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An Analysis of NTE Scores and Quality Point Averages of Selected SSC Graduates from 1961 through 1966

by

Martha W. Wilson

The National Teacher Examinations are required at Savannah State College as senior comprehensive examinations for students majoring in the Division of Education. Each senior is required to take both the Teaching Area Examination in his major area of concentration and the Common Examinations. The Common Examinations are included in this requirement on the assumption that every prospective teacher should be able to demonstrate reasonable competence with respect to professional knowledge, general culture, English usage, and mathematics skills. Their value as a comprehensive is enhanced by the fact that scores on the various parts of the Common Examinations are scaled so that comparisons may be made among them for a given student or among groups in a given institution from year to year. The Teaching Area Examinations cover subject matter areas such as areas of major concentration. For the most part, these tests are devoted to problems of teaching the subject matter, but concern is also shown for subject matter competence. The National Teacher Examinations do not purport to assess anything other than knowledge assimilated and few experts deny that they achieve this objective. In general, it may be said that, in these tests, understandings are emphasized rather than rote recall of information. While, knowledge of subject matter is not sufficient to assure teacher competence, certainly it is necessary to the attainment of true competence. To this extent, then, performance on this test becomes an important consideration for college seniors in the field of Education. In addition, many geographical areas have established minimum scores on NTE as prerequisites for teacher employment.

This study was made to determine (1) whether there does exist any significant relationships between NTE scores of SSC graduates and their academic achievement as measured by quality point averages in the subject matter areas with which the tests are concerned and (2) whether there are significant differences among groups of students classified according to area of major concentration with respect to NTE scores and quality point averages.

Included in the sample studied were SSC graduates from 1961 to 1966 for whom all desired items of data were available. Since their part scores on the Common Examinations were not available, graduates of the year 1963 and 1965 were excluded. Music education majors were omitted in classifying students according to area of concentration since there were too few for consideration.

NTE data utilized for each student included these scaled part scores on the Common Examinations: professional information, mathematics

and science, and English; the composite scaled score on the Common Examinations; and the scaled score on the Teaching Area Examination. Cumulative quality point averages were computed for each student on the basis of grades earned in college courses in each of the following subject matter areas: education, mathematics and science, English and the student's major area. These were considered in addition to the over all cumulative quality point average at graduation. Intercorrelations between NTE scores and the related quality point averages were computed. All mathematical computations for this study were made on the IBM 1620 Computer at Savannah State College. The composite scores on the Common Examinations have a possible range from 300 to 900. The part scores and scores on the Teaching Area Examinations may range from 30 to 90 and the quality point averages range from 0 (F) to 4.0 (A).

**TABLE 1. STATISTICS NTE SCORES OF
1961-62-64-66 SSC GRADUATES**

N = 272

	Prof. Info.	Math & Science	English	Composite NTE	Teaching Area
Mean	45.0	44	43	436	47
S. D.	4.7	7.1	8.1	57	6.4

**TABLE 2. STATISTICS ON QUALITY POINT AVERAGES
OF 1961-62-64-66 SSC GRADUATES**

N = 272

	Education Av.	Math & Science	Eng. Comp.	Cum. QPA	Major Av.
Mean	2.8	2.4	2.2	2.5	2.7
S. D.	.48	.59	.54	.38	.43

**TABLE 3. INTERCORRELATIONS BETWEEN NTE
SCORES AND QUALITY POINT AVERAGES OF
1961-62-64-66 SSC GRADUATES**

N = 272

	Education Average	Math & Science	Eng. Comp. Av.	Cum QPA	Major Average
Prof. Info.	.46	.51	.23	.58	.36
Math & Science	.25	.36	.14	.40	.33
English Score	.45	.50	.32	.61	.37
Composite Score	.50	.57	.27	.66	.46
Teaching Area	.28	.27	.05	.30	.34

One might expect that quality point averages in the respective academic areas would have a high positive correlation with scores on the related sections of the Common Examinations. Table 3 shows the results of these computations. The correlation coefficients (r) located on the diagonal represent the strength of the relationships between academic achievement in given areas and scores on the related tests. The correlation between the 4 year cumulative quality point average and the composite score on the Common Examinations was found to be .66 with a standard error of .06. This " r " is highly significant statistically as well as from a practical point of view. However, the other values of " r " on the diagonal of Table 3, although indicating definite positive relationships between the variables, are too low for the purpose of prediction.

The total group was then classified according to major areas of concentration and the following measurements on each student were considered: composite NTE score, cumulative quality point average, and score on the Teaching Area Examination. Table 4, Table 5, and Table 6 show the means and standard deviations computed for each major area.

TABLE 4. STATISTICS ON NTE COMPOSITE SCORES BY MAJOR AREAS

	Phys. Ed.	El. Ed.	Ind. Ed.	Bus. Ed.	Gen. Sci.	Soc. Sci.	Math	English	Total
N	25	90	20	19	18	32	32	32	268
Mean	410	418	419	431	445	449	476	480	438
S. D.	59	44	47	60	45	59	55	60	57

TABLE 5. STATISTICS ON QPA BY MAJOR AREAS

	Phys. Ed.	El. Ed.	Ind. Ed.	Bus. Ed.	Gen.	Soc. Sci.	Math	Eng-lish	Total
N	25	90	20	19	18	32	32	32	268
Mean	2.44	2.45	2.36	2.61	2.49	2.57	2.80	2.79	2.56
S. D.	.25	.28	.26	.55	.40	.38	.48	.45	.40

TABLE 6. STATISTICS ON TEACHING AREA SCORE BY MAJOR AREAS

	Phys. Ed.	El. Ed.	Ind. Ed.	Bus. Ed.	Gen. Sci.	Soc. Sci.	Math	English	Total
N	25	90	20	19	48	32	32	32	268
Mean	49	48	48	48	44	46	45	46	47
S.D.	5.6	5.4	5.1	6.3	4.8	5.3	5.5	6.0	5.7

The data in Table 4 and Table 5 seem to indicate that there may be among these major groups differences that are significant. On the

basis of their mean NTE scores, elementary education, physical education and industrial arts education seemed to be similar enough to be grouped together (PIE). Similarly, general science, social science and business education were combined (GSB) and in the same way, mathematics and English majors (ME). Table VII shows the means and standard deviations calculated for the three combined groups PIE, GSB, and ME.

TABLE 7. STATISTICS ON NTE, QPA, AND TEACHING AREA SCORES

PIE = Phys Ed + Ind Ed + El Ed GSB = Gen Sci + Soc Sci + Bus Ed ME = Math + English

	PIE		GSB		ME	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
N	135		69		64	
NTE	417	46	443	56	479	57
OPA	2.48	.28	2.56	.44	2.81	.46
Teach. Area	48	5.4	46	5.6	46	5.7

In order to determine whether the mean composite scores on NTE, mean quality point averages or mean scores on Teaching Area Examinations differ significantly among these three combined groups, the technique of analysis of variance was employed. The author tested the hypothesis that there were no significant differences among these means. Table 8 shows the analysis of variance of the three combined groups of majors with respect to NTE composite scores.

TABLE 8. ANALYSIS OF VARIANCE OF THE THREE COMBINED MAJOR GROUPS WITH RESPECT TO NTE COMPOSITE SCORES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Among Means of Groups	2	170,944	85,472
Within Groups	265	691,173	2,608

$$\frac{85,472}{2,608} = 32.8 \quad P < .05$$

The F ratio has the value 32.8 which corresponds to a probability of less than .05. Therefore, we may reject the null hypothesis at the 5% level of significance and state that the variation among the mean NTE composite scores of these three groups is significant.

TABLE 9. ANALYSIS OF VARIANCE OF THE THREE COMBINED MAJOR GROUPS WITH RESPECT TO QUALITY POINT AVERAGES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Among Means of Groups	2	6.52	3.26
Within Groups	265	36.95	.14

$$F = \frac{3.26}{.14} = 23.3 \quad P < .05$$

Table IX shows the analysis of variation among the mean quality point averages of the three combined major groups. The F ratio has the value 23.3 which corresponds to a probability of less than .05. Again, we may reject the null hypothesis at the 5% level and state that there appear to be some significant differences existing among these mean quality point averages.

TABLE 10. ANALYSIS OF VARIANCE OF THE THREE COMBINED MAJOR GROUPS WITH RESPECT TO SCORES ON TEACHING AREA EXAMINATIONS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Among Means of Groups	2	311	155.5
Within Groups	265	8210	31

$F = \frac{155.5}{31} = 5.0$ $P \text{ is } > .05$

Table 10 shows the analysis of variation among the means of the scaled scores made on the Teaching Area Examinations by the three combined major groups. The F ratio of 5.0 is inconclusive since its corresponding probability of chance occurrence is greater than .05.

Since the three combined groups are mutually independent, the decision was made to test the significance of the differences between the means of the respective groups for NTE composite scores, quality point averages, and scaled scores on Teaching Area Examinations. When the critical ratio of the difference between successive means to its standard error was computed, in every case except one the value of "t" ranged from 2.2 to 3.3 with corresponding probabilities of chance occurrence from .03 to .002. The difference which was not statistically significant was that between mean scores of GSB and ME on the Teaching Area Examinations.

The results of this analysis seem to indicate that there is little correspondence between quality point averages achieved by students in certain subject matter areas and scores attained on related sections of the National Teacher Examinations. However, the cumulative quality point average at graduation has a high positive correlation with the composite score made by the student on the Common Examinations. It seems also that there are significant differences among students in the several areas of major concentration with respect to mean composite scores on NTE, mean quality point averages, and mean scores on Teaching Area Examinations. It is interesting to note that the combined groups having the lowest mean composite NTE scores and lowest mean quality point averages had the significantly higher mean scores on the Teaching Area Examinations.

Implications

The results of this study are by no means conclusive; however, the need for further investigation seems to be definitely indicated in order that questions such the following may be answered.

1. Is the lack of correlation between quality point averages in subject matter areas and scores on related sections of NTE due to the notorious unreliability of teachers' grades or do the goals of the classroom differ from those tested in NTE?
2. Are there factors operating at Savannah State College which cause the student body to be stratified with respect to these measures considered here and perhaps others?
3. Is it significant that each of the major groups having the highest mean score on the Teaching Area Examinations also includes within its curriculum at least one course in special methods of teaching area subject matter?