

# ***Implementation of Science Teaching and Learning in Natural School Exclusive Curriculum***

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**Abstract-** Natural schools offer an education that integrates and friendly by nature. This study aims at investigating the implementation of science teaching and learning in the Natural School. The implementation was observed in terms of planning, implementation, and assessment. The research was conducted by qualitative case study approach. The results reveal that teacher is required to formulate "Lesson Plan" during a semester since the lesson plan is the only curriculum document in Junior High School of Nature. This document covered the time/date, subject material, learning approach/method, media/learning resources, and evaluation. In addition, the process emphasized on student centered by guiding student to discover their concepts through the learning experiences given during the teaching and learning process. The assessment was conducted in the daily-based test, mid examination, performance test, and final examination which are collected as report card, while the groove provide a descriptive assessment for each subject. The groove serves as a control sheet for parents to monitor the learning progress of their children compared to the previous semester.

**Keywords:** *natural school, exclusive curriculum, science teaching and learning, curriculum*

## I. INTRODUCTION

Many research show that student interest in learning science is still low [1] since it is considered as the difficult subjects. The fact that the low student interest toward science is reinforced by the PISA In 2012, the ability of the younger generation on science, Indonesia ranks 62 out of 63 countries. Science as subjects who observe objects and events in nature should be the subject of fun and learning that is able to raise the curiosity of students with a variety of natural phenomena that are occurring and objects in the vicinity.

Mackinson resumed that the teaching and learning process in science founds to be subject oriented compared to the other applied science subjects [2] which resulted in the material being taught to the students in character often becomes more abstract and remote from the experience of students; teaching methods used are still using the lecture method; linkages between concepts and theory with application experience of everyday life is minimal, teaching and learning process tend to be teacher centered; teachers force students to memorize various concepts without understanding of the concept.

Apart from a wide range of issues, science education has huge potential in playing a strategic role in preparing human resources for the era of industrialization and globalization. Science education should orientation to the development of the ability to think and speak, to prepare the students to face the issue of the social impact of science and technology, cultivation of ethical values and aesthetics, problem-solving skills, developing self-reliant attitude, creativity and responsibility.

As of a few weaknesses science teaching which have been peeled before it can be concluded the learning process of students are still more in "learning about" (learning about a thing) rather than "learning to be" (learning how to be) so that the knowledge of the students have not been out of the search results, excavation that is done by the students do not have a sense of ownership of the knowledge acquired.

School as a school that integrates natural and friendly with nature believes that nature and experience is the best teacher. Natural School places great emphasis on every teacher to design meaningful learning and creative to maximize nature as a laboratory, or in other words, teachers are required to become a creator of learning subjects while growing the three pillars of education, namely good moral, philosophy of science, leadership, entrepreneurship. This is in line with the national education goals, developing the potential for him to have the spiritual power of religion, self-control, personality, intelligence, character and skills needed him, society, nation and country. Any educational institution is obliged to strive together with the government in achieving national education goals. As one of the educational units have the typical educational units other than, of course, nature school has other values to be created in an atmosphere of learning, the key thing that is associated with a love of the environment, exemplary virtue. This is exactly what is characteristic of the existing curriculum in junior high nature school.

The statement found in documents BSNP 2006 [3] stressed that the Sciences (IPA) related to the natural way of finding out about it systematically. Surely this is in line with the philosophy of nature school, which emphasizes nature as a media center educational process taking place in it and also a nature school emphasizes learning processes within the institution.

The fact, based on the preliminary study did not find any documents related to the school syllabus and lesson plan (RPP) specifically. The only document that is used as a reference for teachers in implementing the learning namely "Lesson plan" that includes; time, date, subject matter and statements containing the teaching methods used and the tools and materials needed in the classroom. There are no indicators and evaluation results in "Lesson plan".

As a conscious effort in developing the potential of children, education in Indonesia should refer to national education standards that apply in Indonesia. Education is carried out systematically and in accordance with the provisions of applicable law. As for the indicators and evaluation of learning outcomes is very important in the learning process because education is an activity that aims it is necessary indicators and evaluation of learning outcomes are also necessary to determine the extent of achievement of learning that has been done. It can be said that there are no guidelines for the provision of education in addition to the Lesson plan and also the uniqueness of the Nature school learning that blends with nature, because of researchers are interested in the investigation of the implementation of science subjects in the Junior School of Natural Bandung. Based on the background of the problem, the proposed focus of this research is as follows:

1. How is the implementation of planning science subjects in the Junior School of Nature Bandung?
2. How is the implementation of learning science subjects in the Junior School of Nature Bandung?
3. How does learning outcome assessment of the implementation of science subjects in the Junior School of Nature Bandung?

## II. METHOD

The method used in this study is a qualitative approach. A qualitative approach is a research approach that is able to describe the study as a whole (holistic). The method used was the case study method. The aim of this case study method to investigate an event or series of events associated with the specific purpose to describe and explain certain phenomena

## III. RESULT AND DISCUSSION

From the research that has been done obtained as follows:

### A. *Planning of Science Learning*

Planning each subject in the School of Natural begins with making "Lesson plan" (read: name of curriculum document Curriculum in Nature School) for one semester. In the preparation of this lesson plan, teachers are asked to analyze the Competence Standard and Basic Competence of the curriculum imposed by the government. The curriculum used is KTSP 2006. After analyzing the standard of competence and basic competences then the next teachers create lesson plan for one semester which involves a series of day, date, time, matter, and information. The day, date and time of an ongoing lesson schedule. The material point contains subject matter to be taught, and a description explaining the methods and models of learning what to use, but it also explained about

the equipment and materials required when such material will be taught. In the planning process of learning, the school gives teachers the freedom to create with fixed emphasizes learning that is student center and a learning experience. For science subjects teachers encouraged, where possible involve the potential of nature around the school as a learning resource that is used when learning occurred.

### B. *Implementation of Science Learning*

Based on observations and interviews, it is found that the junior high school science teacher at nature school Bandung already conducts a student centered learning and learning experience. It is typical of a natural science teaching in schools that teachers can easily experiment with the students outside the classroom. The students are enthusiastic and cheerfulness. "Learning with playing" is designed by the School of Nature of all the learning process.

As for the delivery of content relevant to students, although the lesson plan there are no points about preconception, main activity, conclusion, the science teacher always connect three things in the learning process. As for learning using the experimental method, the science teacher here did not stand idly by laboratory facilities are still minimal. They remain passionate in providing meaningful learning experiences for their students by preparing the materials and equipment needed, borrow tools and materials to the laboratory. At the time of the learning takes place the teachers did not immediately provide subject matter that will be delivered, but they lead students through the questions that lead students to the subject matter to be studied so that students are trained to develop the capacity to think and construct the material being studied. In addition to emphasizing inquiry, the science teacher was concerned about improving students' creativity by using a project-based learning and problem-based learning. The use of project-based learning and problem-based learning, creativity of the students can be optimized to be developed and students are trained to solve a problem in the future.

In natural science teaching in schools, learning is emphasized so that students can interact with nature as a source of learning and also provide educational process friendly to the environment. So do not just rely on the tools and materials that can be outside of the school but also exploiting the potential of the environment, and to foster a love for the environment. Of course it is aligned with the purpose of the establishment of the natural school scored younger generation is not only good in terms of spiritual, academic, moral but also love the environment. Besides considering the nature school Bandung emphasis on leadership of their students, the teachers are always trying to get every student as the leader of the group when there is a division of the group during the learning using the experimental method.

### C. *Assessment of Science Learning*

The terms of the assessment carried out by science teachers, consisting of daily tests, performance assessment,

assessment tasks, Middle Semester Exam and Final Exam. In terms of ratings science subjects that became his trademark in nature school every teacher is able to observe their students when the learning process, especially when the students conduct experiments. It becomes difficult not to be done by a science teacher because the number of students per class is limited in small amounts is a maximum of 20 people so that teachers are able to observe the students one by one. The form issued report Nature School is unique. This is because report distributed at the end of the school year, in each subject area are student progress reports per subject. Student progress report per subject is called groovy. In groovy, there are several criteria that is not yet visible, growing and independent. In determining the criteria on students, teachers do not construct assessment criteria document. Determination of criteria is based on the observation of teachers for one semester on learners.

From the standpoint of science curriculum, the curriculum in nature schools Bandung more emphasis on the learning experience in the learning process. Junior High School of nature notably less emphasis on administrative documents such as schools in general, and the achievement of the values for their students. The most prominent thing that basis the provision of education in the Natural School are stressing students to love the process. The good model and habituation are two things that must be held by teachers when educating children. It is suggested that the whole activity (intracurricular and extracurricular) performed by students both inside and outside the school of origin of these activities are still under the responsibility of teachers (school) [4]. Related to these statements, it supports the implementation of the curriculum at the School of Natural Bandung. Every week on Wednesday is a special day to carry outing. Implementation of this outing may be a visit to a place, to meet with an expert and do an internship. One outing that support the increased oversight of the science which is visiting the island of Karimun Java to observe the process of acculturation turtles over there and a visit to the science laboratories in Indonesia University of Education.

#### *D. Planning of Science Learning*

As for the delivery of education in Indonesia apply the minimum criteria for the provision of education in the entire territory of the Unitary Republic of Indonesia, this is done with no such thing as the National Education Standards such as:

- a. Planning the learning process includes planning for learning and learning implementation plan (at least the purpose of learning, teaching materials, teaching methods, learning resources, and assessment)
- b. Assessment of learning outcomes using a variety of valuation techniques in accordance with the basic competencies that must be mastered. Assessment by written tests, observation, practice tests, and individual and group assignments

- c. Supervision of the learning process encompasses the monitoring, supervision, evaluation, reporting and taking the necessary follow-up steps.

Based on that statement, reseacher can say that if planning implementation curriculum in nature school do in different way from standar process of national education. Because in draft of lesson plan, there are no indicators of learning and assessment of learning outcomes. As we know that the indicator is a specific elaboration of the basic competencies that poured into the form of the verb and its operations can be measured. Related to this, the management has the view that the emphasis of the materials listed in the "Lesson plan" already inadequate to describe what things need to be mastered students. Another point of concern that researchers in the "Lesson plan" which made no statement about how teacher doing assessment to their student. Related to that the management does not emphasize the value achieved by the students it is important for those students willing to learn and love the process, because they are aware of the younger generation is almost largely do not like the process, the younger generation present time most favored ways- instant way to achieve something and one example of the instant way to get good grades is by cheating. Even so it does not mean the school management ignore this aspect of the assessment. Natural school report cards has a different format from the school where the most relevant rapot format will be discussed at scoring points.

The model-related learning and the tools and materials needed in the science lesson is clear enough is listed on the "Lesson plan". From the analysis of the "Lesson plan" learning science, methods and models used have stressed on enough experience-based learning and optimize the natural resources that surround the school.

#### *E. Implementation of Science Learning*

The existence of the curriculum will not have an impact on the achievement of educational goals if teachers are not optimal in implementing the things contained in the study. However, if a teacher put all energy and mind in designing and implementing learning for their students, the curriculum document is missing can be resolved. It is observed in the Junior School of Natural Bandung.

As an educational units using SBC 2006 is not fully in its implementation. This is indicated by there is no the documents comprising the syllabus and lesson plan. The management of the Junior School of Nature held the view that "The most important thing in our school, which is essential fulfilled" This statement along with the many out there that administration should be done either by the management and teachers.

Nature School Bandung Fondation, encourage teachers to be creative in presenting the material. This is evident from their efforts to facilitate teacher-related funding for the provision of props used during the learning. In addition, the school is always that children have direct experience

with there is one day of a week to carry out for outing activity. For science subjects, it is observed by a researcher with outing activities Biology Laboratory at Indonesia University of Education.

Judging from learning in the classroom, there are unique things that are found by the researchers, which turned out to be a science teacher requires one hour of learning to explain the experimental procedure. According to one science teacher, the children in the School of Natural need more time to understand all stages of the trial. The children there when teachers explain their experiments step all listen carefully and active to ask, categories of questions raised children were contextual. Another unique thing, the students at the School of Natural Bandung is not afraid dirty and hold animals such as frogs, tadpoles and others. Naturally courageous attitude at a young age as they are not easy to build. In accordance with the concept of Nature School, studying with nature makes it such a common thing to do, it is no wonder the kids really liked the School of Natural Bandung such activities.

#### *F. Assessment of Science Learning*

The assessment is not significantly different with another school since there is strengthening in learning experiences, the science teacher frequently use performance assessment to observe students's participation. The unique in this part is there is description assessment called Groovy. The description based on teacher observations. Groovy serves as a control sheet for the parents to their children learning progress during the semester that has passed.

From the above discussion, the researchers found a few things that can be used as a reference for the development of curriculum for science subjects and in terms of learning. In terms of the development of the curriculum , should science

teaching is emphasized more on the methods and learning models to emphasize student to train high order thinking, based on direct experience as well as subjects that are closely related to nature have a responsibility also to sensitize students to always maintain the natural environment around with love.

#### IV. CONCLUSION

From the research it can be concluded:

1. In terms of planning of science learning, each teacher shall make "lesson Plan " during one semester. As for the science teacher every planning emphasized to harness the potential of the natural surroundings as a source of learning and a place to learn (outdoor activity) when the learning process.
2. In terms of implementation of science learning, the nature school freeing teachers to teach science to suit their style each with fixed emphasizes learning that is that is student centered learning experience and give priority to maximizing the potential of nature around the school .
3. The terms of assessment of science learning, teachers assess the results of daily examination, mid examination, performance assessment, and final examination (UKK) . In addition there is an assessment format in the form of the numbers in the report cards there are also descriptions of ratings that are named groovy.

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