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Development Of A Local Potential-Based Learning Model To Enhance Critical Thinking Skills

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ABSTRACT: This study aims to develop a local potential-based learning model to enhance elementary school students' critical thinking skills. Local potential-based learning is expected to utilize the wisdom and resources available in the surrounding environment as relevant and engaging learning materials for students. This learning model is designed to strengthen student involvement in the learning process, foster curiosity, and develop essential analytical and problem-solving skills for critical thinking. The approach involves integrating local materials, such as history, culture, and local social issues, into teaching activities. This study uses a simplified development method divided into three stages: preliminary study, development stage, and model effectiveness testing stage. The development stage begins with needs analysis, design, trial, and model evaluation. The research findings indicate that during the model evaluation stage, the effectiveness test results in SDN Bunikasih 1 as Experiment Class 1 reached an average % N-gain value of 55.05%, and model evaluation in Experiment Class 2 SDN Sukawangi 2 showed an average % N-gain value of 55.09%. Thus, the application of the local potential-based learning model is quite effective in helping improve students' critical thinking skills. The conclusion of this study is expected to contribute significantly to the development of a more contextual curriculum, enhance students' critical thinking skills, and encourage them to better understand and appreciate the local potential in their surroundings.

Abstrak: Penelitian ini bertujuan untuk mengembangkan model pembelajaran berbasis potensi lokal yang dapat meningkatkan keterampilan berpikir kritis siswa sekolah dasar. Pembelajaran berbasis potensi lokal diharapkan mampu memanfaatkan kearifan dan sumber daya yang ada di lingkungan sekitar sebagai bahan ajar yang relevan dan menarik bagi siswa. Model pembelajaran ini dirancang untuk memperkuat keterlibatan siswa dalam proses belajar, mendorong rasa ingin tahu, serta mengembangkan kemampuan analisis dan pemecahan masalah yang esensial dalam berpikir kritis. Pendekatan ini melibatkan integrasi materi lokal, seperti sejarah, budaya, dan isu sosial setempat, ke dalam kegiatan belajar mengajar. Penelitian ini menggunakan metode pengembangan yang disederhanakan menjadi tiga tahap, yaitu studi pendahuluan, tahapan pengembangan, dan tahap uji efektivitas model. Tahapan pengembangan diawali dengan analisis kebutuhan, perancangan, uji coba, dan evaluasi model pembelajaran. Hasil penelitian menjelaskan bahwa pada tahap evaluasi model, hasil uji efektivitas model yang diterapkan di SDN Bunikasih 1 sebagai Kelas Eksperimen 1 dari nilai % N-gain rata-rata mencapai 55,05%, dan evaluasi model di kelas Eksperimen 2 SDN Sukawangi 2 menunjukkan nilai rata % N-Gain sebesar 55,09%. Sehingga penerapan model pembelajaran berbasis potensi wilayah cukup efektif membantu meningkatkan keterampilan berpikir kritis peserta didik. Kesimpulan dari penelitian ini diharapkan dapat memberikan kontribusi signifikan bagi pengembangan kurikulum yang lebih kontekstual dan meningkatkan keterampilan berpikir kritis siswa, serta mendorong mereka untuk lebih memahami dan menghargai potensi lokal yang ada di sekitar mereka.

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INTRODUCTION

Enhancing critical thinking skills in the 21st century is essential (Herlinawati et al., 2024) in educational settings, especially in teaching and learning processes at the elementary school level (Alawiah, 2024) to face the challenges of the digital era (Pare & Sihotang, 2023), solve complex problems, make rational decisions (Mardhiyah et al., 2021; Mahmud & Wong, 2022; Halim, 2022; Ngatminiati et al., 2024). According to Situmorang (2021) and Facione (2011), critical thinking is a focused and reflective process essential in education, enabling students to develop the skills needed for solving complex problems and making informed decisions (Agustiani et al., 2024). This skill is also important for competing in the global market, actively participating in a democratic society, and adapting to technological innovations. Critical thinking enables individuals to continue learning and growing, preparing them to face global challenges and contribute to an ever-evolving society (Nzomo et al., 2023).

Previous research explains that students' critical thinking skills can be stimulated and enhanced through the Social Studies curriculum (Sofiasyari et al., 2024). Social Studies is strategically significant as it aids students in understanding various social, economic, political, and cultural issues within society. Critical thinking is an essential skill that enables individuals to make effective decisions by scientifically and thoughtfully evaluating phenomena and considering multiple perspectives (Manurung et al., 2023). Learning processes that encourage students to develop perspectives, integrate information, and solve problems are crucial aspects of critical thinking education (Ritonga & Napitupulu, 2024). Septian (2023) explains that critical thinking skills are necessary for students to compete globally and respond to contemporary society's challenges (Sofiasyari et al., 2024). Social Studies instruction can also enhance students' analytical skills , (Sudewiputri et al., 2023), enabling them to compare, classify, and evaluate data and facts (Handayani & Muhammadi, 2020). Consequently, students are better equipped to make informed decisions based on relevant information and diverse perspectives. Furthermore, critical thinking skills encourage students to be more active in public discourse and decision-making within their communities, contributing to social problem-solving. Overall, developing critical thinking through Social Studies prepares students to become informed, engaged citizens capable of independent thought when facing complex social challenges. This indicates that elementary school students possess the cognitive capacity to develop and apply analytical thinking skills, given appropriate guidance and support.

Jean Piaget and Lev Vygotsky, in their constructivist assumptions, explain that Social Studies learning can enhance students' critical thinking skills by emphasizing active processes in constructing knowledge through experiences and social interactions (Kusumawati et al., 2022). Concepts such as Problem-Based Learning, which encourages students to analyze social issues and seek real solutions, as well as deep collaboration and discussion, play an essential role in training critical thinking skills (Kustiarini et al., 2024). Additionally, social studies also fosters analytical and reflective thinking by encouraging students to critically evaluate information and relate knowledge to real-world issues, such as human rights and globalization (Agustin et al., 2024). Therefore, social studies becomes an effective tool for equipping students with the critical thinking skills necessary to address social challenges (Wulandari et al., 2023; Nurhayati et al., 2024).

The integration of local potential in Social Studies learning provides significant benefits, particularly in enhancing students' understanding of local wisdom and developing their critical thinking skills (Jayadi et al., 2024). A local potential-based approach enables students to connect theoretical concepts with the realities around them, fostering a deeper understanding and appreciation of their region's traditions, culture, history, and unique resources (Suwandayani & Kumalasani, 2024). This approach enhances students' knowledge and cultivates a sense of love, pride, and responsibility toward local culture. Furthermore, contextual learning experiences through the integration of local potential encourage students to explore, analyze, and solve problems relevant to their everyday lives (Jayadi et al., 2024). This process hones their critical thinking skills, such as analytical, reflective, and creative thinking, essential for finding relevant and sustainable solutions. Integrating local potential not only enriches students' understanding of local wisdom but also prepares them to become adaptive, innovative, and responsible individuals capable of facing diverse global challenges.

The gap in utilizing local learning resources, is the lack of integration of local learning

resources in Social Studies, especially at the elementary level, often disconnects students from their local context and limits their understanding of the material's relevance to daily life. Despite the potential of local wisdom to enrich learning and deepen students' understanding of social and cultural environments, teaching approaches frequently prioritize general content over locally specific material.

This study introduces an innovative approach by integrating local potential as a primary source in Social Sciences education to enhance students' critical thinking skills. Unlike conventional learning models that tend to focus on theoretical content, this model involves exploring local potential, including natural resources, culture, and social issues in the students' surroundings. This place-based approach enables students to connect the knowledge they acquire with their real-life context, enriching the learning process and stimulating critical thinking. By emphasizing direct experiences through field studies, student collaboration, and the resolution of real-world problems, this research demonstrates how place-based learning can deepen understanding and foster students' critical thinking skills in analyzing and solving social issues in their environment. The novelty of this research lies in the application of constructivist theory in a more contextual and applicable context, utilizing local potential as a learning resource to enhance students' critical thinking skills in an increasingly complex and dynamic era.

The statement above results in several research questions. To gather data to meet the needs of this study, the research questions are organized as follows: What is the reality of Social Studies learning in elementary schools? How is the process of implementing the learning model? Is the model effective in enhancing students' critical thinking skills? Therefore, the objective of this study is to analyze the effectiveness of a place-based learning model in improving the critical thinking skills of students conducted in fifth grade of elementary schools in Warungkondang District, Cianjur Regency, West Java Province.

RESEARCH METHOD

Type and Design

This study employs the Research and Development (R&D) approach as outlined by Borg and Gall (1983), which involves relatively extensive stages due to its 10-step implementation process (Maydiantoro, 2020). Due to certain limitations, the researcher has adapted the fundamental principles and procedures outlined by Borg and Gall, simplifying them into three major steps: preliminary study, model development, and model validation testing (Sukmadinata, 2010; Anisah, 2022). The characteristics of development research share similarities, particularly in its procedural stages. This study begins with problem analysis, followed by product development, product validation, and product testing, and concludes with revisions to refine the product (Waruwu, 2024). The research method was a quasi-experimental design using a non-equivalent control group design. Two groups of subjects were included, with one group receiving the treatment and the other serving as the control group. Both groups underwent pre-tests and post-tests (Abraham & Supriyati, 2022).

Data and Data Sources

Primary data is obtained directly through field interactions and observations. Qualitative data includes interviews with teachers, observations of model implementation, focus group discussions (FGD), and notes on students' behavior. Meanwhile, quantitative data is derived from pre-tests and post-tests, student performance assessments, and perception questionnaires from teachers and students. Primary data sources include students, teachers, principals, and education experts.

Secondary data comes from previous studies, school documents (such as lesson plans and curricula), regional statistical data, academic literature, and relevant research reports. The combination of these two types of data aims to produce a contextual and effective region-based learning model that enhances the critical thinking skills of elementary school students.

Data collection technique

Data collection techniques involved interviews, observations, documentation, critical thinking ability tests, and questionnaires.

Data analysis

Data analysis was conducted after the model trial, including validity and reliability tests for the data and testing the difficulty level and discrimination power of the test instruments. Subsequently, normality and homogeneity tests were performed before t-tests, N-Gain tests, and model effectiveness assessments.

RESULT AND DISCUSSION

The findings of this study regarding the development of a region-based learning model in Social Studies instruction can be described starting from the observations made during the process. The reality of social studies instruction implementation in Fifth Grade at public elementary schools in the Warungkondang District, Cianjur Regency, indicates that many schools still apply traditional teaching models and methods centered on direct instruction (lectures). This approach results in limited development of interactive and contextual learning processes for students, leading to suboptimal development of their critical thinking skills. Overall, implementing region-based social studies learning to enhance students' critical thinking skills in these schools has not been a significant focus. This fact is evident from observations and questionnaires administered to teachers and school principals from six regional elementary schools. The results and process of region-based learning to enhance students' critical thinking skills remain inadequate, despite the potential of this learning model to help students address various social issues within their communities.

The following are the results of the pre-survey on students' critical thinking skills, which serve as the basis for developing the foundational model and the hypothetical model conducted in 2 schools. From the 20 indicators asked, with responses rated on a scale from very poor (1) to excellent (5), the findings can be summarized as follows:

Table 1: Results of the Pre-Survey on Critical Thinking Skills of Fifth Grade Students

Grup	Score	Category
SDN Cimanggu	3,14	Fairly Good
SDN Jambudipa 3	3,36	Fairly Good

The conclusion from the pre-survey results in Fifth Grade at SD Negeri Cimanggu indicates that students possess a relatively good level of critical thinking skills, with an average score of 3.14. The highest score was observed in the activity of checking answers before submission, with an average score of 4.14, indicating that students frequently review the answers to questions given by the teacher before submitting or presenting them in class. Conversely, the lowest score was found in the aspect of difficulty in answering questions about the environment, with an average score of 2.25, suggesting that students often face challenges when dealing with questions related to their surrounding environmental issues. This indicates that students have not yet been able to leverage the potential of their local environment to assist in understanding the taught material. This situation may be attributed to teaching methods and instructional content that are not contextualized to the local environment or surrounding context.

The results of the pre-survey on the critical thinking skills of Grade V students at SD Negeri Jambudipa 3 indicate slightly better achievement compared to the previous school, with an average score of 3.36. SD Negeri Jambudipa 3 demonstrated slightly superior critical thinking skills compared to SD Negeri Cimanggu. The highest score, 3.63, was observed in the aspect of enjoying questions related to solutions for environmental issues or those that challenge their thinking abilities. However, students did not particularly favor questions related to more difficult problems, as reflected by the lowest score of 2.70. Therefore, teachers should continue to use contextual instructional materials and more varied methods that engage students with current environmental issues.

The development of the social studies learning model in Fifth Grade at the schools mentioned was conducted based on an examination of the supporting and inhibiting factors that each school may have and face. The results of the SWOT analysis, as part of the initial preliminary study, indicate that teaching social studies in fifth Grade of elementary schools in Warungkondang District, Cianjur Regency, using a regional potential-based learning model has not been optimally implemented. The Social Studies learning that has been conducted so far has not been effective in enhancing students' critical thinking skills. The results of the analysis facilitated the researcher in designing the regional potential-based learning model. Below is an overview of the model development syntax:

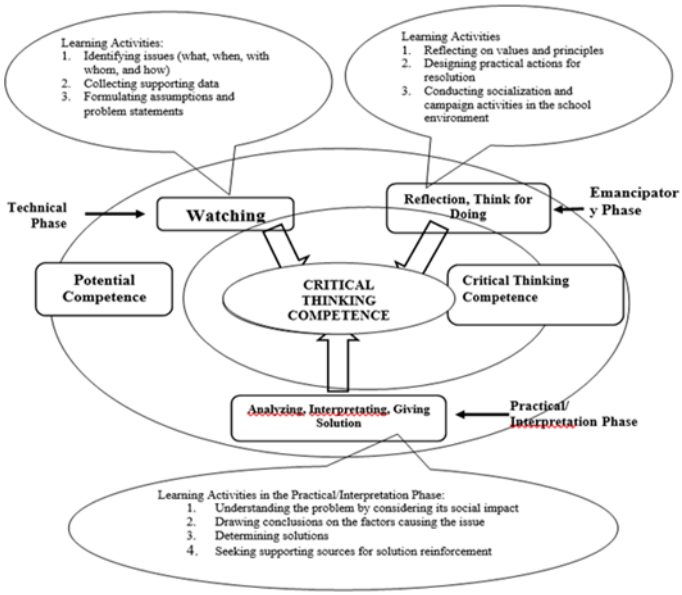

Figure 1: Syntax of the regional potential-based learning model development

The developed hypothetical model was then subjected to a limited trial. This trial was a continuation of the preliminary study, focusing on fifth Grade students at SD Negeri Cimanggu as the Experimental Class and SD Negeri Jambudipa 3 as the Control Class. The limited trial was conducted through stages that included administering pre-tests, observing/monitoring the learning process, conducting interviews with teachers and students, administering post-tests, and revising or refining the model draft for the subsequent large-scale trial. The results of the limited trial conducted in both schools are detailed in the following table:

Table 2: Results of the Pre-test for the Experimental Class (SD Negeri Cimanggu) and the Control Class (SD Negeri Jambudipa 3)

No	**SD Cimanggu**	**∑**	**Individual KKM**	**No**	**SD Jambudipa3**	**∑**	**Individual KKM**
Average		70,75		Average		74,33	
Class KKM		46,43	unfinished	Class KKM		55,56	unfinished

The achievement of both classes was below the established KKM (Minimum Completeness Criteria), both individually and in groups (classically). In other words, the learning outcomes in the form of critical thinking skills were considered "incomplete." However, the performance of the Control Class was slightly better than that of the Experimental Class. This fact can be used to test the next phase and to revise several aspects of the test instrument and its implementation. The results of the observation of the implementation of the region-based learning model to enhance the critical thinking skills of students in the Experimental Class are presented in the following table:

Table 3: The results of the observation of the learning activities in the Experimental Class (SD Negeri Cimanggu and Jambudipa 3) are presented below:

No.	**Indicator of Critical Thinking Activity Observed**	**SDN Cimanggu**		**SDN Jambudipa3**	
		Score	Category	Score	Category
1	Understanding or mastery of the lesson material	3.32	Adequate	2.93	Adequate
2	Group collaboration	3.50	Good	3.41	Good

3	Involvement in examining or recognizing issues of regional potential	3.25	Adequate	3.41	Good
4	Presentation skills	3.57	Good	2.70	Adequate
5	Active participation in discussions during presentations	3.54	Good	3.04	Adequate
6	Analyzing and interpreting issues	3.57	Good	3.11	Adequate
7	Ability to answer questions	3.50	Good	3.30	Adequate
8	Active in expressing opinions or practical ideas	3.43	Good	3.26	Adequate
9	Providing solutions to regional potential issues	3.36	Adequate	2.74	Adequate
10	Reflecting or thinking to take action with alternative solutions	3.32	Adequate	3.07	Adequate

The critical thinking activities of the fifth-grade students at SD Negeri Cimanggu, as the Experimental Class, were rated as good, with an average score of 3.44. However, the aspect of engagement in observing or examining regional potential issues needs improvement, as it had the lowest score of 3.25. Meanwhile, the Control Class also conducted learning activities using the direct instruction teaching model. The achievement of critical thinking activities in Fifth Grade students at SD Negeri Jambudipa 3 as the Control Class was relatively good, with an average score of 3.10. The lowest achievement was observed in the aspect of presentation skills, with an average score of 2.70. This finding indicates that the performance was slightly lower compared to that of the experimental class. This may be due to the fact that the learning in the control class did not utilize the regional potential-based learning model or employed a different model.

The next phase of the limited trial was the administration of the post-test after the learning process, conducted in both the Experimental and Control Classes using the same test instrument as the one used during the pre-test, after several revisions and validation by the teacher, the researcher, and appointed experts (supervisors/promoters). The results of the post-test on students' critical thinking skills in Social Studies for both classes are presented in the table below:

Table 4: Post-test Results of Students in the Experimental and Control Classes

No	**SD Cimanggu**	**∑**	**Individual KKM**	**No**	**SD Jambudipa3**	**∑**	**Individual KKM**
Rata-rata		**86,18**	Completed	Average		**77,89**	Completed
Class KKM		**82,14**		Class KKM		**81,48**	

The table shows that the achievements of both classes have met the determined KKM (75.00), both individually and collectively (class-wide). In other words, the learning outcomes in terms of critical thinking skills are considered "complete." However, the performance of the Experimental Class was better than that of the Control Class. This indicates that the implementation of the area-based learning model was successful in improving the post-test results of students' critical thinking skills. This finding can be used to test the next phase and to revise some aspects of the test instruments and their implementation.

Table 5: Results of the Learning Activity Evaluation by the Teacher in the Experimental Class and Control Class by the Evaluation Team

No.		**Learning Activity**	**Score**	**Category**
A		Opening	4.17	Good
	1	Implementation of preliminary activities	3.50	Good
	2	Delivery of learning objectives	5.00	Excellent
	3	Providing learning motivation	4.00	Good
B		Core Activities	3.38	Fairly Good
	4	Student engagement	3.50	Good
	5	Training critical and creative thinking	3.50	Good

	6	Presentation of regional potential	3.50	Good
	7	Utilization of regional potential	3.00	Fairly Good
C		Closing	3.50	Good
	8	Implementation of assessment	4.00	Good
	9	Implementation of reflection	3.50	Good
	10	Closing of the learning activity	3.50	Good
Average			**3.70**	**Good**

The evaluation results of the social studies learning activities in Fifth Grade, both in the Experimental and Control Classes, have not yet optimally reached the target minimum average score of 4.0. The core learning activities still show some challenges, especially in utilizing regional potential as a learning resource for students, both in instructional materials and in teacher-led discussions in front of the class, with an average score of 3.38, categorized as fairly good. However, the opening activities showed good achievement with an average score of 4.17, which can serve as motivation for students to engage more enthusiastically in learning, with the expectation of improved critical thinking skills. Subsequently, the effectiveness of applying the learning model was tested based on the N-Gain test, with the results as shown in the following table.

Table 6: N-Gain Test Results for Pretest-Posttest in the Experimental Class (SD Negeri Cimanggu)

∑ Students 28	**Score**		**N-Gain Category**					
	Pretest	**Posttest**	Pos-Pre	Ideal-C	N-gain	Category	%N-Gain	Efectiveness
∑	1981	2413	432	819	15,55		1554,84	
Average	**70,75**	**86,18**	**15,43**	**29,25**	**0,56**	Moderate	**55,53**	Quite Effective

Based on the data presented in the table, the implementation of the region-based potential learning model has proven to be moderately effective in improving the critical thinking skills of fifth-grade students at SD Negeri Cimanggu. This conclusion is supported by the total N-Gain score of 0.56, categorized as moderate, or 55.53%, categorized as quite effective. The effectiveness of the model's implementation is further evidenced by the individual and group (classical) achievement of the minimum competency standards (MCS) in the post-test results, where the average score met the requirement of 75.00, or 75% of students achieved a score ≥ 75.00.

The limited trial conducted serves as a foundation for revising and refining the model before broader application. Subsequently, the developed model will be tested on a larger scale in five schools within the Warungkondang District. The pre-test and post-test results of the broader model trial are presented in the following table.

Table 7: Pre-Test and Post-Test Results of Fifth-Grade Students at SD Negeri Bunikasih 1 (Experiment Class 1) and SD Negeri Sukawangi 2 (Experiment Class 2)

∑ Student 33	**Name Experiment Class 1**	**Pre-test**		**Post-test**	
		∑	Individual KKM	∑	Individual KKM
	Average	70,70	unfinished	86,58	Completed
	Class KKM	**33,33**		**86,67**	

Students ∑	**Name Experiment Class 2**	**Pre-test**		**Post- test**	
		∑	Individual KKM	∑	Individual KKM
	Average	70,47	Unfinished	86,47	Completed
	Class KKM	33,33%		86,67%	

The expanded trial conducted at another elementary school, designated as Experiment Class 1, successfully enhanced the critical thinking skills of fifth-grade students at SD Negeri Bunikasih 1. This is evident from the increase in the pre-test average score from 70.70, with a group KKM level of

33.33%, to a post-test average score of 86.58, with a group KKM level of 86.67%. This improvement indicates that implementing the regionally-based potential learning model effectively enhanced students' critical thinking skills. Similarly, comparable results were achieved by the fifth-grade students of SD Negeri Sukawangi 2, designated as Experiment Class 2, after being taught using the regionally-based potential learning model. There was an increase in the average scores and the number of students achieving scores above the specified KKM (75.00), from 33.33% to 86.67%.

The results in the table above indicate the success of implementing a region-based potential learning model in improving the critical thinking skills of fifth-grade students in social studies at the school. Meanwhile, learning in the fifth-grade class at SD Negeri Bunikasih 4, serving as Control Class 1, which did not apply the region-based potential learning model, also showed an improvement in the students' critical thinking skills, as presented in the following tabl**e:**

Table 8: Pretest-Posttest Results of Fifth-Grade Students at SD Negeri Bunikasih 4 (Control Class 1) and SDN Jambudipa 2 (Control Class 2)

∑ students 34	**Name Control Class 1**	**Pre-test**		**Post-test**	
		∑	Individual KKM	∑	Individual KKM
	Average	70,74	unfinished	77,47	Completed
	Class KKM	52,94%		76,47%	
∑ Students 42	**Name Control Class 2**	**Pre test ∑**	**Post-test Individual KKM**	**∑**	**Individual KKM**
	Average	74,36	Unfinished	77,88	completed
	Class KKM	52,38%		76,19%	

The table above indicates that although a learning model not based on local potential was used, fifth-grade students at SD Negeri Bunikasih 4, serving as Control Class 1, successfully improved their critical thinking skills after social studies instruction. The average posttest score was 77.47, with a group passing rate of 76.47%. This marks an improvement compared to the pretest results, where the average score was 70.74 with a group passing rate of 52.94%.

Slightly better results were achieved by fifth-grade students at SD Negeri Jambudipa 2, serving as Control Class 2. They successfully enhanced their critical thinking skills after social studies instruction without employing a learning model based on local potential. The average posttest score was 77.88, with a group passing rate of 76.19%, indicating an improvement compared to the pretest results, which showed an average score of 74.36 and a group passing rate of 52.38%.

The table above demonstrates that although the fifth-grade students of SD Negeri Jambudipa 2 achieved satisfactory scores and minimum mastery criteria (KKM) without the use of a region-based learning model, these results could be attributed to various factors, including potential advantages or limitations. These can be further validated through the following homogeneity and effectiveness tests.

The homogeneity test for two correlated samples, comparing pretest and posttest results of critical thinking skills among fifth-grade students of SD Negeri Bunikasih 1 (Experimental Class 1), yielded an F-value of 1.1618. This value is smaller than the F-table value {0.01;33-1;33-1} of 1.8045, indicating that the samples are homogeneous. This result supports the need for further homogeneity testing using a t-test with a non-pooled variance formula for equal sample sizes (N=33). Complete calculations are provided in the Appendix.

Subsequent t-test results show that the calculated t-value of 14.6092 exceeds the t-table value {0.05;33+33-2} of 1.9977. Therefore, it can be concluded that there is a significant difference between the pretest scores before the application of the region-based learning model and the posttest scores after its implementation. In other words, the hypothesis is accepted.

The results of the homogeneity test for two correlated samples, comparing pretest and posttest results of critical thinking skills among fifth-grade students of SD Negeri Sukawangi 2 (Experimental Class 2), produced a calculated F-value of 1.0719, which is smaller than the F-table value {0.01;30-1;30-1} of 1.8608, indicating that the samples are homogeneous. This result suggests the need for

further homogeneity testing using a t-test with a non-pooled variance formula for equal sample sizes (N=30). Subsequent t-test results indicate that the calculated t-value of 13.0978 is greater than the t-table value {0.05;30+30-2} of 2.0017. Therefore, it can be concluded that there is a significant difference between the pretest scores before the application of the region-based learning model and the posttest. The results of the observations of student activities during the implementation of the region-based learning model in the experimental classes at SD Negeri Bunikasih 1 and SD Negeri Sukawangi 2 are presented in the following table:st scores after its implementation. In other words, the hypothesis is accepted.

Tabel 9: Results of the Observation of Learning Activities in Two Experimental Classes (SD Negeri Bunikasih 1 and SD Negeri Sukawangi 2)

No.	Indicator of Critical Thinking Activities Observed	Score	Category
1	Understanding or mastery of the subject matter	3,56	Good
2	Collaboration within the group	3,35	Fairly
3	Involvement in examining or identifying issues related to regional potential	3,54	Good
4	Presentation skills	3,70	Good
5	Active participation in discussions during presentations	3,84	Good
6	Creating analyses and interpretations of issues	3,73	Good
7	Ability to answer questions	3,46	Good
8	Active in expressing opinions/practical ideas	3,57	Good
9	Providing solutions to regional potential issues	3,46	Good
10	Conducting reflection or thinking to take action with alternative solutions provided	3,56	Good
	Average	3,58	Good

The observation results above indicate that the critical thinking activities of students in the two classes are good, with an average score of 3.58. The teacher should place more emphasis on enhancing group collaboration, as this aspect had the lowest achievement at 3.35. These results demonstrate that the application of the region-based learning model effectively improves students' critical thinking skills when compared to the learning activities in the limited trial conducted with Grade V students at SDN Cimanggu (Table 4.16), which had an average score of 3.44, and at SDN Jambudipa 3, which had an average score of 3.10.

The results of the effectiveness test of the region-based learning model, based on the pre-test and post-test scores of students in each school where the model was trialed on a larger scale, are discussed one by one as follows:

Table 10: Results of the Effectiveness Test of the Learning Model at SD Negeri Bunikasih 1 (Experiment Class 1) and SDN Sukawangi 2 (Experiment Class 2)

Σ Students 33	**Score**				**N-Gain Category**			
	Pretest	**Postest**	Pos-Pre	Ideal-C	N-gain	Category	%N-Gain	Effctiveness
		Average	16	29	0,551	Moderate	**55,05**	**Fairly Effective**
Σ Students 30		Score				CategoriyN-Gain		
	Pretest	**Post tes**	**Pos-Pre**	**Ideal-C**	**N-gain**	**Category**	**%N-Gain**	**Effectiveness**
Σ	2114	2594	16	30	0,55	Moderate	**55,09**	**Fairly Effective**

The table above shows that the implementation of the learning model based on regional potential is quite effective in helping to improve the critical thinking skills of fifth grade V students

at SD Negeri Bunikasih 1 as Experiment Class 1. This is reflected in the average %N-gain value, which reached 55.05% as a result of the comparison between the pretest and posttest scores obtained in Social Studies learning in that class.

Similar results were also obtained by fifth grade students at SD Negeri Sukawangi 2 as Experiment Class 2. The results in the table above indicate that the average % N-Gain value of 55.09% shows that the implementation of the learning model based on regional potential is quite effective in enhancing the critical thinking skills of fifth grade students at SD Negeri Sukawangi 2. Furthermore, the results of the homogeneity test for the critical thinking skills of students in the experiment and control classes, conducted on the combined post-test results of both experiment classes and both control classes, as well as based on two uncorrelated samples, allow the conclusion to be drawn. The post-test results of the critical thinking skills of fifth grade students at SD Negeri Bunikasih 1 and SD Negeri Sukawangi 2 as Experiment Classes 1 and 2, compared to the post-test results of fifth grade students at SD Negeri Bunikasih 4 and SD Negeri Jambudipa 2 as Control Classes 1 and 2, resulted in an F count of 1.1016, which is smaller than the F table value {0.01;63-1;76-1} of 1.4884, indicating that the samples are homogeneous. This result recommends conducting an additional homogeneity test using a t-test with the pooled variance formula for different sample sizes (N=63 and N=76).

Furthermore, the results of the t-test show that the calculated t-value of 126.2814 is greater than the t-table value {0.05;63+76-2} of 1.9780. It can be concluded that there is a difference between the post-test scores of the experiment class, which was given the treatment of the regional potential-based learning model, and the post-test scores of the control class, which did not receive the treatment. In other words, the hypothesis is accepted. Therefore, the regional potential-based learning model is effective in enhancing students' critical thinking skills in Social Studies.

Cianjur is known as one of the regions in Indonesia with strategic potential as a rice producer (Putri et al., 2024). This is due to various geographical, climatic, and resource management factors that support agriculture, particularly rice cultivation (Muhyi, 2022). Muhyi also explains in his thesis that the geographical conditions of the Cianjur region, viewed from the aspects of topography, tropical climate, and fertile soil, contribute to its agricultural viability. Abundant water resources are supported by the Citarum River and an irrigation system. Cianjur boasts superior rice varieties and is known for producing premium rice, ensuring that the region consistently yields abundant and high-quality harvests. This contributes significantly to the rice supply for Java and beyond. Both regional and national governments implement programs for agricultural intensification and modernization. With these potentials, Cianjur is not only a strategic region as a rice producer in Indonesia but can also serve as a model for sustainable and innovative rice farming management (Noviyanti et al., 2020).

Discussion

Local wisdom in Cianjur should be introduced to children from an early age, particularly at the elementary school level, by implementing a regional potential-based learning model. The application of this learning model will have many strategic benefits, both in terms of education, character building, and the preservation of local culture.

The regional potential-based learning model, from the perspective of constructivist theory, emphasizes learning that connects the knowledge students acquire with the social and cultural context around them. Piaget viewed student interaction with peers and adults as a form of (Zhang, 2022) , that provides insight into their thinking and reasoning as they develop across various aspects, including cognitive, social, moral, and others (Waite-Stupiansky, 2022), with knowledge being constructed based on prior experiences (Kouicem, 2020). In this model, students do not just learn theories from textbooks, but are also encouraged to identify, understand, and utilize the potential within their region or environment as a source of learning. By using the environment as a learning resource, students are expected to develop a sense of care for their surroundings. Research related to the utilization of local potential was also conducted by (Arif et al., 2024), on utilizing coastal areas as a learning resource for Social Studies., regarding the use of coastal areas as a learning resource for Social Studies. From this understanding of concepts and the resulting concern, students are expected to find solutions, make decisions, and take real action when facing problems in their environment (Hafni, 2020). This learning approach aligns well with the principles of constructivism, which emphasizes active learning and knowledge construction through direct experience and social

interaction. The constructivist principles are in harmony with social constructivist theory, developed by Jerome Bruner and Lev Vygotsky, which highlights the importance of language, culture, and social interaction in the process of knowledge formation for students.

The main elements in the application of the regional potential-based learning model, associated with constructivist theory, include creating contextual learning by linking lesson content with regional potential, such as natural resources and local culture, that are relevant to their surroundings. In line with the principles of social constructivism, this approach is implemented through activities such as class discussions, small group work, and active student participation. By integrating cognitive and social aspects, this approach creates a dynamic and inclusive learning environment. Overall, social constructivism views learning as a social activity (Nasution et al., 2024). This enables students to understand how the knowledge they acquire can be applied in real-life situations. Additionally, students gain firsthand experience by being given opportunities to explore and engage directly with regional potential, such as field studies or visits to places involved in natural resource management in their area. In Vygotsky's perspective, social interaction is crucial in learning. During this process, cognitive apprenticeship occurs, which is a process where individuals gradually develop expertise through interaction with an expert. Vygotsky's theory supports the concept of sociocultural revolution, which states that learning happens when children attempt tasks they have not yet mastered but are still within their zone of proximal development (Suardipa, 2020).

From its characteristics, the regional potential-based learning model emphasizes collaboration among students in groups to explore their regional potential. Discussions and group work allow students to exchange information, question assumptions, and evaluate different perspectives. This enables them to solve problems that encourage critical thinking, analyze issues, and formulate solutions relevant to their regional conditions. Students are encouraged to reflect on their experiences and connect them to the knowledge they have acquired. According Le & Chong (2024), critical thinking allows students to thoroughly analyze information, assess arguments, synthesize ideas, and find creative solutions to problems (Sasmita et al., 2022; Hermiyati et al., 2024). In this context, constructivist theory emphasizes the importance of reflective thinking (Saksono et al., 2023), where students evaluate and reconstruct their knowledge based on practical experiences and regional context.

CONCLUSION

The study shows that the regional potential-based learning model positively impacts elementary students' critical thinking skills in Social Studies education by integrating local environmental potential to create contextual and interactive learning. While effective in improving conceptual understanding and applied skills, adjustments to assessment instruments are needed to align with basic competencies. This model highlights the importance of utilizing local potential as a learning resource to foster innovative teaching and critical thinking development. It suggests refining the model for broader, sustainable application in schools. The findings call for integrating this approach into elementary curricula through policy support from governments and education departments. Teacher training is essential to ensure effective implementation, encouraging the use of local potential to create contextual and engaging lessons. Further research is recommended to refine the model, explore its effectiveness across diverse educational settings, and assess its broader impact on learning.

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