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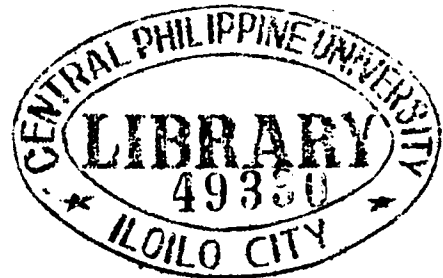
**A VALIDITY STUDY OF THE PHILIPPINE SELF-ADMINISTERING MENTAL
ABILITY TEST IN PREDICTING ACHIEVEMENT IN SECONDARY
MATHEMATICS AT CENTRAL PHILIPPINE UNIVERSITY**

A Thesis

Presented to

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ABSTRACT

The purpose of this research was to determine the predictive validity of the Philippine Self-Administering Mental Ability Test (PSAMAT) by Leila Padilla in predicting achievement in secondary mathematics at Central Philippine University. More specifically, this investigation hoped to find out the relationship existing between I.Q. and achievement in Mathematics I (Advanced Arithmetic), I.Q. and achievement in Mathematics II (Elementary Algebra), I.Q. and achievement in Mathematics III (Geometry), I.Q. and achievement in Mathematics IV (Advanced Algebra), I.Q. and achievement in Elective V (Trigonometry), and I.Q. and the average achievement of these five secondary mathematics subjects. The investigator also sought to find out whether there is a statistical difference in the coefficients of correlation between I. Q. and achievement in Secondary mathematics for the boys and the girls.

This study would be of value to the students, the mathematics teachers, the principal, the guidance personnel, the parents, and other educators as well, in the light of knowing the predictive validity of the

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instrument and in preparing the student towards his future success in secondary mathematics and other mathematics courses.

The subjects of this study were the one hundred fifty (fifty-six boys and ninety-four girls) senior high school students enrolled in the Central Philippine University High School in the school year, 1977-1978. These students took the PSAMAT in July, 1974. They have not transferred, dropped or left in any secondary mathematics subject from the first year to fourth year. The PSAMAT was administered to the subjects by the Guidance and Counseling Center personnel of Central Philippine University.

The respective scores of the subjects from the PSAMAT were converted to I.Q. equivalent and were copied from the files of the Guidance Office. A personal interview with the guidance coordinator and other personnel in the same office about the usefulness and extensive usages of the PSAMAT was undertaken. It was found out that the said test is a standardized one.

From the permanent records in the Registrar's office of Central Philippine University, the final grades of the subjects in each of the secondary

mathematics subjects were copied. The average of the final grades of the five secondary mathematics courses was computed.

The mean, standard deviation, standard error of the mean, significance of difference between two means, coefficient of correlation, significance of the coefficient of correlation, standard error of the coefficient of correlation, standard error of the Fisher's z , prediction efficiency, significance of the difference between two coefficients of correlation, simple regression equation, and standard error of estimate were the statistical analysis used. These were done at the 1% level of significance or at the 99% level of confidence. The subjects were classified as a group and according to sex.

The study was based on the following assumptions:

1. The final grades in all of the mathematics subjects at Central Philippine University High School were valid measures of the subjects' academic performance or their achievement in secondary mathematics.
2. The PSAMAT was administered under conditions specified for the test.

3. The PSAMAT was accurately scored and properly recorded.

4. The final grades in secondary mathematics were valid measures of achievement.

The following were the findings of the investigation:

1. The predictive efficiencies of the PSAMAT as a predictor of achievement in secondary mathematics at Central Philippine University are 10.85%, 14.36%, 10.29%, 21.47%, and 18.27% in Mathematics I, Mathematics II, Mathematics III, Mathematics IV, and Elective V, respectively.

2. There is a positive substantial relationship between I.Q. as measured by the PSAMAT and achievement in Mathematics I. The obtained coefficient of correlation is 0.45, significant at the .01 level.

3. There is a positive substantial relationship between I.Q. as measured by the PSAMAT and achievement in Mathematics II. The obtained coefficient of correlation is 0.52, significant at the .01 level.

4. There is positive substantial relationship between I.Q. as measured by the PSAMAT and achievement in Mathematics III. The obtained coefficient of correlation is 0.44, significant at the .01 level.

5. There is positive substantial relationship between I.Q. as measured by the PSAMAT and achievement in Mathematics IV. The obtained coefficient of correlation is 0.62, significant at the .01 level.

6. There is positive substantial relationship between I.Q. as measured by the PSAMAT and achievement in Elective V. The obtained coefficient of correlation is 0.58, significant at the .01 level.

7. There is positive substantial relationship between I.Q. as measured by the PSAMAT and the average in the achievement of the five secondary mathematics courses. The obtained coefficient of correlation is 0.60, significant at the .01 level.

8. There is positive slight relationship between I.Q. and achievement in Mathematics I for boys. The obtained coefficient of correlation is 0.34, significant at the .01 level. For the girls, the obtained coefficient of correlation is 0.53, positive, substantial, and significant at the .01 level.

9. There is positive substantial relationship between I.Q. and achievement in Mathematics II for boys. The obtained coefficient of correlation is 0.44, significant at the .01 level. For the girls, the obtained coefficient of correlation is 0.55,

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positive, substantial, and significant at the .01 level.

10. There is positive substantial relationship between I.Q. and achievement in Mathematics III for boys. The obtained coefficient of correlation is 0.42, significant at the .01 level. For the girls, the obtained coefficient of correlation is 0.62, positive, substantial, and significant at the .01 level.

11. There is positive substantial relationship between I.Q. and achievement in Mathematics IV for boys. The obtained coefficient of correlation is 0.60, significant at the .01 level. For the girls, the obtained coefficient of correlation is 0.62, positive, substantial, and significant at the .01 level.

12. There is positive substantial relationship between I.Q. and achievement in Elective V for boys. The obtained coefficient of correlation is 0.59, significant at the .01 level. For the girls, the obtained coefficient of correlation is 0.64, positive, substantial, and significant at the .01 level.

13. The critical ratios for the coefficients of correlation obtained for boys and girls are 1.39, 1.04, 1.62, 0.23, 0.29, and 0.64 for the five secondary

mathematics subjects, respectively. Since these figures are all less than 2.58, then there is no statistical difference between the coefficients of correlation of the boys and the girls.

Basing on the related studies reviewed and the findings of the investigation, the investigator presents the following conclusions:

1. The PSAMAT has a predictive value in predicting achievement in secondary mathematics at Central Philippine University.
2. There is a significant relationship between I.Q. as measured by the PGAMAT and achievement in Mathematics.I.
3. There is a significant relationship between I.Q. and achievement in Mathematics II, Mathematics III, Mathematics IV, and Elective V.
4. There is a significant relationship between I.Q. and the average achievement in Mathematics I, Mathematics II, Mathematics III, Mathematics IV, and Elective V.
5. There is no statistical difference in the coefficients of correlation between I.Q. and achievement in secondary mathematics of the boys and the girls.

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Basing on the conclusions made, the following recommendations are given:

1. It is recommended that the Guidance and Counseling Center of Central Philippine University use the PSAMAT in predicting achievement in secondary mathematics.

2. It is recommended that the Guidance and Counseling Center of Central Philippine University use the findings of the study in constructing an expectancy table.

3. It is recommended that the PSAMAT be subjected to further study to determine its predictive validity regarding achievement in other secondary subjects and general average.