JPIS JURNAL PENDIDIKAN ILMU SOSIAL
p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

ENHANCING CREATIVE AND CRITICAL THINKING THROUGH PROBLEM-BASED LEARNING WITH CULTURALLY RICH INDONESIAN CONTENT

Wayan Pudma Febby Mandalika[1], Maria Melani Ika Susanti[2], Andreas Erwin Prasetya[3]
[1,2,3] Professional Teacher Education for Elementary Schools, Universitas Sanata Dharma
email: wayanpudmafebbymandalika21@gmail.com

ABSTRACT

This research aims to improve creative and critical thinking skills in culturally rich Indonesian material by implementing the Problem Based Learning (PBL) learning model for grade 4 elementary school students. This research method is classroom action research. Data collection techniques in this research are non-test techniques and test techniques. Non-test techniques include observation, questionnaires and interviews. All of the students in the class were the subjects of this classroom action research IV D of SD Negeri Pujokusuman 01, totaling 28 students, consisting of 14 female students and 14 male students. The results of observations and interviews found that after the treatment was carried out, students were able to find many problems and solutions from learning sources and in their own sentences. The results of the questionnaire data analysis showed that the ability to think creatively and critically had increased, from 69.7% in the pre-cycle, 73.4% in the first cycle to 83% in the second cycle. The results of data analysis using tests showed that the ability to think creatively and critically had increased, from 68% in the pre-cycle, 77% in the first cycle to 84.5% in the second cycle. Based on this research, it can be concluded that the implementation of the Problem Based Learning (PBL) learning model can improve the creative and critical thinking abilities of grade 4 students at SD Negeri Pujokusuman 01 on Indonesia Kaya Budaya in IPAS culture.

Keywords: *Problem based learning, creative thinking, critical thinking*

Received: *07 Mei 2024*
Accepted: *03 Juni 2024*
Published: *10 Juni 2024*

INTRODUCTION

Quality human resources can of course be met through successful implementation in the education sector. The field of education is one way to advance a country because through education it can produce skilled people to meet the needs

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

of the times. The importance of efforts to grow capacity and shape the personality of citizens in order to create quality people who are proactive and ready to respond to the difficulties of the times in improving the prosperity of the country's life. The government through Law no. 20 of 2003 emphasizes that teaching is a conscious and planned work to create a learning environment and developing experience so that students effectively grow their ability to have the strength, wisdom, character, knowledge, honorable ethics and abilities needed without the help of others, society, nation and state (Indriani et al., 2023).

During the Corona virus pandemic, various learning challenges are often encountered in educational instructive units. The spread of the Corona virus pandemic in this country has hit various public areas, causing various problems and emergency situations. The effect in the area of education is no exception (Saleh, 2020). According to Maulinda (2022) The recovery of school areas after the Coronavirus pandemic has caused public authorities to make efforts to provide engaging and imaginative learning over the past two years. The issuance of the Decree of the Imam of Education, Culture, Exploration and Innovation of the Republic of Indonesia Number 56/M/2022 concerning the rules for implementing educational programs in the context of improving learning and restoring learning as a form of full assistance to work on education plans in Indonesia to realize a sovereign High Level Indonesia, independence, and character through the birth of Pancasila students who think fundamentally, are imaginative, free, self-confident, they have commitment to God All-powerful, have honorable person, cooperate and have worldwide variety through the execution of an autonomous educational plan program (Rahmadayanti & Hartoyo, 2022).

The kurikulum merdeka program was created to further develop the principles of schooling in Indonesia. Students may find it easier to learn without feeling overwhelmed by assignments assuming that an autonomous educational plan is created specifically for their needs and character qualities (Budiwati et al., 2023). The curriculum in Indonesia continues to undergo refinement and evolution in order to provide high quality education (Sari et al., 2023). The use of the kurikulum merdeka education program considers deeper, more enjoyable and independent learning (Arisanti, 2022). The kurikulum merdeka education program focuses on improving character through Pancasila learning content and student profiles. The characters framed are important figures in Pancasila, have noble character, are devout, independent, think, critical, can work together, and are creative (Maulinda, 2022). The kurikulum merdeka education plan was created to improve the quality and principles of training in Indonesia (Mandalika et al., 2024). Therefore, one of the government's policies in an effort to form character education and improve abilities is through an independent curriculum. This curriculum policy must be in line with macro national development plans (Asmawan et al., 2023).

The capacity to think creatively and critically is essential to the reasoning abilities that society in the 21st century needs to face the many open doors and difficulties faced in this period of rapid and dynamic progress in data and

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

correspondence innovation. Students need creative and critical thinking skills to face the 21st century which is marked by very rapid world changes in various fields, especially financial issues, transportation, innovation, correspondence, data, and so on (Ridwan & Nasrulloh, 2022). Thinking creatively and critically is an academic field that encompasses the following kinds of thinking: identification of goals and problems, clarification of concepts, validation, assumption discovery, perspective evaluation, and identification of implications and consequences (Seibert, 2021).

Critical thinking is an ability that must be prepared in students, because with critical thinking skills, students can draw conclusions about themselves and how they should act and overcome problems (Rauf et al., 2022). Critical thinking ability is the ability to think fairly without taking sides with one party, express explanations based on evidence, and provide goals based on existing reality to overcome problems (Sani, 2019). Critical thinking is the ability to think on a larger stage. Determining critical thinking reasoning is an important capacity in human existence. Strong thinking abilities that can help someone make things, assess and implement choices according to what they accept and do. The characteristics of students' assertive reasoning proposed by Robert Ennis include providing straightforward explanations, building basic skills, completing, providing further explanations, and developing methodologies and strategies (Rauf et al., 2022). Marks of decisive reasoning skill incorporate (a) being able to give a simple explanation, (b) being able to build basic skills, (c) being able to make an inference, (d) being able to provide a further explanation, and (e) being able to organize strategies and tactics (Handayani et al., 2021). The pointers that understudies should accomplish in decisive reasoning are: a) having the option to seek clarification on some pressing issues, b) having the option to respond to questions, c) having the option to reach determinations, d) having the option to offer viewpoints/contentions, e) having the option to tackle issues, and f) having the option to assess and surveying the aftereffects of basic examination. Thusly, decisive reasoning abilities will be capacities that understudies ought to have (Nida Winarti et al., 2022).

The ability to think creatively is found in handling problems with high creativity. Creative thinking is a process used to come up with an idea or idea for solving a problem (Handayani & Koeswanti, 2021). Creative thinking is believing that it is unique, intelligent, and produces confusing items in numerical problems. Synthesis, development, and evaluation of new ideas are part of this type of thinking. (Huliatunisa et al., 2020). There are four indicators of creative thinking ability, including a) fluency, which is indicated by the presence of various ideas, b) flexibility, namely the variety of ideas that come up, c) originality, namely the presence of new ideas in solving problems. problems, and d) elaboration is characterized by the ability to develop ideas in detail (Astuti et al., 2020). Supported by the opinion of Wahyuni & Palupi (2022), the ability to think creatively in mathematics, there are four components, namely fluency which means being able to produce many thoughts, flexible thinking which means easily switching from one type of thought. Thinking in another direction, originality, meaning being able to

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

think in a new and unique way, as well as thinking in detail (elaboration) which means being able to determine the details of an object, idea, or situation.

The relationship between creative and critical thinking allows individuals to generate disagreements in dealing with problems and can coordinate all appropriate data and identify reactions and legitimize their positions (Richard & Elder, 2019). One of the abilities that students must have is creative and decisive reasoning. The importance of creative and critical thinking skills is driven by students to become individuals who are able to understand and investigate complex things or objects thoroughly to produce more advanced goals and choices (Rauf et al., 2022). The development of students' creative and critical thinking will not arise by chance, but requires the cooperation of other people and a strong climate (Ridwan & Nasrulloh, 2022).

The results of interviews from class IV D elementary school teachers in the city of Yogyakarta said that students' creative and critical thinking skills are still very lacking, learning that emphasizes creative thinking skills really needs to be developed and applied to the learning process in elementary schools so that students always have flexibility in thinking and are able to solve various current life problems creatively and critically. Apart from that, based on the results of observations and interviews, teachers appear to still be lacking in developing students' creative and critical thinking skills, especially through learning carried out in class and questions or creative assignments that can build students' higher-level thinking skills.

Culturally rich Indonesian material is difficult for students to understand because the material is so extensive and extensive that it makes it difficult for students to understand the material if the material is only explained through the lecture method (Agustina & Nugroho, 2024). It is important to increase students' understanding of the material Indonesia is Rich in Culture because the material Indonesia is Rich in Culture is difficult for students to understand using conventional learning methods or lecture methods. Students become less interested and this affects the quality of education. Using inappropriate models, methods and approaches in learning can cause the quality of education to decline. In learning activities, especially social studies learning in elementary schools, learning methods and models that are interesting and appropriate to the material being taught are really needed (Ajeng Ayu Lestari et al., 2023). In the material Indonesia is Rich in Culture, it is divided into 3 topics, namely: Topic A: Unique Habits of the People Around Me; Topic B: Indonesian Cultural Wealth; Topic C: Benefits of Diversity and Preserving Cultural Diversity. So in this material, students are focused on understanding the material and increasing students' competence regarding various cultural riches in Indonesia (Murti et al., 2023). Students solve problems in social studies learning individually or in groups so that it is hoped that they can improve students' creative and critical thinking abilities.

By implementing a problem-based learning model in learning, it can provide student expansion, because by implementing PBL students are given the

opportunity to be actively involved in learning and ready to face learning. Overcoming critical thinking problems. Students' capacity to overcome a problem must be seen in their relational abilities in the educational experience (Janah et al., 2023). The critical thinking learning model trains students to search for data and really see the validity of data from various sources. Critical thinking is expected to provide changes to students' reasoning examples so that they focus and can examine a problem which can then be resolved well. One learning model that can prepare and empower students to handle problems freely and connect material and problems with students' daily routines is the problem-based learning model (Rauf et al., 2022). The problem-based learning model is a learning model where students are expected to think basicly and imaginatively while paying attention to relevant problems (Anwar & Jurotun, 2019). The problem-based learning model has extraordinary qualities, more specifically issues are the initial stage in learning; The problems raised are problems that exist in reality (Rosmana et al., 2022).

Problem-based learning was created to help students develop thinking capacity, critical thinking and scientific abilities and become independent in learning (Tiyasrini, 2021). There are several learning models that can be applied in developing experiences, one of which is problem-based learning (Janah et al., 2023). Critical thinking is considered appropriate for dealing with learning problems because it trains how to think and reason in making decisions, fosters the ability to overcome problems by conveying data (Ariyani & Tego, 2021). The problem-based learning configuration is to plan students to think fundamentally and systematically, search for and utilize appropriate learning assets (Prayogi & Estetika, 2019). Supported by opinion Monalisa et al., (2019) who said that the method for further developing understudies' decisive reasoning abilities is to utilize the Issue Based learning model.

In implementing PBL, educators should be ready to plan, design and deal with developing experiences. Therefore, open modules are needed as tools to assist educators in implementing educational experiences in the classroom (Syahril et al., 2023). The syntax of the PBL learning model is (1) orienting students regarding the problems they face; (2) organizing students in learning by forming groups; (3) Guiding investigations in groups; (4) present the results; (5) Analyze the results. Therefore, critical thinking skills are one of the benchmarks for assessing whether PBL learning can influence student learning outcomes. The linguistic structure of the PBL learning model is (1) placing students according to the problems they face; (2) organize students to progress by forming groups; (3) Directing the exam in the meeting; (4) describe the results; (5) Dissect the results. Therefore, decisive reasoning ability is one of the benchmarks for surveying whether PBL learning can influence student learning outcomes (Novianti et al., 2023).

Based on previous research from Aulia (2023) concluded that the next teacher or researcher should be able to apply the Project Based Learning Model as an effort to improve elementary school students' creative thinking abilities through the learning process. Other research was also carried out by Idris et al. (2020) which

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

concluded that students who were taught using the problem-based learning model had the best inference and interpretation abilities compared to other indicators of critical thinking abilities. Other research was also carried out by Rujiah (2021) Problem Based Learning is a recommended learning model in elementary school level learning because it can support the improvement of students' high-level thinking abilities through investigation and problem solving which has implications for the development of students' knowledge construction. Other research was also carried out Mustofa & Hidayah (2020) there is a significant influence of the PBL model on students' thinking abilities.

In an effort to facilitate students to be able to think creatively and critically, teachers need to carry out student-centered learning. Thus, because of these problems, the researcher aims to implement the Problem Based Learning (PBL) learning model to improve students' creative and critical thinking in culturally rich Indonesian material in grade 4 elementary school.

RESEARCH METHOD

The plan used in this exam is a class action activity research plan (PTK). PTK is a perception that carries out activities in class involving rules in accordance with research techniques carried out over several periods or cycles (Luthfa Eka Saputri et al., 2023). All of the students in the class were the subjects of this classroom action research IV D of SD Negeri Pujokusuman 01, totaling 28 students, consisting of 14 female students and 14 male students.

Data collection techniques are the most important step in research, because the main aim of research is to obtain data (Sugiyono, 2021). Data collection techniques in this research are non-test techniques and test techniques. Non-test techniques include observation, questionnaires and interviews. Observations during the research were carried out to observe the application of the problem-based learning model and students' creative and critical thinking. The purpose of this observation is to see and observe directly the situation in the learning process using the problem-based learning model. Through this observation the researcher obtains a clearer picture of the problem being studied. Interviews were conducted directly with class IV D students regarding the implementation of the problem-based learning model that had been carried out. Interviews were conducted after the learning process took place. The purpose of interviews with teachers is to explain how they respond after teaching using the problem-based learning model, while the purpose of interviews with students is to find out students' responses to the problem-based learning model. The use of questionnaires in this research was to obtain information regarding improving students' creative and critical thinking abilities according to predetermined indicators. The test technique uses a rubric for assessing students' creative and critical thinking which is used to obtain data about students while taking part in learning taking place in science lessons with Culturally Rich Indonesia material in class IV from cycle 1-2 with indicators of creative and critical thinking.

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

The information examination method utilized in this study hall activity research is graphic investigation and spellbinding measurable information investigation. Subjective distinct examination procedures are utilized to dissect information as data in sentence structure. Qualitative data in the form of interviews and observations of teachers and students regarding the science and science learning process about Culturally Rich Indonesia in Indonesia by implementing the problem-based learning model. Quantitative data in the form of numbers, such as the results of student questionnaires and assessments of students' creative and critical thinking, are analyzed using descriptive statistical data analysis techniques. The form of data analysis in this research uses the Miles and Huberman model (Sugiyono, 2021) which includes three flows, namely data reduction, data presentation, and conclusions. The indicator of achievement or completeness of creative and critical thinking skills is based on the average score of students who reach ≥ 80, so they are said to be complete (Nida Winarti et al., 2022).

To calculate the percentage increase in ability classically, the following formula is used.

$$\text{Mark} = \frac{\text{The total score obtained by students}}{\text{Maximum total score}} \text{ x } 100$$

Each student has experienced improvement if they have achieved a score of ≥ 75, and classical completeness is declared successful if they have achieved completeness of ≥ 80% (Rais et al., 2023).

RESULTS AND DISCUSSION

Results of Observations and Interviews on the Creative and Critical Thinking Ability of Cycle I and II Students

Based on the results of pre-cycle observations, students have not been able to find the problems around them and find solutions. Students also cannot find problems in the learning resources presented. Many students cannot write down the contents of their ideas in their own sentences. In interview activities, students had never carried out learning activities using a problem-based learning model. Students are accustomed to writing answers exactly according to the sentences in the book. Students are not yet able to formulate their own ideas. Apart from that, students are also not used to doing activities in groups, students tend to do assignments independently, which makes students not used to evaluating and concluding.

Based on the results of observations from cycle I and cycle II carried out on students, an increase in creative and critical thinking abilities was found. At the first meeting in cycle I, students were still not used to looking for problems, carrying out investigations, and finding solutions from the learning resources presented by the researcher. After the researchers presented several problems through text, photos and videos, students still had difficulty finding problems and solutions. After reflecting on the learning, the researcher told the students to observe the learning resources and express them in their own words. In the second meeting in cycle I, students were getting used to finding problems and solutions, although it was still

not optimal for all groups to find many problems and many solutions. In cycle II learning activities, students are used to looking for various problems and solutions from the learning resources presented by researchers. Researchers also added diverse and more contextual learning resources to make it easier for students to carry out investigations.

Based on the results of interviews from cycle I and cycle II conducted during the research. At the first meeting of cycle I, students said that they still had difficulty finding problems and solutions from the learning resources presented. Students said that they were not yet familiar with the learning model used. Students also have a little difficulty coordinating with groups in carrying out investigations. However, at the end of cycle I, students began to get used to the learning steps in the problem-based learning model. At the end of cycle II, students in groups were able to find many problems and solutions from the learning resources presented by the researcher. Students can also express problems and solutions in writing and sentences that they create themselves in groups.

Results of the Creative and Critical Thinking Ability Questionnaire for Cycle I and II Students

Based on the table below, in both cycle I and cycle II, there were 28 students as exploration subjects to pay attention to the inventive and decisive reasoning abilities of 4th grade elementary school students in science and science subjects in the city of Yogyakarta who utilized the Issue Based method. Understanding learning models. Perceptions are created based on signs of the student's imaginative and assertive reasoning during the developing experience.

Table 1.

Table of Questionnaires Implemented from Pre-Cycle Stages, Cycle I to Cycle II

No.	Variable	Indicator	Pre-Cycle	Cycle 1		Cycle 2	
				1	2	1	2
1.	Think critically	Able to analyze/identify information and problems	68	71	73	81	86
		Able to formulate ideas to solve problems	69	70	72	80	85
		Able to evaluate	70	74	75	82	87
		Able to conclude	70	73	75	82	86
2.	Creative Thinking	Fluency	71	73	74	83	87
		Flexibility	72	73	75	80	88
		Authenticity (Originality)	68	72	73	80	84
		Elaboration	70	75	76	81	85
			69,7	72,6	74,1	81,1	86
			69,7%	**73,4 %**		**83,6 %**	

In view of table 1, it very well may be seen that understudies have encountered improvement from cycle I to cycle II with the use of the problem-based learning model. In cycle I, understudies got a genuinely decent classification with 73.4%. Nonetheless, this is as yet said to have not arrived at the predetermined

accomplishment markers. With 83.6%, students improved significantly in cycle II. This has grown to the point where it has been achieved during this cycle.

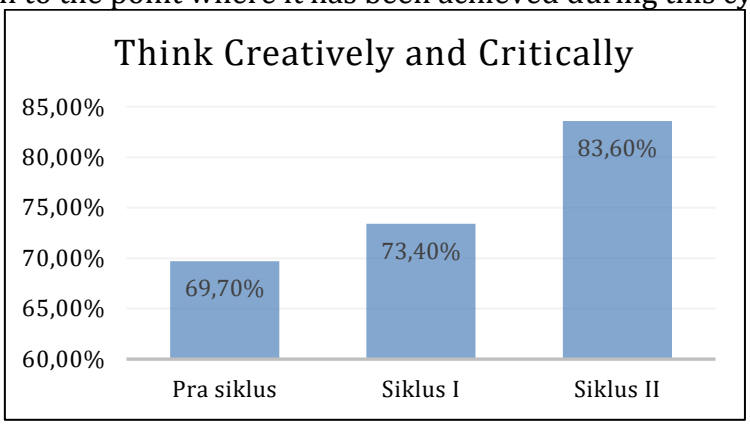

Figure 1.
Results of the Creative and Critical Thinking Questionnaire

Figure 1 shows that there has been a significant increase in the use of the PBL learning model regarding students' creative and critical thinking abilities as measured by questionnaires.

Student Creative and Critical Thinking Ability Test Results

Table 2.
Table of Creative and Critical Thinking Ability Test Results in Pre-Cycle

Precycle	The number of students	Percentage
Meeting 1	28	68%
Average		**68%**

At the first meeting in the pre-cycle, it was conducted on 28 students and resulted in a percentage of ability of 68%.

Table 3.
Table of Creative and Critical Thinking Ability Test Results in Cycle I

Precycle	The number of students	Percentage
Meeting 1	28	75%
Meeting 2	26	79%
Average		**77%**

The first and second meetings in cycle one was conducted on 26 and 28 students and resulted in an increased percentage of ability, namely 75% and 79% with an average ability of 77%.

Table 4.
Table of Creative and Critical Thinking Ability Test Results in the Cycle II

Pre-cycle	The number of students	Percentage
Meeting 1	27	83%
Meeting 2	28	86%
Average		**84,5%**

In light of table 3 with respect to understudy test results, it is realized that there was an increment from pre-cycle 68%, cycle I 77%, and cycle II 84.5%. From the test brings about the pre-cycle, it got an unfortunate classification, this has not yet arrived at the foreordained accomplishment markers. Because the category that was obtained during cycle I was the sufficient category, it still required improvement in cycle II, the results of the thinking ability test continued to show an increase in the achievement indicators that had been determined. After enhancements were made in cycle II, understudy test results encountered a huge increment to the generally excellent classification.

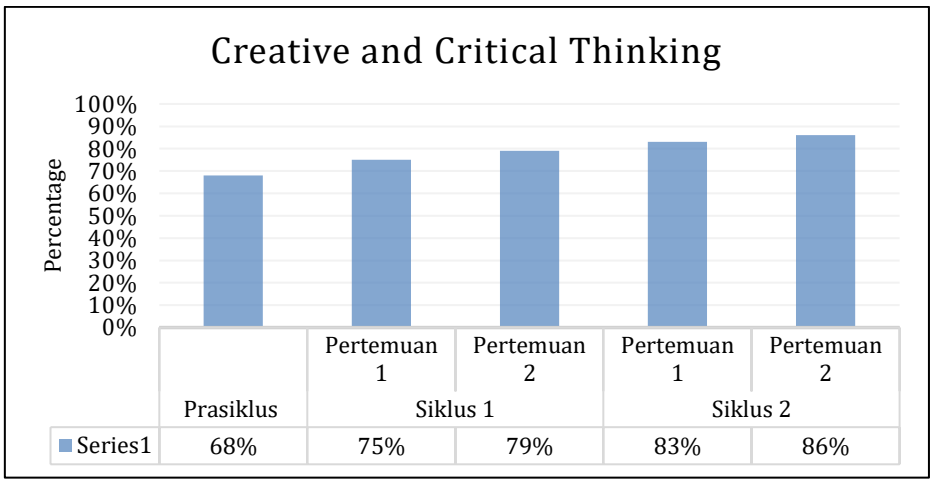

Figure 2.
Graphic of Creative and Critical Thinking Test Results

Figure 2 explains that there was a significant increase in the use of problem-based learning models in pre-cycle, cycle 1 and cycle 2. The exploration results showed that there was a huge expansion in the utilization of the PBL learning model with respect to understudies' imaginative and decisive abilities to reason. The PBL learning model can be applied to further develop understudies' imaginative and decisive reasoning abilities on the grounds that in this learning model there are exercises that train understudies to think. In accordance with persistently prepared speculation processes, understudies can further develop their imaginative and decisive reasoning skills. By applying the PBL learning model to further develop innovative and decisive reasoning abilities to assist understudies with tackling the issues they face.

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

Discussion

Remembering signs of decisive reasoning skills, esp; (1) students are able to analyze/identify information and problems from the learning resources presented. The text also provides important information for students. This was obtained from the results of observations and interviews conducted with students. From the final results of the questionnaire carried out by the students, the results also stated 86, namely that they felt capable of analyzing information; (2) students are able to formulate ideas to solve problems from the learning resources presented. Students watch various learning resources and write down their ideas in their own language and sentences. Students are able to find many solutions to problems and determine the most appropriate solution for the problem. This was made possible by the observations and interviews with students that were carried out. From the final results of the questionnaire carried out by the students, the results also stated 85, namely that they felt capable of analyzing information; (3) students are able to evaluate the results of their work and the results of the work of other groups after making a presentation in front of the class. Students summarize the problems and solutions obtained and improve the results of their own work. This was also obtained from the results of observations and interviews conducted with students. From the final results of the questionnaire carried out by the students, the results also stated 87, namely that they felt capable of analyzing information; (4) students are able to conclude answers from the solutions that have been written, and students are also able to conclude regarding the material they have studied together. Students are able to summarize the problems and solutions obtained and summarize the learning results obtained. Supported by opinion Monalisa et al., (2019) who said that the PBL model can develop interpersonal relationships in group work, encourage student initiative in the workplace, and improve critical thinking skills. This learning model can work on understudies' decisive reasoning, where understudies will have their capacities investigated before the instructor clarifies the material for be educated. This was additionally gotten from the aftereffects of perceptions and meetings led with understudies. From the final results of the questionnaire carried out by the students, the result was 86, namely that they felt capable of analyzing information.

Considering signs of creative thinking ability, in particular; (1) students have fluency in generating many variations of problems and are able to provide many variations of solutions. This was acquired from the consequences of perceptions and meetings led with understudies. From the final results of the questionnaire carried out by the students, the results also stated 87, namely that they felt capable of analyzing information; (2) students have flexibility in seeing problems from different points of view and presenting concepts in different ways. This was gotten from the aftereffects of perceptions and meetings directed with understudies. From the final results of the questionnaire carried out by the students, the results also stated 88, namely that they felt capable of analyzing information; (3) students are able to present originality in providing new ideas and are able to create new ideas in solving problems in many ways. This was made possible by the observations and

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

interviews with students that were carried out. From the final results of the questionnaire carried out by the students, the results also stated 84, namely that they felt capable of analyzing information; (4) students are able to carry out elaboration in developing the ideas found into sentences and are able to organize good sentences from the ideas found. This was obtained from the results of observations and interviews conducted with students. From the final results of the questionnaire carried out by the students, the result was 85, namely that they felt capable of analyzing information. According to Nurlaily et al., (2019) Educators need adequate opportunity to arrange understudies in bunch exercises. Aside from that, they experience issues separating their time while directing gatherings since understudies are as yet trusting that the educator will make sense of for the gathering without doing it without anyone's help first.

Based on the test results, creative and critical thinking abilities increased from pre-cycle 68%, cycle I 77% and cycle II 84.5%. At the first meeting, the pre-cycle activities were carried out with a total of 28 students with a score percentage of 68%. In the first cycle of activities, at the first meeting there were 28 students with a score percentage of 75% and there was an increase in the second meeting with 26 students with a score percentage of 79%. In cycle II activities, at the first meeting, there were 27 students with a score percentage of 83% and there was an increase in the second meeting with 28 students with a score percentage of 86%.

Based on the results of observations, it was found that there was improvement in the implementation of actions in cycle I, namely that they were starting to get used to the steps of the Problem Based Learning model, although there were still deficiencies in learning. Previously, at the first meeting in cycle I, students were still not fully involved in looking for problems and were not active in solving the problems they found. This is because at the first meeting in cycle I the group had not paid close attention to the learning resources presented by the researcher. At the end of the first meeting in cycle I, the researcher reflected by asking the children to pay attention and explore in-depth information from learning sources in order to obtain problems and solutions. The researcher also prepared more diverse learning resources for the second meeting in cycle I. At the second meeting in cycle I, the implementation of learning had begun to be conducive and could be carried out well. This is also proven by the evaluation results at the end of the lesson where the students' creative and critical thinking abilities increased by 73% in cycle I.

Implementation in cycle II obtained even better improvement results than the previous cycle as evidenced by the learning progressing systematically and students carrying out directions well in accordance with the teacher's directions. Students in groups can take part in learning activities and complete LKPD well and on time. Students can also observe learning resources and obtain information to find problems and solutions. Finally, students can get used to finding problems through the text, photos and videos displayed and looking for solutions from investigations. In the implementation of cycle II, it was clear that there was an increase in cognitive scores, as evidenced by the evaluation carried out at the end of the lesson which saw an increase in the percentage of students' creative and critical thinking abilities by

83.6% in cycle II. The learning outcomes of students in science and science learning with culturally rich Indonesian material show that learning by applying the Problem Base Learning model can improve students' creative and critical thinking abilities in each cycle. In accordance with the results of research regarding the application of the Problem Based Learning model.

CONCLUSION

To work with students to think creatively and critically, teachers need to complete student-focused learning. Therefore, based on these problems, experts plan to apply the Problem Based Learning (PBL) learning model to train students' creative and critical reasoning. Considering the consequences of perception, students' imaginative and decisive reasoning skills have developed from pre-cycle, cycle I to cycle II. The capacity for innovative and fundamental thinking is expanded after carrying out pick-up using an issue-based learning model. This can be seen because there is an increase in the normal value of students' critical thinking abilities from pre-cycle, cycle I to cycle II. Therefore, students' ability to think increases after using the problem-based learning model in each cycle. In the next test, while the learning exercise uses the PBL learning model, students are expected to focus on each stage of the process, especially in meeting needs and overcoming problems caused by students who master it.

REFERENCES

Agustina, F. L., & Nugroho, A. (2024). Pengembangan Media Pembelajaran Pile Of Cultural Blocks untuk Meningkatkan Pemahaman Siswa dalam Materi Indonesia Kaya Budaya Kelas IV Sekolah Dasar. *Jurnal Basicedu*, *8*(1), 601–614. https://doi.org/https://doi.org/10.31004/basicedu.v8i2.7321.

Ajeng Ayu Lestari, D., Sagita, J., & Trismawanti, I. (2023). Upaya Meningkatkan Keaktifan Belajar Peserta Didik Dengan Model Problem Based Learning Pada Materi Indonesia Kaya Budaya di Kelas IV SDN Tanah Tinggi 09 Jakarta Pusat. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, *9*(2), 2164–2178. https://doi.org/10.36989/didaktik.v9i2.925.

Anwar, K., & Jurotun, J. (2019). Peningkatan Aktivitas dan Hasil Belajar Siswa SMA Pada Dimensi Tiga Melalui Model Pembelajaran PBL Berbantuan Alat Peraga. *Kreano, Jurnal Matematika Kreatif-Inovatif*, *10*(1), 94–104. https://doi.org/10.15294/kreano.v10i1.19366.

Arisanti, D. A. K. (2022). Analisis Kurikulum Merdeka dan Platform Merdeka Belajar Untuk Mewujudkan Pendidikan Yang Berkualitas. *Jurnal Penjaminan Mutu*, *8*(02), 243–250. https://doi.org/10.25078/jpm.v8i02.1386

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

Ariyani, O. W., & Tego, P. (2021). Efektivitas Model Pembelajaran Problem Based Learning dan Problem Solving Terhadap Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Jurnal Basicedu*, *5*(3), 2247–2255. https;//jbasic.org/index.php/basicedu.

Asmawan, M. C., Thoyibbah, K., & Gano-an, J. C. (2023). Implementation of Character Education Through the Independent Curriculum to Face the Era of Society 5.0. *Jurnal Pendidikan Ilmu Sosial*, *33*(2), 235–248. https://journals2.ums.ac.id/index.php/jpis/article/view/3418.

Astuti, A., Waluya, S. B., & Asikin, M. B. (2020). Instrumen Kemampuan Berpikir Kreatif Matematika untuk Siswa Kelas IV Sekolah Dasar. *Musamus Journal of Primary Education*, *3*(1), 27–34. https://doi.org/10.35724/musjpe.v3i1.3117.

Aulia, N. (2023). Penerapan Model Project Based Learning untuk Meningkatkan Kemampuan Berpikir Kreatif Siswa di Sekolah Dasar. *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)*, *3*(1), 1–7. https://doi.org/10.32665/jurmia.v3i1.338.

Budiwati, R., Budiarti, A., Muckromin, A., Hidayati, Y. M., & Desstya, A. (2023). Analisis Buku IPAS Kelas IV Kurikulum Merdeka Ditinjau dari Miskonsepsi. *Jurnal Basicedu*, *7*(1), 523–534. https://doi.org/10.31004/basicedu.v7i1.4566.

Handayani, A., & Koeswanti, H. D. (2021). Meta-Analisis Model Pembelajaran Problem Based Learning (PBL) Untuk Meningkatkan Kemampuan Berpikir Kreatif. *Jurnal Basicedu*, *5*(3), 1349–1355. https://doi.org/10.31004/basicedu.v5i3.924.

Handayani, S. L., Budiarti, I. G., Kusmajid, K., & Khairil, K. (2021). Problem Based Instruction Berbantuan E-Learning : Pengaruhnya terhadap Kemampuan Berpikir Kritis Peserta Didik Sekolah Dasar. *Jurnal Basicedu*, *5*(2), 697–705. https://doi.org/10.31004/basicedu.v5i2.795.

Huliatunisa, Y., Wibisana, E., & Hariyani, L. (2020). Analisis Kemampuan Berfikir Kreatif Matematis Siswa Dalam Menyelesaikan Soal Pemecahan Masalah. *Indonesian Journal of Elementary Education (IJOEE)*, *1*(1), 56–65. https://doi.org/10.31000/ijoee.v1i1.2567.

Idris, N. W., Usman, & Subaer. (2020). Pengaruh Model Pembelajaran Berbasis Masalah Terhadap Kemampuan Berpikir Kritis Peserta Didik. *Cakrawala: Jurnal Manajemen Pendidikan Islam Dan Studi Sosial*, *4*(2), 300–337. https://doi.org/10.35580/jspf.v16i1.15284.

p-ISSN: 1412-3835
e-ISSN: 2541-4569
VOL 34, NO. 1, JUN 2024

Indriani, S. S., Lestari, R. Y., & Juwandi, R. (2023). Implementasi Projek Penguatan Profil Pelajar Pancasila Dalam Membentuk Profil Peserta Didik Sebagai Pelajar Pancasila di SMPN 1 Kota Serang. *Equilibrium: Jurnal Pendidikan*, *XI*(3), 397–405. http://journal.unismuh.ac.id/index.php/equilibrium.

Janah, A. F., Yulianti, D., & Purnomo, H. (2023). Penerapan Model Problem Based Learning dengan Strategi TaRL untuk Meningkatkan Keterampilan Berkomunikasi Peserta Didik Application of the Problem Based Learning Model with the TaRL Strategy to Improve Student ' s Communication Skills. *Jurnal Penelitian Pendidikan Fisika*, *8*(3), 158–164. https://doi.org/https://doi.org/10.36709/jipfi.v8i3.45.

Luthfa Eka Saputri, C., Suprapto, E., & Sri Mulyanti, E. D. (2023). Penerapan Model Project Based Learning Untuk Meningkatkan Kreativitas Peserta Didik Kelas IV Pada Pembelajaran IPAS Materi Indonesiaku Kaya Budaya. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, *8*(1). https://doi.org/10.23969/jp.v8i1.8318.

Mandalika, W. P. F., Priyanti, B. A., Puspitasari, L. M., Purwani, M. A., Sundari, N. D., & Susanti, M. M. I. (2024). *Analisis Rancangan Modul Ajar Kurikulum Merdeka Pendidikan Pancasila Sekolah Dasar*. *XII*(April), 69–79. https://doi.org/https://doi.org/10.26618/equilibrium.v12i1.13547.

Maulinda, U. (2022). Pengembangan Modul Ajar Berbasis Kurikulum Merdeka. *Tarbawi*, *5*(2), 130–138. https://doi.org/https://doi.org/10.51476/tarbawi.v5i2.392.

Monalisa, C., Ahda, Y., & Fitria, Y. (2019). Critical Thinking Skill Improvement Using Problem Based Learning (PBL) Model of 4 th Grade Students of Elementary School. *International Journal of Science and Research*, *8*(2), 429–432. https://www.ijsr.net/archive/v8i2/ART20194984.pdf.

Murti, K., Kresnadi, H., & Halidjah, S. (2023). Pengembangan Modul Ajar Mata Pelajaran Ilmu Pengetahuan Alam dan Sosial (IPAS) Kelas IV Kurikulum Merdeka Materi Indonesiaku Kaya Budaya di SDN 24 Pontianak Timur. *Journal on Education*, *06*(01), 6801–6808.

Mustofa, R. F., & Hidayah, Y. R. (2020). The Effect of Problem-Based Learning on Lateral Thinking Skills. *International Journal of Instruction*, *13*(1), 463–474. https://doi.org/10.29333/iji.2020.13130a.

Nida Winarti, Maula, L. H., Amalia, A. R., Pratiwi, N. L. A., & Nandang. (2022). Penerapan Model Pembelajaran Project Based Learning Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Kelas III Sekolah Dasar. *Jurnal Cakrawala Pendas*, *8*(3), 552–563. https://doi.org/10.31949/jcp.v8i3.2419.

Novianti, Zaiyar, M., Khaulah, S., Fitri, H., & Jannah, R. (2023). Pengembangan E-Modul Berbasis Problem Based Learning Terhadap Kemampuan Berfikir Kritis Siswa. *Jurnal Ilmu Sosial Dan Pendidikan (JISIP)*, *7*(3), 2598–9944. https://ejournal.mandalanursa.org/index.php/JISIP/article/view/5370.

Nurlaily, V. A., Soegiyanto, H., & Usodo, B. (2019). Elementary School Teacher's Obstacles in The Implementation of Problem-Based Learning Model in Mathematics Learning. *Journal on Mathematics Education*, *10*(2), 229–238. https://doi.org/10.22342/jme.10.2.5386.229-238.

Prayogi, R. D., & Estetika, R. (2019). Kecakapan Abad 21: Kompetensi Digital Pendidik Masa Depan. *Jurnal Manajemen Pendidikan ,14*(2), 144-151. https://doi.org/10.23917/jmp.v14i2.9486.

Rahmadayanti, D., & Hartoyo, A. (2022). Potret Kurikulum Merdeka, Wujud Merdeka Belajar di Sekolah Dasar. *Jurnal Basicedu*, *6*(4), 7174–7187. https://doi.org/10.31004/basicedu.v6i4.3431.

Rais, R. Z., Auliah, A., & Azriani. (2023). Penerapan Model Problem Based Learning dengan Pendekatan Teaching at The Right Level dalam Meningkatkan Hasil Belajar Kognitif Peserta Didik. *Jurnal Pemikiran Dan Pengembangan Pembelajaran*, *5*(3), 1009–1017. https://doi.org/https://doi.org/10.31970/pendidikan.v5i3.831.

Rauf, I., Arifin, I. N., & Arif, R. M. (2022). Pengaruh Model Problem Based Learning Terhadap Kemampuan Berpikir Kritis Siswa. *Pedagogika*, *7*(1), 163–183. https://doi.org/10.37411/pedagogika.v13i2.1354.

Richard, P., & Elder, L. (2019). *A Guide For Educators to Critical Thinking Competency Standards: Standards, Principles, Performance Indicators, and Outcomes With A Critical Thinking Master Rubric*. Rowman & Littlefield.

Ridwan, T., & Nasrulloh, I. (2022). Analisis Kemampuan Berpikir Kreatif dan Kritis Siswa Sekolah Dasar. *JPPI (Jurnal Penelitian Pendidikan Indonesia)*, *8*(2), 466-471. https://doi.org/10.29210/020221520.

Rosmana, P. S., Iskandar, S., Annisa, N., Nurfadilah, A., & Maharani, C. (2022). Kesiapan Sekolah Dasar Dalam Menerapkan Kurikulum Prototipe Untuk Menciptakan Generasi Yang Kreatif dan Inovatif. *Equilibrium: Jurnal Pendidikan*, *10*(2), 175–184. https://doi.org/10.26618/equilibrium.v10i2.7262.

Rujiah. (2021). Problem Based Learning in Mathematics Learning in First Grade Elementary Schools. *Workshop Penguatan Kompetensi Guru* , *4*(6), 1341–1347. https://jurnal.uns.ac.id/SHES/article/view/70564.

Saleh, M. (2020). *Merdeka Belajar di Tengah Pandemi Covid-19*. 185. http://proceedings.ideaspublishing.co.id/index.php/hardiknas/article/view/8.

Sani, R. A. (2019). *Pembelajaran Berbasis HOTS Edisi Revisi: Higher Order Thinking Skills*. Tira Smart.

Sari, D. E., Yuningsih, Y., & Muhammadiyah, U. (2023). Sculpting Success: A Blueprint For 21st-Century Accounting Education Through Innovative Lesson Planning in Vocational High Schools. *Jurnal Pendidikan Ilmu Sosial, 33*(2), 197–216. https://journals2.ums.ac.id/index.php/jpis/article/view/3040.

Seibert, S. A. (2021). Problem-based Learning: A Strategy to Foster Generation Z's Critical Thinking And Perseverance. *Teaching and Learning in Nursing*, *16*(1), 85–88. https://doi.org/10.1016/j.teln.2020.09.002.

Sugiyono. (2021). *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D dan Penelitian Pendidikan)* (A. Nuryanto (ed.)). Bandung: Alfabeta.

Syahril, R. F., Saragih, S., & Suanto, E. (2023). Pengembangan Modul Ajar Berbasis Problem Based Learning Untuk Memfasilitasi Kecakapan Pemecahan Masalah Matematis. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *12*(2), 1987. https://doi.org/10.24127/ajpm.v12i2.6923.

Tiyasrini, W. A. (2021). Penerapan Model Pembelajaran Berbasis Masalah Problem Based Learning (PBL) Dalam Meningkatkan Hasil Belajar IPS Materi Kegiatan Ekonomi Di Negara Asean Pada Siswa Kelas VI SDN Dawuhansengon II Tahun 2020. *Educatif Journal of Education Research*, *3*(1), 208–217. https://doi.org/10.36654/educatif.v3i1.198.

Wahyuni, D., & Palupi, B. S. (2022). Analisis Kemampuan Berpikir Kreatif Matematis Siswa Kelas V Sekolah Dasar Melalui Soal Open-Ended. *Jurnal Kiprah Pendidikan*, *1*(2), 76–83. https://doi.org/10.33578/kpd.v1i2.30.