ABSTRACT

Chintia Monika Sihaloho, NIM 4163342007 (2016). Development of 3R (Reduce, Reuse, Recycle) Student Worksheet Based on STEM (Science, Technology, Engineering, Mathematics) on Environmental Change Topic Class X Natural Science SMA Negeri 2 Percut Sei Tuan

The aims of study is to determine (1) The feasibility of STEM student worksheet that be developed, (2) The effectiveness of STEM student worksheet that be developed. This research design is a 4-D development research that is through stages Define, Design, Develop, Disseminate. This research has been conducted in March to June 2020. Research subject is material expert, learning strategy expert, biology teacher, and class X-3 natural science student at SMA Negeri 1 Percut Sei Tuan. The topic of STEM student worksheet that hass been developed is environmental change. The result of the assessment of student worksheets based on material expert in very feasible category (92.70%), Learning strategy expert in very feasible category (93.75%), Biology teachers in very feasible category (92.18%) and student responses in very feasible category (95.31%). In the effectiveness test student get a Pre-test score with average (61.25), after the implementation using student worksheet based on STEM student gets a Post-test score average (83.43). Based on Wilcoxon test it was found that there was a very significant difference between the pre-test value and the post-test value (Z=5.07; P=0.000). The result of N-gain test from pre-test and post-test obtained a value 0.77 with "High" category. Therefore, can be concluded student worksheet based on STEM on environmental change topic that has been developed are effective to improving student's achievement ih high category.

Keywords: Student Worksheet, STEM (Science, Technology, Engineering, and Mathematics), Environmental Change.