



## Improvement of Student Ecoliteracy through Contextual Teaching and Learning Based on Outdoor Study in Elementary Social Studies Learning

Iyus Nurbaeti<sup>✉1</sup>, Nana Supriatna<sup>✉2</sup>, Hari Ahmad Zulfikar<sup>✉3</sup>

<sup>1,2,3</sup> Universitas Pendidikan Indonesia, Pendidikan Dasar, Bandung, Indonesia

✉ <sup>1</sup>[iyyusnurbaeti@upi.edu](mailto:iyyusnurbaeti@upi.edu), ✉ <sup>2</sup>[nanasup@yahoo.com](mailto:nanasup@yahoo.com), <sup>3</sup>[hazulfikar@upi.edu](mailto:hazulfikar@upi.edu)

**Abstract.** Ecoliteracy or Ecological Intelligence is intelligence that is built by understanding, awareness and life skills in harmony with the preservation of nature. This study began with an objective observation in the Binekas Elementary School in Bandung regarding the behavior of students related to environmental awareness. The observation of the behavior of class III students totaling 22 people showed that they were not accustomed to separating organic and inorganic waste, as well as damaging and picking vines in the school. This study aims to increase students' ecoliteracy through contextual teaching learning (CTL) based on outdoor study in elementary social studies learning. The teaching and learning process uses CTL with the material "Protecting the Environment for the Preservation of Plants and Animals". The purpose of CTL learning based on outdoor study is to improve environmental problems and increase student ecoliteracy. The method used in this research is Classroom Action Research with a design developed by Kemmis and Mc Taggart for 2 cycles. The results showed that there was an increase in students' ecoliteracy in terms of knowledge, skills and attitudes. In the aspect of knowledge, students show a good understanding of the importance of maintaining hygiene in school. In the aspect of attitude, students show awareness to protect their environment. It was also practiced among other things accustomed to separating organic and inorganic waste, as well as maintaining plants around the school.

**Keywords:** *Ecoliteracy, Contextual Teaching and Learning, Outdoor Study, Action Research*

**INTRODUCTION**~ Earth is a place where various living things, namely plants, animals and humans live in it. All living things are interdependent to meet their needs. Like humans who need animals and plants for consumption. Likewise animals and plants need humans to protect the environment so that their habitat is maintained. The environment that supports various activities and the fulfillment of human needs is often exploited by humans themselves for the sake of their livelihood, resulting in natural imbalances. This means that whatever humans do to the environment, the impact will again be felt by humans themselves. Or in other words humans and the environment into a unity that can not be separated, which means that the balance

must be maintained for the existence of survival.

Environmental problems continue to be a global issue today, such as deforestation and waste. An environment that should provide benefits and comfort in life, on the contrary is now a source of problems. But ironically, not many people want to know and care about the environment.

The government program that is so much in tackling environmental problems if it does not become an awareness of every human individual, it can be limited to a written program. Therefore, efforts are needed to foster awareness of every human being to the environment on an ongoing basis. One of the efforts is through educational facilities. Education makes it possible to



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shape the mental and behavior of individuals as humans as expected, (Syukri, 2013: 43).

Relevant to the main purpose of education, social studies learning is also oriented to increasing student awareness not only aspects of knowledge, but also incorporates elements of skills and attitudes of attitude or behavior in the learning process. Thus, education is expected to be used effectively to form attitudes and care for the environment. As an academic movement, the social studies learning process can be done by the teacher by taking small steps to start a big step to make students who have ecological intelligence as saviors of the earth, (Supriatna, 2017: 10).

This is relevant to the context of ecological intelligence, empathy is not only done by humans in each other but also in all living things or all forms of life (Goleman, 2012) "empathy for all forms of life".

Improving students' caring attitude towards the environment is very important to be developed early on. Someone can be said to be ecologically intelligent is someone who understands that each of his behavior and actions not only have an impact on him and others but also on the natural environment in which he lives. Concern and awareness is what Supriatna (2017) calls ecoliteracy.

Ecoliteracy or also called ecological intelligence, comes from the Greek words *oikos* (habitat) and *logos* (science). Understanding ecological intelligence is

our ability to adapt to the ecological niche where we are (Goleman, 2010: 37). As explained by Supriatna (2017: 27) that ecological intelligence is complex. The intelligence is supported by intellectual or cognitive, affective ((social and emotional) and psychomotor elements.

The desire to protect the environment is based on knowledge and understanding of the environment. Awareness and empathy to save the damaged environment is based on aspects of affection. While his actions to preserve the environment can illustrate aspects of psychomotor skills. With ecological intelligence, a person will show his affection for trees (forests), animals (living things other than humans), air, soil, and water (the entire surface of the earth) through his good actions.

To foster student ecoliteracy there must be a study that aims to improve ecoliteracy which later grows and develops into an awareness of each individual. This will be very important along with the development of science and technology. Without environmental awareness, the science and technology will actually affect the natural imbalance. Thus, there must be concrete actions to develop student ecoliteracy. Starting from small things in school, teachers can teach and foster an understanding of this environment through learning. Connecting classroom material with the real world is contextual learning that can strengthen ecological intelligence.



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In the Binekas school the actions taken in order to foster the ecoliteracy of these students through Contextual Teaching and Learning based on Outdoor Study.

Contextual learning according to the Directorate General of Primary and Secondary Education (in Sanjaya, 2011, has seven main components, namely constructivism), inquiry (questioning), questioning, learning community, learning (modeling), modeling, reflection, and assessment the truth (authentic assessment).

The seven components can be explained as follows:

### 1. Constructivism (constructivism)

In contextual learning, students play an active role in building their own knowledge based on new experience as initial knowledge. Students not only receive knowledge from the teacher, but seek, explore and arrange their own knowledge.

### 2. Finding (inquiry)

In contextual learning, learners learn not only the results of remembering facts, but through the results of finding through the process of thinking systematically.

### 3. Asking (questioning)

Students are encouraged to dare to ask questions, express opinions, ideas or ideas and answer questions raised by the teacher.

### 4. Learning community

Learning outcomes are obtained by collaborating with others through the activities of study groups.

### 5. Modeling

Learning is displayed by demonstrating something as an example that can be imitated by every student. The model can be by teachers or "experts" who are competent in their fields, even students themselves can be used as models. The model is brought into the classroom or vice versa, students who visit the model.

### 6. Reflection (reflection)

How to think about what has been learned or think back about what has been done in the past, then settle it

as new knowledge which is a revision of previous knowledge. This reflection is carried out on new events, activities or knowledge

be accepted.

### 7. Authentic assessment

It is a process carried out by the teacher to gather information about students' learning progress. Learning progress is made with various ways, including through written assessment (pencil and paper test), performance based assessment (performance based assessment), assignment (project), product (product) or portfolio (portfolio).



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This is so that the assessment is comprehensive and illustrates the true abilities of the students.

The learning process with CTL can be applied using various methods. In this study, researchers used a CTL model based on outdoor studies.

The application of outdoor study method was chosen as one of the alternatives and variations in learning activities outside the classroom so that students do not feel bored. In addition, it can develop activities and motivate students to think, argue, talk and express their ideas. The syntax of the CTL learning model based on outdoor study can be explained as in table 1.

**Table 1.** Syntax of the CTL learning model based on outdoor study

NO	Stage	Activity
1	<i>Constructivism</i>	<ul style="list-style-type: none"><li>• Students read text related to the material to be studied.</li><li>• The teacher shows impressions about the material to be studied.</li></ul>
2	<i>Inquiry</i>	<ul style="list-style-type: none"><li>• Students write down their findings from reading activities and watching shows.</li></ul>
3	<i>Questioning</i>	<ul style="list-style-type: none"><li>• The teacher gives questions related to the problem being studied.</li></ul>
4	<i>Learning Community</i>	<ul style="list-style-type: none"><li>• Students discuss and provide arguments, opinions and ideas with their friends.</li><li>• Students in groups discuss the problems being studied.</li></ul>
5	<i>Modelling</i>	<ul style="list-style-type: none"><li>• (Outdoor study based) An expert doing role playing related to the material being studied.</li></ul>
6	<i>Reflection</i>	<ul style="list-style-type: none"><li>• Students analyze about the material being studied.</li></ul>
7	<i>Authentic assessment</i>	<ul style="list-style-type: none"><li>• The teacher gives an assignment in the form of a portfolio to make books.</li><li>• The teacher gives practice exercises.</li></ul>

After observations made on third grade students at SD Binemas it is known that student ecoliteracy is still lacking. This can be seen from students still not accustomed to separating organic and inorganic waste, as well as damaging and picking vines. From the written test results in the concept of knowledge, it shows that there are still many students who have not reached the Minimum Mastery Criteria (KKM), which is 80. Of the total 22 students in class III, only 5 people who completed social studies

learning, while 17 other students were declared unfinished. Therefore, the teacher has a role to foster student ecoliteracy by means of concrete actions in the learning process.

With this concrete action, students are expected to grow in their daily behavior that reflects ecological intelligence. In this effort the teacher has a big contribution to provide understanding for students of the importance of environmental awareness.



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Even students are expected to form good personalities and later be reflected in every behavior in daily life.

Learning activities as explained above, can be made a fun learning for students because they can be directly involved in the preservation of the local environment. It aims to make students more concerned with problems that occur in the environment closest to students.

## METHOD

This research was conducted for 2 months on 22 third grade students of Binekas Elementary School in Bandung KidulSubdistrict, Bandung Municipality which consisted of 11 female students and 11 male students. In this study, researchers act as researchers and teachers who teach.

Research on the application of the contextual model of Teaching Learning based on Outdoor Study to improve students' ecoliteracy in waste management activities and planting in class III social studies learning uses a qualitative research approach with Classroom Action Research (CAR) methods.

The Classroom Action Research Process is a cyclic assessment that each cycle consists of 4 steps, which are action planning, action observation, and reflection. This is in accordance with the opinion of Kemmis and Taggart (in Denzine & Lincoln, 2007:

278). The steps in the Classroom Action Research process are as follows:

### 1. Planning Phase

a. Develop a Learning Implementation Plan (RPP) for social studies subjects using the Contextual Teaching Learning model.

b. Prepare teaching materials and media that will be used in learning.

c. Prepare Observation Sheet for cycle 1.

### 2. Implementation Stage

#### a. Preliminary activities

1) The teacher greets

2) The teacher conditions the class before starting learning.

3) The teacher gives apperception to students.

4) The teacher conveys the learning objectives.

#### b. Core activities

1) Students read text related to the material to be studied for 20 minutes.

2) The teacher shows impressions about the material to be studied.

3) Students write down their findings from reading and viewing shows.

4) Students discuss and provide arguments, opinions and ideas with their friends.

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- 5) The teacher gives questions related to the problem being studied.
- 6) Students in groups discuss the problems being studied.
- 7) (Outdoor study based) An expert doing role playing related to the material being studied.
- 8). Students analyze about the material being studied.
- 9). The teacher gives an assignment in the form of a portfolio to make books.
- 10). The teacher gives practice exercises.

c. Closing

- 1) The teacher and students conclude the lesson they have learned.

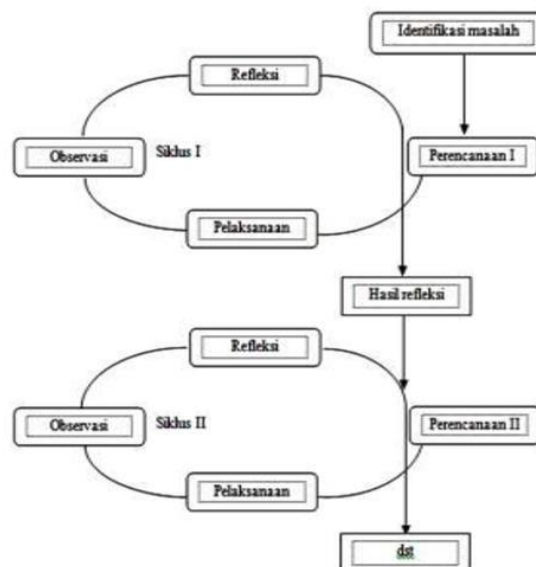
- 2) The teacher provides motivation to students
- 3) The teacher ends the learning by praying together.

3. Observation Stage

The observation phase is done during the learning process. Observation is focused on students' speaking skills and teacher assessment through the Observation Sheet.

4. Reflection Stage

Reflection is carried out to analyze the results of tests or evaluations obtained by students. Researchers and teachers discuss the advantages and disadvantages of the learning process, so that the results of this reflection are used as improvements in the next cycle. As shown in Figure 1.



**Figure 1.** Classroom Action Research Cycle Kemmis and Mc. Taggart (Akib, 2009).

The data needed in this study is data about the implementation of research actions from the first cycle to the second cycle of the second meeting, the development of

students' ecoliteracy which includes aspects of knowledge, skills, and attitudes. Data about the implementation of contextual teaching learning based on



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outdoor study from teachers and students through observation using the observation sheet of the implementation of learning.

Data on the implementation of learning by applying contextual teaching learning based on outdoor study and student ecoliteracy applications were obtained by means of student observation. Observations are made by referring to the observation sheet observation sheet. Meanwhile, data on the description of students' ecoliteracy attitudes was obtained through several statements that had to be responded by respondents. The instrument used to measure students' ecoliteracy attitudes was a questionnaire sheet. The test is used to measure the extent of students' ecoliteracy knowledge as a result of the learning process that has been implemented. The test referred to in this study was in the form of a written test. The ecoliteracy knowledge test instrument

refers to the ecoliteracy indicator set by the researcher.

Data obtained during the study were then analyzed using qualitative and quantitative descriptive analysis techniques. The data analyzed in quantitative descriptive are data in the form of the implementation of contextual teaching learning based on outdoor study, data on the observation of ecoliteracy applications, student response data on ecoliteracy attitudes, and end of cycle test results, while the data analyzed descriptively qualitatively are the results of interviews. The data analysis technique used is the stage of data analysis according to Miles and Huberman (in Sugiyono, 2009: 251), including (1) data reduction, (2) data presentation, (3) drawing conclusions / verification. This research is successful if it meets all the criteria. The criteria set by the researcher are presented in Table 2.

<b>Table 2. Success Criteria</b>	<b>Aspect</b>	<b>Criteria</b>
<b>Action No</b>		
1	Implementation of learning by the teacher	Percentage of observations of the implementation of learning by the teacher reached $\geq 80\%$
2	Implementation of learning by students	Percentage of observations of the implementation of learning by students reached $\geq 80\%$
3	<i>Ecoliteracy (knowledge)</i>	If 85% of students have reached KKM $\geq 70$
4	<i>Ecoliteracy (attitude)</i>	Percentage of ecoliteracy questionnaire results reached $\geq 80\%$
5	<i>Ecoliteracy (skill)</i>	Percentage of ecoliteracy observations reaching $\geq 80\%$



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### RESULTS

Cycle I was conducted in four meetings. Meeting I, II, and III carry out contextual teaching learning based on outdoor study. At the fourth meeting the end of the cycle test was carried out to measure the students' ecoliteracy knowledge and also the students' ecoliteracy questionnaire. The first meeting of the first cycle was held on Friday, July 26, 2019 at 07.30 - 08.30 WIB (60 minutes).

The purpose of cycle 1 is to explain the environment. Phase 1 of the first meeting of cycle I was to know about the environment, and to know the types of environment. In Stage 2, students issue their own ideas to explain the environment based on students' initial knowledge. Stage 3 the teacher gives questions related to the environment. Stage 4: students discuss with their friends discussing the questions of the teacher and his friend. Stage 5 students see shows about the types of environments. Stage 6 students try to deduce the knowledge they have acquired. Stage 7 the teacher gives an assessment through the game.

The second meeting was on August 2, 2019 at 07.30-08.30 WIB (60 minutes). Phase 1 of the second meeting of cycle 1 is to add information about the environment through reading magazine sources. Stage 2 gives its own arguments after reading the source book. Phase 3 students give questions to each other. Phase 4 is discussed again and in stage 5 students identify the environment around the school by studying outside the school (outdoor study). Phase 6 is to reflect

on the state of the school environment. And Stage 7 the teacher conducts an assessment of the assignment to the house looking for any environment that it encounters.

The third meeting was on 9 August 2019 at 07.30-08.30 WIB (60 minutes). Phase 1 students look for information from the results of the previous meeting assignments. Stage 2 students explain their findings about the environment in their homes. Stage 3 and 4 students discuss about the types of environment that they get.

Stage 5 Students conduct an outdoor study at the Club House, a sports facility in the form of a swimming pool and a gym. They took several actions, namely interviews with the officers. Stage 6 students explain their findings, which are sports facilities environment full of garbage. Then in stage 7 the teacher does reflection through practice questions and games. The fourth meeting was on August 23, 2019. At this 4th meeting students worked on the exercises as a result of reflection.

The second cycle begins on August 30, 2019. In this cycle students are expected to be able to explain the environment as expected and how to maintain that environment so that it is always comfortable to live in.

The first stage of the first meeting is identifying topics and organizing students into class. At this stage students read text about "The Importance of Creating a Clean School Environment". The teacher divides





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students into five groups, each group consisting of three or four students. The division of groups is carried out heterogeneously both in terms of students' cognitive levels and in terms of gender.

The second stage is planning the task to be learned. The teacher distributes worksheets to each group. Students gather with their respective groups, then they learn what needs to be done when later working on a worksheet. At this stage students were still seen playing around, while the other group members were seriously planning.

The third stage is conducting an investigation. Students collect plastic bottle bins around the school environment such as Parks, Roads and Club Houses, a sports facility.

The fourth step is preparing the final report. Each group plans and prepares a report from the results of the group discussion they had worked on to present it to the class. The fifth stage is presenting the report. Each group representative presented the results of their group's investigation in front of the class in turn. While the other groups listened, then gave questions or responses to the results of the investigations of other groups that were appearing.

The sixth stage is reflection. The teacher gives students the opportunity to ask questions about material that they do not understand. Then students and teachers make conclusions related to how to deal with the waste problems that occur in the school environment. After that students

work on problems to measure students' understanding of the material that has been learned.

The seventh stage is evaluation. Students and teachers conclude the material that has been learned. The teacher gives reinforcement to students to create a clean and healthy home environment and to participate in maintaining environmental cleanliness by separating organic and inorganic waste, as well as utilization of inorganic waste in the form of used plastic bottles.

The second meeting was held on Tuesday, September 6, 2019. The implementation time began at 07.30 - 08.30 WIB. The first stage in the second meeting was students looking for information about how to make flower pots from used bottles they got.

In the second step, students gave their opinions about the idea of making pots from plastic bottles. The third and fourth stages have discussions to make the pot. The fifth stage students as a group take action to make a draft pot. The sixth and seventh stages of students report the results of their design.

The third meeting was held on October 13, 2019. At this meeting students were expected to be able to take the actions that they had planned with the group. In the first stage, students look for information on various kinds of plants that are useful for planting in pots. Then together with his group determine the plants to be planted.



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The next stage is students begin to take action to make potted plants and plant their plants. From the series of learning from cycle 1 to cycle 2, it is expected that in addition to aspects of increased knowledge about environmental sustainability, also musty attitude can grow and can be applied daily. Likewise with the aspect of his skills. At the 4th meeting, students work on the final test cycle in the form of a 10-item description question to measure students' ecoliteracy knowledge in social studies learning by using a contextual teaching and learning model based on outdoor study.

## DISCUSSION

Percentage of learning accomplishment based on observers' observations shows an increase. In the first meeting 78.7% (good criteria) increased in the second meeting by 84% (very good criteria), and increased again in the third meeting by 86.7% (very good criteria). The average performance at the meetings I, II, and III reached 83.1% with very good criteria. Based on the achievement of the implementation of learning in the first cycle which reached an average of 83.1% with very good criteria already met the criteria of success of the action.

Based on observations of the implementation of learning by students at the first meeting of the first cycle showed that the score achieved was 277 with an average of 61.6% (good criteria), at the second meeting of the first cycle reached

a score of 323 with an average of 71.8% (criteria good), whereas at the 3rd meeting of the first cycle reached a score of 363 with an average of 80.7% (very good criteria). The average percentage of the first cycle is 71.4% with good criteria.

Based on the analysis of the observational data aspects of ecoliteracy applications during learning, the results showed the acquisition of ecoliteracy application scores of students in the first meeting of the first cycle with a score of 30 with an average of 24% (less criteria), the second meeting of the first cycle with the acquisition of a score of 42 with an average of 33.6% (less criteria), while the third meeting of the first cycle obtained a score of 50 with an average of 40% (less criteria). The average percentage of cycle I was 32.5% with less criteria.

The average score of students' ecoliteracy knowledge test in the first cycle was 71.58 with classical completeness known by students who completed 18 students or 72% of the total number of students, 22 students. In general, students have shown a high ecoliteracy attitude with a percentage of 75.2%. Based on the results of the analysis of research instruments, the results of social studies learning by using a model of contextual teaching and learning based on outdoor study in the first cycle can be concluded THAT USING THE CONTEXT MODELING OF TEACHING LEARNING based on Outdoor Study can improve student ecoliteracy.



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**CONCLUSION**

From the analysis and synthesis conducted by researchers, it can be concluded that the Contextual Teaching Learning model based on Outdoor Study is an effective learning model to improve student ecoliteracy. This intelligence is supported by intellectual or cognitive, affective ((social and emotional) and psychomotor elements, the desire to protect the environment is based on knowledge and understanding of the environment, awareness and empathy to save the damaged environment based on affection aspects, while the actions to protect environmental sustainability can describe aspects of psychomotor skills, with ecological intelligence, a person will show affection for trees (forests), animals (living things other than humans), air, soil, and water (the entire surface of the earth) through good actions.

Ecological intelligence is very important to be developed because the demands of life must always be carried out in a sustainable and sustainable way (sustainability).

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