

# DEVELOPMENT OF LABORATORY WORK ASSESSMENT INSTRUMENTS TO MEASURE STUDENTS' SCIENCE PROCESS SKILLS

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## ABSTRACT

The new paradigm in the independent curriculum places the learning and assessment process in an effective manner. One of these paradigms is that the learning process supports the holistic development of students' competence and character. This research aims to develop laboratory work evaluation instruments that are feasible, valid and effective for improving science process skills.

The research uses a Research and Development (R & D) model with 4-D stages (Four D). This model consists of four main stages, namely define, design, develop, and disseminate. Initial research was carried out by analyzing the depth of the junior high school science material curriculum, especially aspects of science process skills carried out in laboratory activities, identifying types of basic and integrated process skills that are appropriate to laboratory work activities, designing a model of science process skills assessment instruments including indicators, validation and initial revision. as well as, implementation or empirical testing in the field, and dissemination through international workshops and seminars attended by students, teachers, lecturers and science education observers.

The conclusion of this research shows that 4-D model development research is effectively used in developing laboratory work assessment instrument products to measure students' science process skills. In detail, it was obtained 1) a laboratory work assessment instrument was prepared to measure students' science process skills which was valid based on the Aiken formula and appropriate according to science education experts from the content, construct and language aspects, 2) a laboratory work assessment instrument was composed to measure scientific process skills. quantitatively fulfills the validity of the construct and the Rasch model, and 3) the results of limited scale testing show an increasing effect or positive influence on students' laboratory work.

Kata Kunci: *Laboratory Work* , *Science Process Skills*