

**A STUDY ON THE PREDICTORS OF ACADEMIC PERFORMANCE
OF THE COLLEGE OF ENGINEERING GRADUATES**

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by

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ABSTRACT

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This study was designed to determine the ability of the qualifying examination to predict the academic performance of the College of Engineering Classes 1995, 1996, and 1997. It further aimed to determine the other predictors of academic performance.

The population of the study was composed of the 123 students of the College of Engineering who graduated in 1995, 1996, and 1997 for whom complete data needed were available. These said data were coded and encoded and analyzed by computer using the Statistical Package for Social Sciences (SPSS) program for Windows, 1993 Version.

The predictors considered in this study were: High School General Average (HSGA), High School Math Final Grade, High School English Final Grade, English Placement Examination Scores, Intelligence Quotient, Differential Aptitude Tests-Numerical Ability (DAT-NA) Scores, Qualifying Examination Scores, General Average for the first two years in college, and performance in professional courses during third to fifth years in college. Academic performance is measured by the average grade obtained

during his entire stay in the College of Engineering and also that of his performance in professional courses during his third to fifth years in the College of Engineering.

Furthermore, this study tried to find out the variation of the groups when the population was classified according to sex, type of high school graduated from and major course taken.

Hypotheses of the Study

1. Students differ in their academic performance when grouped according to sex, type of high school graduated from and major course taken.
2. Students differ in their admission requirements, such as, high school grades; English placement exam scores; DAT-NA and IQ scores; qualifying exam scores when grouped according to sex, type of high school graduated from and major course taken.
3. Academic performance is significantly related to each of the following factors: Placement exam scores in English; High School General Average; High School Final grades in English and Math; DAT-NA and IQ scores and Qualifying Exam scores.
4. All of the factors cited are good predictors of academic performance of the College of Engineering students.

Major Findings

The pertinent results of the study were:

1. The profile of the population of the study shows that a typical CPU College of Engineering student/graduate is a male, a graduate of either a private or public high school who earned a mean HSGA, High School Math and English final grades that range

from 85 - 89, and chose EE as a major course in the College of Engineering. His scholastic profile in college shows that he earned an HPA that range from 1.76 - 2.50, and in the different examinations the following scores: between 71 - 80 in the English Placement (EP), 21 - 30 and 91 - 100 in the Differential Aptitude Tests- Numerical Ability (DAT-NA) and IQ respectively, and between 51 - 60 in Math Qualifying Exam (QE-Math), Chem/Phys Qualifying Exam (QE-Chem/Phys) and Final Qualifying Exam (QE-Final) and 41 - 50 in English Qualifying Exam (QE-Eng).

2. The means of High School General Average (HSGA), High School Final Grade in Math (HS Math), Math Qualifying Exam (QE-Math), Chem/Phys Qualifying Exam (QE-Chem/Phys), Final Qualifying Exam (QE-Final), General Average for the first two years in college (Gr 1-2), performance in the professional courses during the third to fifth years in college (Gr 3-5) and total academic performance (Gr 1-5) did not significantly differ when the graduates were grouped as to sex, type of high school graduated from, and major course taken. On the other hand, the differences between the means of scores of High School Final Grade in English (HS Eng), English Placement (EP), Differential Aptitude Tests- Numerical Ability (DAT-NA) and English Qualifying Exam (QE-Eng) were significant when the graduates were grouped as to type of high school graduated from. The groups formed according to sex and major course taken, did not significantly differ. There were significant differences in the mean scores in IQ when they were grouped according to sex and major course taken. Male and female graduates significantly differed in their QE-Eng scores.

3. The obtained coefficients of correlation between each of the 12 independent variables and total academic performance show that all of these variables are good

predictors of total academic performance. Likewise, the 11 independent variables were also found to be significantly correlated to performance in the professional courses, hence, these are good predictors, too. There is a significant, very high positive correlation between the independent variables, general average for the first two years in college (Gr 1-2) and performance in the professional courses during the third to fifth years in college (Gr 3-5), and total academic performance (Gr 1-5). This means that the higher the HPAs in the first two years in college and in the professional courses during the third to fifth years in college, the higher is the total HPA.

4. There is a significant, marked or substantial positive correlation between each of the following: High School Final Grade in Math (HS Math), English Placement (EP), Differential Aptitude Tests – Numerical Ability (DAT-NA), Intelligence Quotient (IQ), Math Qualifying Exam (QE-Math), Final Qualifying Exam (QE-Final), English Qualifying Exam (QE-Eng) and total academic performance in college. The same correlation is found also moreover, between performance in the professional courses during the third to fifth years in college and each of the following: High School Final Grade in Math (HS Math), English Placement (EP), Differential Aptitude Tests-Numerical Ability (DAT-NA), Chem/Phys Qualifying Exam (QE-Chem/Phys), and Final Qualifying Exam (QE-Final). This result indicates that students who perform well in these subject areas tend to perform well along these areas also in college. In other words, a student who got a high score in the EP and DAT-NA for example, may also get a high grade in English and Math courses in college respectively.

5. There is a significant, slight positive correlation between total academic performance and each of the following: High School General Average (HSGA), High

School Final Grade in English (HS Eng), and Chem/Phys Qualifying Exam (QE-Chem/Phys). Likewise, the same correlation exists between performance in the professional courses during the third to fifth years in college and each of the following: High School General Average (HSGA), High School Final Grade in English (HS Eng), Intelligence Quotient (IQ), English Qualifying Exam (QE-Eng) and Math Qualifying Exam (QE-Math).

6. An analysis of the regression coefficients of the 10 scholastic variables on total academic performance shows that High School Final Grade in Math (HS Math), English Placement (EP) and Chem/Phys Qualifying Exam (QE-Chem/Phys) are the best predictors of total academic performance. Meanwhile, the only and best predictor of performance in professional courses during third to fifth years in college is the general average for the first two years on college.

Conclusions

On the basis of the findings of this study, it seems reasonable to conclude that:

1. The three background variables namely, sex, type of high school graduated from, and major course taken can affect the performance of the College of Engineering graduates in High School Final Grade in English (HS Eng), English Placement (EP), Differential Aptitude Tests-Numerical Ability (DAT-NA), Intelligence Quotient (IQ) and English Qualifying Exam (QE-Eng). There were significant differences in the mean scores between groups formed according to type of high school graduated from in the following: High School Final Grade in English (HS Eng), English Placement (EP), Differential Aptitude Tests – Numerical Ability (DAT-NA), and English Qualifying

Exam (QE-Eng). The differences between the mean scores of IQ were significant when the graduates were grouped according to sex and major course taken. Male and female graduates significantly differed in their mean scores in the QE-Eng.

2. High School Final Grade in Math (HS Math), English Placement (EP) and Chem/Phys Qualifying Exam (QE-Chem/Phys) are the best predictors of total academic performance of the College of Engineering graduates. Meanwhile, the general average for the first two years in college is the only and best predictor of performance in professional courses during their third to fifth years in college.

3. Chemical Engineering graduates significantly did better compared to Electrical Engineering graduates in their performance in the professional courses during their third year to fifth years in college.

Recommendations

The foregoing findings lead to the following recommendations:

1. Since HSGA is proven to be a predictor of the general average for the first two years in college, it is important that the College of Engineering raises the cut-off HSGA for admission to the College.

2. Other variables not considered in this study should be explored such as personality, values, study habits and attitudes.

3. The College of Engineering should adhere to the selective admission and retention policy of the college.