ABSTRACT

Vivi Mardian, 2021: Development of STEM Integrated Electronic Teaching Material on Elasticity Materials to Improve Students' 21st-Century Skills. *Undergraduate Thesis*. Padang: Study Program of Physics Education, Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Negeri Padang.

The ease of internet access currently provides an excellent opportunity for the government to increase growth in all aspects of life. 21st-century skills include critical thinking, creativity, and communication skills. Based on preliminary data at SMAN 2 Padang, physics teachers have not applied STEM well to teaching materials. Student learning outcomes are still low, as evidenced by the acquisition of students' mid-semester exam results, namely 63.3. One of the right solutions to overcome these problems is to develop STEM-integrated electronic teaching materials to improve students' 21st-century skills. The method used in this research is Research and Development (R&D) by applying the Plomb research model. The object of this research is STEM integrated electronic teaching material on elasticity material. The data collection instruments used were questionnaires for validity, practicality, and effectiveness test instruments. Based on the research objectives and data analysis conducted, three research results were obtained. First, the average value of the validity of the STEM integrated electronic teaching materials is 0.87, which is in the very good category. Second, according to students, the average practical value of using STEM integrated electronic teaching materials is 83, in the good category. Third, the use of STEM integrated electronic teaching materials developed effectively improves students' 21st-century skills. The data analysis shows that the electronic teaching materials developed are valid, practical, and effectively used in online learning to improve students' 21st-century skills.

Keywords: Electronic Learning Material, STEM Integration, 21st – Century Skill