Ethiopian Journal of Education, Vol. XII, No. 2, 1991

"Teachers' Estimation of Test Items Difficulty as an Indicator of their Prior Knowledge of Academic Performance"

M.A. Thesis in Educational Psychology, Addis Ababa university, 1990.

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ABSTRACT

In order to reduce the number of students that fail in examinations and to improve classroom instruction, this study has attempted to find out how far teachers could estimate their students' academic performance and by what factors such prediction is influenced.

For this purpose, a total of 5,464 examination papers answered by 3,312 students were used to determine the difficulty level of the items and to obtain the scores achieved by each individual student. Altogether, the difficulty indices of 3,875 items were Determined. Ninety-six teachers were sampled from Awassa, Debrebirhan and Dessie Teacher

Training Institutes and Comprehensive Secondary Schools were involved in the study.

According to the finding of the study, 72.92% of the correlation coefficients between the estimated and actual values were found to be significant beyond $p< 0.05$ level of significance. Here, 0.0263 and 0.6299 were found to be the lowest and highest correlation coefficients respectively. In addition, it was found that Amharic, English, Mathematics, Pedagogics and Psychology teachers' estimated values were correlated highly and positively with the actual values of the students as compared to the other teaching subjects considered in the study.

When the actual values were deducted from the estimated values to determine the values of the teachers' prior knowledge of their students academic performance (criterion measure), 0.05 and 46.29 were found as the lowest and highest differences, respectively. Besides this, a Chi-Square test has been made in relation to the difference between the estimated and actual differences between the estimated and actual values. The Chi-Square value,

$X = 291.2843$, was found to be significant at $p < 0.001$ level of significance.

Furthermore, the Pearson Product-Moment Correlation Coefficient was employed to determine the relationships between the criterion measure (dependent variable) and each of the six independent variables (predictors). In most of the cases, the result showed that there is a substantial relationship which is statistically significant at $p < 0.01$ level of significance.

When the step-wise multiple regression analysis was employed, from the full set of predictors, the three independent variables,

i) the efficiency results of teacher (X_5).

ii) the knowledge that teachers had in test construction (X_1). and

iii) the number of students found in a Class (X_3).

were found to be more important in predicting the teachers prior knowledge of students academic performance as compared to the remaining three independent variables, namely,

i) number of years teachers stayed in teaching (X_3).

ii) being home-room teacher or not (X_4), and

iii) number of periods a teaching subject had per week (X_6).