MODEL OF IMPROVING TEACHER PROFESSIONAL COMPETENCY IN DEVELOPING PROCEDURAL AND METACOGNITIVE ABILITY TESTS THROUGH THE DESIGN OF ASSESSMENT OF INTEGRATED SCIENCE USING MOBILE LEARNING ON GADGET ANDROID PLATFORM

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ABSTRACT

This research is intended to support the UNY Research Master Plan in the focus areas of Teacher Professional Development (education and non-education fields) as national and regional references. Currently almost all interact using an Android-based communication tool. The development of intelligent mobile phone terminals, mobile learning has become an effective and efficient way for teacher learning, so that continuous development of teacher competency development can take place in a fun way. From the aspects of integrated science learning material, it is very clear that science learning in the 2013 curriculum is carried out based on integration. Learning concepts should focus on active, cognitive and constructive processes in meaningful learning. Learners (learners) are assumed to be active actors in learning activities. Science learning is developed as an integrative science subject not as an educational discipline, so it must be applicative oriented, develop thinking skills, learning abilities, curiosity, and the development of caring and responsible attitudes towards the natural and social environment. Integrative science has the meaning of combining various aspects, namely the domain of attitudes, knowledge, and skills. Therefore, the assessment system developed in science learning must also include four types of knowledge that are presented in the knowledge dimension, namely; (1) factual knowledge, (2) conceptual knowledge, (3) procedural knowledge, and (4) metacognitive knowledge. This type of knowledge really helps educators decide what needs to be taught. This level of specification makes it possible to apply to all grade levels and subjects.

Teacher competency development in this study generally aims to produce science teachers who are able to make adjustments to policies in the implementation of the 2013 Curriculum, where the main priority of the dimensions of knowledge developed is emphasized on procedural and metacognitive abilities. This is very important related to the learning outcome in KKNI level 7, the teacher professional program, which is mastering certain theoretical concepts in specific fields of knowledge, as well as being able to formulate procedural and metacognitive problem solving, so that teachers are accustomed to training their students to develop higher-order thinking skills (high order thinking). The methodology developed in this study is a spiral Research & Development model as referenced by Cennamo and Kalk (2005: 6). In this spiral model, there are 5 (five) development phases, namely: (1) definition (define), (2) design (design), (3) demonstration (4), (4) develop, and (5) presentation (deliver). The research output is software copyrights and Scopus International Journal Publications, Journals of Education and Learning, Canadian Center of Science and Education.

The research results that have been achieved are; (1) The model for improving the professional competence of teachers has been produced in the development of procedural and metacognitive ability tests through the design of assessment of integrated science using mobile learning on appropriate android platform gadgets based on expert judgment, (2) Practical testing of the model based on results training involving junior high school teachers in the Mlati Subdistrict Science Teachers 'MGMP in Sleman Regency, (3) The model is effective for improving students' procedural and metacognitive abilities.

Kata Kunci: *teacher professional competence, procedural abilities, metacognitive abilities, android-based mobile learning*