Effectiveness Case Based Outdoor Learning to Improve the Ability Writing Scientific on Social Sciences Education Students

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ABSTRACT

Revealing students' abilities in writing scientific is one of the bases for achieving of 4th SDG's, is quality education. This research is an case study on outing class conducted to social sciences education students. The aim of this research is effectiveness case based outdoor learning to improve the ability of social sciences education undergraduate students in writing scientific. The ability to write the scientific paper with case study to the field was believed to improved the students concept, practically, and collaboration. The outdoor learning process was implemented using the authentic instruments through Fatchan model (Fatchan et al., 2016). The results show reveals an improvement in understanding concept, used to practicing, and collaboration strengthening students writing ability. There is a significant increase in article writing skills, but there are still several groups of students who lack depth in the analysis and interpretation of field data. This can be expected to be caused by students' lack of familiarity with research in the field. This can be achieved through familiarizing courses using theoretical practice in the field using the case study model.

KEYWORDS: Case Study, Outdoor Learning, Writing Scientific, Social Science, SDG's

1 INTRODUCTION

The quality of education according to the SDG's targets must be achieved before 2030. From a quality perspective, lectures in the Social Sciences Education study program still encounter various problems. (Bashith et al., 2022; El Rizaq, 2021). Lecture problems originate from students, lecturers and teaching materials. For students, especially student learning outcomes which are still low, namely on average reaching 50% of 100% of the expected results (Amin et al., 2020). This is influenced by several reasons, such as: (1) student assignments tend to be conceptual, (2) they are passive, (3) they feel bored, and (4) they are less responsive in lectures. For lecturers, they still prioritize material completeness and do not optimize learning variations so that lectures are still centered on the lecturer (Kusters et al., 2023; Liu et al., 2023).

Ideally, learning in higher education is the achievement of academic competence and skills in writing scientific papers. One indicator is student academic competence in the 21st century (Kivunja, 2014b, 2014a). However, in real conditions, students' academic responses are low (Arianto & Fauziah, 2020). This is suspected to be due to the lack of effective scientific-based academic climate in the classroom. This

ineffectiveness is caused by a lack of variety in lectures in class, especially the need to write academic work (Sejati et al., 2017). This problem could also be caused by the lecturer's teaching style which is still oriented towards material completion.

Problems in learning that become obstacles to achieving optimal 21st century academic competency results. Appropriate 21st century academic competency problem solving strategies are needed (Utami et al., 2016). To solve this problem, the strategy chosen is the case based outdoor learning model. The reason for choosing this model is that the series of problems above can be overcome at the same time. Through the case-based outdoor learning model, a scientific-based academic climate between students and lecturers can be built, students can see objects directly in the field so that verbalism can be eliminated, case studies in the field create a new atmosphere thereby eliminating boredom (Kärkkäinen et al., 2023). Through case-based outdoor learning, learning with a scientific approach can be developed, including implementing problem-based case studies, investigative groups, and collaborative social projects. (D'Amato & Baa, 2019). Learning outside the classroom through field observations and interviews can not only improve learning outcomes, but can also improve students' skills in writing scientific articles in the field (Fatchan et al., 2016). Therefore, to overcome the problem the author created a solution strategy in the form of implementing a case-based outdoor learning model to improve scientific writing skills in students of the Social Sciences Education study program.

In implementing the case-based outdoor learning model, the technique used has the characteristics of innovative learning outside the classroom using map media to explore the shape of the terrain/field using authentic assessments and guidelines for observation and interview activities based on the case studies studied. (Blades, 2021; Fägerstam, 2012). This case-based outdoor learning model has the advantage of inviting students to be more active and easier to understand concepts because they observe social phenomena directly in the field. The research field (in the broadest sense) is a real laboratory for the social sciences (Bashith et al., 2022). That's where theories are proven and applied, the research field also becomes a concrete learning environment for students, so that the material is easy to understand and understand (Oktavianto et al., 2021). Three types of environments that can be used in field learning, namely the social environment, natural environment and artificial environment. The social environment as a learning resource is related to human interaction with social life. The natural environment concerns everything that is natural in nature, such as geography, climate and natural resources. An artificial environment is an environment that is deliberately created or built by humans for certain purposes that are beneficial to human life (Aliman et al., 2019; Cheng & Wan, 2017).

Field case studies are also developed by various outdoor-based educational institutions. An example is the Gartan Outdoor Education and Training Center in learning geography and socio-anthropology. Applications in the social sciences include: Students use the skills of observation, mapping, measurement, recording and analysis of various natural and social phenomena. After completing field work, students will then return to class to compile and evaluate the results obtained from the field (Heinimäki et al., 2021). Field case studies applied in field research measure student learning outcomes, social skills, and teamwork development. The topic discussed in the field study is ecology that uses gardens within the school environment. The results obtained in this research include; (1) increasing knowledge obtained from tests; (2) high social skills, as proven from the interview results; (3) group collaboration shows an increase (Nasution et al., 2022).

The implementation of the case-based outdoor learning model will be carried out in the odd semester 2023-2024 in the continuous study course of social, economic, political and cultural change. The material in this integrated course given to third semester Social Sciences Education students has 4 topics, namely: (1) study of sustainable development, (2) cultural development and sustainable tourism, (3) regional analysis of the impact of social, economic, political and cultural changes, and (4) sustainable population and transportation systems. This research was conducted to find the gap between research on innovative models of lectures in the Social Sciences Education study program and efforts to improve students' scientific skills through outing class case studies conducted on Social Sciences education students. This research aims to reveal the effectiveness of the case-based outdoor learning model to improve the ability of undergraduate

social studies students in writing scientific papers. The ability to write scientific papers with case studies in the field is believed to be able to improve student concepts, practices and collaboration.

2 METHOD

The research design used a quasi-experiment using a one-shot case study (Flannelly et al, 2018). This research was conducted in two classes of the Unesa Social Sciences Education study program for the 2023/2024 odd semester, a total of 72 students divided into 17 groups. The research instrument uses authentic assessment based on the guidelines for writing scientific articles at Surabaya State University (PPTI, 2020). Authentic assessment is carried out before and after treatment. The yield category is determined based on the N-Gain value and percentage. If the value is >0.7 then the N-Gain category is high and has a percentage of 76% then the interpretation is that the treatment is effective (Prastiyono et al., 2022). The instrument is equipped with a rubric and scoring guidelines consisting of 7 aspects including: discovery of novelty (10%), formulation of originality (10%), understanding of background (20%), mastery of systematic methods (10%), presentation of results and discussion (30%), selection of bibliography for the last 5 years (10%), and use of writing according to spelling (10%). It can be seen from performance, authentic assessment is more appropriate to use to determine students' abilities in writing scientific articles. In the treatment, students carry out case study activities in the field according to the chosen topic. Students are given research procedures in the field through worksheets. Then, students are provided with knowledge of writing consisting of 5 stages: preparation – observation – writing – revision – dissemination (Grenville, 200l; Murray, 2004). The division of student roles in activities is divided into the following three things: (1) preparation and observation are carried out in groups; (2) writing and revision are carried out by dividing the roles of group members; and (3) dissemination is carried out jointly.

The collected data will be used to test hypotheses. The instrument was tested and analyzed using correlation calculations. Between item scores and total scores. The calculation of item validity is given by r which is obtained from the product-moment correlation method. This research uses statistics to test hypotheses. Prerequisite tests are normality and homogeneity. The normality test uses Shapiro-Wilk with a significance value ($p > 0.05$) and the homogeneity test uses Levene's test with a significance value ($p > 0.05$). Data that meets normality and homogeneity can be continued with the t-test with a significance level of 5%.

3 RESULT AND DISCUSSION

To answer the problem formulation that has been determined, namely the effectiveness of case-based outdoor learning in an effort to improve the skills of students in the Social Sciences Education study program in writing scientific articles. The case-based outdoor learning model was designed using the Northquay Harbor Area in Surabaya as a case study topic for social studies lectures in the field. The implementation of field activities begins with identifying the environment in the field in November 2023. The results of the understanding before and after treatment of the scientific article writing skills of IPS students are shown in Figure 1 below..

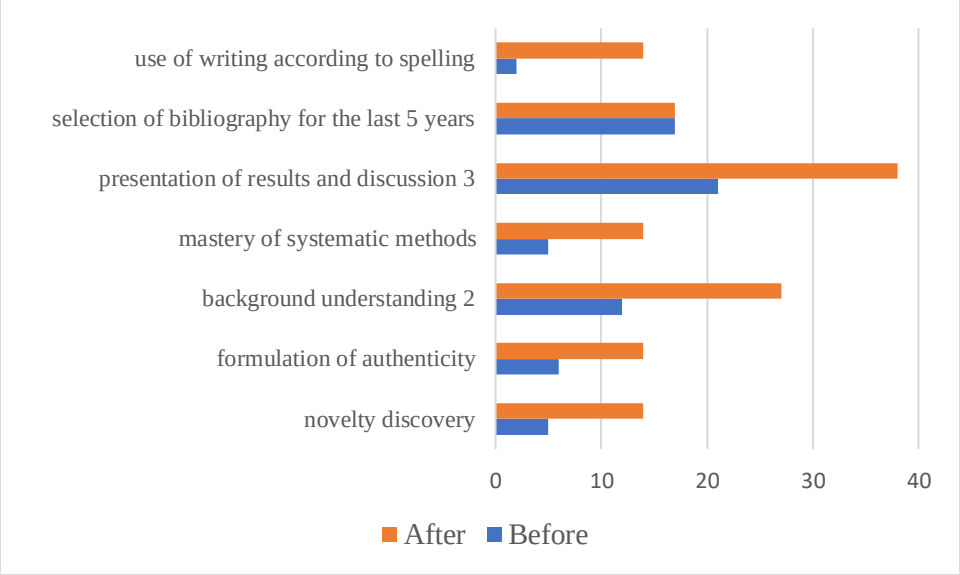

Figure 1. Results of understanding before and after treatment of social science students' scientific article writing skills

Based on pre and post test data on scientific article writing skills through authentic assessment using student worksheets, the N-Gain score results according to the rubric are recorded in table 1 below.:

Table 1 N-Gain Score Value of Social Sciences Students' Skills in Writing Scientific Articles

Descriptives

			Statistic	Std. Error
N-Gain Score	Mean		73.0588	4.64827
	95% Confidence Interval for Mean	Lower Bound	63.2049	
		Upper Bound	82.9127	
	5% Trimmed Mean		73.5654	
	Median		75.0000	
	Variance		367.309	
	Std. Deviation		1.91653E1	
	Minimum		37.00	
	Maximum		100.00	
	Range		63.00	
	Interquartile Range		25.00	
	Skewness		-.201	.550
	Kurtosis		-.663	1.063

From table 1 above, we can conclude that the n-gain score of students' skills in writing scientific articles using the case-based outdoor learning model before and after field studies with achievements from

37.00 to 100.00 has increased by 73.058%. The increase in achievement means that the case-based outdoor learning model is effective in helping students' skills in writing scientific articles.

Data analysis of the effectiveness of the case based outdoor learning model uses one sample t-test. This measurement is used to partially test and score data on the rubric acquisition of social science students' skills in writing scientific articles. Based on the results of data processing and calculations of the normality test and one sample t-test, the results obtained in table 2 are as follows:

Table 2 Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
N-Gain Score	.130	17	.200*	.941	17	.335

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Table 3 One Sample T-Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Before Treatment	5.828	16	.000	4.118	2.62	5.62
After Treatment	22.387	16	.000	8.118	7.35	8.89

Based on the SPSS output in table 2, the Shapiro-Wilk sig value is 0.335 > 0.05, meaning the N-Gain score value is normally distributed. Thus the assumption of normality can be continued with the next test. Based on column table 3, it is known that the t value (t-count) is 22.387 and sig 0.000, which means h0 is rejected so h1 is accepted. Thus, the case-based outdoor learning model is effective in improving the scientific article writing skills of IPS students.

The case-based outdoor learning model uses field study activities to provide students with empirical experience in understanding a topic/case. Social studies learning outside the classroom can use field study stages (Prastiyono et al., 2021), as seen in table 4 below.

Table 4. Field study stages

Stages/Model Syntax	Activity
Preparation	1) Literature study and information exploration
	2) Field study and validation instruments
	3) Needs and accommodation
Field Activities	4) Travel documents
	1) Field study
	2) Presentation of field results
Post Field	1) Analyze the collected data
	2) preparation of scientific articles
	3) Collection and revision
	4) Final product and dissemination

Source: Primary Data (2023)

The operational stages in carrying out the case based outdoor learning model strategy are as follows:

1) Preparation, including:
   a. The selection of field studies is based on CPL and CPMK ongoing studies of social, economic, political and cultural change. Then the field studies were grouped into 4 topics, namely: (1) study of sustainable development, (2) development of culture and sustainable tourism, (3) analysis of areas of impact of social, economic, political and cultural changes, and (4) transportation and population systems sustainable. Literature study to dig up information and locate suitable subjects for field studies (focus of study).
   b. Determination of location and manufacture of instruments. Exploring information on field study objects. The location used for the field study was in the NorthQuay Harbor area of Surabaya. Apart from that, students create field data instruments, while field study instruction is contained in worksheets. Create a field study instrument that contains a description of the subject/object determination, questionnaire/interview data, and the required information. Then, validate the field instruments with the supervisor.
   c. Preparation of equipment and supplies, including recording equipment, documentation and field kits.
   d. Preparation of travel documents in the form of field study permits.
2) Field Activities, namely field studies according to the chosen topic, then carrying out instructions according to student worksheets, including:
   a. Looking for sources/taking measurements/collecting field data
   b. Present the data that has been obtained. If the data collected is still insufficient, data collection is carried out again.
3) Post-Field Activities, including:
   a. Analyze, process and interpret the data that has been collected
   b. Compile scientific articles by preparing outlines, dividing writing tasks, and adjusting the format of scientific articles
   c. Collect scientific articles and carry out a revision process if there are deficiencies or errors.
   d. Produce revised (Final) scientific article products and disseminate them in academic forums

The application of the case-based outdoor learning model has several disadvantages, including (1) field preparation requires a long time so that the slower lecturers and students carry out their roles, the more preparation time will be delayed, (2) not all fields/resources are able to provide indicators of achievement so they must search for the object/subject of the case study correctly, (3) the problem of bad weather/scorching heat in the field will stop or hinder activities so you have to choose the right time, and (4) field studies require quite large travel costs so that implementation is tight. preparation will incur more costs. In line with that, the weakness of outdoor learning is that lecturers are unable to supervise students

when collecting field data (Utomo, 2020). So, at least in the field you need a minimum of two to four supervisors.

The case based outdoor learning model has limitations in its use. The limitations are: (1) the development of the model is limited only to courses on the study of sustainability of change which are included in the social sciences group, while other courses need to be developed, (2) the trial is limited, with a sample of 72 students which does not yet reflect the national application, it is best to carry out field trials by taking an expanded sample throughout Indonesia, (3) the implementation of the model that has been carried out is only short considering time and cost limitations, it should be programmed multiyearly and continuously every semester to get maximum results. Each limitation certainly reduces the achievement of successful application of the model, but the aim of the research to improve student skills has been achieved (Degeng & Mandagi, 2019).

Apart from the shortcomings and limitations, there are supporting factors in implementing the case based outdoor learning model which are described as follows:

1. Activity Permit
   Implementing this case-based outdoor learning model requires permission to carry out activities from the faculty and students' parents.
2. Availability of funds
   Activities will run smoothly if there is good budget planning and financial source support.
3. Great Intentions and Motivation
   This factor is the most important in organizing case-based outdoor learning model activities. This is to encourage innovative learning to be carried out in a sustainable manner.

Social studies education is an applied branch that has an integrated scope of knowledge, in the form of social humanities interaction with the surrounding environmental conditions. In this science, formal objects are needed to study material objects. Where to examine social humanities phenomena and reciprocal processes (interactions) between humans and humans, humans and their environment, using a social science perspective (Segara, 2015). This approach is also applied to social studies learning in this field study. The application of a more innovative 21st century learning model encourages students to be more skilled (Lai & Viering, 2012; Prastiyono et al., 2021). In line with this, the case based outdoor learning model is almost the same as the Outdoor Learning concept which has a syntax, namely: Visiting environmental location, Walk and Talk, Gave Task and Discussion, Debrief and Evaluation (Fagerstam, 2012). The choice of strategy to improve scientific article writing skills for IPS students using the case-based outdoor learning model has several reasons to consider.

The first consideration is that the location used contains social studies learning topics that can be used as case studies so that it is suitable as a learning resource or data collection. The technique for selecting field study locations must be appropriate because students do not need to visit all areas, but in accordance with the representation of the topic as a learning resource (Bashith et al., 2022). Second, to answer problems on the topic, it is not enough to have just one location but rather spread it across an area. Therefore, several locations are needed to meet the achievement criteria. Scattered areas usually contain various aspects so that there are many topics that can be researched (Hidayah & Rosyadi, 2019). Third, have varied sources and media of information. The location used as a field study must be able to contain complex information so that a precise sense of the eye of the object and subject is required. Choosing the right object and subject will help convey learning messages that can formulate scientific texts (Sejati et al., 2017). Fourth, the field study option contains varied learning strategies so it is not boring. In line with this, there are six advantages of the case-based outdoor study model, namely (1) increasing student learning capacity, (2) uncovering facts and obtaining data in the field, (3) encouraging student learning motivation, (4) developing natural environment abilities. social, (5) making student learning meaningful, and (6) techniques suitable for application in the social sciences (Sumarmi, 2015; Utomo, 2020).

Students should get concrete facts about social science knowledge and experience. Learning through direct experience is the right method for students to gain optimal understanding so that they are able to be flexible, free to imagine, and contextual in writing narratives (Khotimah et al., 2022). The concept of

narrative is based on the following understanding: (1) direct experience obtained by students as a result of their own activities; (2) students experience and feel for themselves everything related to achieving goals; (3) students relate directly to objects without intermediaries (Suryandari et al., 2018). This direct experience makes the results obtained by students become concrete so that they will have high flexibility in narrating the results of the observations obtained.

Skern Lodge Field Studies Center as an educational institution in England develops field studies in its curriculum. In its application, students are introduced to natural photography. This activity can encourage students to analyze information both spatially and visually. Students are also directly involved in field activities, and discover several key concepts using only a digital camera as a tool for exploring and documenting. With photography, students are able to articulate key features in environmental concepts. This activity is very interesting and can improve skills in processing information visually. Apart from that, there are also educational institutions that implement field studies in Ireland, namely the Burren Outdoor Educational Center. In practice, they plan projects, including: (1) geomorphic processes of erosion in a coastal environment. At each location they will use various criteria to assess the landscape. Surveys of city residents and questionnaires for tourists will be conducted to demonstrate the importance of tourism to the local economy. Meanwhile, observations and questionnaires will be used to identify problems and issues related to tourism. Based on the experience of this educational institution, it encourages people to explore the environment more, interact and be involved in the process so that they can provide meaningfulness and freedom to tell stories contextually.

The social environment is an interesting contextual vehicle for lecturers and students to use for field studies. Observations to explore real understanding of concepts can be done by interacting directly with objects (Puspita et al., 2018). This can foster student activity that cannot be obtained from classroom learning. Furthermore, through observation of the environment and reality (sense of reality) curiosity can be developed (sense of curiousity). Students can also investigate (sense of inquiry) and discover (sense of discovery). (Bialik & Fadel, 2015). Field studies can also develop students' social skills, including student collaboration in groups.

Research on field studies was described by Milton, et al (1995) with the title "Changing perceptions of nature, self, and others: a report on a Park/School Program". The research measures student learning outcomes, social skills, and teamwork development. The topic discussed in the field study is ecology that utilizes gardens within the school environment. The results obtained in this research include; (1) increasing student knowledge obtained from tests; (2) high social skills, as proven from the interview results; (3) group collaboration shows an increase. Apart from that, there is a difference with research conducted by Hamdani (2015) at SMAN 1 Pakusari that field learning not only improves learning outcomes but also social skills and group collaboration. Esteves, et al. (2013), conducted research entitled "Geological Fieldwork: A Study Carried Out With Portuguese Secondary School Students" on 280 11th grade students from three state schools in Portugal. They coordinate students separately to carry out geology learning through the stages of field studies described by Orion (1993). The conclusion from the results of this research is that learning by utilizing the field as a learning resource is very effective in developing conceptual knowledge. Student motivation is high during field activities, as well as contributing to education and student awareness of science. Therefore, the environment outside the classroom can be used as a learning resource that triggers increased skills in processing knowledge.

4 CONCLUSION

It can be concluded that the case-based outdoor learning model is effective for improving the scientific article writing skills of students in the Social Sciences Education study program. The effectiveness of the case based outdoor learning model is characterized by several factors. First, based on the results of improving skills in writing scientific articles and students' very good response to the application of the case-based outdoor learning model in social studies learning. Second, based on the t-test statistical test, it was found that there were significant changes after implementing the case-based outdoor learning model in social studies learning using field studies. Third, the case-based outdoor learning model invites students to

explore topics, observe case studies, process data, discuss and present so that they gain meaningful and contextual experience in compiling scientific articles. Learning activities using the case-based outdoor learning model consist of 3 stages, namely preparation, field study and post-field study. Social studies learning is always related to environmental and social aspects so it requires practice in understanding concrete concepts through direct study in the field.

AUTHOR CONTRIBUTIONS

Hendri Prastiyono: Writing - Original Draft Preparation,. Nuansa Bayu Segara: Validation, Formal Analysis and Investigation. Ali Imron: Methodology, Software and Data Curation. Muhammad Ilyas Marzuqi: Methodology, Conceptualization and Supervision. Dhimas Bagus Virgiawan: Writing - Publication Draft. Janice Zamora Morales: Writing - Review and Supervision.

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