MODEL OF WEIGHTING BY DIFFICULTY (WD) AND NUMBER RIGHT (NR) MODEL FOR SCORE ESTIMATION IN PROFESSIONAL COMPETENCE ASSESSMENT OF IPA TEACHER CANDIDATES WITH INTERNATIONAL BENCHMARKING SURVEY (PISA)

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ABSTRACT

The quality of the teaching and learning process in the science teacher preparation education program in particular which educates prospective Natural Sciences teachers in Indonesia still needs to be improved in quality, especially when associated with international benchmarking surveys. One such survey is the Program for International Student Assessment (PISA), measures what students know and what they can do (application) with their knowledge. One of them is to improve the quality of assessment used in learning evaluation. Therefore, this study aims to describe: (1) the characteristics of professional competency competency test instruments for prospective IPA teacher candidates for international benchmarking surveys (PISA); (2) the suitability of the distribution of the level of difficulty set by the lecturer on the distribution of the difficulty level of the empirical results; (3) the score distribution characteristics of professional competency competency test instruments for science teacher candidates are the estimation results of the two scoring models; and (4) the results of the scores of professional competency competency test instruments for prospective science teachers based on the application of the two scoring models. The analysis in this study used the Rasch Model and was based on the pattern of student responses to the candidates for science teachers on the professional competency competency test instruments for science teacher candidates who had been developed by the research team in 2018. The sample of 70 students was taken using cluster random sampling technique. Scoring model used in estimating scores Assessment of professional competence is a Weighting by Difficulty (WD) and Number-Right scoring model (NR).
The results of the analysis show that; (1) Prospective Professional Competency Instruments PISA standardized Science teacher prospective students have a moderate level of difficulty, the points function well in distinguishing the ability of prospective students of natural science teachers, and reliable; the instrument has a good function of information (the maximum test information function is obtained at 18.187 at the ability of +0.2 logit) and is able to measure the ability of students in the medium category with an interval range of -0.259 logit $\leq \theta \leq 0.659$ logit; (2) Distribution of the level of difficulty determined by researchers has a significant incompatibility with the level of empirical difficulties; (3) the average WD score is higher than the average NR score, but the resulting score is more diffuse from the mean, both have negative skew prices so the distribution is to the left and the kurtosis is platicurtic; and (4) the application of the scoring model causes changes in the ranking of prospective students of science teachers because the consistency of the scores between the scoring models is in the fair agreement category.

Kata Kunci: *weighting by difficulty, number right, international benchmarking survey assessment (PISA), professional competence*