

# **PENGEMBANGAN ALAT UKUR KEMAMPUAN GURU DALAM PEMBELAJARAN IPA**

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Tesis ini untuk Memenuhi Sebagian Persyaratan  
Mendapatkan Gelar Magister Pendidikan

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## ABSTRACT

Susanti Murwitaningsih. *The Development of an Instrument to Measure Teacher's Ability in Science Instruction. Thesis.* Jakarta: Program of Graduate Studies. IKIP Jakarta. 1999.

This research was aimed to develop an instrument measuring teacher's ability in science instruction. The population of this study was elementary school teachers in Jakarta who was studying at the DII PGSD program at The Universitas Terbuka and at IKIP Jakarta. A sample of 380 teachers was taken for the testing of the two sets of instruments by using random sampling technique.

The instrument to measure teacher's ability in science instruction consisted of two tests. The first test is to measure the understanding and knowledge of the content of Science and the second test is to measure the ability of planning science instruction at elementary schools. The first set of test consisted of 60 test items and was structured based on Science curriculum analysis. The second set consisted of 14 test items developed based on five indicator, i.e. the ability to formulate objectives, organizing the subject material, determining instructional strategy, improving process skills by doing science activities, and designing evaluation. The quality of the instruments were determined by measuring construct validity and reliability.


The results of the content validity analysis revealed that the composed items of instrument to measure teacher's understanding and knowledge of the content of science were in

understanding and knowledge of the content of science were in accordance with the curriculum. Item validity analysis produced 52 test items which were significant at the level of significance  $\alpha = 5\%$ . Construct validity analysis of the instrument to measure teacher's ability on planning science instruction indicated that the test items were commensurate with the theoretical construct. The five ability factors of planning instruction could indicate 68.1% on the first test, and 79.6% on the second test. Every test item and ability factor has a significant factor loading of more than .566. The final standardization of the instrument covered the aspects of content and administration.

The reliability coefficients were determined by test-retest method for the first instrument (to measure teacher's understanding and knowledge of the content of science) and inter-rater method for the second instrument (to measure teacher's ability on planning instruction). On the first calibration, the reliability coefficient of the first instrument was .772 and for the second instrument was .805. On the second calibration, the reliability coefficient of each instrument turned out to be .864 and .858 respectively.


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