
Development of a Self-Efficacy-Integrated Problem-Based Learning Model for Social Studies Instruction to Enhance the Critical Thinking Skills of Prospective Elementary School Teachers

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Abstract

This study aims to develop a Problem-Based Learning (PBL) model integrated with self-efficacy in Social Studies education to enhance the critical thinking skills of prospective elementary school teachers. The study is motivated by the demands of 21st-century education, which emphasize the mastery of critical thinking skills, while the learning process in higher education continues to be dominated by conventional approaches that have not optimally fostered students' analytical abilities and self-confidence. This research employed a Research and Development (RSD) method based on the Tjeerd Plomp development model using a mixed-methods approach. The participants consisted of 60 students enrolled in the Elementary School Teacher Education Program at Universitas Iskandar Muda. The research stages included preliminary investigation, design, construction, testing, evaluation, revision, and implementation. The findings indicate that the developed model met the criteria of validity, practicality, and effectiveness, as evidenced by expert validation and field implementation. The implementation of the model resulted in significant improvements in students' critical thinking skills, particularly in the aspects of analysis, evaluation, argumentation, and logical conclusion drawing. In addition, students' self-efficacy improved, especially in terms of confidence in completing academic tasks, perseverance in overcoming challenges, and active participation in the learning process. This study concludes that integrating self-efficacy into the Problem-Based Learning model provides an effective instructional innovation for preparing prospective elementary school teachers who are critical, reflective, and adaptable to the demands of 21st-century education.

1. Introduction

The development of twenty-first-century education has transformed the learning paradigm from one primarily focused on knowledge transmission to one that emphasizes competency development, enabling prospective elementary school teachers to adapt to increasingly complex global changes. The twenty-first century, which marks the beginning of the third millennium, is characterized by the rapid advancement of science, information and communication technology, global competitiveness, and the evolving demands of the workforce. These developments require educational institutions to respond appropriately, particularly in preparing prospective elementary school teachers. In the twenty-first century, prospective elementary school teachers are expected to possess higher-order thinking skills, demonstrate proficiency in information technology, collaborate effectively, and communicate efficiently [1].

The essential 21st-century skills that students are expected to master include critical thinking, communication and collaboration, as well as creativity and innovation. These competencies are particularly crucial for prospective elementary school teachers, as they enable them to address authentic and complex problems encountered in educational settings. To foster these competencies, educators are required to implement instructional models that align with the demands of 21st-century learning. Such learning is designed to equip prospective teachers with critical thinking abilities, effective communication skills, and innovative problem-solving capabilities. Furthermore, it emphasizes the development of essential skills and competencies needed in the digital era, including digital literacy—the ability to use digital technologies, communication platforms, and social media effectively and responsibly—as well as life skills, such as social and intercultural competence, productivity, leadership, and personal responsibility.

In the Basic Knowledge and Contemporary Themes course, prospective teachers are expected to master core concepts and apply them in real-world contexts. The transformation of 21st-century learning has become a key strategy for developing high-quality human resources by emphasizing the acquisition of 21st-century skills. These competencies are essential for fostering a generation that is excellent, intellectually capable, competitive, and possesses strong character, enabling them to compete effectively both within their local communities and in the global arena. [2]. Critical thinking is a higher-order thinking skill and is regarded as an intended educational outcome [3]. When taught effectively, it fosters critical and logical thinking. Learning can be considered effective in enhancing students' critical thinking skills when students are actively engaged physically, mentally, and socially throughout the learning process. Students are able to understand the content of all subjects and apply their knowledge in everyday life when they possess well-developed critical thinking skills [4].

Critical thinking has, in fact, been practiced since the era of the ancient Greek philosophers; however, the term only gained widespread recognition in academic discourse in 1987. Richard Paul and Linda Elder were among the leading scholars who popularized the concept at the 8th Annual International Conference on Critical Thinking and Educational Reform in 1987. Both are distinguished professors and researchers in the field of critical thinking. They define critical thinking as an intellectual process of conceptualizing, analyzing, synthesizing, and evaluating information to guide beliefs and actions. Such information is derived from observation, experience, reflection, reasoning, and communication [5]. In general, classroom teaching and learning processes are predominantly directed toward the memorization of information. Prospective teachers are expected to remember and accumulate large amounts of information rather than develop a deep understanding of the knowledge they acquire and integrate it with real-life situations. Learning that emphasizes rote memorization fails to foster students' self-directed learning and is unable to optimize the development of their critical thinking skills

Critical thinking refers to the process of determining what actions should be taken and what beliefs should be held through reflective judgment. Individuals who possess strong critical thinking skills are more likely to make sound and appropriate decisions in their daily lives, as these skills enable them to evaluate information objectively and choose the most reasonable course of action [6]. Critical thinking refers to the process of determining the actions that should be taken and the beliefs that should be held through careful and reflective

judgment. Individuals who possess strong critical thinking skills are more likely to make sound, rational, and well-informed decisions in their daily lives, as these skills enable them to evaluate information objectively, analyze multiple alternatives, and select the most logical and justifiable course of action.

Correspondingly, the World Economic Forum's Future of Jobs Report ranks critical thinking among the most essential skills required to address the transformations within the modern labor market [7] posits that critical thinking skills constitute the primary foundation for developing individual capabilities to address complex issues, make rational decisions, and engage effectively in 21st-century society. Despite critical thinking being a paramount requirement in modern education, a body of research demonstrates that fostering this competence in higher education students continues to encounter diverse obstacles. A significant portion of pedagogical practices in tertiary education remains focused on conceptual and procedural knowledge acquisition, thus failing to provide adequate opportunities for students to cultivate analytical, evaluative, and reflective capacities. [8] explains that student engagement in critical thinking activities is heavily influenced by the instructional strategies implemented within the lecture process.

Recent studies carried out by [9] indicates that the deficient cultivation of higher-order thinking skills continues to be a systemic challenge in tertiary education, notably when pedagogical approaches fail to foster independent and active problem-solving among students. This situation warrants critical attention, particularly in teacher training programs, given that prospective teachers hold a crucial responsibility in shaping the quality of learning they will deliver in future elementary schools. In the context of primary teacher education, Social Studies instruction constitutes a domain with immense potential for fostering students' critical thinking competencies. The nature of Social Studies is inherently linked to social phenomena, economic challenges, community dynamics, social conflicts, cultural diversity, and real-world decision-making. Such circumstances necessitate that students possess the capacity to conduct multidimensional analysis, evaluate data objectively, and formulate arguments based on pertinent social realities.

One of the widely recommended learning models for enhancing critical thinking skills is Problem-Based Learning. The Problem-Based Learning (PBL) model integrated with self-efficacy is an effective learning model for improving critical thinking skills." [10]. his model places students at the center of the learning process by presenting authentic problems that stimulate investigation, discussion, information exploration, data analysis, and the formulation of solutions based on logical argumentation. Research—specifically the results of a meta-analysis conducted by [9] Furthermore, it indicates that the implementation of Problem-Based Learning exerts a significantly positive influence on enhancing students' problem-solving skills, self-directed learning abilities, and critical thinking development. These findings demonstrate that Problem-Based Learning is a relevant instructional model to meet the competence demands of 21st-century education.

Critical thinking is inherently tied to self-efficacy, requiring students to possess intrinsic self-belief. A person's capacity for critical thinking evolves over time as they confront novel issues or unsolved problems. This development takes place because newly acquired information is stored in the memory, enabling the interconnection of different data points to arrive at the desired answers [6]. Self-efficacy is not an innate trait; instead, it is constructed through an individual's personal characteristics and the influence of their surrounding environment..

Self-efficacy refers to an individual's conviction in their capability to organize and execute the actions required to attain expected results [11][12]. Self-efficacy helps future teachers determine their choices, their drive to advance, and the persistence and perseverance they exhibit in countering difficulties. Individual beliefs regarding self-efficacy dictate the magnitude of effort to be expended and the duration of endurance when encountering unpleasant obstacles [12]. Self-efficacy is a concept that influences how individuals think, act, and motivate themselves. One appropriate model with the potential to enhance the critical thinking skills of prospective elementary school teachers is Problem-Based Learning integrated with Self-Efficacy, as this model facilitates inquiry in solving real-world problems.

The relationship between self-efficacy and critical thinking skills has increasingly gained attention in educational research in recent years. Students who possess high confidence in their own capabilities tend to be more confident in exploring ideas, questioning assumptions, critically evaluating information, and defending arguments when facing academic problems. Recent research [13] indicates that the implementation of Problem-Based Learning not only enhances students' critical thinking skills but also simultaneously strengthens their self-efficacy in the learning process. These findings imply that the success of problem-based learning is optimized when students possess a strong belief in their own capabilities to overcome various academic challenges.

A review of prior studies reveals a distinct research gap that warrants further attention. The vast majority of existing literature has focused on either testing the effectiveness of Problem-Based Learning in enhancing critical thinking skills or examining the impact of self-efficacy on student academic performance in isolation. Research specifically oriented toward developing an instructional model that integrates Problem-Based Learning syntax with self-efficacy enhancement strategies into a cohesive instructional design remains relatively scarce, particularly within the context of Social Studies education for preservice elementary school teachers. This limitation underscores the critical need to develop an innovative instructional model that not only emphasizes pedagogical aspects but also addresses students' psychological dimensions as a contributing factor to academic success.

Based on these various issues, this study aims to develop a Social Studies Problem-Based Learning model integrated with self-efficacy to enhance the critical thinking skills of pre-service elementary school teachers. The novelty of this research lies in the development of an instructional model that systematically integrates a pedagogical dimension—through Problem-Based Learning syntax—with a psychological dimension—through the reinforcement of self-efficacy—into a single instructional framework. This study is expected to offer a theoretical contribution to the development of innovative instructional models, while simultaneously providing a practical contribution to preparing pre-service elementary school teachers with critical thinking competencies that meet the demands of 21st-century education

2. Research Methodology

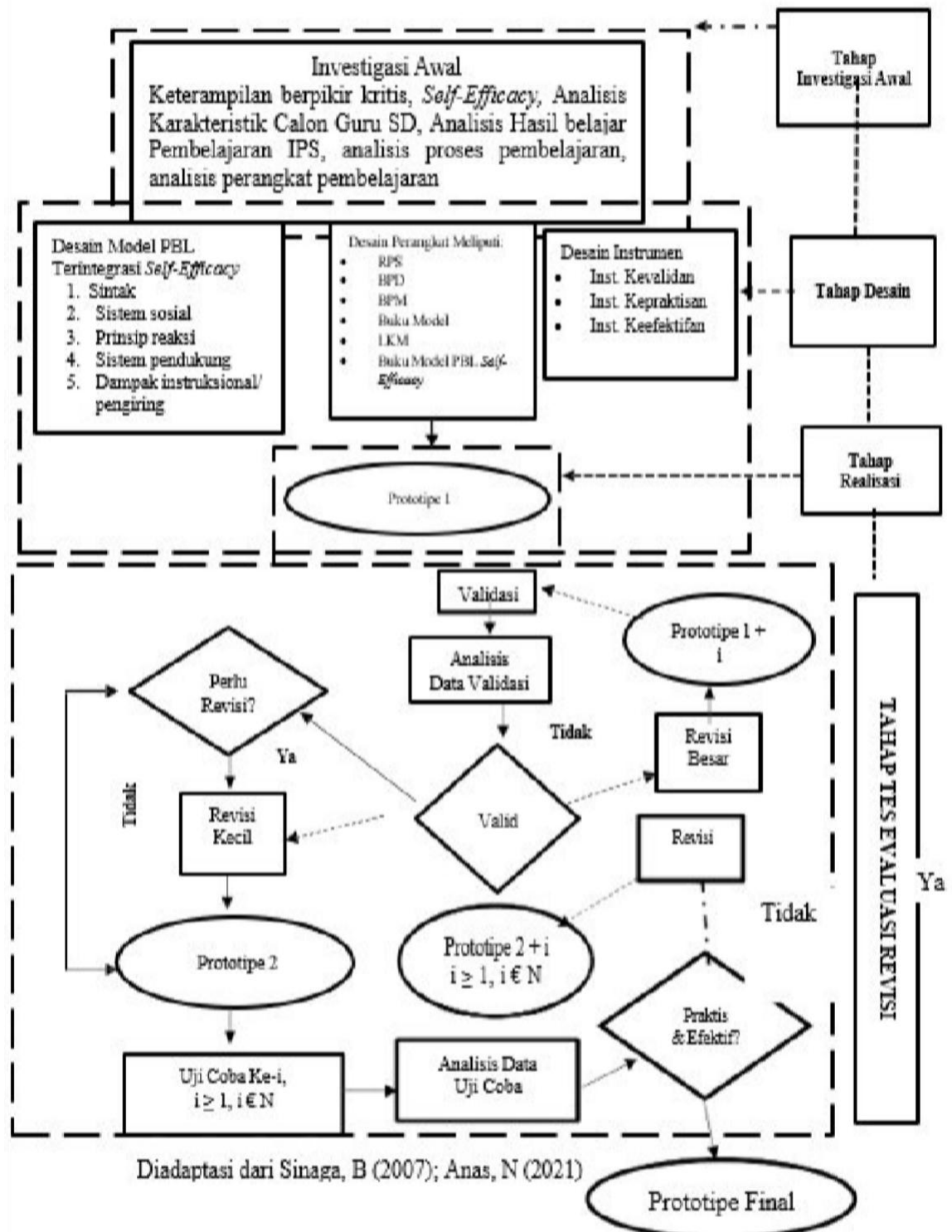
The Methods section provides details on the execution of the study, including the research workflow, materials and equipment used, study location, and other relevant information. The methods must be described in detail to ensure that readers interested in replicating the study can do so based on the information provided in this section.

This study employs a Research and Development (RSD) design based on the Plomp model, utilizing a mixed-methods approach [14]. The primary objective of development research is to generate a model or product by addressing its shortcomings, finding solutions to problems, making judgments in the face of ambiguity, exploring new possibilities, and planning for the future.

This research approach was selected due to its direct relevance to the background problem, namely the lecturers' lack of proficiency in implementing appropriate instructional models in elementary social studies education. Furthermore, the learning instruments currently utilized by lecturers do not adequately meet the learning needs of pre-service elementary school teachers. Consequently, the researcher aims to validate the instructional model design, learning instruments, and necessary evaluation tools by involving experts, followed by field testing and continuous revisions. This process is intended to produce a valid, practical, and effective instructional model to enhance the critical thinking skills of pre-service elementary school teachers in social studies education.

The Plomp model is one of the most widely used models in the field of instructional design, as it is considered more adaptable and flexible than other frameworks. This model comprises five distinct phases: preliminary

investigation, design, realization or construction, testing, evaluation, and revision, as well as implementation. The specific research workflow is illustrated in Figure 1 below.”:



Gambar 1. Alur Model PBL terintegrasi Self-Efficacy

This research was conducted at the Faculty of Teacher Training and Education (FKIP), Elementary School Teacher Education Study Program, Universitas Iskandar Muda, Banda Aceh, during the even semester of the 2025/2026 academic year. The research sample comprised 60 undergraduate students, consisting of 29 students from Class A and 31 students from Class B. A purposive sampling technique was employed to select the sample based on specific criteria relevant to the research objectives. Purposive sampling is a method where subjects are selected based on specific characteristics, ensuring they are deemed suitable and appropriate for the study [15].

The following are several academic translation options, depending on your preferred writing style.

"Option 1: Formal and Cohesive (Highly Recommended)

"This research instrument is utilized to assess students' mastery of the instructional material. The assessment employs a multiple-choice format, designed based on a test blueprint that spans from C4 to C6 cognitive levels.

Scoring

Test scoring was conducted to assess students' mastery of the previously taught material, specifically focusing on cognitive skills. The primary dimension measured in this scoring process was the cognitive domain.

Test sensitivity

Test sensitivity is conducted to measure effectiveness based on learning outcomes. Lecturers administer the same test to students both before and after the learning process. Essentially, item sensitivity measures how well a test item distinguishes between students who have received the learning material and those who have not. Item sensitivity can be calculated using the following formula:

$$S = \frac{\sum_{i=1}^N U_{21} - \sum_{t=1}^N U_{\mu}}{N (\text{Skor Maksimum} - \text{Skor Minimal})}$$

Keterangan :

S = Item sensitivity degree atau Degree of item sensitivity

N = A large number of respondents completed both the pre-test and post-test.

$\sum_{i=1}^N U_{21}$ = The total post-test score of all student respondents

$\sum_{t=1}^N U_{\mu}$ = The total score of all student respondents after the learning process (post-test)

An item is considered to be of good quality if its item sensitivity index (S) ranges from 0 to 1. Based on the established criterion, a test item is regarded as sensitive to instruction if its sensitivity index is equal to or greater than 0.30 ($S \geq 0.30$)

Test Reliability

Reliability is a crucial aspect of educational measurement, as it is used to determine whether a test that has been developed yields consistent results. A measurement is considered reliable if repeated administrations of the same test to the same group of participants produce relatively consistent results [16]. The reliability coefficient of a multiple-choice test can be calculated using the following formula:

$$a = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^n S_i^2}{S_1^2} \right)$$

Keterangan :

a = test reliability coefficient
 K = a large number of test items
 $\sum_{i=1}^n S_i^2$ = the number of test item variants
 S_1^2 = total variance

Test validity

A test instrument is considered to have a high level of validity when the score for each test item demonstrates a strong correlation with the total test score. This indicates that each item consistently measures the same underlying construct as the overall instrument. Therefore, the higher the correlation coefficient between the item score and the total score, the greater the validity of the corresponding test item. The formula used to examine item validity is based on the method proposed by [17].

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{(N \sum X^2 - (\sum X)^2)(N \sum Y^2 - (\sum Y)^2)}}$$

r_{xy} = the correlation coefficient value r product moment
 $\sum xy$ = the sum of the products of the X and Y scores
 $\sum x$ = The total score of the variable (x)
 $\sum y$ = The total score of the variable (y)
 $\sum X^2$ = Sum of Squares for Variable X
 $\sum Y^2$ = Sum of Squares for Variable Y
 N = The total sample size

The classification of item validity refers to the degree to which a test item accurately measures the construct it is intended to assess. In general, item validity is evaluated using a correlation coefficient, which is subsequently interpreted based on predetermined validity criteria..

3. Results and Discussion

A. Research Findings

This study aims to develop a Self-Efficacy-Integrated Problem-Based Learning (PBL) model for Social Studies instruction to enhance the critical thinking skills of prospective elementary school teachers. The model was developed through a research and development process consisting of needs analysis, model design, expert

validation, pilot testing, model implementation, and evaluation of the model's effectiveness. The results of the needs analysis revealed that the Social Studies learning process among students in the Elementary School Teacher Education (PGSD) Study Program at Iskandar Muda University is still predominantly characterized by conventional, lecturer-centered instruction. Students tend to be passive during the learning process and demonstrate limited ability to present arguments, analyze social issues, and draw conclusions based on empirical evidence. Furthermore, the findings indicate that the students' level of self-efficacy remains relatively low, particularly regarding their confidence in completing complex academic tasks. Based on these findings, a Self-Efficacy-Integrated Problem-Based Learning model was developed by combining the instructional syntax of Problem-Based Learning with strategies designed to strengthen students' self-efficacy. The proposed model comprises five main stages: contextual problem orientation, social problem exploration, self-reflection-based group investigation, alternative solution development, and evaluation accompanied by self-efficacy reinforcement. The validation results obtained from subject-matter experts, instructional model experts, and instructional design experts indicated that the developed model achieved a very high level of validity. The assessed aspects included the appropriateness of the model syntax, the relevance of the Social Studies content, the integration of self-efficacy indicators, and the measurability of critical thinking skill indicators. The first pilot study, conducted with Class A students of the Elementary School Teacher Education (PGSD) Study Program, involved administering a critical thinking skills test. Based on this series of activities, data on the critical thinking performance of the prospective teachers were obtained as follows:

Table 1. Results of the Analysis of Students' Critical Thinking Skills in the First Trial

NO	STUDENT NAME	TOTAL VALUE		TOTAL VALUE	
		PRETEST	POSTEST	PRETEST	POSTEST
1	A1	73,33	86,67	Medium	Height
2	A2	46,67	73,33	Low	Medium
3	A3	66,67	80,00	Medium	Height
4	A4	60,00	73,33	Medium	Medium
5	A5	63,33	86,67	Medium	Height
6	A6	53,33	73,33	Medium	Medium
7	A7	46,67	60,00	Rendah	Medium
8	A8	56,67	70,00	Medium	Medium
9	A9	63,33	80,00	Medium	Height
10	A10	50,00	70,00	Low	Medium
11	A11	76,67	90,00	Height	Very high
12	A12	56,67	66,67	Low	Medium
13	A13	63,33	80,00	Medium	Height
14	A14	56,67	90,00	Low	Very high

NO	STUDENT NAME	TOTAL VALUE		TOTAL VALUE	
		PRETEST	POSTEST	PRETEST	POSTEST
15	A15	63,33	90,00	Medium	Height
16	A16	70,00	90,00	Medium	Very high
17	A17	56,67	70,00	Low	Medium
18	A18	60,00	83,33	Low	Height
19	A19	63,33	80,00	Medium	Height
20	A20	60,00	76,67	Medium	Height
21	A21	56,67	80,00	Low	Height
22	A22	80,00	90,00	Height	Very high
23	A23	53,33	63,33	Low	Low
24	A24	66,67	90,00	Medium	Very high
25	A25	70,00	86,67	Medium	Height
26	A26	56,67	73,33	Low	Medium
27	A27	53,33	70,00	Low	Medium
28	A28	60,00	86,67	Medium	Height
29	A29	60,00	76,67	Low	Height
Average		60,80	78,85		

The results of the first trial analysis, based on the data presented in Table 1, indicate that, at the class level, students' knowledge mastery integrated with critical thinking skills—including the aspects of analysis, evaluation, and creation—on the instructional material showed a significant improvement. The posttest scores increased compared with the pretest scores following the implementation of the learning intervention. At the individual level, the pretest results revealed that 12 students (41.38%) were classified in the low category, 15 students (51.72%) in the moderate category, and 2 students (6.90%) in the high category. The individual posttest results demonstrated substantial improvement, with 10 students (34.48%) classified in the moderate category, 13 students (44.83%) in the high category, and 5 students (17.24%) in the very high category.

Based on the data obtained, it can be concluded that, at the class level, the level of knowledge mastery among students in Class A of the Elementary School Teacher Education (PGSD) Study Program during the first trial indicated that, in the pretest stage, the students achieved a mean score of 60.80, suggesting that their mastery of the subject matter had not yet reached the satisfactory level. However, following the implementation of the instructional intervention, the posttest results increased to a mean score of 78.85, which falls within the satisfactory category. These findings indicate that the instructional process implemented during the first trial effectively enhanced the students' overall knowledge mastery. The level of knowledge mastery among the PGSD students in Class B was measured by administering a

learning achievement test to all research participants. The purpose of the test was to obtain empirical evidence regarding the extent of the students' understanding of the instructional materials that had been delivered. The detailed results of the assessment of the students' mastery of the instructional materials are presented in Table 2 below.:

Table 2. Analysis Results of Students' Learning Outcomes in the Second Trial

NO	STUDENT NAME	TOTAL VALUE		TOTAL VALUE	
		PRETEST	POSTEST	PRETEST	POSTEST
1	B1	66,67	80,00	Medium	Height
2	B2	56,67	73,33	Medium	Medium
3	B3	63,33	80,00	Low	Height
4	B4	80,00	90,00	Height	Very Height
5	B5	66,67	83,33	Medium	Height
6	B6	60,00	76,67	Medium	Height
7	B7	63,33	70,00	Medium	Medium
8	B8	70,00	83,33	Medium	Height
9	B9	80,00	86,67	Medium	Height
10	B10	66,67	86,67	Medium	Height
11	B11	66,67	83,33	Medium	Height
12	B12	60,00	73,33	Medium	Medium
13	B13	76,67	86,67	Height	Height
14	B14	53,33	76,67	Low	Height
15	B15	56,67	63,33	Low	Medium
16	B16	53,33	66,67	Low	Medium
17	B17	66,67	70,00	Medium	Medium
18	B18	56,67	70,00	Medium	Medium
19	B19	86,67	90,00	Height	Very height
20	B20	66,67	86,67	Medium	Height
21	B21	56,67	83,33	Medium	Height

NO	STUDENT NAME	TOTAL VALUE		TOTAL VALUE	
		PRETEST	POSTEST	PRETEST	POSTEST
22	B22	76,67	83,33	Height	Height
23	B23	60,00	90,00	Low	Very height
24	B24	70,00	86,67	Medium	Height
25	B25	76,67	83,33	Height	Height
26	B26	60,00	66,67	Medium	Medium
27	B27	56,67	76,67	Medium	Height
28	B28	73,33	86,67	Medium	Height
29	B29	56,67	73,33	Medium	Medium
30	B30	83,33	86,67	Height	Height
31	B31	76,67	86,67	Medium	Very Height
Average		66,56	80,00		

The results of the second trial analysis, based on the data presented in Table 4.22, indicate that, at the class level, students' mastery of knowledge integrated with critical thinking skills—encompassing the aspects of analysis, evaluation, and creation—on the instructional material improved from the pretest to the posttest. Individually, the pretest score distribution revealed that 8 students (25.81%) were in the low category, 16 students (51.61%) were in the moderate category, and 7 students (22.58%) were in the high category. The individual posttest results demonstrated a substantial improvement, with 9 students (29.03%) classified in the moderate category, 18 students (58.06%) in the high category, and 4 students (12.90%) in the very high category..

Based on the data obtained, it can be concluded that, at the class level, the level of knowledge mastery among students in Class A of the Elementary School Teacher Education (PGSD) Study Program during the second trial demonstrated a substantial improvement. In the pretest, the students achieved a mean score of 66.56, indicating that their level of content mastery was still categorized as not meeting the expected level of competency. However, following the instructional intervention, the posttest results increased to a mean score of 80.00, which falls within the mastery category. These findings indicate that the implementation of the Self-Efficacy-Integrated Problem-Based Learning (PBL) model in the first trial was effective in enhancing students' overall knowledge mastery at the class level..

Improvements were also observed in students' self-efficacy, particularly in the indicators of confidence in completing tasks, willingness to express opinions, persistence in overcoming learning difficulties, and the ability to regulate their thinking processes while solving social issues presented in Social Studies learning. Overall, the effectiveness testing demonstrated that the Self-Efficacy-Integrated Problem-Based Learning model was effective in enhancing the critical thinking skills of prospective elementary school teachers..

B. Discussion

The findings indicate that the development of a Problem-Based Learning (PBL) model integrated with self-efficacy made a significant contribution to improving the critical thinking skills of prospective elementary school teachers. These findings demonstrate that a learning process which positions students at the center of learning activities promotes higher levels of cognitive engagement than conventional instructional approaches.

Theoretically, the Problem-Based Learning model is oriented toward solving authentic, real-world problems, enabling students to engage in processes of analysis, data interpretation, information evaluation, and rational decision-making. In the context of Social Studies education, these characteristics are highly relevant because Social Studies content is closely associated with diverse social phenomena that require analytical and reflective thinking. The integration of self-efficacy into the learning model was found to further strengthen students' engagement in the problem-solving process. According to Albert Bandura's theory, individuals with high self-efficacy tend to possess stronger motivation, greater resilience in the face of challenges, and stronger confidence in completing complex tasks. In the present study, students who participated in the developed learning model demonstrated increased confidence in presenting arguments and making academic decisions..

The improvement in students' critical thinking skills indicates that integrating the affective dimension of self-efficacy into the Problem-Based Learning (PBL) model creates a more comprehensive learning process. Through this approach, students not only develop the cognitive abilities required to understand Social Studies content but also gain psychological reinforcement that supports their academic success. These findings corroborate previous studies demonstrating that the Problem-Based Learning model is effective in enhancing learners' critical thinking skills. However, the present study offers a novel contribution by integrating self-efficacy as an internal psychological factor that strengthens the effectiveness of the instructional model. In the context of elementary teacher education, these findings have important implications, as they suggest that teacher competency development should extend beyond the acquisition of knowledge to include the enhancement of students' self-belief as a key determinant of both academic and professional success. Future elementary school teachers are expected to possess not only strong critical thinking skills but also high levels of self-confidence in order to effectively address the complex educational challenges of the twenty-first century. Therefore, the self-efficacy-integrated Problem-Based Learning model developed in this study represents a promising alternative instructional model for higher education, particularly in Social Studies courses within Elementary School Teacher Education (PGSD) programs.

4. Conclusion

The development of a Self-Efficacy-Integrated Problem-Based Learning (PBL) model for Social Studies instruction to enhance the critical thinking skills of prospective elementary school teachers demonstrated that the proposed model is valid, practical, and effective in supporting the learning process. Integrating self-efficacy into the Problem-Based Learning syntax strengthens students' confidence in their own abilities, thereby fostering active engagement throughout the learning process, particularly in analyzing problems, evaluating information, and drawing logical conclusions. The implementation of this model was proven to enhance the critical thinking skills of prospective elementary school teachers more effectively than conventional instructional approaches. Therefore, the developed model represents an innovative alternative for Social Studies instruction in higher education, contributing to the preparation of competent, reflective, and adaptive prospective teachers who are equipped to meet the demands of 21st-century education.

5. References

- [1] S. , R. Jannah, H. Suyitno, and I. Rosyida, "Pentingnya Literasi matematika dan Berpikir Kritis Matematis dalam Menghadapi Abad 21," *PRISMA*, pp. 1–6, 2019.

- [2] C. I. S. Puspa, D. N. O. Rahayu, and M. Parhan, "Transformasi pendidikan abad 21 dalam merealisasikan sumber daya manusia unggul menuju indonesia emas 2045," *Jurnal Basicedu*, vol. 7, no. 5, pp. 3309–3321, 2023.
- [3] UNESCO, *Reimagining our futures together: a new social contract for education*. New York: W.H. Freeman and company: UNESCO, 2021. doi: 10.54675/ASRB4722.
- [4] L. Amelia and M. S. Prayogo, "PENINGKATKAN KETERAMPILAN BERPIKIR KRITIS PADA PEMBELAJARAN TEMATIK MELALUI MODEL PEMBELAJARAN PROBLEM BASED LEARNING," *Indonesian Journal of Teacher Education*, vol. 3, no. 3, pp. 447–451, 2022.
- [5] L. Elder and R. Paul, *Critical thinking: Tools for taking charge of your learning and your life*. Foundation for Critical Thinking, 2020.
- [6] M. Munawwarah, N. Laili, and M. Tohir, "Keterampilan berpikir kritis mahasiswa dalam memecahkan masalah matematika berdasarkan keterampilan abad 21," *Alifmatika: Jurnal Pendidikan Dan Pembelajaran Matematika*, vol. 2, no. 1, pp. 37–58, 2020.
- [7] C. P. Dwyer, M. J. Hogan, and I. Stewart, "An integrated critical thinking framework for the 21st century," *Think. Skills Creat.*, vol. 12, pp. 43–52, 2014.
- [8] S. Fatimah, F. D. Murwani, I. A. Farida, and I. Hitipeuw, "Academic self-efficacy and its effect on academic engagement: MetaAnalysis," *International Journal of Instruction*, vol. 17, no. 1, pp. 271–294, 2024.
- [9] T. Chen et al., "The effect of problem-based learning on improving problem-solving, self-directed learning, and critical thinking ability for the pharmacy students: A randomized controlled trial and meta-analysis," *PLoS One*, vol. 19, no. 12, p. e0314017, 2024.
- [10] R. Ruslaini, Y. Yusnadi, and E. Surya, "Problem-Based Learning Model Integrated with Self Efficacy: A Literature Review on Improving Self-Efficacy in Critical Thinking," in *Proceedings of International Conference on Education*, 2025, pp. 162–166.
- [11] Bandura, *Self Efficacy: The exercise of Control*. New York: W.H. Freeman and Company, 1997.
- [12] Y. Sunaryo, "PENGUKURAN SELF-EFFICACY SISWA DALAM PEMBELAJARAN MATEMATIKA DI MTs N 2 CIAMIS," *TEOREMA: Teori dan Riset Matematika*, vol. 1, no. 2, p. 39, Aug. 2017, doi: 10.25157/teorema.v1i2.548.
- [13] N. Nofriyandi, D. Andrian, S. Nurhalimah, and F. Loska, "Problem Based-Learning Performance in Improving Students' Critical Thinking, Motivation, Self-Efficacy, And Students' Learning Interest," *Mosharafa: Jurnal Pendidikan Matematika*, vol. 13, no. 1, pp. 259–272, 2024.
- [14] A. Mukhtamar, S. E. Ruslaini, R. Shoufiah, W. Kurniawan, and N. Q. Syarif, "Metode penelitian pendidikan," *Jln. Sungai Lareh*, no. 26, 2024.
- [15] Y. Septiani, E. Aribbe, and R. Diansyah, "Analisis Kualitas Layanan Sistem Informasi Akademik Universitas Abdurrah Terhadap Kepuasan Pengguna Menggunakan Metode Sevqual (Studi Kasus: Mahasiswa Universitas Abdurrah Pekanbaru)," *Jurnal Teknologi Dan Open Source*, vol. 3, no. 1, pp. 131–143, 2020.
- [16] M. F. Ramadhan, R. A. Siroj, and M. W. Afgani, "Validitas and reliabilitas," *Journal on Education*, vol. 6, no. 2, pp. 10967–10975, 2024.
- [17] E. W. Winarni, *Teori dan praktik penelitian kuantitatif, kualitatif, PTK*, R S D. Bumi Aksara, 2021.