

Research Title The Effects on Test Scores and Test Reliability after Removing Items with Negative Discrimination Power: Epidemiology Subject

Researcher Sresuda Wongwiseskul, Monchaya Somjarit, Wassana Janjai

Organization Faculty of Nursing, Suandusit University

Year 2015

This study aimed to evaluate the quality of test item, explore changes of test score and students' ranking, and changes of mid-term and final test reliability after removing the test items with negative discrimination power. Sample group was test and test items in Epidemiology, semester 1 educational year 2012. Research tool was test item analysis according to Classical test Theory. Difficulty Index, discrimination index, test reliability were calculated using computerized program. Paired t-test and Sign Rank test were applied to test the changes of test score and students' ranking.

Results of the study revealed that:

1. 91.70% of items in mid-term test and 82.50% of items in final test had index of difficulty (P) between .20 - .80

2. 61.70% of items in mid-term test and 56.25% of items in final test had discrimination power (R) \geq .20

3. After removing the test items with negative discrimination power, the reliability of mid-term and final test were increased (from 0.554 to 0.622 and from 0.694 to 0.727 respectively). Mean score of mid-term and final test were increased (from 55.36 to 56.68 and from 49.76 to 51.19 respectively) significantly at $p=.001$. 70.6% and 81.52% of students got higher ranking; the increasing was significantly at $p=.001$.

In conclusion, excluding test items with negative discrimination power affected on test reliability, mean score of the test, and score ranking.

Keywords: quality of test items, negative discrimination power, reliability of MEQ examination