DE LA SALLE UNIVERSITY

ANALYSIS AND PREDICTION OF THE NCEE PERFORMANCE

OF THE EXAMINEES AT ST. GREGORY ACADEMY:1981-1986

IMPLICATIONS FOR INSTRUCTIONAL MANAGEMENT

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SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study which made use of the descriptive-correlational method of research analyzed and predicted the NCEE performance of the graduates of St. Gregory Academy on the basis of the NCEE performance of its graduates during the five-year period, 1981-1986. The findings of this study identified the strengths and weaknesses of the SGA examinees and determined the relationship between NCEE performance and selected intellective and non-intellective factors.

Specifically, this study answered the following questions:

1. How do the NCEE performance of the SGA examinees compare with the division, regional and national norms from 1981 to 1986?

    1.1 Is there a significant difference between their NCEE performance in Reasoning Ability, Mathematical Ability, Verbal Ability and Reading Comprehension and the corresponding division, regional, and national norms during the indicated five-year period?

1.2 Is there a significant difference between their overall NCEE performance and the corresponding division, regional, and national norms?

2. What are the academic strengths and weaknesses of the SGA examinees based on thier NCEE performance in the different areas and based on the division, regional and national norms?

3. Is there a significant relationship between the student's overall NCEE performance and the following variables:

3.1 The Student's

   3.1.1 Sex

   3.1.2 High School Overall Academic Achievement

   3.1.3 Final Grades in English, History, Physics, and Mathematics;

3.2 The Teacher's

   3.2.1 Age

   3.2.2 Teaching Performance

   3.2.3 Years of Teaching Experience

   3.2.4 Number of Actual Teaching Hours;

3.3 Class Size

3.4 Number of siblings in the family taken singly and in combination?

4. Is there a significant relationship between the students' high school achievement in English, Mathematics, History, and Physics and their NCEE performance in Reasoning Ability, Mathematical Ability, Verbal Ability, and Reading Comprehension.

5. Which of the independent variables analyzed in this study are the best predictors of the students' NCEE performance?

Hypotheses:

The following null hypotheses were tested at the .05 level of confidence:

1. There is no significant difference between the NCEE performance of the SGA examinees in Reasoning Ability, Mathematical Ability, Verbal Ability, and Reading Comprehension and the corresponding division, regional and national norms.

2. There is no significant difference between the overall NCEE performance of the SGA examinees and the corresponding division, regional and national norms.

3. There is no significant relationship between the examinees' overall NCEE performance and the following variables:

   3.1 The student's

       3.1.1 Sex

       3.1.2 High school overall academic achievement

       3.1.3 Final grades in English, History, Physics, and Mathematics;

   3.2 The Teacher's

       3.2.1 Age

       3.2.2 Teaching performance

       3.2.3 Years of teaching experience

       3.2.4 Number of actual teaching hours;

   3.3 Class size

   3.4 Number of siblings in the family taken singly and in combination?

4. There is no significant relationship between the students' high school achievement in English, Mathematics, Physics and History and their NCEE performance in Reasoning Ability, Mathematical Ability, Verbal Ability, and Reading Comprehension.

The study included a sample of 268 SGA examinees who were selected at random from a total population of 679 students who had been at Saint Gregory Academy from their freshman to senior years prior to the study.

The data used in this study were personally gathered from the masterlists of NCEE results in the division, regional, and national levels furnished by the National Educational Testing Center of the MECS in Manila, from the Division Office of Cavite, and from the school records of SGA.

To compare the SGA examinees' overall and area mean performance with the corresponding division, regional, and national norms, the Z-test was used. The null hypotheses of no significant differences between said performances were tested at the .05 level of confidence.

The NCEE areas in which the SGA examinees obtained significantly higher scores than the corresponding division, regional and national mean scores were considered strengths while the areas in which the SGA examinees got significantly lower scores were regarded as weaknesses. On the other hand, performances in areas where observed

differences were not significant were interpreted as neither strengths nor weaknesses but as average performances.

The Pearson Product-Moment Coefficient of correlation was used for bivariate correlation analyses while multiple correlation through stepwise regression was used for multiple correlation analysis.

Canonical Correlation was employed to determine the correlation between the dependent set of variables and the independent set of variables.

Finally, multiple regression analysis through stepwise regression was used to identify the best predictors of the dependent variables.

FINDINGS

The major findings of this study are as follows:

1. Comparison by NCEE Areas

In general, the SGA examinees performed significantly higher than the division, regional, and national norms groups in the four areas of NCEE: Reasoning Ability, Mathematical Ability, Verbal Ability, and Reading Comprehension during the five-year period, 1981-1986. Exceptions were in 1981 and

1982, when the Mathematical Ability performance of the SGA examinees was found to be lower when compared with division and regional norms. They performed equally as well as their counterparts in the national level during the same years.

In Reasoning Ability, the respondents exceeded their national counterparts from 1982 to 1986. Exception was in 1981 when the SGA examinees performed equally as well as their counterparts in the division, regional, and national levels.

The Verbal Ability mean scores of the SGA examinees did not differ significantly from the division and regional mean scores in 1981. However, their mean score in the same area was significantly higher than the national mean score.

Lastly, the SGA examinees obtained significantly higher mean scores in Reading Comprehension as compared with the examinees in the division, regional, and national levels during the five-year period. In 1983, however, this was their weakest area performance. Nonetheless, they performed significantly better than the average examinees in the division, regional and national levels.

2. Comparison by Overall NCEE Performance

From 1981 to 1982, the SGA examinees' overall NCEE Performance were comparable with the GSA performances of the average examinees in the division level. However, in the following years, 1983 to 1986, their GSA mean scores exceeded the division norms. Compared with the regional and national norms, the SGA examinees consistently obtained higher GSA mean scores except in 1981.

3. Generally, the SGA examinees were found to be strong in all the NCEE areas as indicated by their significantly higher mean scores as compared with the division, regional, and national mean scores.

4. Relationship between the SGA examinees' overall NCEE performance and the selected independent variables

4.1 A correlation coefficient of .0840 was obtained between the students' SGA overall NCEE performance and sex. This obtained value falls short of the critical value of .118 at .05 for significance. Thus, the null hypothesis of no significant relationship between these two variables

was accepted.

4.2 The computed correlation coefficient between the students' GSA score and their class size is -.2641061 which is highly significant at the .0000791 level. This negative relationship indicates that the smaller the size of the class to which the SGA examinees belong, the higher are their GSA scores. The null hypothesis between these variables was therefore rejected.

4.3 The SGA examinees' overall NCEE performance and the number of siblings in the family is described by a correlation coefficient of -.1339286 which is significant at the .02266177 level. This negative relationship indicates that the lesser number of siblings in the family, the higher the NCEE scores the students tend to be. This finding resulted to the rejection of the null hypothesis which asserts no significant relationship between overall NCEE performance and number of siblings in the family.

4.4 The computed correlation coefficient between the students' GSA scores and faculty performance is .2907972 which is significant at the .0000260 level. The null hypothesis of no significant relationship between overall NCEE performance and faculty effectiveness was therefore rejected.

4.5 A correlation coefficient of .3168825 was obtained between the overall NCEE performance and the teachers' teaching experience. This obtained r is highly significant at the .0000092 level. This finding led to the rejection of the corresponding null hypothesis.

4.6 With an obtained correlation coefficient of .040 which is not significant, the null hypothesis of no significant relationship between the SGA examinees' overall NCEE performance and the teachers' age was accepted.

4.7 The obtained r value between the students' overall NCEE performance and hours of actual teaching is -.2299783. This is highly significant at the .0008528 level suggesting a substantial degree of association between the examinees' GSA mean score and hours of actual teaching. The finding resulted to the rejection of the corresponding null hypothesis.

4.8 The correlation coefficient between the SGA examinees overall NCEE performance and their high school academic achievement is .6738005. This is very highly significant at the .0000000 level. The null hypothesis of no significant relationship between those two variables was therefore rejected.

4.9 The obtained simple correlation between overall NCEE performance and the students' grades in English, History, Physics and Mathematics are .658486, .5819476, .6865912, and .6310086, respectively. These were all highly significant (p =.0000000). The highest correlation obtained indicating substantial

relationship was between GSA mean score and Physics grade yielding a correlation of .68659. The findings between the GSA mean score and each of the academic grades led to the rejection of the null hypothesis.

5. When taken in combination, the students' grades in Physics, English, as well as class size and number of teaching hours are the only variables which significantly correlate with the students' GSA scores. The multiple correlation coefficient obtained between the GSA score and the combined effects of these five variables is .7554642 which is highly significant relationship was therefore rejected.

6. The obtained four canonical correlation coefficients between the dependent set of variables: Reasoning Ability, Mathematical Ability, Verbal Ability and Reading Comprehension and the set of independent variables: grades in English, History, Physics and Mathematics are: .70144, .32860, .26157 and .00100, respectively. Of these only the first three canonical coefficients are significant: the first two at the .0000 level and the third

at the .0278 level. This led to the rejection of the null hypothesis between the two sets of variables.

7. The multiple regression equation obtained through stepwise regression to predict the SGA examinees' overall NCEE performance (Y) based on their final grade in Physics (X_1), sex (X_2), class size (X_3), final grade in English (X_4), and number of teaching hours is:

$$Y -209.9168 \quad 3.934836X_1 \quad 33.42553X_2$$
$$-2.77795X_3 \quad 9.898434X_4 \quad 9.122159X_5$$

8. Predictors of Overall NCEE and Area Performance

The best predictors of the SGA examinees' overall NCEE performance are: Physics, Sex, Class Size, English Grade and Number of Teaching Hours, in that order.

The set of independent variables are all significant predictors of the first canonical variate of the set of NCEE performances. The best predictor is Physics achievement followed by achievements in English, Mathematics, and History. The null hypothesis of no relationship between the two sets of the aforementioned variables was therefore rejected.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

1. The St. Gregory graduates are relatively better than their division, regional, and national counterparts.

2. Mathematics is an area of weakness in the respondent school.

3. There are other variables not included in the study which could further explain the variance in the students' GSA score.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are offered:

1. Since Physics, English, Mathematics, and History are significant correlates of overall NCEE performance, more efforts should be exerted by the school administrators and the teachers toward improving supervision as well as strengthening and enriching the curriculum in these fields. Likewise, remedial instruction and individual consultations may be offered by the school to the students especially in the

area of Mathematics where the examinees were found to be relatively weak.

2. Since a significant positive relationship exists between NCEE performance and teaching performance, the school should strengthen the faculty development program to further maintain teaching effectiveness.

3. Since a highly significant negative relationship exists between NCEE performance and the number of actual teaching taken singly and in combination, the school should look into the possibility of decreasing the teaching loads of the teachers based on MECS (DECS) policies.

4. Since a significant negative relationship exists between the overall NCEE performance of the SGA examinees and class size, the school may likewise look into the possibility of reducing class sizes to comply with the requirements set by the MECS. If the school can not reduce class size due to financial constraints, then the teachers concerned should try to devise plans to give attention to students' individual differences.

5. As offshoots of this study, the following researches may be conducted:

5.1 Periodic similar studies by the respondent school to determine the strengths and weaknesses of the SGA graduates which will serve as bases for periodic curricular evaluation and development.

5.2 Replication of this study in other schools in the same division and region to verify its findings especially with regard to the correlates and predictors of NCEE performance.

5.3 An attempt could be done to identify factors, other than those investigated in this study, which may be related to students' NCEE performance.