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ABSTRACT

A comprehensive guidance program aimed at predicting chances of success in a student's choice of programs in community college and occupational programs, this project was undertaken during the fall of 1971 at Wayne Community College. The subjects used were those seniors from the five high schools who were interested in one of the vocational technical programs offered at the college, recent graduates of the college, and currently enrolled sophomores. A number of instruments such as the School and College Aptitude Test (SCAT), the Otis-Lennon J., Advanced Level Test, and College Qualification Test (CQT) were administered to participants in order to obtain generalizable results. Findings indicated that the CQT was the more accurate of the three tests in predicting grade point average, therefore predictive models based on the principle inherent in the CAT were developed for both the technical and vocational skill areas. The models include a percentile range on chances in 100 of earning the quality point average, giving rise to the expectation that applicants who are admitted as students can be expected to earn a "B" or "A" in more cases than previously were seen. (Author/SN)

PREDICTIVE MODELS FOR SUCCESS IN OCCUPATIONAL EDUCATION

WAYNE COMMUNITY COLLEGE

DECEMBER, 1972

OCCUPATIONAL RESEARCH PROJECT FINAL REPORT
Vocational Education Amendments of 1968 (Public Law 90-576)
(Title I - Part C)

PREDICTIVE MODELS FOR SUCCESS IN OCCUPATIONAL EDUCATION

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I. ABSTRACT

This study in the development of a comprehensive guidance program to predict chances of success in a student's choice of program was undertaken during the fall of 1971 at Wayne Community College, Goldsboro, North Carolina. The objectives of this research were

A. To design, develop, and operate an "efficient program of occupational and educational guidance within Wayne County through the Goldsboro City Schools, Wayne County Schools, and Wayne Community College."

B. The development of a model to predict success in community college programs and especially in occupational programs. The admissions procedures developed by the Student Personnel Services at the college includes

1. the accumulation of information regarding a student's previous academic experiences
2. recommendations from teachers and counselors
3. placement tests of basic skills learned
4. interviews with counselors and college staff
5. additional testing as desired

The rationale in the procurement of this information is to enable the student to be placed in a program in which he is interested and in which his abilities indicate the likelihood of success. In spite of these efforts some students succeed and

others do not. In this study success is measured by successful completion of the program. It was felt that by studying the information available on students who have succeeded and on students who are near completion, a pattern of scores and skills would emerge. By comparing a potential student's record with this pattern a counselor could predict the level of success this student might experience.

Through a series of visits to the five high schools within the immediate area of Wayne Community College, discussions were held with the counselors concerning 1) a need for the development of a model to predict success in vocational/technical programs; 2) testing practices currently used; 3) problems; and 4) needs. The subjects used in this experiment were those seniors from the five high schools who were interested in one of the vocational/technical programs offered at Wayne Community College, recent graduates from these programs at Wayne Community College, and the currently enrolled sophomores in these programs. Data for both the high school seniors that were tested and enrolled in the fall of 1972, the graduates, and the currently enrolled sophomores at Wayne Community College was 272. Withdrawals due to disinterest and transfers to college transfer reduced the original number to this final figure.

The instruments currently used for students enrolled at Wayne Community College is the School and College Aptitude Test, Form 1A (SCAT), and the Otis-Lennon J., Advanced. An extensive study of evaluative instruments was pursued, and from this evaluation the instrument which appeared to be most applicable for testing the high school seniors was the College Qualification Test (CQT). Although the SCAT and CQT for freshman year academic performance in the vocational programs gave evidence that students earn a "C" average in only 67 cases out of 100, the CQT gave evidence that students, as a group, also could be expected to earn a "B" in 33 cases out of 100. Students in the technical programs with a SCAT score in the 11-20 percentile range, as a group, gave evidence of earning a "C" in only 60 cases out of 100, but the results of the CQT gave evidence that students as a group could be expected to earn a "B" in 36 cases out of 100. The findings reported support the CQT as more accurate in predicting grade point average than verbal and numerical scores resulting from the use of the SCAT.

Utilizing the results of these findings as the base and after extensive deliberation, it was determined that two predictive models should be designed for best results. Since occupational programs are separated into technical and voca-

tional areas requiring different skill areas, a model was developed for each of these areas. The models include a percentile range or chances in 100 of earning the quality point average (as equated to alphabetical grades), giving rise to the expectation that students can be expected to earn an "B" or "A" in more cases. An overall general conclusion which might be drawn from the two models in that prediction will be accurate in 60 cases out of 100. This assumes a normal distribution of motivational and other factors which cause students to appear to perform at a higher level than they should.

The objective to operate "an efficient program of occupational and educational guidance within Wayne County through the Goldsboro City Schools, Wayne County Schools, and Wayne Community College," at the onset of this research, is gradually taking form and eventually will become a reality.

II. THE PROBLEM

A. General Statement of the Problem

The purpose of the study was to develop a significant battery of occupational testing and guidance procedures that would provide the student with meaningful information for selection and placement with chances of success in occupational education. The subjects used as the experimental group were seniors from the five local high schools, who were interested in pursuing one of the vocational or technical programs offered at Wayne Community College. The control group comprised the recent Wayne Community College graduates from these programs, and the currently enrolled sophomores in these programs at Wayne Community College.

B. Rationale for Project

The community college system in North Carolina represents a major source of educational opportunity for most of its citizens. Over 95% of the population in North Carolina live within commuting distance of the fifty-four institutions.

Investigation has shown there is a very obvious socio-economic hierarchy in the community college program --- it is not surprising to find that the same hierarchy that operates in family income, education, and job status operates in racial mix. Minority groups are not well represented in the

college transfer program, but the percentage of minorities in the total sample of the community college population is 8%. Thus, the technical and occupational curriculums draw a somewhat higher proportion of minority students.[1] The Student Personnel Services at Wayne Community College have for a long period of time been aware of these interrelated factors that determine whether students entering the college will complete their educational objectives. Since for most students the community college will be the final organized educational experience, placement in a program where success is possible and probable becomes vital. For placement to be valid, it must be based upon a realistic choice by the student, and realistic choices require adequate information.

The model to be developed will provide valuable information for individual students, the public schools, and the college. Ultimately, the model will enable the college to predict success for occupational students, provide information for articulation between secondary and post-secondary institutions, and enable students to develop realistic career plans.

C. Need for the Project

Wayne Community College conducts systematic evaluations of how well the college is doing in providing for the needs

of students through vocational and technical education. When a student seeks admission to Wayne Community College, the suggested model (Figure 1) indicates the way in which the admission procedures progress. The process is continuous, cyclical, and requires feed-back into all parts of the educational system. In the sections which follow the admission procedure, including initial testing, specific uses of test score information, special testing for individuals; then with testing needs and problems; faculty and student attitude toward testing; and finally, suggested recommendations.

1. Initial Testing

This section will cover the testing conducted at Wayne Community College involving the administration of standardized tests to entering freshmen students. The specific tests used are SCAT, Form I-A, and the Otis-Lennon J., Advanced Level. These tests are administered to the entire enrolling group and the results used for several purposes:

a. Selective admission: the test scores as one of the factors used in making the decision to consider or reject an applicant for the nursing and dental programs.

b. Guidance and counseling: the test scores are used

URE 1 STUDENT PERSONNEL SERVICES

Admissions
Information
Admission Application
Request for High School Transcript
College Transcript Form
Medical Form
Veteran's Administration Forms
Other Relevant Materials

Schedule Test & Interview with Counselor
Prepare Packet for Counselor
Application
Transcript
Other Relevant Material
Packet to Counselor's Secretary

Acceptance
(All except Health & Dental Occup.)
1. Copy to Counselor's Secretary
2. Copy in Packet
3. Packet to Advisor

Health and Dental Occupations
1. Schedule Interview with Department Head
2. Copy to Counselor's Secretary
3. Copy in Packet
4. Packet to Dept. Chairman

Interview
1. Admissions Counseling Report to Registrar's Office
2. Acceptance or Reschedule with Counselor

Dean of Students

Testing	Work-Study	Laison With:
Counselors	Housing	Student Government Assoc.
Vocational Rehabilitation	Health Room	Academic Departments
Veteran's Affairs	Job Fair	Evening Extension
Recruitment	Job Placement	Youth Center(Cherry Hosp.)
Graduati	Financial Aid	Seymour Johnson AFB
College Day		Community Agencies
Career & Educational Information Center		Public & Private Schools
		Colleges & Universities

Test - A.M.
Administer and Score
Scores in Packets to Coun.

Counselors & Interview - P.M.
Evaluation and Discussion of:
1. Grade Point Average
2. Test Results
3. Credit for Courses Transferred
4. Curriculum Requirements
5. Advancement Studies -(if needed)
6. Emotional - Socio-economic
7. Advisor
8. First Quarter Courses
9. Grading and Quality Point System
10. Registration and Costs
11. Student Government Activities

Special Testing

ACT(American College Testing)	Manual Dexterity Tests
Dental Hygiene Aptitude Tests	Personal Values Survey
GED(General Education Development)	Study Habits & Aptitudes Survey
Interest Inventories	Temperament Schedules

by the guidance staff in the placement of students in different levels in preparation for the program of choice. Test scores, with counselor evaluation, are routinel, forwarded to faculty advisors on all their adviseec.

2. Initial Use of Interest Inventories

This category of information is used primarily for those individuals not sure of a specific goal. The most frequently used inventory is the Kuder Vocational Preference administered to vocational and technical students, and the Kuder DD to college transfer and selected technical students.

3. Special Tests

The guidance personnel administer the

a. Study Habits and Attitude Survey (Brown and Holtzman) to all entering freshmen in Agricultural and Biological Sciences. Any student showing a need for further guidance in these areas are given individual counseling.

b. The Thurstone Temperament Schedule is administered upon request of any instructor to their groups of students.

c. The Edwards Personal Preference, and Thurstone

Temperament Schedule is administered to the Mental Health Associate students. In addition to the above mentioned inventories, these and others are also used on an individual basis as the need arises.

4. Testing Needs and Problems

a. Need for shorter tests: Primarily the amount of time spent in testing, particularly in the initial testing.

b. Need for a comprehensive testing center encompassing all the educational institutions, thereby avoiding the possibility of over testing students.

c. Misuse of test information: Concern is felt deeply in situations where test information is used to evaluate individual students.

d. Test administration: This area cites the problem faced in having inadequate testing facilities; problems of adequate test security, including lack of proper facilities for storage of tests.

5. Faculty and Student Interest in Testing

In general, the majority of the faculty members have "an interest" in the results of standardized tests administered to students. There appears to be a few

faculty members that seem to place too much reliance on the information obtained from tests, and appear to not recognize the limitations of this kind of information. Most students express some interest in the test results, and a smaller number place a great deal of emphasis on the information. The consensus of opinion among most students though is that they are "test weary" and question the use of tests as a criteria in determining their potential aptitudes.

6. Recommendations

a. A preparatory program of study for those students who do not meet the requirements of their curriculum. Each department will have to prescribe its own formula for aiding students to have the preparation they need in order to succeed in the field of study they have chosen.

b. A complicating factor is that there are a number of levels of weakness with which we must deal. Some students will need to be exposed to a basic preparatory program. Others will have only limited weaknesses which may be removed without too much difficulty.

c. In dealing with the student who is generally weak

there appears to be two basic alternatives available, (1) a quarter or more, if necessary, of preparatory study in reading, English, mathematics, and physical science (a science test is not part of the present test battery); (2) the other alternative involves assigning the student a reduced load. The same preparatory courses may be assigned, and where practicable, certain of the major courses. Care must be taken, however, to ensure the student is not overloaded during his first year.

d. There is an obvious need that some objective criterion must be established for successful completion of the preparatory program. It would be most inappropriate to merely certify that the student concerned has attended the required classes. The most appropriate criterion would be a retesting with another form of the tests used in the admissions battery.

e. It is also suggested that applicants with minor academic weaknesses might be accepted tentatively on the condition that they resolve their academic weaknesses.

The administration of the college felt that for this situation to exist the Goldsboro City Schools, Wayne County Schools and Wayne Community College would need to establist and maintain close coordination and cooperation. Through the assistance and leadership of the guidance staff from the public school units an effective area guidance program would evolve. The primary concern of this research is the development of a model to predict and enhance chances of success in the student's program of choice.

D. Summary of Related Literature

In the review of literature relevant to the study, it was discovered that extensive research has been conducted, not only pertaining to the role of the community college in providing for the needs of students through vocational and technical education, but also of all youth who are found to be disadvantaged academically and deprived in the social, psychological, economic, political and cultural factors. Foundations of Behavioral Research[2] and Elementary Statistics[3] were diligently studied. Correlation studies were performed using the Pearson Product linear co-efficient correlation to determine degree of relationship between high school GPA and Wayne Community College QPA. Trends in Post-Secondary Education and Educating the Disadvantaged were also re-

searched extensively. Journals, dissertations, yearbooks, volumes and tests were also used as research sources.

III. OBJECTIVES

The objectives of this project as stated in the abstract of the proposed project was design, develop, and operate an efficient pilot program of occupational testing and guidance within Wayne County under the guidance and direction of Wayne Community College. The three-fold objectives of the project were as follows:

A. Coordination and effective liaison between the local high school units and Wayne Community College. The combined efforts of these agencies will provide more of the necessary resources and skills, will delete duplication, and will be comprehensive in approach.

B. Provide information that will enable students to develop realistic career plans.

C. Development of a predictive model that might be used by the high schools and Wayne Community College counselors as an additional tool for the guidance of students in assessing chances in the program of choice.

IV. PROCEDURES

A. Design Criteria

Preceding the construction of the model for this research in the summer of 1971, Wayne Community College hosted a counselor workshop for public schools to provide information about the college and to improve individual competence through North Carolina State University faculty presentations. As a result of this workshop the concept evolved that an attitude change regarding occupational programs had emerged. The apparent interest generated by the public schools' personnel brought forth a request for more in-depth exploration. Another workshop hosted by Wayne Community College was conducted during the summer of 1972, placing emphasis on vocational and technical programs offered.

During the academic year of 1971-72 conferences were held with counselors at each of the five high schools in Goldsboro and Wayne County for the purpose of

1. determining the number of seniors indicating an interest in one of the vocational/technical programs offered at Wayne Community College.
2. distributing questionnaires to be completed by those seniors.
3. arranging a time schedule for the administration of the

College Qualification Test to those seniors planning to enroll at Wayne Community College during the fall of 1972. A listing of the institutions visited is contained in Figure 4.

The instrument presently used at Wayne Community College in the placement of students is the SCAT, and during the study of evaluative tests, the decision was reached that the instrument most applicable for this study in testing the seniors from the five high schools would be the College Qualification Test.

Based on findings in the 6th Mental Measurement Yearbook[4] referring to Ralph F. Berdie "items in the vocabulary section of the CQT require the student to select from four words the one that means the same or about the same as or opposite of the fifth word." Berdie remarks further that since the 1920's such vocabulary test has proved to be among the best predictors of college success. The numerical items consist of simple problems in mathematics covering fractions, decimals, square root, elementary algebra, and simple geometry. The information test consists of items dealing with a) physics, chemistry, and biology; b) history, government, economics, and geography. The items call for knowledge of facts and terminology and are designed to measure

how much information the student has at his command rather than how much he can use or interpret (this information) to solve problems. The conclusion of the information test gives that battery an advantage over most competing measures of scholastic appitude -- validity co-efficients show that this test is slightly more predictive of GPA than verbal and numerical tests.

Tiedman states, "The CQT can be used for selective admission to college placement of students in sections (provided SCAT was formerly used for this purpose)."[5]

B. Population and Sample

The subjects used for this research study involved recent graduates from the vocational and technical programs, currently enrolled sophomores in these programs at Wayne Community College and seniors from the five high schools interested in a vocational or technical curriculum. The recent graduates and currently enrolled subjects were in either the one-year vocational programs or the two-year technical associate degree programs. The total number consisted of 50 graduates and 159 sophomores. Due to attrition and switching over to college transfer, the actual number of sophomores participating in the research study was 112.

The College Qualification Test was administered to a

total of 224 seniors from the five high schools. Sample size varied from 12 to 77 students for the five high schools. From this number 110 students enrolled at Wayne Community College in the fall of 1972. This made a total of 272 subjects participating in the study. See Figure 2. The measures used for the fifty graduates and the 112 sophomores were high school grade point average (GPA), and Wayne Community College quality point average (QPA). The measures used for the 110 freshmen enrolled in the fall of 1972 were the high school GPA and the College Qualification Test total score. One of the objectives in the study was to attempt the development of a predictive model as one of the tools used to guide students in the assessment of their chances in succeeding in the program of choice. During the conference with the counselors at the five high schools it was decided that a short questionnaire be given to each of the 224 participants. (See Appendix I.) From this, 200 replied stating causative factors regarding choice of school and curriculum as summarized in Figure 3.

C. Implementing the Study

During the academic year 1971-72 visits were made to the five high schools in Goldsboro and Wayne County to secure the completed questionnaires giving a brief resume of the

FIGURE 2

Curriculum	1971 Graduates	1972 Sophmores	1972 Freshmen	Total
Accounting	3	6	3	12
Business Administration	5	17	13	35
Electronic Data Processing	-	2	8	10
Executive Secretary	8	20	23	51
Medical Secretary	1	8	11	20
Aviation	1	2	-	3
Fish & Wildlife	-	4	3	7
Forest Resources Tech.	3	1	4	8
Livestock & Poultry	3	2	1	6
Recreation & Grounds	2	-	2	4
Associate Degree Nursing	-	7	4	11
Dental Hygiene	2	3	2	7
Mental Health Associate	-	7	9	16
Drafting & Design	1	8	4	13
Electronics Engineering	2	3	6	11
Industrial Engineering Tech.	-	-	1	1
Automotive Technology	-	5	6	11
Auto-Body Repair	-	-	2	2
Auto-Diesel	-	4	1	5
Machinist	2	1	-	3
Watchmaking	-	2	-	2
Welding	-	1	-	1
Dental Assistant	3	5	6	14
Practical Nursing	14	4	1	19
Total	50	112	110	272

FIGURE 3

Causative Factors in Choice of School and Curriculum

	NUMBER	PERCENT
Cost of Education of Prime Importance	3	.02
High School Courses as Influence	53	.26
Monetary Gain Derived from Choice of Career	12	.06
Family Influence	14	.07
Desire to Help Humanity	50	.25
Outside Influences	22	.11
Undecided	2	.01
Self-Concept	4	.02
Thought Choice "Would be Interesting"	40	.20

FIGURE 4

SCHEDULE	QUESTIONNAIRES	(CQT) TESTING DATE
Charles B. Aycock	February 2, 1972	February 9, 1972
Eastern Wayne	January 14, 1972	January 26, 1972
Goldsboro City	December 17, 1971	February 18, 1972
Rosewood	November 19, 1971	December 6, 1971
Southern Wayne	January 17, 1972	February 16, 1972

seniors' vocational or technical goals, and to administer the College Qualification Test to those seniors planning to enroll at Wayne Community College during the fall of 1972. A listing of the institutions visited is shown in Figure 4.

The researcher was responsible for the administration and scoring of the tests. This procedure was used with all the institutions to reduce the chance of any administrative errors during the administration of the test. The collection of the data on the recent graduates and currently enrolled sophomores at Wayne Community College was initiated during the fall of 1971 and tabulated separately. The measures used for these two groups of subjects were high school grade point average and Wayne Community College quality point average.

D. Evaluation of the Data

The method selected for determining the degree of relationship between the two variables - GPA and QPA - was the product-moment coefficient of correlation, the Pearson "r". The primary reason for selecting this type of analysis was influenced by an excerpt taken from Test Service Bulletin as follows:

> A correlation coefficient is not a judgement - it is only a number summarizing the relationship of two sets of facts to each other. -- But the more basic more meaningful step - which must be taken by the

> counselor, the teacher, the administrator - is to look at the coefficient as a clue to further investigation. This investigation should include not only the test, but also the criterion, the population and any other factors which might have influenced the state of affairs which the coefficient describes. [6]

The first step was to group the scores of the 50 graduates and the 159 currently enrolled sophomores from Wayne Community College into classes so that a single number might be secured which expresses the extent of relationship between the two variables. The second step involved grouping the GPA and CQT total scores into classes for the 110 high school seniors enrolled at Wayne Community College in the fall quarter, 1972. This information was computed by hand on individual sheets.

The statistical method used in this study was the Correlation Coefficient, "r". This method provides a quantitative measure of the relationship between two variables. The Grade Point Average and the Quality Point Average was used as variables for the Wayne Community College graduates and currently enrolled sophomores. The variables used for the high school seniors who enrolled at Wayne Community College in the fall of 1972 were Grade Point Average and College Qualification Test, Total Score. The term "correlation" refers to the degree of relationship between two sets of scores, and

despite its appearance, the coefficient of correlation should not be thought of as a percentage. Furthermore, all observed correlation does not mean that either variable causes the other, but that owing to a large number of factors any attempt toward classification of success in any curriculum is rarely successful, and even when accomplished, may suffer limitations and inconsistencies.

The data reported in Table I and II represent a classification and summary of the testing information obtained. The group relationship between GPA and QPA for the Wayne Community College graduates and Wayne Community College currently enrolled sophomores were closely related. In evaluating the significance of the obtained "r", the number of "degrees of freedom" was computed. The "t" ratio was not significant at either the .05 level, or .01 level.

The data reported in Table III represents an analysis of Grade Point Average means and the percentile means of the College Qualification Test total scores for the high school seniors entering Wayne Community College in the fall of 1972. The data reported in Table IV represent an analysis of the group means SCAT total score equivalent to the group mean CQT total score.

V. RESULTS

The models as represented in Charts I and II depict freshman year academic performance. Charts I and II indicate on the vertical scale the percentile ranges of the "Total" School and College Aptitude Test (SCAT) scores for the fall, 1972 incoming students at Wayne Community College in Goldsboro, North Carolina. The numbers appearing in each cell reflect the percentages or chances in 100 of earning the quality point averages (as equated to alphabetical grades) listed on the horizontal scale. From the results reported in Chart I, it has been shown that Wayne Community College students in technical programs with a "total" SCAT score in the 11-20 and 31-40 percentile range have, as a group, earned an acceptable quality point average (2.0 or "C") in only 60 cases out of 100. On the other hand, students in the vocational programs (Chart II), even with such a small sample, in the 11-20 percentile range have earned a "C" average in 67 cases out of 100.

The results reported in Chart III using the College Qualification Test (CQT) Form C, indicate that for technical programs with a "total" CQT score in the 11-20 percentile range will as a group earn an acceptable QPA (2.0 or "C") in only 53 cases out of 100, but this same group could be expected to earn a "B" in 36 cases out of 100. Applicants in the vocational programs (Chart IV) earning scores in the 11-20 percentile range could be expected to earn

"C" average in only 67 cases out of 100, but this same group could be expected to earn a "B" in 33 cases out of 100.

Based on the data reported above, the predictive models are represented in Charts V and VI. Chart V indicates on the vertical scale the percentile ranges of the placement test. The numbers appearing in each cell reflect the percentages or chances in 100 of earning the quality point averages (as equated to alphabetical grades) listed on the horizontal scale. From the results reported in Chart V, it might be predicted that Wayne Community College applicants in technical programs with a score in the 31-40 percentile range will as a group earn an acceptable quality point average (2.0 or "C") in only 60 cases out of 100. On the other hand, as a group, they might be expected to earn a "B" in 20 cases out of 100, and an "A" in 5 cases out of 100. Applicants in the vocational programs (Chart VI) earning scores in the 21-30 percentile range could be expected to earn a "C" in 60 cases out of 100, and earn a "B" in 10 cases out of 100. In the interest of clarity, it should be pointed out that educational qualifications are somewhat higher for applicants in the technical programs as opposed to the vocational programs. As a result, in the final analysis, consideration for any program should be based on evaluation rather than measurement. Since test results cannot define the whole person, all factors relating to a person's behavior must be considered in the making of any judgements about that person.

CHART I

Freshman Year Academic Performance

SCAT Technical Programs		(1.0-1.9) D=70-76	(2.0-2.9) C=77-84	(3.0-3.9) B=85-92	(4.0) A=93-100
Doubtful	N=14 1-10	50%	40%	10%	-
Hopeful	N=22 11-20	20%	60%	20%	-
	N=11 21-30	10%	40%	50%	-
	N= 8 31-40	10%	60%	30%	-
	N=13 41-50	20%	30%	50%	-
	N=10 51-60	-	60%	40%	-
	N=10 61-70	-	40%	60%	-
	N= 4 71-80	-	50%	30%	20%
	N= 2 81-90	-	50%	50%	
	N= 3 91-100	-	-	70%	30%

N=97

CHART II

Freshman Year Academic Performance

SCAT Vocational Programs		(1.0-1.9) D=70-76	(2.0-2.9) C=77-84	(3.0-3.9) B=85-92	(4.0) A=93-100
Doubtful	N=5 1-10	60%	40%	-	-
Hopeful	N=3 11-20	33%	67%	-	-
	N=1 21-30	-	-	100%	-
	31-40	-	-	-	-
	N=2 41-50	-	100%	-	-
	N=3 51-60	-	33%	67%	-
	N=1 61-70	-	-	100%	-
	N=2 71-80	-	50%	50%	-
	81-90	-	-	-	-
	91-100	-	-	-	-

N=17

CHART III

College Qualification Tests (Total Score)
for Estimating Freshman Year Academic Performance

Technical		D=70-76	C=77-84	B=85-92	A=93-100
Doubtful	N=40 1-10	28%	57%	15%	-
Hopeful	N=19 11-20	11%	53%	36%	-
	N= 8 21-30	13%	37%	50%	-
	N=11 31-40	1%	54%	35%	-
	N= 6 41-50	-	50%	17%	33%
	N= 9 51-60	-	45%	44%	11%
	N= 2 61-70	-	50%	50%	-
	N= 1 71-80	-	-	100%	-
	N= 1 81-90	-	-	100%	-
	91-100	-	-	-	-

N=97

CHART IV

College Qualification Tests (Total Score)
for Estimating Freshman Year Academic Performance

Vocational		D=70-76	C=77-84	B=85-92	A=93-100
Doubtful	N=7 1-10	43%	57%	-	-
Hopeful	N=3 11-20	-	67%	33%	-
	N=1 21-30	-	100%	-	-
	N=3 31-40	-	33%	67%	-
	N=1 41-50	-	-	100%	-
	51-60	-	-	-	-
	N=2 61-70	-	50%	50%	-
	71-80	-	-	-	-
	81-90	-	-	-	-
	91-100	-	-	-	-

N=17

CHART V

Predictive Model - Technical Programs

	Percentile Range	F=1-69	(1.0-1.9) D=70-76	(2.0-2.9) C=77-84	(3.0-3.9) B=85-92	(4.0) A=93-100
Doubtful	1-10	60%	40%	-	-	-
Hopeful	11-20	50%	45%	5%	-	-
	21-30	30%	15%	50%	5%	-
	31-40	5%	10%	60%	20%	5%
	41-50	-	1%	37%	50%	12%
	51-60	-	-	20%	55%	25%
	61-70	-	-	10%	60%	30%
	71-80	-	-	5%	60%	35%
	81-90	-	-	-	30%	70%
	91-100	-	-	-	25%	75%

CHART VI

Predictive Model - Vocational Programs

	Percentile Range	F=1-69	(1.0-1.9) D=70-76	(2.0-2.9) C=77-84	(3.0-3.9) B=85-92	(4.0) A=93-100
Doubtful	1-10	45%	50%	5%	-	-
Hopeful	11-20	25%	30%	45%	-	-
	21-30	5%	20%	60%	10%	5%
	31-40	-	5%	65%	25%	5%
	41-50	-	1%	39%	50%	10%
	51-60	-	-	20%	60%	20%
	61-70	-	-	10%	65%	25%	
	71-80	-	-	5%	65%	30%
	81-90	-	-	-	65%	35%
	91-100	-	-	-	60%	40%

VI. CONCLUSION

There has been presented in this report information relevant to a need for an evaluative instrument to provide base line data that might be used as an additional tool for assessing possible success in a student's choice of program. This information is based on the past performance of graduates from the vocational and technical programs, and the achievement of currently enrolled sophomores in vocational and technical programs at Wayne Community College. The experimental group consisted of a sample of seniors, from the five high schools located in Goldsboro and Wayne County, professing an interest toward the pursuit of a vocational or technical career. The results of this study indicated that the high school Grade Point Average (GPA) and Wayne Community College Quality Point Average (QPA) showed some degree of relationship, but a more definite degree of relationship was indicated between high school GPA and the CQT that was administered to the high school seniors.

Such evaluative tools can be of particular value in the assessment of students for admission to a given program and the student's chances of achieving satisfactory progress, but the individual must be willing to make the investment required to realize these goals. This investment involves the crucial question as to whether the student has sufficiently clear objectives and goals to put forth the

effort of extending his length of time in a program to accomplish these goals. There is considerable interest in tests and test usage on the part of administration, faculty, and students. While SCAT appears to be meeting some of the evaluation needs in the area of admissions, guidance and placement, the college feels that the need for a more comprehensive instrument can be met through the use of CQT.

VII. RECOMMENDATIONS

The major outcome of this study has brought forth the realization that even though there continues to be a correlative effort to have an efficient program of occupational guidance within school systems, other areas in need of further study have emerged.

A. The obvious need for a comprehensive guidance center for the immediate vicinity. The availability of sufficient data to plan high school and post-secondary experiences in a single center would ease eliminate articulation difficulties. The transition from high school to community college would be successful especially with interests, aptitude, and experience as an information base.

B. The need for more in-depth study into each curriculum offered including periodic review so to better meet the needs of the non-college bound student.

C. The question of a possible lack of continuity in the grading systems on the local high school level. This needs to be considered and studied closely.

D. For any occupational program to work at optimum, there must be a closer liaison with the secondary schools to strengthen and improve those weak areas in English, reading, and mathematics.

E. A need for articulation, with follow-up after graduation, as an aid in the assurance of success in the student's chosen career.

There is no point in furthering failure by allowing an unqualified student to enroll in a curriculum in which that student is not prepared to succeed, so finally, the possible need for further study might be conducted from each community college and technical institute in an effort to perfect these goals.

APPENDIX I

WAYNE COMMUNITY COLLEGE

Occupational Research Questionnaire

I. Considering what you know of your own abilities, interests, and educational opportunities, what field do you think you are most likely to enter when you finish school? Give examples:

II. In view of the above choice/choices, state briefly the motivating factor/factors, that have influenced you in reaching a decision. Give examples:

APPENDIX II

TABLE I

Graduates, 1971 Curriculum	N	X GPA Mean	Y QPA Mean	SD X	SD Y	"r"
Accounting	3	88	2.77	1.92	45.23	- .01
Business Admin.	5	84	2.58	4.38	15.90	.02
Executive Sec.	8	84	2.99	4.05	15.21	.01
Medical Secretary	1	82	2.47	-	-	-
Forestry Res. Technology	3	81	2.71	3.70	42.90	.01
Livestock/Poultry	3	85	2.84	5.00	37.28	.01
Recreation Grounds Management	3	83	2.88	1.00	40.51	.01
Dental Hygiene	2	89	2.77	4.53	13.00	-
Drafting/Design	1	84	2.42	-	-	-
Electronics	2	82	3.00	2.55	21.51	.02
Auto. Technology	-	-	-	-	-	-
Auto/Diesel	-	-	-	-	-	-
Machinist	2	75	2.79	1.00	13.51	- .02
Welding	-	-	-	-	-	-
Dental Assisting	3	86	2.36	.82	9.90	- .09
Practical Nursing	14	85	3.00	3.74	14.41	.07
Aviation	1	83	3.03	-	-	-

TABLE II

Freshmen, 1971 Curriculum	N	X GPA Mean	Y QPA Mean	SD X	SD Y	"r"
Accounting	13	83	2.08	5.43	10.52	.08
Bus. Admin.	29	81	1.66	4.38	7.58	.07
Elec. Data Proc.	5	83	2.28	5.30	29.89	.03
Executive Sec.	23	83	2.60	4.56	8.52	.04
Medical Sec.	9	82	2.37	3.77	31.93	.02
Aviation	2	77	3.06	2.01	45.64	.09
Fish/Wildlife	6	79	1.53	2.12	20.69	.06
Forestry Res. Tech	3	79	1.40	1.83	25.05	-.01
Livestock/Poultry	4	83	1.99	1.58	18.61	-.06
Rec. Grounds Mgt.	1	81	3.33	-	-	-
Assoc. Degree Nsg	11	87	2.63	4.23	13.58	.02
Dental Hygiene	3	89	3.36	3.32	24.74	.03
Mental Health	7	80	2.12	5.32	23.91	-.01
Drafting/Design	10	84	2.21	3.20	14.19	.02
Electronics	6	80	1.53	2.38	37.16	.01
Industrial Engineering Technology	-	-	-	-	-	-
Automotive Tech.	6	79	2.65	2.80	39.31	.05
Auto/Diesel	4	78	3.28	5.36	44.53	-.09
Machinist	2	81	2.57	.71	63.70	.007
Watchmaking	2	86	2.30	1.59	9.00	.09
Welding	3	79	2.48	4.00	35.72	.03
Dental Assisting	6	86	2.53	2.71	28.13	.09
Practical Nursing	4	86	3.07	2.74	42.85	.07

TABLE III

Fall, 1972 Curriculum	N	X GPA Mean	Y CQT Total Mean	XD X	SD Y	"r"
Accounting	3	73	35	2.65	18.71	-1.00
Business Admin.	13	83	25	4.76	19.90	1.00
Electrical Data Processing	8	81	21	4.22	14.86	.67
Executive Sec.	23	82	19	5.35	17.00	.41
Medical Secretary	11	85	33	6.67	17.26	.69
Aviation	-	-	-	-	-	-
Fish/Wildlife	3	78	15	4.65	7.07	.25
Forest Resources Technology	4	85	20	4.36	9.35	- .18
Livestock/Poultry	1	81	5	-	-	-
Recreation/Grounds Management	2	79	15	1.00	5.00	1.00
Associate Degree Nursing	4	92	63	3.32	18.75	- .56
Dental Hygiene	2	90	75	2.55	5.00	.96
Mental Health	9	79	17	5.28	16.91	.40
Drafting/Design	4	84	29	3.24	22.47	.88
Electronics	6	81	25	5.29	31.90	.87
Industrial Engineering Tech.	1	78	5	-	-	-
Automotive Tech.	6	79	18	4.76	21.63	.35
Auto/Diesel	1	64	1	-	-	-
Machinist	-	-	-	-	-	-
Watchmaking	-	-	-	-	-	-
Welding	-	-	-	-	-	-
Auto Body Repair	2	84	20	1.00	10.00	1.00
Dental Assisting	6	89	41	2.68	13.37	.46
Practical Nursing	1	80	20	-	-	-

TABLE IV

Curriculum	N	SCAT Total Mean	Percentile	College Qualification Test Mean		Percentile
Accounting	2	M 286	44	Male	95	20
	1	F 288	49	Female	80	10
Business Admin.	7	M 292	60	Male	83	10
	6	F 283	33	Female	75	5
Elec. Data Proc.	4	M 274	15	Male	64	3
	4	F 284	38	Female	86	15
Executive Sec.	23	F 278	23	Female	68	3
Medical Sec.	11	F 286	44	Female	80	10
Fish/Wildlife	3	M 282	33	Male	74	5
Forest Res. Tech.	4	M 283	33	Male	79	10
Livestock/Poultry	1	M 280	27	Male	59	1
Recreation/ Grounds Mgt.	2	M 274	15	Male	74	3
Assoc. Degree Nsg	4	F 299	75	Female	111	40
Dental Hygiene	2	F 300	79	Female	119	50
Mental Health	9	F 275	15	Female	63	3
Drafting/Design	4	M 286	44	Male	81	10
Electronics Tech.	6	M 283	33	Male	78	10
Industrial Engineering Tech.	1	M 287	44	Male	62	1
Automotive Tech.	6	M 272	12	Male	70	5
Auto/Diesel	1	M 262	4	Male	45	1
Auto Body Repair	2	M 289	49	Male	79	10
Dental Assistant	6	F 291	54	Female	86	15
Practical Nurse	1	F 289	49	Female	72	5

TABLE V

ADVANCEMENT STUDIES

Percentile Rank Used In Program Placement

Verbal Percentile	Area	Level	
1-15	All Students	English	91
16-30	All Students	English	92
30-60	College Transfer; Nursing; Dental	English	93
31-up	Executive & Medical Secretaries	Business	105
31-up	Technical Students	English	101
61-up	College Transfer	English	151

Quantitative Percentile	Area	Level	
1-20	All Students	Math	91
21-40	Business Students	Business	119
21-40	Agricultural & Biological Science	Math	100
21-40	Engineering; Electronic Data Processing; College Transfer	Math	92
41-up	Agricultural & Biological Science	Math	111
41-up	Livestock and Poultry	Business	119
41-50	College Transfer; Nursing;Dental	Math	93
41-up	English; Electronic Data Processing (with Algebra I)	Math	101
51-up	College Transfer (with Algebra I and II)	Math	151

APPENDIX III

FOOTNOTES

[1]K. Patricia Cross, "The Role of the Junior College in Providing Post-Secondary Education For All," Trends in Post-Secondary Education. U. S. Department of Health, Education, and Welfare. October, 1970. 190-192.

[2]Fred N. Kerlinger, Foundations of Behavioral Research, New York: Holt, Rinehart and Winston. 1964.

[3]Henry Garrett, Elementary Statistics. 2nd Edition. New York: David McKay Company. 1962.

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[5]_____ The Psychological Corporation, "The Three-Legged Coefficient," Test Service Bulletin, Number 40. 20.

[6]Ibid.

APPENDIX IV

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