Needs of integrated science experiment student worksheet in junior high school to improve students science process skills

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Abstract. In this article, we discuss the main arguments that deal with the issue needs of integrated science experiment student worksheet in junior high school to improve students science process skills. the very basic issues highlighted in this article is Types of student worksheet available has not yet guide students to find concepts. The experiment student worksheet developed by teacher are only confirming the concept. This article is structured as follows. After giving an overview of the scope of the availability of tools and experiment materials in school laboratories, teaching materials used in schools, we review the particular about the experiment student worksheet can improve students science process skills. This research is a Descriptive Research. This research was conducted at Junior High School 1 of Pakis Karawang. The data collection used in this research is observation, interview and student questionnaire. From this research obtained data that there has been no improvement of students science process skills from practical work conducted using experiment student worksheet developed by teachers. So, we argue that need developed an experiment student worksheet to improve students science process skills.

1. Introduction
Integrated science learning process in Junior High School involves many practical work [1]. In the implementation of experiment there are some things that become consideration, such as the availability of laboratory, the availability of tools and materials laboratory and the availability of guidance or experiment student worksheet [2]. However, the problems found are experiment performed after students get the theory, Laboratory activities separate with the theory. So students can only prove the concept with experiment. It has not been able to develop students science process skills. Experiment activities are also rarely because unavailability of integrated science experiment student worksheet that can improve students science process skills. Currently practical work only use procedures worksheet created by teachers. Skills basic science processes can be broken down into two, namely: (1) Basic Skill (2) Process skill [3]. Skill of the process will develop with experiment activities. Because Stages in experiment activities is a form of implementation of a process skill approach [4]. Improved science process skills can be done with problem based instruction model [5]. Implementation of inquiry learning process [6]. In this research, we discuss the issue about needs of integrated science experiment student worksheet in junior high school to improve students science process skills. The results of this study will be the basis for development of experiment student worksheets that can improve students' science process skills.
2. Method

2.1. Types of Research
This study was conducted only to obtain information about the use of integrated science teaching materials in the form of experiment student worksheet. This research is a descriptive research. We want to describe the systematic and accurate population characteristics of integrated science in junior high school 1 of Pakis Karawang [7,8].

2.2. Data Collection
The study was conducted at Junior High School 1 of Pakis Karawang. This study focuses on the issues practical work and teaching material used teaching materials used in the learning activities (experiment in laboratory) related to students science process skills. In this study, data collection was done using student questionnaire, observation and interview. Student questionnaires contain questions about their views on practical work and teaching materials used in experiment activities. Students fill in completely and then return to us [9]. The answers from and students will be analyzed qualitatively so we get description of the problem of practical work and teaching materials used in experiment activities. Interviews were conducted with structured interviews, namely by preparing written questions to science teachers and principals Junior High School 1 of Pakis Karawang [10]. Observation is a process composed of various biological and psychological processes. Observation is the process of obtaining data from the first hand by observing people and places during the study [9]. In this study, we observed the condition of the school, the learning process and the teaching materials used in the learning activities. This research will be the basis for the development of integrated science experiment student worksheet in junior high school to improve students science process skills.

3. Result and Discussion

3.1. Observation
Based on the observations we have done in Junior High School 1 of Pakis Karawang, it is found that in Junior High School 1 of Pakis Kerawang, there are science laboratories, tools and experiment materials that enable experiment-based learning to improve students science process skills. The condition of science laboratory in Junior High School 1 of Pakis Karawang can be seen in figure 1.

![Science Laboratory in Junior High School 1 of Pakis Karawang](image)

Figure 1. Science Laboratory in Junior High School 1 of Pakis Karawang.

In experiment activities, teachers have developed worksheets that contain only tools and materials, procedures and tables of observation. Teaching materials developed by teachers do not meet the standards as proposed by Majid on the six components that must exist in the teaching materials, *i.e* (1) Instruction studies; (2) Competence to be achieved; (3) Supporting information; (4) Exercise; (5) Job guidance, or worksheet; (6) evaluation [11].
3.2 Interview

Based on our interviews with principals, science teachers, and students, it was found that the underlying problem was the lack of student motivation in learning. Students of SMP 1 Pakis Karawang also have a weak economy, so many are unable to buy textbooks (Teaching Materials). Today, the teaching materials used are government aid books. However, there is no government assistance for experiment teaching materials. So teachers have to develop their own teaching materials for practical work. But due to time constraints in developing teaching materials for experiment, the teaching materials developed there are only working procedures and tables of observation. In addition, teachers also recognize that their practical work is still in confirming the concepts. So that they have not been able to practice students science process skills. Experiment can train students to work according to scientific procedures in order to acquire knowledge, skills and scientific value [12]. Teachers also expect the development of experiment teaching materials that can train and improve students science process skills. Based on our interview with 20 students of grade 8th Junior High School 1 of Pakis Karawang, Most students answered less motivated to read science textbooks. Because the teaching materials used are less interesting. Associated with the use of worksheets for practical work, the students answer they only do according to the procedure in the worksheet. It can be concluded that students do not like the existing teaching materials, and the teaching materials have not been able to train and improve students science process skills.

3.3 Student Questionnaire

We have distributed questionnaires to 20 students of grade 8th Junior High School 1 of Pakis Karawang. We asked about the teaching materials used. Criteria question on student questionnaire can be seen in Table 1. Based on the results of student answers analysis obtained data as in Figure 2.

<table>
<thead>
<tr>
<th>Table 1. Criteria question on student questionnaire</th>
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<tbody>
<tr>
<td>Criteria</td>
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<tr>
<td>1. The availability of interesting images to support understanding</td>
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<tr>
<td>2. The language used is easy to understand</td>
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<td>3. Fun Experiment</td>
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<td>4. Easy laboratory procedures</td>
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<td>5. Teaching materials can improve my skills on science issues</td>
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<tr>
<td>6. The teaching materials used can motivate me to learn science</td>
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<td>7. Teachers explain the subject matter in accordance with the teaching materials used</td>
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<td>8. Textbooks can be used for self-study</td>
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<tr>
<td>9. Overall I enjoy reading science textbooks</td>
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<tr>
<td>10. The teaching materials of science contain examples that exist in daily life</td>
</tr>
</tbody>
</table>

From figure 2 we can be seen that 60% of students think that the teaching materials used have an interesting image to support their understanding of science. The language used is easy to understand. However, the experiments performed less fun can be seen 50% of students answered enough and 35% of students answered less. Existing experimental procedures are fairly easy to do. The teaching materials used are not yet able to motivate students to learn science. According to students, teachers have taught according to the material in the book. Some students think that the book can be used in self-study. Overall 65% of students answered quite like the science books used, because the book has an example in daily life but still less. So, students expect the existence of teaching materials that contain more examples in daily life.
3.4 Student Science Process Skills
Science process skills are special skills that simplify learning science, activate students, develop students’ sense of responsibility in their own learning, increase the permanency of learning, as well as teach them the research methods [13]. Science process skills are the tools that students use to investigate the world around them and to construct science concepts, so it is essential that teachers have a good understanding of these skills [14]. Development of laboratory activities can be done using 5E model [15], Inquiry learning strategy [6], problem based instruction [5], inquiry based instruction [16]. Based on our observations at Junior High School 1 of Pakis Karawang, the learning process has not been able to improve students science process skills. Even though, Science process skills are central to the acquisition of scientific knowledge which is useful in solving problems in society [17]. So, we need to do a development of teaching materials that can improve the skills of science students in Junior High School 1 of Pakis Karawang.

4. Conclusions
In science learning in Junior High School 1 of Pakis Karawang has been supported by laboratory activities (experiment). However, laboratory activity is done after the theory learning so that it is confirming the concept. Experiment activities were conducted using worksheets developed by teachers that contained only procedures and observation tables. Thus, overall science learning activities in Junior High School 1 of Pakis Karawang have not played a role in improving students science process skills. So to improve the science process skills of students we need to develop a teaching material that can improve students science process skills, and we choose to develop teaching materials in the form of integrated science experiments student worksheet.

Acknowledgments
We sincerely thank you to principal, science teachers and students grade 8th Junior High School 1 of Pakis Karawang for their help and participation in this research. Also, special thanks to LPDP Scholarship which has provided financial support for this research.

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