IMPLEMENTATION OF PROJECT-BASED LEARNING IN GRADE 4 ELEMENTARY SCHOOL, NORTH CIMAHAI

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Abstract

One of Indonesian Ministry of Education Regulation, Permendikbud No. 22/2016, stated that the characteristics of learning in elementary schools should be based on Graduate Competency Standard, which cover 3 domains: attitudes, knowledge and skills. In order for the 3 domains to be successfully nurtured in every learner, scientific approach and thematic integrated curriculum need to be reinforced by implementing discovery or inquiry learning and project-based learning. This research paper aims at describing the implementation of project-based learning by using qualitative research approach with descriptive method. Data collection conducted through observations, interviews, and questionnaire. The research outcome indicates that the project-based learning that have taken place are mostly implemented without following whole standardized steps or flow. The other findings indicate that the limitations of assessment tools and classroom condition are the main obstacles in project-based learning assessment. Pedagogic implication of such findings have been discussed and followed up by proposing recommendations for strategies in order to improve project-based learning.

Keywords: project-based learning, inquiry learning, elementary school

INTRODUCTION

To thrive in today’s innovation-driven economy, everyone needs to have different mix of skills than in the past. In addition to foundation skills like literacy and numeracy, everyone needs to have certain competencies like problem solving, critical thinking, collaboration, communication and creativity, 21st Century Partnership Learning Framework called them as learning and innovation skills, as part of whole 21st century skills. Those competencies are essential to the 21st century workforce as the norm and for their success life.

Recently, Indonesia is facing a big challenge to improve workforce’s skills through education. Based on OECD report (2013), the score of 2012 PISA Literacy, Mathematics and Science Assessment of Indonesian students is low. The result indicates that the majority of Indonesian students, once they enter workforce, has low performance and as a result, Indonesia is ranked the bottom among OECD’s countries.

Table 1. Snapshot of Performance in Mathematics, Reading and Science

<table>
<thead>
<tr>
<th></th>
<th>Mathematics</th>
<th>Reading/Literacy</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD average</td>
<td>494</td>
<td>496</td>
<td>501</td>
</tr>
<tr>
<td>Indonesia</td>
<td>375</td>
<td>396</td>
<td>382</td>
</tr>
</tbody>
</table>


The low students’ performance in 3 areas are caused by many factors. One of them is inappropriate teaching methods used in schools. Based on field observations, conventional method like teacher-centred teaching approach is still commonly used in classess. According to Sudarma (2016), using only one-way communication method like lecturing can decrease students’ interest in learning and their reasoning skill. Students are accustomed to receiving and not seeking information to solve problems. As a result, conventional method produces passive and unskilled students.
To improve students’ performance and to enhance the quality of learning, Indonesian government launched an innovative learning program that is based on Ministry of Culture and Education Regulation, Peraturan Menteri Pendidikan dan Kebudayaan (Permendikbud) No. 22 tahun 2016, which stipulates the necessary standardized learning process in Primary and Secondary Education. According to this Permendikbud, the characteristics of learning in Elementary Schools should refer to the Graduate Competency Standard, which covers 3 domains: attitudes, knowledge and skills. In order for the three domains to be optimally developed in the learners, the integrated scientific and thematic approach needs to be strengthened through discovery / inquiry learning and project-based learning.

Project-based learning is a student-centered learning model where students are given the opportunity to learn autonomously to construct their learning. Buck Institute of Education/BIE defines project-based learning as "... a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem, or challenge” (www.bie.org). Project-based learning is a learning model consisting of the following flow or steps (Hallermann, Larmer & Mergendoller, 2011):

1. Launch project : Entry event & driving question (DQ)
2. Build knowledge & skill to answer DQ
3. Develop & revise products that answer DQ
4. Present product that answer DQ

Project-Based Learning can be considered the estuary of 21st century learning model because it includes investigation, problem formulation, cooperation and collaboration, as stated by Suparno (in Trianto, 2015). Project-based learning is a combination of various learning models. Because it is a combination of several learning models, project-based learning is considered difficult to implement and requires a long-term reinforcement. Therefore, teachers' skills in planning, implementing and evaluating project-based learning activities are required.

This research focuses on the implementation of project-based learning in two elementary schools in North Cimahi and aims at describing the process of the implementation and comparing it with the project-based learning theories.

**METHODOLOGY**

This research was conducted at SDN Cibabat Mandiri 1 and SDN Cibabat Mandiri 2 North Cimahi. The selection of research sites was conducted with the consideration of the status of both schools as model schools in North Cimahi region. The subject of research is the 4th grade classes of academic year 2016/2017, which consists of teachers and students. The approach and research method used during the research was qualitative descriptive method. Data collection techniques used were the questionnaires, observations, and interviews. Questionnaires were used to collect data on perceptions of innovative learning and observations were used to collect data on planning, implementation, and assessment of learning. Interviews were used as an information gathering tool that will be used to assist data analysis in the discussion chapter.
RESULT

Project-based learning on the theme of ‘My Neighbourhood, My Home’ in both schools was carried out in the last lesson and the teaching of the unit went through three stages: 1) knowledge and understanding, 2) awakening awareness, and 3) knowledge application. Reinforcement of Knowledge and awareness was carried out through direct instructional methods in the form of lectures and assignments. Once the students demonstrated appropriate knowledge of the content taught, their awareness of the knowledge itself was reinforced further through discussions. The next step would be the application of the knowledge in the project. There are different types of projects carried out in both schools. SDN Cibabat Mandiri 1 showcased a performing art as their project, while SDN Cibabat Mandiri 2 created a miniature of their neighbourhood as their project. The researchers did not find any specific and complete documents related to the projects. For performing-art project in SDN Cibabat Mandiri, the planning documents were distributed in the form of RPP (lesson plan) and activity plans (for the showcase of their performance). As for the miniature of neighbourhood by SDN Cibabat Mandiri 2, planning was carried out and documented in the form of RPP by involving 2 subjects: SBdP (Art) and Bahasa Indonesia. The researchers also found out that the planning process conducted by the teachers had not included many activities that foster the development of high-level thinking skills in students.

Based on the observations on the assessment and measurement documents, the researchers did not find any specific documents that measure learning outcomes through project activities. Assessment was done by evaluating 3 aspects demonstrated in the projects: knowledge, skills, and attitude. Knowledge is measured by a written practice test and end-of-year exam. Attitude is measured using attitude scale according to the format available in the textbook. Skills are measured using performance tests. Overall project evaluation was based on the products created for the project – the accessories and props made by the students for their performing art showcase and also the quality and details put in the miniature of the neighbourhood. Despite evaluating the 3 aspects mentioned above, the measuring tools that the teachers made and used had not yet enabled them to measure and evaluate the high-order thinking skills (HOTS). This was proven by the outcome of the written examination which was still limited to the area of C3. High-level thinking skills were incorporated only within the area writing, including essay writing. Besides students’ abilities and high-level thinking skills, two other skills that had not been measured were the quality of verbal communication skills, especially in learning process, and cooperation (the ability to work together for a certain project).

DISCUSSION

As outlined in the introduction and the outcome, project-based learning has been implemented even though it does not follow the standardized steps or flow. Based on the observation of the planning-process documents and the execution of the lessons, the project was not started with what-so-called a Driving Question as the state of the problem. The Driving Questions were difficult to establish because the main ideas or the themes used as the base of the projects did not come from the students’ experience or their familiar environments. Instead, the main ideas for the projects were listed in the textbooks that the students used in the schools. As a result, the projects that the students worked on did not foster the development of the students' knowledge, skills and attitudes, because the students saw it as part of a task completion of a certain subject.

Besides the lack of Driving Questions, the planning for the project was less comprehensive. This happened because the teaching content in the textbooks was too broad and shallow. As a result, the teachers found it difficult to determine the appropriate projects in
order to achieve optimal learning goals. In addition to the shallow content of the textbooks, another factor that hindered the implementation of project-based learning was teachers’ perceptions. Some teachers considered project-based learning time-consuming, ineffective and did not contribute directly to the improvement of students’ final scores (exam scores). Another disadvantage of project-based learning was the cost inefficiency as creating props or products required extra expenses to purchase the materials.

Measuring students’ progress through assessment becomes a major obstacle in the implementation of project-based learning. Teachers still have difficulties in assessing students’ progress because of the limited measuring tools available for use in schools. The existing measuring tool used in the schools can only measure two aspects of learning – knowledge and attitude. Hence, four competencies necessary in the 21st century – critical thinking and problem-solving skills, cooperation, communication, and creativity – are difficult to establish and nurture. The absence of the four critical skills above has impacted the development of such competencies in the students. Besides the limited measuring tools, the number of students that exceeds the capacity of the classroom (30-40 students per class) as well as the existing inclusive programme are also adding to the difficulties in assessing students’ learning progress through project-based learning. This is especially true when it comes to assessment or evaluation of the learning process. Due to this complication and challenges, the assessment of project works is emphasizing more on the end-product and not the learning process.

**SUMMARY AND SUGGESTION**

Based on the description found in the introduction part of this paper as well as from the results of the research and discussions, it can be concluded that the implementations of project-based learning in SDN Cibabat Mandiri 1 and 2 indicate the following characteristics:

1) Project-based plans made by the teachers were good but they were lacking of the description of the problems, less comprehensive, and have not fostered the development of high-order thinking skills (HOTS) in students;

2) Implementations of project-based learning are still rigid, following structured tasks in the textbooks. They also do not follow the standardized steps or flow that is necessary for the success of the projects.

3) Assessments are mainly conducted to measure knowledge, skills and attitude. They emphasize more on the learning outcomes and not the learning process. Limitation of assessment tools available for use in the classroom and the class physical condition are the main constraints in assessing student progress through project-based learning.

In order for project-based learning to be implemented properly and successfully, the following suggestion can be adopted:

1) Project-based plans should follow the standardized flow or syntax, beginning with inquiry activities to find problems that students are familiar with and ended with project presentations.

2) In preparing lesson plans, school textbooks should not be the sole resource for learning. Using other resources to make learning more meaningful is highly encouraged. Teachers will need to scaffold the tasks before devising a lesson plan;

3) Learning is carried out not only in the classroom, but also outside the classroom. It should involve the community in the surrounding environment. Teachers act as facilitators, mediators, and learning motivators in order to create a conducive learning environment.
4) To be more effective and efficient, merging 2-3 related learning themes as one project theme is recommended. Thus, in 1 semester there should be two projects implemented in the school. In other words, one project towards the end of the term is applicable;
5) There should be regular trainings on project evaluation, improvement of measurement tools or instruments that can be used to assess students’ learning progress;
6) The reduction of the maximum number of students that can be placed in one classroom should be advocated in order to make the learning more engaging and conducive.

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