Collaboration learning: Local wisdom as source of science learning in elementary school

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Abstract. The source of science learning used by elementary school teachers is always oriented to material and technological substance, even though the environment can also be used as the source of science learning and can be done together with the community. This study outlines local wisdom as the source of science learning in elementary school. The Observation was conducted in Kampung Naga to investigate science learning source based on local wisdom, while teaching-learning activities was carried out at Elementary Green school which involved 20 students of third grade. The source of science learning in elementary school can also be analyzed from the local wisdom of Kampung Naga and several people from Kampung Naga can be involved in the collaborative teaching learning as guest teachers to attend the school.

1. Introduction

Learning approach is a decisive aspect in accepting students’ obedience. There are several learning approaches which are usually carried out by teachers when conducting research, such as traditional approach (teacher-centered) and collaborative approach (student-centered). At present, the concept of collaboration that brings out social interaction is the main trend in Education. Therefore many researchers conduct research for learning in the Education field [1]. Collaboration is the philosophy of interaction and lifestyle of individuals which are responsible for their actions, including learning, respecting ability and contributing to their friends [2], collaboration has been studied and developed, especially in the teaching learning field [3].

In collaborative teaching learning by using images, a researcher collaborates the method with students’ drawing activity. The result of the research showed that collaborate teaching learning activities by drawing can provide a good influence on student interaction in class [4]. Collaboration has also been carried out between organizations and industry institutions that benefits industries [5]. This can be achieved when vocational school can collaborate with institutions or profit organizations that can improve students' ability. Other collaborations are also carried out by universities with industry. This collaboration combines university and industry with semiotic interaction model and cross-border ideas from organizational theory [6]. This collaboration has encouraged universities to work on projects that they have acquired. In addition, collaboration has also been carried out in cross-university learning, where students from several universities can conduct e-learning activities. This is done in the framework of international collaboration [7]. Aside from the learning field, collaboration is also carried out to
improve teacher skills through collaborative activities between teachers from various schools in training [8].

Local wisdom is knowledge that comes from experience and local knowledge. Local wisdom is found in society [9]. Local wisdom is knowledge that has been proven valid in the local context and accumulated by the local community. There are differences in local wisdom, social context, cultural asset, and history background which are accumulated over the years [10]. Based on the previous study, the difference of this research is the collaborative teaching learning development that makes local wisdom as the source of science learning in elementary school. The research objective was to create collaborative science learning designs in elementary schools with learning resources from Kampung Naga Indonesia local wisdom.

2. Method
The research method used in this study is qualitative research using literature study techniques and field observations. Literature studies are carried out by collecting books, journals, other document materials that are related and supportive of the research objectives. Meanwhile, field observation was conducted to examine the concept of collaboration that could be carried out by the school and Kampung Naga Indonesian in the learning activities.

3. Results and discussion
One of the roles of local wisdom in education is as a source of learning [11]. The local wisdom of Kampung Naga in Indonesia has a concept of knowledge related to the planting which is seen as making life sustainable in the future. The process of planting carried out by the Kampung Naga local wisdom in Indonesia is very simple and uses environmentally friendly equipment. The process starts from preparing the required materials and equipment, there are equipment as follows: Plants to be planted, Organic fertilizer, Small hoe, and Land that has been prepared

Furthermore, the equipment will be used in schools as a project to plant trees around schools and classes. Then some of the equipment prepared by the school regarding tree planting based on Kampung Naga local wisdom in Indonesia are as follows:

- Trees to be planted
- Soil
- Organic fertilizer
- Plant Pots
- Small hoe
- Shovel

The implementation of science learning in elementary schools by planting trees based on Kampung Naga local wisdom in Indonesia can be done through a project-based learning method. This project-based learning puts Kampung Naga local wisdom in Indonesia as a source of science about tree planting
in schools and classrooms. One of the community's local wisdom Kampung Naga in Indonesia was invited by the school as a teacher guest in science learning in elementary school through tree planting. The community representatives first explained the process of farming in Kampung Naga local wisdom in Indonesia, then explained the materials and equipment needed in tree planting to be carried out by students in the school. Furthermore, students, teachers, and guest teachers jointly carry out tree planting projects around the school environment both in the yard and through the pot media. The ingredients selected in tree planting are very easy to find and also environmentally friendly. As one example is the use of organic fertilizers. Organic fertilizer is one of the fertilizers that is easily available and widely used in the global era agriculture [12].

Furthermore, the implementations of science learning in elementary school at the stage of planting in collaboration with Kampung Naga local wisdom in Indonesia are as follows:

- Prepare planting equipment;
- Mix soil with organic fertilizer and stirring it by using a small hoe;
- Pour the soil in the pot media as much as ¼ from the height of the pot using a shovel;
- Insert ready-made plants into pots;
- Insert soil / sand that has been stirred with ½ organic fertilizer from the size of the pot media;
- As a final activity, add a little soil to the pot media and water it.

![Figure 2. Students planting.](image)

The steps of collaborative learning that involved Kampung Naga local wisdom in Indonesia by using the following project-based learning methods are as follows: The stages of determining fundamental questions are the activities of teachers in expressing essential questions that are exploratory knowledge that has been possessed by students based on their learning experiences which lead to the assignment of students in carrying out an activity. The stage of making the project design was carried out jointly between the teacher and students. At this stage the teacher divided the study group for students and determined the rules of the game in working on the project. Furthermore, the stages of making the schedule were carried out jointly between the teacher and students. The planning steps and project completion techniques in the preparation of the schedule were to make an agreement between the school and Kampung Naga community as a guest teacher who would later attend school. At the stage of examining the project, the students completed the project they were doing accompanied by a guest teacher from the Kampung Naga community. After the project was completed, the teacher helped prepare the student work report. After the report was made, the teacher invited each group to report the results of the project facing other students. The last stage was evaluating students related to experiences gained by students, as well as reflecting on the results of projects that are done by students in groups. Thus, it can be described the steps of science learning in elementary schools by using project based learning in collaboration with local wisdom as a source of learning is:
4. Conclusion
The source of science learning in elementary school can be found in the values of Kampung Naga local wisdom. Besides as a source of science learning in elementary school, Kampung Naga local wisdom can be integrated with collaborative learning in schools through project-based learning.

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