Efisiensi dan akurasi computerized adaptive testing pada sistem ujian akhir semester Universitas Terbuka

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Abstrak

Universitas Terbuka (UT) applied online examination system (sistem ujian online-SUO) for end of semeter examination (ujian akhir semester-UAS), beside the paper and pencil test (P&P test). In order to improve efficiency, adaptive test application should be analyzed, as an accuracy level of the computerized adaptive testing (CAT) design and conventional test using both P&P test and SUO. The research was conducted by simulation procedure. The item bank for the simulation used calibrated 404 test items using item response theory model. In the reseacrh, CAT and P&P test algorithm was developed. To measure efficiency, the required number of the CAT design was analyzed, while to measure accuracy of the estimation, the bias and standard error of measurement of both design were compared. The simulation result show that (1) CAT design was more efficient, since it required only half of the number of item which was used in P&P test, to estimate the ability of examinee, (2) CAT design was more accurate in estimating ability of examinee, compared to P&P test design, since it resulted lower bias and standard error of measurement compared to conventional test design. Therefore, CAT design could be applied in UT's UAS system, while considering the balance of content for each modules.