

TRUNGJAI POOLPONAMNUAY : THE DEVELOPMENT OF TAILORED TEST
IN SCIENCES FOR MATHAYOM SUKSA THREE STUDENTS, THESIS ADVISOR:
ASSOCIATE PROFESSOR YAVADEE VIBULSRI, PH.D., 184 pp.

The purpose of this study was to develop a computerized tailored test on Sciences for Mathayom Suksa Three students. A total of 4,492 students comprised the sample at the first stage for this research. At the second stage, however, a total of only 123 students were used as the sample in this study.

At the first stage, the data based on 200 items, constructed on Facet design with expert judgement for content validity consideration. The items were tested by 4,492 students. Logistic program, based on Item Response Theory was utilized to estimate item parameters. After that, 177 items were selected to be grouped according to their difficulties so that an item pool of 10-stage with 19 interval pyramidal design was formed. Fifty-five items were randomly selected from the pool to form a computerized tailored test. The ranges of their discriminatory power, difficulty and guessing indices were 0.8203 to 2.0000, -0.6673 to 2.8739 and 0.0417 to 0.2848 respectively. The average of item difficulty between each corresponding stage was 0.1968.

At the second stage, 123 students were asked to responded to different items from the computerized tailored test, accordingly to their abilities. The data were then analysed and the findings of this study were as follows ;

1. The content validity of the computerized tailored test using Rovinelli and Hambleton's Index of Item Objective Congruence ranged from .75 to 1.00.
2. The concurrent validity of the computerized tailored test determined from the correlation coefficient between the 123 students's ability and the grade point average on sciences was 0.7517.
3. To determine the representativeness of the computerized tailored test to the 55 items test, their correlation coefficient was computed, the latter was tested by paper-pencil. Their correlation coefficient was 0.7818.
4. The standard error of ability estimation of the computerized tailored test was 0.443.