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Developing Learners' Autonomy-Oriented Physics Teaching Materials to Enhance Students' Science Process Skills

Nadia ¹, Mastuang ², Misbah ³, Mohd Ali Ibrahim ⁴

Universitas Lambung Mangkurat, Indonesia^{1,2,3}, Universiti Teknologi Malaysia, Malaysia⁴

nadia.baharuddin@icloud.com¹, mastuang_pfis@ulm.ac.id², misbah_pfis@ulm.ac.id³, p-mali@utm.my⁴

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ABSTRACT

The unavailability of learner autonomy-oriented physics teaching materials which are capable of enhancing students' science process skills (SPS) of students is becoming a hindrance in one of the public high schools in Banjarmasin, as well as the lack of SPS in students. Thus, this study was carried out with the aim to produce learning materials oriented on learner autonomy orientation to enhance students' SPS properly. This was based on the validity, practicality, and effectiveness of the developed teaching materials in terms of learning outcomes in the students' cognitive and psychomotor domains. This research utilized research and development method with the use of the ADDIE development model (Analyze, Design, Develop, Implement, Evaluate). The trial subjects in this study consisted of 34 students of Grade X in one of the public high schools in Banjarmasin. The data were obtained through validation sheets, lesson plan implementation sheets, SPS observation sheets, and learning outcomes tests (LOT). The results indicated that the teaching materials developed were: 1) valid, based on the results of the validator's assessments with the average score of 3.35, categorized in the "valid" category; 2) practical, based on the implementation of lesson plan with the average score of 3.66 in the very good category; 3) effective, seen from the gain score obtained of 0.67 in the "medium" category; 4) SPS achievement of 72.17 in the "good" category. It is then concluded that the learner autonomy-oriented learning materials are feasible to be implemented in classroom activities.

INTRODUCTION

Science process skills (SPS) are compulsory skills which must be utilized by students when studying science. SPS are one of the skills needed by students to be able to develop their potentials [1] [2] [3]. SPS are basic skills that students need to have in the development of technological science in the 21st