

Development of STEM-Based Constructivistic Learning Model Modules to Improve Creative Thinking Skills and Students' Motivation to Learn Physics

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ABSTRACT

Physics learning in the 21st century is not only oriented towards understanding physical concepts but also oriented towards the development of 4C skills that are a demand in 21st-century learning. So that in learning requires learning tools that not only play a role to convey the material but also train creative thinking skills and increase the learning motivation of learners. The research aims to: (1) generate and know the feasibility of STEM-based e-SSP physics learning devices for physics learning. (2) know the categories of creative thinking skills improvement learners after using STEM-based e-SSP physics. (3) know the categories of learning motivation improvement of learners after using STEM-based e-SSP physics. This research is development research that uses the 4D *Models* approach. The subject of this study is a student who is in several high schools in Yogyakarta. STEM-based e-SSP assessment data is obtained through validator assessments. Data on improving critical thinking skills and learning outcomes are obtained through *pretest* and *posttest*. Data on learning motivation improvement is obtained through questionnaires. RPP implementation data is obtained through RPP implementation observation sheet.

Kata Kunci: *creative thinking, motivation to learn physics, module, constructivists*