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Development of Students' Worksheet Through Guided Inquiry Model to Increase Science Process Skills in The Harmonic Vibration Subject

Puspa Imroah Ramadhani[1*], Eko Hariyono[2], Elok Sudibyo[3]
[1,2,3] Universitas Negeri Surabaya, Surabaya, Indonesia

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ABSTRACT

Objective: This study uses guided inquiry models to test the relationship between the Student Worksheets and Science process skills on the Harmonic Vibration subject. **Method**: This research uses an experimental method with subjects on high school students in two State Islamic School 1 Sumenep classes. **Result**: Through comprehensive equipment and questions. This research results in several aspects as follows: (1) the average validity on the Student Worksheet (SW) is 3.58, which is categorized as a very-valid; (2) the exciting aspect of SW is 93% with attractive criteria, the understanding SW is 87% with easy-to-understand criteria, clarity in terms of font size and typeface is 100% with clear criteria, clarity in terms of language aspects is 92% with clear criteria, as well as clarity of description supported by graphic illustrations of 87% with clear criteria; (3) The effectiveness of SW is measured through the pre-test and post-test which depicts that there is an increase in students' science process skills after the using learning tools and guided inquiry learning models. **Novelty**: This research contributes to the development of indicators in student's worksheets relating to science process skills, including formulating a problem, making a hypothesis, determining the experimental variable, defining operational definitions of variable, creating a data table, creating a finding and analysis, and making a conclusion.

INTRODUCTION

The curriculum is one of the educational programs provided for students learning. Curriculum 2013 contains the improvement and balance between soft and hard skills, including behaviors, abilities, and knowledge (Fadlillah, 2014). Likewise, The regulation of the Minister of Education and Culture No. 54 of the Year 2013 stated that Curriculum 2013 covers students' spiritual and social behavior, knowledge, and skills. Therefore, the curriculum 2013 is relevant to develop process and scientific skills of students in physics (Akib et al., 2020; Maryanti et al., 2021, 2021; Munastiwi & Marfuah, 2019; Salimi et al., 2021).

One of the competencies in Physics in Curriculum 2013 is to design a problem associated with object physics, make a hypothesis, design an experiment, do an exact measurement, note taking and deliver a result and discussion through graphs and charts, make a conclusion, and presenting the result (The regulation of Minister of education and culture No. 64 the Year 2013). In studying physics, students are required to give practical experience. Science process skill is the thinking ability to develop knowledge, solve the problem, and produce a finding result (Haryadi & Pujiastuti, 2020; Kurniawan et al., 2019; Nasir et al., 2019; U. Sari et al., 2020).

Science process skill is a scientific method that includes finding something through tests and experiments. However, process skill involves intellectual, manual, and social abilities. It can be seen in how students utilize tools and instruments and use their minds to interact with others. Based on these theories, science process skill is a thinking

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