the learning process and knowledge related to information obtained previously.

Moreover, learning quality is needed to enhance students' critical thinking skills, especially in mathematics. Creating an effective mathematics learning process is one of the efforts that can be made to improve students' necessary thinking skills—the discovery learning model. Discovery is a learning model in the 2013 Curriculum (Narumia & Kartonob, 2021). The discovery learning model also requires students to learn actively so that learning is assessed based on the learning outcomes and the learning process.

In this study, the actions' results obtained an overview of students' critical thinking skills, which experienced a significant increase as long as the discovery learning model was applied. It is based on the elements studied, i.e., predetermined indicators and high-level test results, to measure critical thinking skills. It is consistent with the opinion (Supanti, 2019) that someone is called to maximize critical thinking if he tries to analyze arguments carefully, look for valid evidence, and produce solid conclusions to believe and do something. In addition, critical thinking tends to seek clarification of a

problem with reasons, seeking as much information as possible from various sources, being open, paying attention to the overall situation, and looking for alternatives.

The advantage of this study is the use of a model that is easy for teachers to implement in simple classroom learning but has an effective impact on improving students' thinking skills, while its weakness is that the results obtained in research can be assumed to have different results if research treatment is applied to the subject and research location elsewhere.

CONCLUSIONS AND RECOMMENDATIONS

Training students to acquire critical thinking skills can be done in any school through the learning process because critical thinking can be trained by choosing the right learning strategy. Critical thinking skills can only be acquired quickly with practice and habituation. Student-centered and problem-solving-oriented learning processes can help improve students' skills in critical thinking. Students are required to gain direct experience by seeking and discovering knowledge from their surroundings. Based on the research results and discussion of this research, the learning method that could be used to support the improvement of critical thinking skills is the discovery learning method.

The discovery learning model can provide a more active learning atmosphere and critical thinking skills, including the HOTS (Higher Order Thinking Skills) level by the 21st-century learning concept, which reflects four things: critical thinking and problem-solving, creativity and innovation, communication, and collaboration. The results of the homogeneity calculation and the significant value hypothesis (Sig 2-tailed) uncovered a substantial difference of 0.000, with Ho being rejected because 0.000 <0.05 and stating that Ha was accepted. In conclusion, the discovery learning model can improve critical thinking skills in students in elementary school.

REFERENCES

Aisyiah, S., Taufina, T., & Montessori, M. (2020). Peningkatan Keterampilan Berpikir Kreatif dan Kritis Siswa Menggunakan Metode Discovery Learning di Sekolah Dasar. *Jurnal Basicedu*, *4*(4), 784–793.

Amrullah, M. F., Juniarso, T., & Yustitia, V. (2022). Efektivitas Discovery Learning Berbantuan Media Question Card Terhadap Hasil Belajar IPS Siswa Kelas IV SDN Tenggilis Mejoyo. *Genta Mulia: Jurnal Ilmiah Pendidikan*, *13*(3), 174–183.

Aprilianingrum, D., & Wardani, K. W. (2021). Meta Analisis: Komparasi Pengaruh Model Pembelajaran Problem Based Learning dan Discovery Learning dalam Meningkatkan Kemampuan Berpikir Kritis Siswa SD. *Jurnal Basicedu*, *5*(2), 1006–1017.

Azmy, B., & Yustitia, V. (2023). Discovery Learning dan Kemampuan Berpikir Kritis Matematis Siswa Sekolah Dasar. *Jurnal Inovasi Dan Teknologi Pendidikan*, *1*(3), 241–360.

Baaijen, V. M., & Galbraith, D. (2018). Discovery Through Writing: Relationships with Writing Processes and Text Quality. *Cognition and Instruction*, *36*(3), 199–223. https://doi.org/10.1080/07370008.2018.1456431

Basariah, Handayani, N., & Sawaludin. (2022). Penerapan Model Discovery Learning untuk

Meningkatkan Kemampuan Berpikir Kritis Siswa. *Jurnal Pendidikan Indonesia*, *3*(6), 542–552.

Buana, F. S., & Anugraheni, I. (2020). Perbedaan Discovery Learning dengan Problem Based Learning Terhadap Kemampuan Pemecahan Masalah pada Pembelajaran IPS Sekolah Dasar. *Nusantara: Jurnal Ilmu Pengetahuan Sosial*, *7*(1), 79–90.

Cholifah, T. N., & Fada, S. (2022). Model Guided Discovery Learning Berbasis Game untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Jurnal Educatio*, *8*(4), 1276–1285.

Dari, F. W., & Ahmad, S. (2020). Model Discovery Learning sebagai Upaya Meningkatkan Kemampuan Berpikir Kritis Siswa SD. *Jurnal Pendidikan Tambusai*, *4*(2), 1469–1479.

Edo, M. K. (2022). Upaya Meningkatkan Hasil Belajar IPS melalui Penerapan Model Pembelajaran Discovery Learning pada Siswa Kelas VIII SMP Negeri 2 Bajawa. *Jurnal Pendidikan Tambusai*, *6*(1), 14528–14538.

Hariyanto, Amin, M., Mahanal, S., & Rohman, F. (2022). Analyzing the Contribution of Critical Thinking Skills and Social Skills on Students' Character By Applying Discovery Learning Models. *International Journal of Education and Practice*, *10*(1), 42–53. https://doi.org/10.18488/61.v10i1.2907

Iskandar, I., & Maeshalina, D. (2020). Efektivitas Penggunaan Metode Discovery Learning, Inquiry, dan Problem Based Learning dalam Meningkatkan Kemampuan Berpikir Kritis. *Jurnal Pendidikan Akuntansi & Keuangan*, *8*(1), 55–68.

Lusmianingtyas, I., & Sriyanto, S. (2022). Model Pembelajaran Berbasis Masalah untuk Meningkatkan Kemampuan Berpikir Kritis Siswa pada Pembelajaran IPS. *Proceedings Series on Social Sciences & Humanities*, *3*, 520–525.

Lutfi Rohmawati. (2020). Pengaruh Metode Discovery Learning dan Metode Problem Solving Terhadap Kemampuan Berpikir Kritis. *Sinau: Jurnal Ilmu Pendidikan Dan Humaniora*, *6*(2), 19–31.

Narumia, S. A., & Kartonob. (2021). Penerapan Fast Feedback dalam Pembelajaran Discovery pada Pencapaian Kemampuan Berpikir Kritis Ditinjau dari Adversity Quotient. *Jurnal Prisma (Prosiding Seminar Nasional Matematika)*, *4*, 406–415.

Permatasari, I. A., Said, M., & Poly, Y. (2022). Peningkatan Hasil Belajar dan Berpikir Kritis dalam Pembelajaran IPS Melalui Model Discovery Learning di SMP Informatika Bina Generasi Kab. Bogor Jawa Barat. *Jurnal Pemikiran Dan Pengembangan Pembelajaran*, *4*(2), 244–249.

Pratama, B. A., & Mardiani, D. (2022). Kemampuan Berpikir Kritis Matematis Antara Siswa yang Mendapat Model Problem-Based Learning dan Discovery Learning. *PowerMathEdu: Jurnal Inovasi Pembelajaran Matematika*, *1*(1), 83–92.

Pratiwi, D. E., & Mawardi, M. (2020). Penerapan Model Pembelajaran Inquiry dan Discovery Learning Ditinjau dari Keterampilan Berpikir Kritis pada Mata Pelajaran Matematika di Sekolah Dasar. *Jurnal Basicedu*, *4*(2), 288–294.

Rini, A. P., Sa'diyah, I. K., & Muhid, A. (2021). Model Pembelajaran Guided Discovery Learning,

Apakah Efektif dalam Meningkatkan Kemampuan Berfikir Kritis Siswa? *Edukatif: Jurnal Ilmu Pendidikan*, *3*(5), 2419–2429.

Rosdiana. (2022). Penerapan Model Pembelajaran Discovery Learning untuk Meningkatkan Hasil Belajar Siswa Mata Pelajaran IPS Terpadu di Kelas VII SMP Negeri 4 Bolo Kecamatan Bolo Kabupaten Bima Tahun Pelajaran 2018/2019. *Pendikdas: Jurnal Pendidikan Sekolah Dasar*, *03*(02), 17–22.

Septiyowati, T., & Prasetyo, T. (2021). Efektivitas Model Pembelajaran Problem Based Learning dan Discovery Learning Terhadap Kecakapan Berfikir Kritis Siswa Sekolah Dasar. *Jurnal Basicedu*, *5*(3), 1231–1240.

Supanti. (2019). Penerapan Model Discovery Learning dalam Pembelajaran IPS untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Kelas IX-G SMP Negeri 1 Surakarta Tahun 2017/2018. *Historika*, *22*(1), 59–70.

Wangi, U. S., Ayub, S., Harjono, A., & Doyan, A. (2022). Pengembangan Perangkat Pembelajaran Fisika Berbasis Masalah Untuk Meningkatkan Kemampuan Berpikir Kritis Peserta Didik. *Jurnal Ilmiah Profesi Pendidikan*, *7*(4), 2274–2276.

Wardhani, D. K., Agus Rustamana, & Wibowo, T. U. S. H. (2022). Implementasi Model Discovery Learning dengan Menggunakan Media Mind Mapping untuk Meningkatkan Kemampuan Berpikir Kritis Dalam Pembelajaran Sejarah Pada Siswa Kelas XI SMA Negeri 2 Pandeglang. *Reslaj: Religion Education Social Laa Roiba Journal*, *4*(4), 970–986.

Wayudi, M., Suwatno, & Santoso, B. (2020). Tingkat Kemampuan Berpikir Kritis Siswa Berdasarkan Self Regulated Learning Melalui Metode Guided Discovery Learning. *Edueksos : Jurnal Pendidikan Sosial & Ekonomi*, *9*(2), 18–35.

Wiguna, A. C., Salamah, I. S., & Rustini, T. (2023). Upaya Meningkatkan Berpikir Kritis Siswa Sekolah Dasar dalam Pembelajaran Ilmu Pengetahuan Sosial. *Journal Dirasah*, *6*(1), 62–70.

Wijaya, S. (2019). Hubungan Kecerdasan Emosional dan Motivasi Berprestasi Siswa Dengan Hasil Belajar Ilmu Pengetahuan Sosial (IPS). *Pedagonal: Jurnal Ilmiah Pendidikan*, *3*(2), 33–42.

Wijaya, S. (2020). Penerapan Model Pembelajaran Inquiri untuk Meningkatkan Hasil Belajar pada Mata Pelajaran Ilmu Pengetahuan Alam. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, *5*(1), 90–104.

Wijaya, S., Gunardi, A., & Ilannur, N. (2021). Development Of Audio Visual Based Numbered Heads Together Learning Model To Improve Learning Outcomes In Multiples And Number Factors. *Jurnal Pendidikan Sekolah Dasar (JPsd)*, *7*(1), 64–77.

Wijaya, S., & Marini, A. (2022). Pengunaan Aplikasi Merdeka Mengajar Dalam Meningkatkan Hasil Belajar Siswa Pada Sekolah Penggerak. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *07*(1167-1178).

Winarni, E. W., Hambali, D., & Purwandari, E. P. (2020). Analysis of language and scientific literacy skills for 4th grade elementary school students through discovery learning and ICT media. *International Journal of Instruction*, *13*(2), 213–222. https://doi.org/10.29333/iji.2020.13215a

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