

THE EFFECT OF THE ENVIRONMENTAL EXPLORATION APPROACH ON THE CRITICAL THINKING ABILITY OF HIGH SCHOOL STUDENTS

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ABSTRACT

Abstract: Proses pembelajaran yang monoton, kurangnya sumber belajar yang efektif serta minim penggunaan pendekatan inovatif menjadi permasalahan utama bagi siswa. Penelitian ini bertujuan untuk mengetahui pengaruh pendekatan jelajah alam sekitar terhadap kemampuan berfikir kritis siswa SMA. Jenis penelitian ini *Quasi Eksperiment, Pretest Posttest Non Equivalent Control Group Design* dengan pendekatan kuantitatif, melibatkan sampel dari kelas XI IPS 1 yang terdiri dari 33 siswa sebagai kelompok eksperimen dan kelas XI IPS 2 yang berjumlah 26 siswa sebagai kelompok kontrol, dengan total populasi penelitian sebanyak 83 siswa. Instrumen yang digunakan dalam penelitian ini meliputi tes tulis dan tes non-tulis. Tes tulis diperoleh melalui pelaksanaan *pretest* dan *posttest* 15 soal (PG) dan 3 soal (Esay) sedangkan tes non tulis diperoleh dari hasil lembar penilaian diskusi dan portofolio. Hasil perhitungan uji hipotesis akhir (Uji t) yang dilakukan menggunakan aplikasi *SPSS Versi 25.0 For Windows* menunjukkan bahwa rata-rata kemampuan berpikir kritis siswa di kelas kontrol sebesar 75,1, sedangkan di kelas eksperimen rata-rata nilai yang diperoleh sebesar 85,7. Nilai signifikan (sig) (2-tailed) sebesar $0,000 < 0,05$. Maka dapat disimpulkan H_0 ditolak dan H_a diterima artinya terdapat pengaruh pendekatan jelajah alam sekitar terhadap kemampuan berfikir kritis siswa SMA.

Abstract: The monotonous learning process, lack of effective learning resources and minimal use of innovative approaches are the main problems for students. This research aims to determine the effect of the environmental exploration approach on high school students' critical thinking abilities. This type of research is *Quasi Experimental, Pretest Posttest Non Equivalent Control Group Design* with a quantitative approach, involving samples from class XI IPS 1 consisting of 33 students as the experimental group and class XI IPS 2 consisting of 26 students as the control group, with a total population of 83 students. The instruments used in this research include written tests and non-written tests. The written test is obtained through carrying out a pretest and posttest of 15 questions (PG) and 3 questions (Essay) while the non-written test is obtained from the results of the discussion and portfolio assessment sheets. The results of the final hypothesis test calculation (t test) carried out using the *SPSS Version 25.0 For Windows* application showed that the average critical thinking ability of students in the control class was 75.1, while in the experimental class the average score obtained was 85.7. The significant value (sig) (2-tailed) is $0.000 < 0.05$. So it can be concluded that H_0 is rejected and H_a is accepted, meaning that there is an influence of the natural exploration approach on high school students' critical thinking abilities.

A. BACKGROUND

The learning process is the main educational activity that involves the interaction between various teaching elements, which is divided into three main categories, namely teachers, subject matter, and students. Then it includes the use of facilities and infrastructure such as models, methods, and learning media that support the achievement of previously set goals. Learning is not only limited to formal learning of subjects at school, but can be interpreted more

broadly, including various human skills, skills, knowledge, habits, interests, and attitudes that are formed, modified, and developed through the learning process (Arif, A., & Saputra, 2019).

One of the characteristics that marks teaching and learning activities is the existence of activities between teachers and students, namely, teachers as supervisors and students as people who are guided by teachers (Bare & Kurniawati, 2022). The term teaching and learning has more meaning than just

presenting material to students, active involvement of students, asking and answering questions is one of the teaching and learning processes. The current learning process, it seems that teachers still dominate learning in the classroom. This causes students to tend to be silent or passive in the learning process and most students prefer to wait for the material given by the teacher rather than looking for or finding the subject matter on their own. This problem has an impact on students' knowledge (cognitive), skills (psychomotor) and attitude (affective) in geography subjects.

Geography is a part of the social sciences that focuses on spatial and ecological aspects related to human life. Geography provides an opportunity for humans to understand the natural phenomena that occur around them, because geography learning is a discipline that integrates the natural dimension and the human dimension in one frame of reference (Dan & Padang, 2024). Science Geography itself studies the geosphere, atmosphere, lithosphere, hydrosphere, biosphere, anthroposphere, the scope of natural phenomena and the scope of spatial relationships about geographical phenomena on the earth's surface (Ildia Mewilda, Slamet Rianto, 2024). Given the complexity of geography material, it is very important for students to study it so that they can understand the characteristics of the potential of the surrounding environment (Rizqiyah et al., 2023). Geography can be useful in everyday life when used to conduct research related to geographical problems in the surrounding environment (Studies & Education, 2024).

Geography learning is useful for honing students' critical thinking skills towards the problems around them, training them to be more adaptive in dealing with problems, and providing the necessary solutions. Geography learning is necessary to train students to think thoroughly and integrally by connecting environmental phenomena in daily life (Triana & Harizah, 2023). The geography learning process in schools, teachers still dominate the learning process in the classroom.

The results of observations and interviews with teachers in the field of geography education study at SMA Negeri 6 Palu, there are several problems in the geography learning process, namely, lack of effectiveness in implementing learning approaches, teachers still prioritize package books as learning

resources and are less innovative in finding approaches according to students' learning interests. In geography subjects, learning must be able to create direct interaction between students and the objects they are learning, such as the surrounding environment (Amalda et al., 2023). The surrounding environment with all aspects contained in it is an example of innovative learning resources, which can be used to support the geography learning process in schools.

Students' ability to understand the material is low, experiencing difficulties in mastering the learning material, this can affect their critical thinking skills. The low critical thinking ability of students can be seen based on the attitude and behavior of students who are focused on the teacher's explanation in front of the class (Kemampuan et al., 2024). Critical thinking skills are a skilled and careful thinking process, for a person when understanding a problem from a different perspective (Yuliandini et al., 2019). Critical thinking skills help students in aspects of life, carried out during the teaching and learning process with the support of assessment instruments that reflect proficiency and ability (Lestari et al., 2017). Indicators of critical thinking skills revealed Ennis (1985) namely, giving simple explanations, building basic skills, summarizing, deducting, providing further explanations, arranging strategies and techniques.

From these problems, there is a need for new innovations related to geography learning in schools. One of them is with development efforts carried out to sharpen geography learning through innovative learning approaches, so that students feel called in the learning process. Students who have an interest in learning tend to feel happiness and interest in the learning process (Dhahana Aris Saputra et al., 2023).

Geography learning requires students to associate theory with practice, which helps build an understanding of the surrounding environment (Mujib, 2023). One of the learning approaches that is suitable for students' interest in learning geography is the approach to exploring the surrounding nature. Neighborhood hiking is a learning approach that prioritizes the yard around the school as a learning resource, allowing students to learn directly about natural phenomena through their own observation. In this way, students' understanding becomes more

real, minimizing a more conducive and enjoyable learning atmosphere. (Hartono et al., 2023).

The environmental exploration approach is an approach that utilizes the surrounding environment, including physical, social, technological, and cultural elements, as an object to study geography (Thaariq et al., 2023). One way to implement learning outside the classroom (*Outdoor*) is by using an environmental exploration approach. Exploring the surrounding nature can make students feel more enthusiastic and not boring, because learning is no longer only in the classroom but can be done outside the classroom (Nur Astuty et al., 2017). This is in line with the research conducted Sons, (2021) Learning using the environmental exploration approach, is effective in improving students' process skills and critical thinking skills. Another study states that the teaching-learning process by applying the environmental exploration approach has a significant effect on the variables that are affected, namely, the free variable (Lumandung et al., 2024).

The difference between this study and the previous research lies in the location of the research, the number of population/sample, and there are still few researchers who study the approach to exploring the environment in high school geography subjects. This study also aims to find out how influential the hiking approach has on the critical thinking ability of high school students.

B. RESEARCH METHODS

This study uses a type of *Quasi Experimental* research with a quantitative approach. The research design uses a *pretest posttest Non Equivalent Control Group Design*. The research design, *pretest* was carried out before being treated using the experimental class environment exploration approach and the control class expository approach, while *the posttest* was carried out after the application of the two approaches. The treatment of the experimental class and the control class is described in accordance with the research design in the following table.

Tabel 1. Non Equivalent Control Group Design

Class	Pretest	Treatment	Posttest
K. Experiment (X)	O1	X1	O2
K. Control (Y)	O3	X2	O4

Source: Sugiono, (2018)

The population in this study includes all students of class XI IPS at SMA Negeri 6 Palu, which is divided into four classes with a population of 83 students. Presented in the form of a detailed table of the following population numbers.

Table 2. Population of Class XI Social Sciences Students

Class	Sum
XI IPS 1	33
XI IPS 2	26
XI IPS 3	24
Total Amount	83

Source: Primary Data of SMA Negeri 6 Palu, 2024

The research sampling used *purposive sampling* techniques. This sample, selected based on the results of observations, found that each class had almost the same level of ability, so all classes were considered to have an equal chance of being used as a research sample. Therefore, it has been determined that there are two classes selected as research samples, namely, class XI IPS 1 as a class (experiment) and class XI IPS 2 as a class (control).

There are two types of tests for critical thinking ability, namely, written tests and non-written tests. The written test was obtained from the results of *the pretest* and *posttest* scores of 15 questions (PG) and 3 questions (Essay), while the non-written test was obtained from the results of the discussion and portfolio assessment sheets. This test is structured based on cognitive dimensions according to the Taxonomy of Anderson & Krathwohl, (2010) (C1) to (C6). The test data analysis technique is carried out by processing score data using a percentage formula, which is obtained from data on students' critical thinking skills according to the category according to (Yunita et al., 2018). Furthermore, instrument tests were carried out using validity and reliability tests, so that the test was suitable for use as a research instrument.

The data analysis technique uses inferential statistical data analysis techniques, which include normality test, homogeneity test, and finally hypothesis t test using the help of *the SPSS Version 25.0 For Windows application*.

C. RESULTS AND DISCUSSION

1. Result

After being given treatment to two research classes, to find out in more detail the influence of the environmental exploration approach on the critical

thinking ability of high school students. A *pretest* and *posttest* data for critical thinking skills and also statistical test results data with the help of the *SPSS Version 25.0 For Windows* application are presented as follows.

Table 3. Description of *Pretest* and *Posttest* Data Experimental Classes

Size Type	<i>Pretest</i>	<i>Posttest</i>
Highest Scores	86	97
Lowest Rate	53	73
Average	70	85,7
Total Number of Grades	2.310	2.829

Source: 2024 Test Data Processing Results.

Table 3, it can be seen that the critical thinking ability of the experimental class in the initial test (*Pretest*). The highest score was 86 and the lowest score was 53, while in (*Posttest*). The highest score was 97 and the lowest score was 73, so for the average score of students in the experimental class using the environmental exploration approach (JAS), in the preliminary test (*Pretest*) was 70 while the average final test score (*Posttest*) was 85.7.

Table 4. Description of *Pretest* and *Posttest* Data Control Classes

Size Type	<i>Pretest</i>	<i>Posttest</i>
Highest Scores	80	86
Lowest Rate	40	66
Average	61,1	75,1
Total Number of Grades	1.587	1.951

Source: 2024 Test Data Processing Results.

Table 4, it can be seen that the critical thinking ability of the control class in the initial test (*Pretest*). The highest score is 80 and the lowest score is 40, while in (*Posttest*). The highest score was 86 and the lowest score was 66, so for the average score of the students in the control class using thee-spository approach, in the preliminary test (*Pretest*) was 61.1 while the average final test score (*Posttest*) was 75.1. From tables 3 and 4. It can be concluded that learning using the environmental exploration and expository approaches has a difference in the test scores of students' critical thinking skills in geography subjects.

Tables 3 and 4, show the changes before and after the treatment. In the experimental class, the environmental exploration approach was applied, while in the control class, the expository approach was used. The change can be seen in the following

diagram.

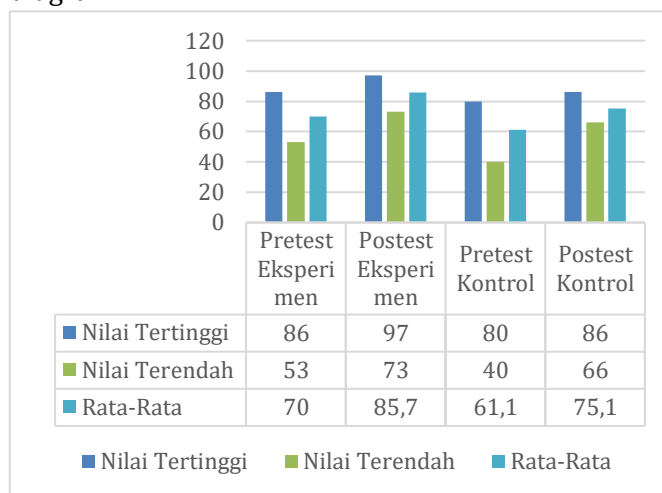


Figure 1. Changes in Critical Thinking Skills

The analysis of students' critical thinking skills was carried out by categorizing the percentage values that had been found. Based on the results of the analysis, the critical thinking skills of students in the experimental class that used the environmental exploration approach, as well as in the control class that used the expository approach, were classified into five categories, namely very high, high, medium, low, and very low. This categorization is based on the percentage score obtained by students in the evaluation of critical thinking skills.

Table 5. Data on the percentage of students in the experimental class

No	Percentage	<i>Pretest</i>	Category	<i>Posttest</i>	Category
		Percentage of students		Percentage of students	
1	$81,25 \leq P \leq 100$	12,1%	Very High	45,5%	Very High
2	$71,5 \leq P \leq 81,25$	45,5%	Tall	54,5%	Tall
3	$62,5 \leq P \leq 71,5$	12,1%	Keep	-	-
4	$43,75 \leq P \leq 62,5$	30,3%	Low	-	-
5	$0 \leq P \leq 43,75$	-	-	-	-

Source: 2024 Data Processing Results.

Table 5, it can be seen that 33 students who were sampled in the experimental class, *Pretest* there was a low category with a percentage of 30.3%, medium category 12.1%, high category 45.5% and very high category 12.1%. Meanwhile, in the *Posttest* results, there is a high category with a percentage of 54.5% and a very high category with a percentage of 45.5%.

Table 6. Data on the percentage of students in the control class

No	Percentage	Pretest		Posttest	
		Percentage of students	Category	Percentage of students	Category
1	81,25 ≤ P ≤ 100	-	-	11,5%	Very High
2	71,5 ≤ P ≤ 81,25	26,9%	Tall	65,4%	Tall
3	62,5 ≤ P ≤ 71,5	26,9%	Keep	23,1%	Keep
4	43,75 ≤ P ≤ 62,5	34,6%	Low	-	-
5	0 ≤ P ≤ 43,75	11,5%	Very Low	-	-

Source: 2024 Data Processing Results.

Table 6, it can be seen that 26 students who were sampled in the control class, *Pretest* had a very low category with a percentage of 11.5% in the low category, 34.6% in the medium category 26.9% and 26.9% in the high category. Meanwhile, in the *Posttest* results , there is a medium category with a percentage of 23.1%, a high category with a percentage of 65.4%, and a very high category with a percentage of 11.5%.

Table 7. Results of the Analysis of the Normality Test

Shapiro-Wilk		
Learning Approach	df	Mr.
Exploring the Environment Approach	33	0,140
Expository Approach	26	0,075

Source: 2024 Statistical Data Analysis.

Table 7, the significance value (Sig) data of the *Shapiro-Wilk* normality test of the experimental class was 0.140 > 0.05 and the control class was 0.075 > 0.05. This proves that there is a significant influence between the approach to exploring the environment on the critical thinking skills of high school students.

Table 8. Results of Homogeneity Test Analysis

		Levene Statistic	Sig.
Critical Thinking Skills	Based on Mean	0,052	0,544

Source: 2024 Statistical Data Analysis.

Table 8, the homogeneity test data of significance data (Sig) was obtained based on *the Based on Mean* > 0.05, that is, 0.544 the basis for

decision-making of the homogeneity test was stated that the students' critical thinking skills were homogeneous.

Table 9. Results of T Test Analysis (*Independent Sample Test*)

	Df	Sig. (2-tailed)	Results
Critical Thinking Skills	1	0,000	Significity (2-tailed) < 0,05 to be a diminutive

Source: Results of 2024 Statistical Data Analysis.

Table 9, the results of significance data (2-tailed) are found in the *Equal variances assured column*, with a value of (sig)(2-tailend) of 0.000 < 0.05. This proves that there is a significant influence between the approach to exploring the environment on the critical thinking skills of high school students.

2. Discussion

Based on the data of related research results The Influence of the Neighborhood Exploration Approach on the Critical Thinking Ability of High School Students have a significant effect. This is evidenced by the findings of the study with App Help *SPSS Verses 25.0 For Windows* Demonstrate the results of hypothesis testing with significance values (2-tailed) of 0.000 < 0.05 basis for decision-making stated that Ho was rejected Ha was accepted. To achieve learning goals, teachers must have innovation in finding and learning effective learning approaches to the material *Scientific Approach* (Anggita et al., 2020).

The process of conducting the research was carried out as many as 4 meetings, starting with the process of conveying the concept of geography learning material in the classroom, then conducting an initial test (*pretest*), then carrying out an environmental exploration approach with SMA Negeri 6 Palu students, conducting a final test (*posttest*) and continuing with the assessment of the products of environmental exploration. The students' critical thinking ability using the environmental exploration approach can be seen from the average analysis process of *pretest* and *posttest*, which has increased before and after the treatment, both in the experimental class and the control class. However, a very significant increase occurred in the experimental class that applied the environmental exploration approach.

The findings of this study are in line with the results of research conducted by (Thaariq et al., 2023) Revealing that interesting learning experiences tend to be embedded in students' memories for a long time, so they will be easier to remember when given tests, and ultimately, it can improve students' critical thinking skills. Students' critical thinking skills can also be influenced by their level of curiosity about the approach to exploring the environment. Other findings emerged from the results of the research presented (Lumandung et al., 2024) Learning that involves experimentation and discussion can create a fun environment, while also developing scientific attitudes such as honesty, rigor, respect for the opinions of others, discipline, tolerance, hard work, and responsibility. All of these attitudes are part of the characteristics of the surrounding nature exploration approach.

The use of the environmental exploration approach to critical thinking skills in high school geography subjects makes it easier for students to solve the problems they learn. Because in the application of this approach, students are not only expected to master the subject matter, but are also required to be active in discussions, as well as cooperation between groups. The concept of exploring the environment is learning that utilizes the environment or the environment around students as an effective source of learning (Putra, 2021). This approach does not emphasize the memorization of information, but rather encourages students to develop the knowledge gained by understanding the concepts of geography through exploration and investigation in their surroundings.

Exploring the surrounding nature will allow students to feel more enthusiastic and happy. This environment-based learning process emphasizes more on active student involvement, providing greater social meaning, and utilizing a variety of resources and diverse assessments (Cahyaningtyas et al., 2019). Exploring the environment is an approach that has a number of benefits, including helping teachers in delivering material directly and improving the ability and skills of the student learning process. This approach focuses on learning activities related to real situations, so that it can broaden students' diverse horizons and ways of thinking (Yusuf et al., 2023).

The application of the environmental exploration approach to the critical thinking skills of high school students is expected to provide benefits to teachers and students. The findings of this study are supported by the characteristics of class XI social studies students who have differences in terms of academic ability, economic conditions and housing. Through the approach of exploring the environment, these differences are not an obstacle that interferes with the course of the teaching-learning process, because the environmental exploration is specially designed, that the learning process is not only carried out in the classroom but can be done outside the classroom (*Outdoor*) by paying attention to the situation and environmental conditions around the school.

D. CONCLUSIONS AND SUGGESTIONS

Based on the results of the analysis of the research data, it was found that the average critical thinking ability of students in the *posttest* in the experimental class was higher than that of the control class, namely, $85.7 > 75.1$ and the results of the t-test using the *Independent Sample Test* with a Sig. (2-tailed) value of $0.000 < 0.05$, then H_0 was rejected H_a was accepted, so it can be concluded that there is an influence of the environmental exploration approach critical thinking skills of high school students. There is a suggestion for future researchers to always make this research a worthy reference to conduct further research on the approach to exploring the environment, especially in the scientific fields of geography education and other disciplines in high schools.

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