THE APPLICATION OF FIELD TRIP LEARNING METHOD
TO MANGROVE FOREST AS A SOURCE OF GEOGRAPHY LEARNING

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Abstract	In this study, the aim was to determine differences in the results of student scores using the field trip learning method, both pre-test and post-test on the field trip learning method. This study uses a quantitative research approach with a type of experimental research. This type of research is an experiment that uses the population in this study is class XI IPS SMAN 1 Sindang ranging from XI IPS 1 to XI IPS 4, which consists of 144 students, but the sample in this study is class XI IPS 1 and XI IPS 2 consisting of 36 students per class when totaled into 72 student samples. The sampling technique carried out in this study is using purposive sampling techniques. The method of data collection in this study is through test exam results conducted pre-test and post-test in learning to see the difference in student scores by providing test, while the data analysis technique used is the T-test analysis with the aim of seeing the difference in value results before and after being given online and offline field trip learning treatment. The data analysis technique used is the T-test analysis with the aim of seeing the difference in value results before and after being given online and offline field trip learning treatment. The results of this study were that there were differences in the learning outcomes of the control class and the experimental class both in the pre-test and post-test. The control class in the pre-test had an average score of 67.33, and after being given offline field trip treatment, the average value increased to 79.89, while the experimental class in the pre-test had an average value of 65.61 and after being given an online field trip treatment the average value increased to 80.38. It can be concluded that these two field trip learning methods can improve student scores, although, in this learning method, there are advantages and disadvantages of each.
Keywords	Field Trip, Geography, SMAN 1 Sindang

INTRODUCTION

Education is a necessity that will be ingrained in an individual throughout their lifetime and will be useful wherever they may be. Every human being needs education to the fullest extent in order to make their lives easier and develop their potential (Kaplan & Haenlein, 2020). So, the importance of education that should be possessed by every individual in the world cannot be overstated. Without education, humans will find it difficult to keep up with the rapid advancements in knowledge. Education is expected to build high-quality and highly competitive individuals, and it is also expected to humanize people through education, in line with Nelson Mandela's statement that education is the only thing that can change the world (Suwasdi & Said, 2022).

According to UNESCO, there are four pillars of education: (1) learning to know, (2) learning to do, (3) learning to be, and (4) learning to live together (Azizi & Mahmoudi, 2019). From these pillars of education, it is expected to produce high-quality individuals. To achieve this, the pillars of education require supportive synergy, starting from educational facilities, educational institutions, and, most importantly, educators who are at the forefront of shaping and guiding students. A good educator is one who understands the needs and knows which methods to use in innovative and engaging teaching to ensure active student participation and interaction in the learning process.

Learning methods are defined as the ways teachers perform their functions and are tools to achieve learning objectives (Puspitarini & Hanif, 2019). According to Fahmi et al. (2019), learning methods are the ways teachers organize learning and how learners learn.

Based on the above explanations, it can be concluded that methods in teaching are the ways used by educators, namely teachers, to carry out the learning process effectively and innovatively so that students can easily acquire knowledge. A teaching method will inevitably differ in each location and target students because not all methods can be applied universally to all places and students, as there are certain places where a teaching method may not be suitable.

The field trip method or excursion can be an alternative for teachers to create innovative learning experiences (Seifan et al., 2020). "Excursion as a teaching method is when students, under the guidance of a teacher, visit certain places with the intention of studying the learning objects present in those places." The field trip method invites students to come and directly observe the objects being studied (Cheng & Tsai, 2019). By seeing things firsthand, students gain real-life experiences rather than just theoretical knowledge from books. This is highly relevant to the subject of geography, which focuses on the study and laboratory work in specific areas, particularly coastal

areas.

Field trips are not just about leisure or recreation but also about learning or deepening learning by directly experiencing reality. With this method, students are expected to gain a concrete understanding of the material covered in geography education. Field trips are a teaching method used by teachers to provide direct learning experiences (Sagala, 2023).

Geography is one of the disciplines that studies the phenomena of the geosphere and its connections with other phenomena, both physical and social. Geography without field practice is like science without experiments (Sui & Kedron, 2021). If geography were compared to a tree of knowledge, its roots would be the study of the atmosphere, lithosphere, biosphere, and anthroposphere, while its branches would be physical and human geography. If science has laboratory space for studying knowledge, then the laboratory for geography is the natural environment. When it comes to effective geography learning, the learning process is not always confined to the classroom because the geography laboratory is found in the surrounding environment.

SMAN 1 Sindang is one of the high schools located in the city center of Indramayu Regency, West Java. Indramayu Regency is one of the regencies located in the northern part of Java Island. The characteristic feature of the North Coast of Java Island is its calm waves and the vegetation of coastal plants, namely the Mangrove Forest. The Mangrove Forest is an important ecosystem for coastal areas, serving as the primary defense against erosion and tidal floods, which are typical disasters in the northern coastal areas of Java Island.

Indramayu Regency has the third-largest Mangrove Forest in West Java Province. One of the Mangrove Forest areas that serves as an ecotourism site is the Karangsong Ecotourism area. However, the utilization of the Mangrove Forest for educational purposes, especially for students from elementary to high school, is not effectively utilized as a source of learning. Yet, it can be a highly effective resource for geography education, as it provides students with new experiences and fosters a sense of environmental care, emphasizing the importance of the Mangrove Forest for human survival. These students, being the future generation, have the responsibility to preserve the surrounding natural environment.

Mangrove forests that are integrated with learning are also one of the solutions for preserving mangrove forests. Mangroves function as coastal defenses against natural disasters, prevent water from flowing onto land and absorb carbon. Mangroves are also a place to find food,

nurture and lay eggs, and a place to find food for various marine life such as fish. So SMAN 1 Sindang can not only increase knowledge about mangrove forests but also as a form of preserving the mangrove forest itself. Given the importance of mangrove forests, it is very necessary to preserve mangrove forests. For this reason, there is a need for a method that can accommodate material that optimizes the potentials that exist at SMAN 1 Sindang. The conservation-based mangrove ecosystem role module is expected to be a solution to accommodate these potentials in order to support learning in the learning process and improve learning outcomes because the existence of abundant marine biota ecosystems has the potential to help the teaching and learning process and research by taking into account the carrying capacity of the environment.

Figure 1. Ecotourism Map of Karangsong Mangrove Forest
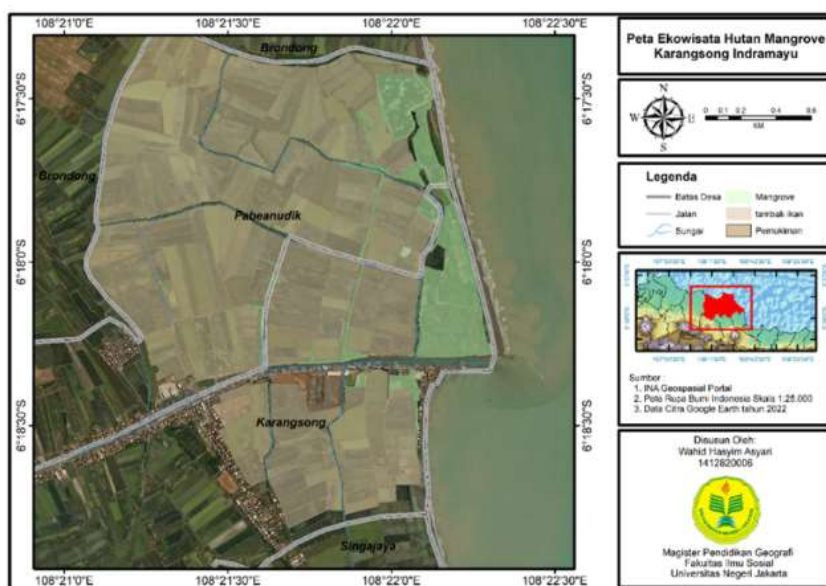
Previous research conducted by Suyadi et al. (2021) stated that mangrove ecosystems have good potential and can be utilized to increase local community income. However, the current utilization of mangrove forests is still extractive in nature, which is not environmentally friendly, such as logging for firewood. An environmentally friendly and community-based mangrove ecosystem management model such as edu ecotourism is needed to ensure the sustainability of mangrove forests while improving community welfare. In addition to being used for the benefit of the community, mangrove forests can also be used as a learning resource such as research by Cahyono & Martuti (2015) which states that the mangrove ecosystem in SMA N 2 Pekalongan can be optimized as a learning resource, so it is necessary to develop a module on the role of mangrove ecosystems as a conservation-based learning resource to support teaching and learning activities so that the use of mangrove forests as a learning medium is also expected to apply local wisdom as

according to Taksu & Wesnawa, (2019) which states that with the development of learning resources, it is expected to be able to understand the importance of the local wisdom values of mangrove forests and implement these local wisdom values into their daily behavior through the learning process, both inside and outside the classroom. The use of learning methods used by teachers can determine student learning outcomes. Research Saputri et al. (2019) stated that there is a significant influence between the utilization of mangrove forests as a learning resource and the caring attitude of fourth-grade students in Bengkulu City Elementary School. Utilization of the surrounding environment, one of which is the mangrove ecosystem, as a learning resource becomes one of the additional learning to help increase students' understanding (Zulhalifah et al., 2021).

Based on the above background regarding the importance of learning method selection in improving student learning outcomes, one of the learning methods that can be used in learning geography is the use of mangrove forests. The use of mangrove forests as a learning medium is not only used to add insight but also as a form of mangrove forest conservation. Thus, this study aims to analyze the application of the field trip learning method to mangrove forests as a source of geography learning.

METHOD

This research was carried out in June-July 2022 at SMAN 1 Sindang, Indramayu Regency. This type of research uses experimental methods of control class and experimental class. The population and sample in this study were 72 students, 36 classes XI IPS 1 and 36 XI IPS 2. The control class was XI IPS 1, which was given online field trip treatment, and XI IPS 2 was used as an offline field trip experimental class. The research flow to be used in this study is Pre-test and Post-test results of student scores from both the control class and experimental class. Data collection methods for this study are observation, questionnaires, documentation, and pre-test and post-test repeat methods. Data analysis techniques use the T-test because they see similarities and differences. The approach in this study uses an experimental approach. The hypothesis in this study is the influence of learning value results after being given a field trip.

FINDINGS AND DISCUSSION

Findings

Based on field findings, researchers get a lot of benefits from this mangrove forest, and in the application of field trip learning, students can follow and be excited in their application because they have a new experience of learning directly deeply and can be directly involved in the field even though there are some students who prefer to have fun alone. When the condition of Karangsong Beach is over, it is time for mangrove rehabilitation because the impact of abrasion is very fast and severe. This will have an impact on community settlements.Karangsong Mangrove Ecotourism in Indramayu Regency

Karangsong Mangrove is located in Karangsong Village, Indramayu District, Indramayu Regency, West Java Province, with an area of approximately 15 hectares. Starting in 2008, parts of the Indramayu coastal area were prone to erosion, and since then, the community has become concerned. The initial step taken was mangrove planting. Then, from 2010 to 2014, the hard work of the community in planting mangroves paid off, and Karangsong Mangrove transformed into an ecotourism site through the CSR program of Pertamina RU VI Balongan. Currently, Karangsong Mangrove has become a tourist area and a center for biodiversity learning in Indramayu Regency, managed directly by the local community through a sustainable farmer group. Karangsong Mangrove Tourism is open every day from 09:00 to 17:30.

Field Trip Learning and Environmental Awareness

Based on the questionnaire survey, the perceptions of the 36 students in the experimental class regarding the field trip learning instrument's ability to enhance their environmental awareness are shown in the table below.

Table 1. Field Trip Learning in Karangsong Enhances Environmental Awareness

No	Choice of Answers	Frequency	Presentation
1	Strongly Disagree		0%
2	Don't agree		0%
3	Doubtful	4	11%
4	Agree	12	33%
5	Strongly Agree	20	56%
	Amount	36	100%

Data Sources for the Research

Based on the table above, the perception of students regarding the field trip learning instrument's ability to enhance their environmental awareness is as follows: 4 students answered

unsure, or 11%. Twelve students answered they agreed, or 33% and 20 students answered strongly agreed, or 56%. From the data obtained in the table, it can be concluded that the experimental class students have a higher level of environmental awareness due to the importance of the mangrove forest for their lives, especially since they live in coastal areas. Furthermore, students are more concerned about the litter scattered around the Karangsong Mangrove tourism site and actively participate in maintaining the cleanliness of the mangrove forest. In addition to waste management, students also have a better understanding of the mangrove ecosystem's function in coastal areas.

Field Trip Learning and Interest in Geography Learning

Based on the questionnaire survey, the perception of the 36 students in the experimental class regarding the Karangsong Mangrove forest as a learning resource for geography shows a higher interest in learning geography, as shown in the table below.

**Table 2.** Field Trip Learning Enhances Interest in Geography Learning

No	Answer Choices	Frequency	Presentation
1	Strongly Disagree		0%
2	Don't agree		0%
3	Doubtful		0%
4	Agree	10	28%
5	Strongly Agree	26	72%
	Amount	36	100%

Based on the table above, students' perception of the Karangsong mangrove forest as a learning source shows that out of 36 students, two students responded hesitantly, or 6%; 14 students agreed, or 39%, and 20 students strongly agreed, or 56%. From the obtained data, it can be concluded that the majority of students from the experimental class of 36 students are more interested in learning geography directly and concretely because they feel bored when learning is always confined to the classroom. By conducting learning activities outside the classroom, such as field trips, students are enthusiastic and more interested and motivated to learn geography.

The results of student learning using the control class

The control class is the class that uses online or remote field trip learning methods. The control class in this study is XI IPS 2, consisting of 36 students. Below are the results of the pre-test and post-test of the control class.

Figure 2. Pre-test and Post-test Results of Student Learning in the Control Class.
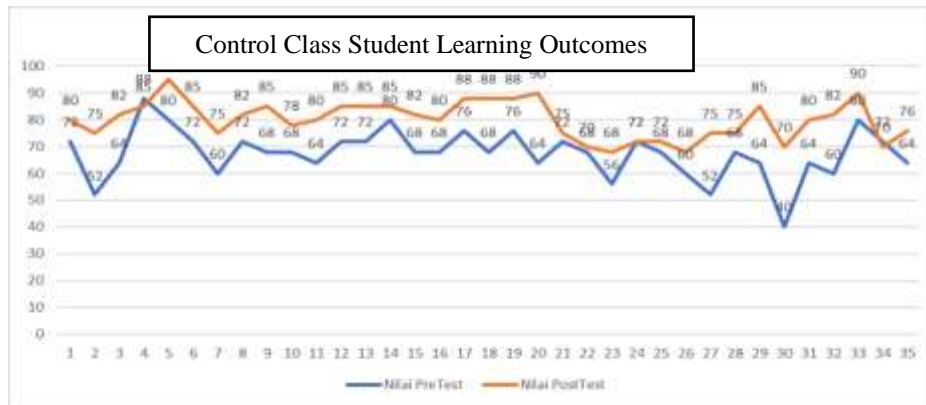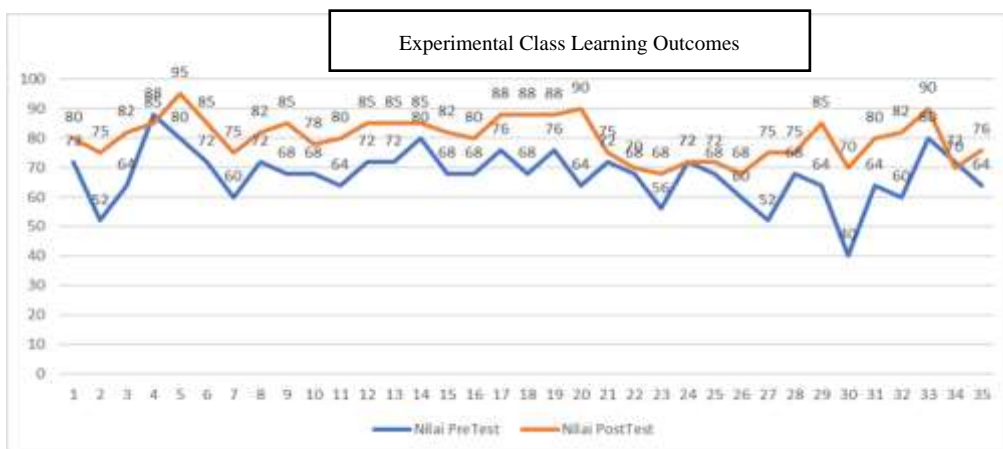
The line graph above shows the pre-test and post-test scores of the control class, indicating that the lowest pre-test score for students is 52, while the highest score is 85. One student achieved the minimum passing criteria (KKM). The average score for the pre-test is 67.54. However, after receiving the treatment of a direct field trip and visiting the Karangsong Mangrove Forest as a tourist attraction, there were changes in the scores. The changes can be observed from the post-test results, where the lowest score is 74, while the highest score is 90. Seventeen students scored above the KKM, and 19 students scored below the KKM. The average post-test score is 79.89. There is a significant improvement in learning outcomes, looking at the pre-test and post-test results of the control class,

Student Learning Results Using the Experimental Class

The experimental class is the class that used the direct field trip learning method by visiting the Karangsong Mangrove Forest as a tourist attraction.

Figure 3. Pre-test and Post-test Results of Student Learning in the Experimental Class.

The line graph above shows the pre-test and post-test scores of the experimental class, indicating that the lowest pre-test score for students is 52, while the highest score is 68. None of the students achieved the minimum passing criteria (KKM), which is 75, and the average pre-test score is 65.61. However, after receiving the treatment of an online field trip, there were changes in student learning outcomes. The changes can be observed from the post-test results, where the lowest score is 62 and the highest score is 90, with an average score of 80.36. There is a significant improvement in student learning outcomes, looking at the pre-test and post-test results of the experimental class.

Identification of Differences in Student Learning Results

The research results show differences in the learning outcomes of the control class, which used the online field trip learning method, and the experimental class, which used the offline field trip learning method. The following table shows the differences in student learning outcomes.

Table 3. Student Learning Results of the Control Class

Class	Average Value	The Highest Score	Lowest Value	Status	KKM
XI IPS 1	67,54	85	52	*Pre-test*	75
XI IPS 1	79,89	90	74	*Post-test*	75

Table 4. Student Learning Outcomes of Experimental Class

Class	Average Value	The Highest Score	Lowest Value	Status	KKM
XI IPS 1	65,71	68	52	*Pre-test*	75
XI IPS 1	80,36	90	74	*Post-test*	75

Source of Research Data

When looking at the table above, there are the learning outcomes of the control class, which used the online field trip learning method, and the experimental class, which used the offline field trip learning method. There is a difference between the control class and the experimental class. From the table above, it can be seen that the post-test score for the control class is 79.89, and the average post-test score for the experimental class is 80.36. It can be concluded that the experimental class has a higher average score compared to the control class.

Normality Test

<div align="center">Table 5. Normality Test</div>

		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	6.17444060
Most Extreme Differences	Absolute	.126
	Positive	.119
	Negative	-.126
Kolmogorov-Smirnov Z		.691
Asymp. Sig. (2-tailed)		.726

According to Siregar in Pratama & Permatasari (2021), the normality test aims to test whether, in the regression model, confounding or residual variables have a normal distribution or not. Amaliah (2017) states that data can be declared normal if it has a significance greater than 0.05. Based on the research results obtained, sig. (2-tailed) of 0.726, so it can be concluded that the research data is normally distributed.

Homogeneity Test

<div align="center">Table 6. Homogeneity Test Results</div>

Nilai

Levene Statistic	df1	df2	Sig.
.286	1	58	.595

Homogeneity test data homogeneity testing is very important in every data processing (A. Q. Sari et al., 2017). A homogeneity test is a statistical test procedure that aims to show that two or more groups of sample data that have been taken come from populations that have the same variance (Y. E. P. Sari, 2019). A homogeneity test can be done if the data groups are in the normal distribution. A homogeneity test is conducted to show the differences that occur in parametric statistical tests (Usmadi, 2020). Based on Table 8, the initial data have equal variances.

Hypothesis Test (T-Test)

<div align="center">Table 7. SPSS Output for Hypothesis Test</div>

One-Sample Test

	Test Value = 75					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Nilai	3.268	29	.003	6.467	2.42	10.51

α value = 0.05

Value sig. (2-tailed) $\geq \alpha$ → Statistical Hypothesis (H_0) ACCEPTED.

Value sig. (2-tailed) $< \alpha$ → Statistical Hypothesis (H_0) REFUSED.

Description:

Based on the t-test results, the odds value sig. = 0,003.

Based on the t-test conducted with a significance level of 5% = 0.05, it shows that the significance value of the experimental class post-test score is 0.03, which is smaller than 5%. Then, the average writing ability of the experimental class reached the minimum completion criteria.

The Kolmogorov-Smirnov test is more appropriate for samples of more than 50. Thus, in this study, the normality test with Kolmogorov-Smirnov was used because the samples used were more than 50, totaling 120. The conclusion of the normality test results can be seen:

a. If the significance value> 0.05, it is stated that the data is normally distributed.

b. If the significance value <0.05, it is stated that the data is not normally distributed.

Based on table 9. shows that all variables get a sig value. > 0.05, so it can be concluded that the research data is normally distributed.

Discussion

Based on the results of the study, it was found that the normality test results obtained a sig value. (2-tailed) of 0.726, so it can be concluded that the research data is normally distributed. Then, proceeded with the homogeneity test, and it was found that the initial data had the same variance called homogeneous. After obtaining the results of the normality test and homogeneity test, it was continued with the t-test and found that mangrove forest tourism affects the value of geography learning at SMAN 1 Sindang. Thus, the use of mangrove forest learning method is effectively used in learning, especially geography learning at SMAN 1 Sindang. Learning methods include all physical equipment and materials used by instructors, lecturers, teachers, tutors, or other educators in carrying out learning and facilitating the achievement of learning objectives (Astari, 2017).

The provision of adequate learning resources for each school or perhaps a school cluster will be important for improving the learning process. Learning resources that are utilized by schools or can also be done jointly (sharing resources) will further accelerate the distribution and dissemination of the quality of learning outcomes. This can be done well if there is good cooperation between existing schools as well as cooperation with other institutions and the surrounding community (Miftah, 2013). The role of learning methods in the learning and teaching process is an inseparable

unity in the world of education. Learning methods are anything that can be used to channel the sender's message to the receiver so that it can stimulate the thoughts, feelings, attention, and interest of students to learn (Tafonao, 2018).

Previous research shows that there is a significant difference between student learning outcomes in experimental groups that utilize mangrove forests as learning resources and control groups that utilize visual methods as learning resources (Magasing, 2013). The results of this study indicate that MMEP has natural, socio-economic, and facilities and infrastructure potential. Most of the respondents from public high school teachers stated that the mangrove ecosystem is relevant to the geography learning outcomes in the independent curriculum. The majority of respondents also stated that MMEP can be used as a geography learning resource. However, there are obstacles to learning outside the classroom due to the time and cost factor that it is quite expensive to go to the location (Ragil et al., 2023). The action (Field trip) provided can improve student activity and learning outcomes (Afifi, 2022). According to Juleha (2018), field trip learning in Theme 2 learning shows positive changes. The average value of concept mastery and naturalistic intelligence in the experimental class is higher than the control class. However, the average increase in concept mastery N-gain in the control class was higher than the experimental class, and both were in the medium category, while the average increase in naturalistic intelligence in the experimental class was higher than the control class, but both were in the low category. The implementation of field trip learning is categorized as almost all activities are carried out, and the responses given by students to this field trip method are very good (Zannah, 2020).

Kata mangrove berasal dari gabungan antara Bahasa Portugis mangue dan Bahasa Inggris grove yang ditujukan kepada sekelompok vegetasi yang mampu tumbuh di area pasang surut pantai beriklim tropis dan subtropis. Salah satu metode belajar yang dapat meningkatkan hasil belajar mahasiswa adalah dengan memberikan metode pembelajaran Karyawisata (Field Trip) dalam mata kuliah IPA kelas tinggi (Tarigan, 2019). The environmental system consists of several components that interact with each other in creating a learning process that is directed towards certain goals. One of the components that support the environmental system is the teaching method (Juniarti et al., 2017).

Based on the results of the study, it was found that the use of learning methods with mangrove forest field trips can increase the value of learning in geography subjects at SMAN 1 Sindang.

CONCLUSION

Based on the results of the study, it can be concluded that the research data is normally distributed based on the results of the normality test, which shows the sig value. (2-tailed) of 0.726. Furthermore, the homogeneity test indicates that the data has the same variance or homogeneous. The t-test results showed that mangrove forest tourism has a significant influence on the value of geography learning at SMAN 1 Sindang. Therefore, the mangrove forest learning method is effectively used in learning, especially in geography learning at SMAN 1 Sindang. Learning methods have an important role in the learning and teaching process, stimulating the interest and attention of students and facilitating the achievement of learning objectives.

In addition, the research also revealed that the provision of adequate learning resources for schools or school clusters can contribute significantly to improving the learning process. Utilizing learning resources together can accelerate the spread of quality learning outcomes, provided there is good cooperation between schools, other institutions, and the surrounding community. Previous research showed significant differences between the learning outcomes of students who used mangrove forests as learning resources and the control group who used visual methods. The results of this study indicate that MMEP has natural and socio-economic potential that is relevant to geography learning outcomes. Although there are constraints outside the classroom, such as time and cost factors, field trips can improve student activity and learning outcomes. The use of the mangrove forest field trip learning method in geography subject at SMAN 1 Sindang has also been proven to increase the learning value.

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