

# DEVELOPMENT OF PHYSICS LEARNING DEVICES BASED ON GUIDED INQUIRY TO IMPROVE LEARNING OUTCOMES OF HIGH SCHOOL STUDENTS

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## ABSTRACT

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The research is umbrella research system conducted in 3 years. The research objective is to develop guided inquiry based learning to improve learning outcomes. The learning outcomes that were investigated were mastery of physics concepts, critical thinking skills, process skills, and cooperative attitudes. The research method is research and development (R & D) based on the four-D methods developed by Thiagarajan, which includes: definition, design, development, dissemination. The first year to develop a guided inquiry based learning devices through the steps of definition, design and development using limited trial expert validation. The second year aims to try out learning devices products which has been produced in the first year in extensive trials so that products can improve student learning outcomes. This product is intended to be used by students anytime and anywhere so it must internet based. Learning devices products that are developed include syllabus, lesson plan, worksheet, evaluation sets, and learning media. The study was conducted on high school students in Yogyakarta. Limited trial subjects involved students in one high school, while broad trial subjects involved students of two high schools. The research instrument was in the form of material mastery test, critical thinking ability test, process skills test, cooperative attitude test. Expected outputs are intellectual property rights, journals / seminar-proceedings indexed by Scopus.

**Keywords:** *learning devices, guided inquiry, learning outcomes*

Kata Kunci: *learning devices, guided inquiry, learning outcomes*