

A PILOT STUDY OF THE PHASE-ELECTIVE CURRICULUM  
IN MAURY HIGH SCHOOL IN NORFOLK, VIRGINIA  
AND IMPLICATIONS FOR VOCATIONAL  
EDUCATIONAL PROGRAMS IN  
THE COMMONWEALTH

by

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## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	ii
LIST OF TABLES . . . . .	vii
LIST OF FIGURES. . . . .	viii
Chapter	
1. INTRODUCTION AND BACKGROUND INFORMATION . . . . .	1
PURPOSE OF THE STUDY. . . . .	4
STATEMENT OF THE PROBLEM. . . . .	5
DELIMITATIONS . . . . .	5
SIGNIFICANCE OF THE STUDY . . . . .	6
DEFINITION OF TERMS . . . . .	7
HYPOTHESES. . . . .	10
ORGANIZATION OF THE STUDY . . . . .	11
2. REVIEW OF LITERATURE AND CONCEPTUAL FRAMEWORK . . . . .	12
CHANGING URBAN EDUCATIONAL NEEDS. . . . .	13
Urban Educational Needs . . . . .	13
Secondary School Reform . . . . .	15
CURRICULUM INNOVATIONS. . . . .	16
Flexible, Modular Schedule. . . . .	17
Phase-Electives . . . . .	19
ALTERNATIVE PROGRAMS USING PHASE-ELECTIVE, NON-GRADED STRUCTURE. . . . .	21

DESCRIPTIVE NARRATIVE OF MAURY HIGH SCHOOL, NORFOLK, VIRGINIA . . . . .	28
CONCEPTUAL FRAMEWORK. . . . .	33
SUMMARY . . . . .	36
3. PROCEDURES FOR THE STUDY. . . . .	38
POPULATION. . . . .	39
DATA COLLECTION . . . . .	40
DATA ANALYSIS . . . . .	42
SUMMARY . . . . .	43
4. DEMOGRAPHIC CHARACTERISTICS OF POPULATION . . . .	45
SUMMARY . . . . .	56
5. FINDINGS. . . . .	58
Enrollment. . . . .	58
Completions . . . . .	66
Test of Hypotheses. . . . .	72
SUMMARY . . . . .	73
6. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . .	76
SUMMARY . . . . .	76
Purpose of the Study. . . . .	76
Statement of the Problem. . . . .	76
Population. . . . .	77
Data Analysis . . . . .	77
Findings. . . . .	78
CONCLUSIONS . . . . .	79
RECOMMENDATIONS . . . . .	82

REFERENCES. . . . .	85
APPENDIXES. . . . .	92
VITA. . . . .	103

## LIST OF TABLES

Table	Page
I. Student Enrollment at Maury High School by Year, Race, and Sex. . . . .	49
II. Mean Percentile Scores Maury High School. . . . .	51
III. Educational Level of Parents by Percentage Norfolk High School Students 1974-75. . . . .	53
IV. Categories of Occupations of Parents by Percentage, Norfolk Public High School Students 1974-75 . . . . .	54
V. Domicile of Students by Percentage Norfolk Public High Schools 1974-75 . . . . .	55
VI. Vocational Enrollment Maury High School by Year . . . . .	59
VII. Vocational Enrollment as Compared to Total School Enrollment (Percentages) . . . . .	63
VIII. Enrollment of Maury Students at Norfolk Technical Vocational Center by Vocational Program. . . . .	65
IX. Number of Students Eligible to Complete Selected Vocational Programs Maury High School . . . . .	67
X. Completions in Vocational Education From Maury High School. . . . .	68
XI. Number of Completions as Compared to Number Eligible to Complete (Percentages) . . . . .	70

## LIST OF FIGURES

Figure	Page
1. Possible Influence of Phase-elective, Non-graded Curriculum Upon Vocational Enrollments and Completions . . . . .	.35
2. Location of Norfolk, Virginia . . . . .	.46
3. Maury High School Attendance District . . . . .	.47
4. Location of Maury High School in School Attendance District. . . . .	.48
5. Vocational Enrollment by Program and Year . . . . .	.61
6. Vocational Enrollment as a Percentage of Total School Enrollment by Program and Year . . . . .	.64
7. Percentage of Completions in Vocational Education as Compared to Those Eligible to Complete by Year and Program . . . . .	.71
8. Percentage of Completions in Vocational Education as Compared to Those Eligible to Complete by Year . . . . .	.74



## Chapter 1

### INTRODUCTION AND BACKGROUND INFORMATION

In the latter part of the sixties, Norfolk Public Schools, Norfolk, Virginia, undertook a major self-study, Survey of Instructional Growth in Norfolk Schools (SIGNS, 1969-70) to determine future direction and give insight into existing educational problems. At that time, the Norfolk School System was experiencing problems typical of urban education systems: social unrest, declining student achievement and enrollment, chronic absenteeism, and an increasing number of dropouts. This city school system had just survived a massive court ordered desegregation of staff and students in all schools. Both students and staff seemed to lack identity with the schools to which they were assigned. The curriculum in the secondary schools had remained virtually unchanged for many years and lacked relevance for today's youth.

One of the recommendations of the self-study was to establish a behaviorally based curriculum and to increase subject offerings to provide more options for students with varying degrees of ability. (SIGNS, 1971) The instructional department moved toward a behaviorally based curriculum with criterion-referenced measurement, in

kindergarten through grade twelve, in addition to providing a number of new course offerings in almost every subject. (Forster, 1972)

The staff at Maury High School, the oldest high school in the city, was particularly concerned with student discontent and apathy, and irrelevance in the school's curriculum. Opened in 1910, it was the only high school that served the white community in Norfolk for many years. As the students' interests, social concerns, and racial composition changed, the Maury instructional program, like that in other schools in the system, tended to remain unchanged. The curriculum at Maury was geared primarily to preparation for college.

The Maury staff organized to identify and seek solutions to their problems. They embarked on an extensive study of the community and the student body as the basis for major revision in the structure and content of the curriculum and instructional program.

The Maury staff and faculty, with the assistance of the central administrative staff, conceived a phase-elective, non-graded, flexibly scheduled program of instruction. The phase-elective curriculum was based on the theory that the urban student needs immediate and positive reinforcement of individual goals. The academic year was divided into four, nine-week segments. The flexible

schedule made it possible to deviate from the traditionally structured, 55-minute periods. The non-graded curriculum permitted course selection based on individual interests and abilities rather than a particular grade level classification. Funded through the Elementary and Secondary Education Act under Title III, the program was implemented in September, 1972, after a year of intensive planning by the staff. The new instructional program at Maury was compatible with the system-wide movement toward a behaviorally based curriculum and expanded curriculum options to allow for achievement of individual goals of students with varying levels of ability.

After a two-year evaluation of the program, the school board accepted the recommendations of the superintendent to implement the phase-elective, non-graded curriculum in the secondary instructional program throughout the city. The secondary students are served by ten junior high schools, five comprehensive high schools, and one technical vocational center. The modular, flexible schedule required the renovation of existing physical facilities to accommodate large and small group instruction and varying time segments. In addition, computer capability was required to schedule large numbers of students four times a year. Capital funds were not available to support renovations and added computer costs. Since this increased cost was due in large

measure to the modular-flexible schedule component, it was decided to eliminate this aspect of the phase-elective curriculum. The non-graded, nine-week, phase-elective curriculum without its modular-flexible schedule component was deemed workable within the economic constraints faced by the city. The target date for implementation in all secondary schools was September, 1976.

The changing curriculum has seemingly created certain problems for vocational education. Two of the problems concern the election of vocational courses by students and the completion of vocational programs.

#### PURPOSE OF THE STUDY

The purpose of this study was to determine change in enrollment and completions in vocational education programs in the phase-elective, non-graded, flexibly scheduled curriculum in Maury High School, Norfolk, Virginia. The study was designed to allow the researcher to compare enrollment and completion data over a five-year period with the two years before the implementation of a phase-elective, non-graded, flexibly scheduled curriculum serving as the base years. The enrollment and completion data in vocational education for three years after implementation of the phase-elective, non-graded, flexibly scheduled curriculum

were compared with the base years to determine the consequences for vocational education programs.

#### STATEMENT OF THE PROBLEM

There were two basic problems investigated which developed into the following questions:

1. Will there be a change in student enrollment in vocational courses in a phase-elective, non-graded curriculum when compared to student enrollment in vocational courses in a traditionally scheduled curriculum organization which had existed at Maury High School?

2. Will there be a change in the number of students completing vocational programs in a phase-elective, non-graded, flexibly scheduled curriculum as compared to the number of students completing vocational programs in a traditionally scheduled program which had existed at Maury High School?

#### DELIMITATIONS

Three significant delimitations of this study were:

1. A time period of five years (two under a traditional program, one implementation year of an experimental program, and two years after implementation).

2. Dependent variables limited to enrollment and

completions in vocational education during the five-year period.

3. Population limited to Maury High School, Norfolk, Virginia.

#### SIGNIFICANCE OF THE STUDY

This research appeared justified in that few urban school administrators have considered the effects on elective components of the curriculum--vocational education in particular--when new phase-elective, organizational patterns were instituted. Studies (Davis, 1975, and Hicken, 1968) have been conducted to evaluate the effectiveness of the program in relation to achievement in English, numerical competence, mathematics, science, social studies, reading, and spelling. Other studies (Resnick, 1970, and Todd, 1973) have been conducted to evaluate the reactions of students, parents, and teachers to new curriculum schedule patterns in a phase-elective program.

This study should provide the reader with insight into the enrollment and completion trends in vocational education when an urban school division elects to organize its secondary curriculum in a phase-elective, non-graded pattern. In addition, the study should acquaint the practicing vocational educator with problems associated with implementing a non-graded, phase-elective curriculum in

concert with other elective and required subjects in a comprehensive high school served by an area technical vocational center.

Results of this study could be used by Norfolk Public Schools to anticipate staff and space requirements for vocational education as the non-graded, phase-elective curriculum is instituted in other secondary schools in the city. Positive results could justify increased expenditures for program expansion. Negative results could indicate corrective action which should be taken to maintain enrollment and insure student completion of vocational programs. The results should also be useful on a statewide basis for school systems considering a similar curriculum organization.

#### DEFINITION OF TERMS

1. Phase-elective--a course of nine-weeks duration, meeting for 45 days, with each phase complete in itself and providing one-fourth unit of credit for each 45 hours of instruction, without restrictive requirements except for some prerequisites and a specified number of credit hours required for graduation. (Davis, 1975:29)

2. Non-graded--courses of study not assigned to a particular grade level.

3. Traditional curriculum organization--each course scheduled to meet daily for a total of 180 hours

during the school year for which the student earns one unit of credit.

4. Non-graded, phase-elective curriculum organization--a structured program of varying time blocks in which the student can make a choice from multiple course offerings without regard to grade level.

5. Comprehensive high school--a secondary school organized for grades nine through twelve, offering vocational, general, and academic courses.

6. Elective--course in a subject area not specifically required by state law for graduation and available for student choice on the basis of course description and stated objectives.

7. Technical vocational center--a school serving several comprehensive high schools for the purpose of providing students vocational programs not available in home schools.

8. Urban school system--a central city system which serves an area of high intensity development and has a high degree of specialized activities.

9. Minicourse--a course which is offered for a period of six to nine weeks; is complete in itself; and provides credit in proportion to its part of the school year. (Caffyn, 1972:2)

10. Baseline data--data collected during 1970-71



and 1971-72 before implementation of phase-elective, non-graded curriculum.

11. Completion--a student's meeting the criteria as defined by the Teacher's Guide published by the Division of Vocational Education, Virginia State Department of Education. (1973:19) The criteria for each program are as follows:

a. Agricultural Education--students completing three or more years of instruction in agricultural education (in area vocational centers with one-half day programs, students completing two years of instruction).

b. Business Education--students completing the vocational instruction in the eleventh and/or twelfth grade for secretarial, stenographic occupations; typewriting and related occupations; data processing occupations; filing, general clerical, office machines operator occupations; or clerical accounting occupations.

c. Distributive Education--students completing the requirements of any distributive education course and either graduating from high school or leaving school at the end of the year without graduating.

d. Home Economics--students completing two years in consumer and homemaking or completing the senior homemaking--family living course; or, students completing the requirements of a course of one or more years duration in occupational home economics and graduating from high school.

e. Trade and Industrial Education--students completing the vocational program requirements and either graduating from high school or leaving school prior to graduation.

12. Enrollment--students enrolled in vocational courses in agriculture, business education, distributive education, health occupations, home economics, industrial arts, and trade and industrial education.

### HYPOTHESES

The problems stated in the research questions were tested by the following hypotheses:

Hypothesis 1. There will be no change in enrollment of students in vocational courses in a phase-elective, non-graded, flexibly scheduled curriculum as compared to enrollment of students in vocational courses in a traditionally scheduled program which had existed at Maury High School.

Hypothesis 2. There will be no change in the number of students completing vocational programs in a phase-elective, non-graded, flexibly scheduled curriculum as compared to the number of students completing vocational programs in a traditional scheduled program which had existed at Maury High School.

## ORGANIZATION OF THE STUDY

After the introduction and statement of the problem in Chapter 1, a review of literature and conceptual framework is given in Chapter 2. A descriptive narrative on Maury High School's experimental program is also included in Chapter 2. Chapter 3 deals with the procedures for the study, statement of hypotheses, research design used, and statistical methods employed to analyze data. Demographic characteristics of the population used in the study are discussed in Chapter 4. The findings are reported in Chapter 5, and the summary, conclusions, and recommendations are in Chapter 6.

## Chapter 2

### REVIEW OF LITERATURE AND CONCEPTUAL FRAMWORK

The purpose of this chapter was to review the literature related to this study and delineate a conceptual framework to guide the study. References have been divided into four sections. The first section deals with changing urban educational needs, the second section involves a discussion of curriculum innovations; and the third section contains a review of alternative programs using phase-elective, non-graded structure. The fourth section contains a descriptive narrative of Maury High School, Norfolk, Virginia, and the subsequent decision to adopt the nine-week, phase-elective concept in the instructional plan for the entire Norfolk School System's secondary program. The review of literature includes a discussion of the concepts on which a phase-elective curriculum organization was based.

In an effort to review all available research on flexible-modular scheduling and phase-electives in vocational education, a manual Educational Resources Informational Center (ERIC) search was made using the descriptors quarter course, minicourse, phase-elective, and schedule. The card catalogs at the Library of Congress and the Newman Library, Virginia Polytechnic Institute and State University, were checked for the references indicated in the ERIC search.

There was a paucity of information available. Only three studies were found that had any relationship to vocational education. Most of the research had been concentrated on academic curriculum and the need for change there to provide for individual differences in students.

## CHANGING URBAN EDUCATIONAL NEEDS

### Urban Educational Needs

The changing urban society has contributed to the need for metropolitan school divisions to scrutinize their curricular offerings and instructional methodologies to meet student needs and to attempt a reversal of the trend toward chronic absenteeism and loss of student interest. As the urban society has changed, so have the students in the urban school. The student is no longer coerced into staying in school by compulsory school attendance laws. The "Report of the National Commission on the Reform of Secondary Education," (1973) stated:

Attendance reports from urban school systems show that in many of the large city high schools fewer than half of the enrolled students attend regularly. Average daily attendance as a percentage of enrollment runs as low as 45 percent some urban schools. Among those who do come to schools, tardiness and class cutting are common.

Another problem facing the urban secondary school was:

. . . a large group of students who have become disenchanted with the way things are but remain in school restlessly and reluctantly.  
(Brown, 1973:98)

Adolescents seem to want and need a change in tempo in the school environment.

Today's child, especially the under-educated, cares little for long-term goals. He wants immediate satisfactions, or realistic incentives at an early age. . . . (Umans, 1971:112)

Umans (24) further stated in her book on Educational Management that:

Each student in our educational system should be viewed as an individual and helped in the fulfillment of his abilities, his hopes, his dreams, for he is a person completely unique. Yet education has made very little provision for the individual to fulfill his abilities to create for himself new abilities, to 'reach' beyond his grasp.

Opportunities for many young people growing up today appear limited for contemporary society. Little effort has been exerted to provide programs for students with varying abilities. The existing combination of secondary schools, community colleges, job opportunities, military service, and early marriage have failed to meet the needs of several million young people. Jobs are not available; school seems pointless; military service is unpopular; and early marriage is no solution for most of youth's concerns. These conclusions were drawn from a study conducted by the National Association of Secondary School Principals. (Havighurst, 1972)

Today, some 25 percent of all high school students drop out before graduation. The "official" figures do not begin to indicate the seriousness of the dropout dilemma.

The figures are only estimates. Few students announce they are leaving school; most are embarrassed at leaving and give moving away as the reason for withdrawal. Census figures show that more than 40 percent of the population over the age of 22 does not possess a high school diploma. In reality, most students leave school because they are uncomfortable in the school environment and view the curriculum as boring and irrelevant. (Brown, 1973:98)

In surveying the literature, it was revealed that there has been very little change in our secondary schools since the turn of the century. New bodies of knowledge have been introduced (i.e. vocational education), and schools have grown larger because of increased population, but the research has not shown any marked change in the secondary program. (Cremin, 1964); Brown, 1973:99)

Urban school systems, once considered the finest in the country, find themselves in a spiral of deterioration, and on the verge of complete collapse. (Fantini, 1970:5) The National Assessment of Educational Progress revealed that the achievement level as measured by standardized tests of students in inner city schools is the lowest in the nation. (Brown, 1973:8)

### Secondary School Reform

The subject of reform for secondary schools has been the topic of writers since the 1950's. James B. Conant

published his report, The American High School Today, in 1959 and listed 21 recommendations for change. He was followed by Cremin, Coleman, Jencks, Silberman, Mead, and others, all stressing the need and calling for a new kind of education that would be more relevant to students in contemporary society. Urban education particularly had become a national issue because of its inability to cope with the social pressures and its lack of educational opportunities for individuals in terms of race, color, religion, and national origin.

The National Defense Education Act of 1958 (NDEA) was followed by the Vocational Act of 1963, the Elementary and Secondary Education Act of 1965, and the Vocational Amendments of 1968. Unprecedented sums of federal monies were poured into the national educational system to rehabilitate the schools. Much of the financial assistance from federal legislation was directed toward programs for urban areas.

### CURRICULUM INNOVATIONS

Federal legislation ushered in a decade of innovations in the 1960's. A variety of program changes was designed and curriculum alternatives were developed to improve the relevance of secondary school programs and thereby attract, hold, and improve the achievement



of urban high school students. The problems in urban schools appeared to be most acute, and federal planners and researchers seemed to believe that solving the crisis in urban education would perhaps assist in solving the problems of public education in general. (Fantani, 1970:8)

Because of the studies by Coleman and others, urban schools and school systems experimented with ways to free themselves of a "lockstep" methodology and proceeded with an instructional program that produced educational achievement and social adjustment for individuals. School leaders became more sensitive to the aspirations, desires, interests, and needs of previously excluded or overlooked groups and individuals in the high schools. (Unruh, 1974: 28) More emphasis was placed on individual goals of students and on their abilities to achieve these goals.

#### Flexible, Modular Schedule

Many innovative programs were developed during the sixties that showed great promise for public education in general and urban secondary schools in particular. Most of the large cities had on-going experimental programs. Out of this milieu, fostered by computer technology, came the flexible-modular schedule. (Bush and Allen, 1964)

For the first time, modifications to the traditional curriculum organization pattern became possible.

More and more variations in time sequences and schedule patterns were common. One of the more widely used formulas was known as the "Trump Plan" in which large and small group instruction was provided, and students were given unscheduled time for independent study within the school day. (Unruh, 1974:129) Many other variations of scheduling have appeared periodically from moderate flexibility within a conventional school building to a completely "open campus" schedule, extending into the community and completely disregarding traditional school hours. (130)

Heathman and Nafziger (1971:3) gave the following definition of flexible scheduling:

Flexible scheduling is an operating framework characterized by classes of unequal length which meet at differing periods throughout the week and which are geared to the individual needs of students. Flexible scheduling may vary from merely rearranging time allotments and sequences of established courses to a complex modular approach in which schedules for each student are generated daily and picked up by the student each morning.

Unruh (1974:130) stated that flexible scheduling was one of several interdependent practices and had little effectiveness except in combination with other closely related procedures. Increased options through a student-centered curriculum were made possible with new scheduling patterns. The development of short courses in the common academic areas provided a program that was generally more responsive to student needs for relevant content.

In a report prepared by the United States Office of Education, it was found that the average number of courses per pupil rose from 6.4 in 1960-61 to 7.1 in 1970-71. The higher number of courses taken by the average pupil during a school year was attributed to the lengthened school day and to flexible class scheduling in a number of schools. (Gertler and Barker, 1972:8)

As school systems experimented with changes in the curriculum organization pattern, it became apparent that these changes were interrelated with new curriculum content, development of students' self responsibility, development of modern learning theories, and attention to new uses of resources. New options in the organizational arrangements made educators aware of the possibilities for more individualized instruction through elective courses--the now popular phase-elective or minicourse. (Unruh, 1974:111)

### Phase-Selective

Of all the experimental ideas and innovations developed, the phase-elective, also known as a short course, minicourse, interim course, quarter course, trimester, or quinmester, has resulted in a major change in the curriculum organizational structure of the secondary school. It was ". . . estimated that 60 to 75 percent of public school systems have adopted minicourses and

electives in some grades." (Virginia Journal of Education, February, 1975:11) The movement has developed swiftly since the mid-sixties, has made the most impact on the senior high school, and has been concentrated in English and social studies. (11)

John Henry Martin, Chairman of the National Panel on High Schools and Adolescent Education, has said that "the increase in the number and variety of minicourses and semester electives is the single most promising and effective development in secondary education." "I've never before seen a movement spread so fast and so far," says Margaret Early, president of the National Council of Teachers of English. (Virginia Journal of Education, February, 1975:11) Phase-electives may be units within a required course, or they may be completely unrelated to subjects usually found in a secondary curriculum. As phase-electives developed in a given subject area, change was brought about in other subject areas. (Unruh, 1974:111)

As the phase-elective became a basis for new scheduling and curriculum organization patterns in high schools, vocational educators have found it necessary to review course options and traditional time frames in order to compete in the elective arena and work within the constraints of new scheduling patterns. The vocational educator has been faced with the challenge to provide

flexibility in vocational offerings while maintaining opportunities for specific skill development and the acquiring of knowledge necessary for successful employment. (Brown, 1973:8)

Phase-electives were usually six to nine weeks in length and were scheduled into traditional time settings of 50-minute periods meeting on a daily basis. "Such a scheme seriously hindered the development of any course that required the large blocks of time necessary for skill training." (Miller, 1974:46) Use of the 50-minute instructional hour as the basic building block of the curriculum coupled with the shorter time frame poses some serious concerns for those persons in the educational system charged with the responsibility of skill development.

#### ALTERNATIVE PROGRAMS USING PHASE-ELECTIVE NON-GRADED STRUCTURE

At Northwest Ashe High School in Warrensville, North Carolina, the principal related that the development of a series of minicourses in English and social studies led to further additional curriculum changes while other changes were being planned. (Unruh, 1974:248)

The following statement was made by F. L. Barker, Jr., Principal of Northwest Ashe High School:

The student body is vocationally oriented, with only 10 percent of the school's 500 enrollment seeking a higher education after high school graduation. With this statistic in mind, the administration has long been searching for a way to turn a traditional, boring, and in many ways, outdated curriculum into something meaningful and interesting to students who could care less if Hamlet wanted 'to be or not to be. . . .'

We were interested in the versatility which the quarter system offered, so we began an intensive study of the new minicourse idea. This seemed to be the one answer for the many vocational students who were artisans in their trade, but who would rather be punished than attend an English class and read poetry. Both English and social studies were adaptable to the mini idea, since they could so easily be broken down into many units of work, and both were required courses for graduation. To a degree, the mini approach made these courses more elective than required. The strong point was that students could choose particular fields that they especially enjoyed within a subject area, and eliminate those that they disliked from their schedules. (Unruh, 1974:248)

Another school system that adopted the four-quarter program was Atlanta, Georgia. Curtis Henson, in a paper presented to the National Seminar on Year Around Education, Chicago, 1974, stated that the school system was faced with finding a curriculum organization pattern which would carry a flexible, changing curriculum and provide for individual goals of students through a wider selection of course options. Each student in the quarter system could develop a more individualized program of study, but more counseling was required because of the program's non-graded, non-sequential characteristics.

McKinley High School, Washington, D. C., reported that the outstanding features of the quarter system were:

1. students can choose teachers, courses, and schedules;
2. greater variety of courses are available from which the student may choose;
3. only one-fourth credit is lost if a course is failed;
4. students are not locked in the same class with the same teacher all year;
5. students have a chance to change or drop a course which they are failing after nine weeks. (Education Report, September, 1971:iv)

High schools in Dade County, Florida, adopted the quinmester plan which divided the school year into five, nine-week sessions of 45 days each. A student could elect to attend any four of the quinesters during the year in order to meet the current state requirements of 180 instructional days. (Rubinstein, 1974)

The educational advantages of the quinmester plan were said to be:

1. it provided a more varied curriculum by offering a variety of minicourses that could be related to one subject.
2. it encouraged scholastic experimentation. The student could try a new subject for nine weeks and drop it in favor of something else.
3. it had the potential to reduce failure--the student need not fail a full-year course.
4. a student could accelerate his program by attending all five quinesters. (Unruh, 1974:124)

Daniel S. Parkinson reported in the April, 1976, issue of Phi Delta Kappan that nearly half of the 548 Ohio junior and senior high schools participating in a recent survey were using minicourses. Parkinson reported:

Survey returns indicate that the primary areas for minicourse development in the Ohio junior and senior high schools are in English (in 76 percent of the schools that use minicourses) and social studies (in 38.8 percent of the schools). Minicourses are also found in 10 percent of the schools in home economics, industrial arts, health and physical education, and art. Minicourses are found in virtually every area of the curriculum-- from math, business, and foreign languages to driver education and special education in Ohio schools.

Parkinson, in comparing his study with earlier studies, indicated the movement toward minicourses was rapidly expanding at the secondary level. He reported that a similar study done in Kansas in 1972 indicated about 28 percent of the high schools in Kansas were using the minicourse approach as compared with nearly half of the Ohio junior and senior high schools using this approach.

It was found in reviewing the literature that school systems had adopted a phase-elective approach in an attempt to provide more options for students and greater flexibility in programs. The nine-week design fitted into the traditional calendar and permitted administrators to add an additional session



during the summer. A wider choice of courses could be provided in each subject area.

Carlos Todd (1973:6) found that most school systems adopting the phase-elective approach developed a data bank of courses from which each school within the division selected those most suitable to its purpose in relation to the needs of the student body and the expertise of the staff. The students had a choice among 250-300 courses depending upon the size of the high school and teaching staff.

Caffyn (1972:7) stated that changes in course structure must be deeper than just breaking a full-length course into four parts to be taken consecutively. She also stated that minicourses should be organized as "strands, separated the long way of the continuum" so that relationships could be built into each course rather than cut across it, forcing the student to learn the content in unrelated fragments. In structured or sequential disciplines, Caffyn said that "minis should be limited to specialized studies beyond the basic requirements," and gave examples as mathematics beyond Algebra I and beginning geometry; home economics beyond the first two years; and science beyond the beginning course, which provides general terms, concepts, and procedures with which to work. Non-graded, short-term

courses were appropriate when students have developed some learning skills with which to work and were ready to think about possible directions for their lives. Caffyn further stated that the phase-elective course plan for secondary schools would not cure all ills, but she agreed with Martin (1975:11) that it was one of the most promising ideas to appear in a long time. She related that, handled with knowledge and judgment, a phase-elective curriculum could fulfill its promises.

In a study conducted by Davis (1975:166), the students educated in a phase-elective, non-graded, flexibly scheduled program did show greater gains in achievement in the areas of English, numerical competence, mathematics, science, and social studies. The comparison was made with a control group educated under a traditional program. Davis' findings supported the conclusion that the growth was uniform by race, and by sex and race, with the exception of reading and the female sub-group in spelling.

However, Moore (1970) found that there was no significant difference in the achievement level of students in BSCS biology, scheduled flexibly, when compared with students scheduled in a traditional fashion.

Resnick (1970) studied the implementation of a flexible, modular schedule and phase-elective curriculum on industrial education, but he made no attempt to assess changes in enrollment and student completion in industrial education under a phase-elective curriculum as compared to a traditional curriculum. He attempted to identify problems and/or advantages for industrial education and came to the conclusion that special consideration was needed in scheduling.

All of the studies and literature reviewed indicated that the advantages of a phase-elective, non-graded curriculum for students were:

1. an opportunity to pursue in much greater depth and breadth topics of particular interest.
2. an opportunity to come in contact with a greater number of teachers and presentations in specialized areas of interest.
3. an opportunity to learn under professional supervision how to be more responsible for one's own progress and opportunities.
4. an increased opportunity to meet with instructors for assistance and informal discussions.
5. flexible course structure that provides room for the growing volume of course content.
6. course length appropriate to content.
7. curriculum organization that reflects predetermined achievement levels and goals.
8. teaching strategies adapted to the demands of specific subject material.

The current study provided an analysis of the effects of a phase-elective curriculum on enrollment and completions in vocational education in one high school. While other studies in the academic areas have looked at enrollment and achievement, the studies by Resnick (1970) and Wiffler (1971) were concerned with the time sequences provided by a flexible-modular schedule for the vocational areas of business education and industrial education. All program areas in vocational education offered at Maury High School and the Norfolk Technical Vocational Center, Norfolk, Virginia, have been investigated: agriculture education, business education, distributive education, health occupations, home economics, industrial arts, and trade and industrial education. The study showed enrollment and completion trends that may be expected in vocational education when an urban high school implements a phase-elective, non-graded curriculum.

DESCRIPTIVE NARRATIVE OF  
MAURY HIGH SCHOOL, NORFOLK, VIRGINIA

Maury High School is the oldest of Norfolk's five public high schools and is located in the Ghent section of the city. It is in the midst of the Ghent-Downtown Renewal Project. The Norfolk Redevelopment

and Housing Authority has picked Maury as a focal point for its projected rebuilding of a prosperous mid-city neighborhood. The area was one of the most depressed sections of the city.

Maury High School has had a racially mixed student body characteristic of inner-city schools for many years. Racial balance is maintained by busing. The approximately 2,000 students enrolled each year from a cross-section of ethnic and socio-economic groups in the city. There are polar differences in the economic status of the families from which Maury's students come. In many families, both parents work; other families receive public assistance. Some students add to the family income by working part time. About 53 percent of the students are entitled to free busing and 45 percent are eligible for free or partially free lunches. At the other end of the economic scale, students come from the most affluent areas of the city. The attendance area also includes students from military families and the local university's professional community.

The Maury administration and faculty recognized the need to revise and broaden the curriculum to meet the needs of the students from a changing community. An application for assistance submitted under Title III of the Elementary and Secondary Education Act--Regeneration: Inner City School Survival. The project was

approved and funded and some four years later, in 1974, it met the ESEA Title III validation criteria as being exportable, having adequate cost information, and showing evidence of effectiveness in improving learner performance.

The philosophy upon which the program was formulated was:

Every student will have the opportunity to pursue an individual program of learning which would meet his needs, build on his strengths, and enable him to eliminate his weaknesses.  
(Dudley, 1974)

The instructional system that evolved was a nine-week, phase-elective, non-graded, flexibly scheduled program. More than 350 course offerings in all subject areas were developed from which each student planned his individual program of studies each nine weeks. Each course was designed on the basis of performance objectives and criterion-referenced test measurements. A syllabus was prepared for each nine-week phase or period of a course and was reviewed and updated periodically. The Maury bank of course offerings contained over 800 syllabi. All courses were considered to be phase-elective--without restrictive requirements except for some prerequisites and for the number of credit hours needed for graduation.

There were no grade level boundaries recognized in the program at Maury. Courses were assigned to meet students' educational needs and interests. Thus, courses

were not assigned to a particular grade level; i.e. ninth, tenth, eleventh, or twelfth.

The course offerings were distributed among the departments as follows:

Art	14
Business	25
Distributive Education	8
English	57
Foreign Language	17
Health Occupations	4
Health and Physical Education	7
Homemaking	23
Industrial Arts	30
Mathematics	30
Music	11
NJROTC	3
Occupational Work Experience	46
School Services	5
Science	28
Social Studies	37

After a two-year evaluation of the Maury program, the school board accepted the recommendation of the superintendent to implement the phase-elective, non-graded, curriculum in all secondary schools. The modular-flexible schedule was not included because of (1) the administrative difficulty and expense involved and (2) the inappropriate use of unscheduled time by some students.

The school system had previously adopted a nine-week grade reporting period. The adoption of the nine-week, phase-elective pattern matched this mode of grade reporting.

The ten junior high schools implemented the phase-elective, non-graded instructional program in September, 1975. The five senior high schools have an implementation target date of September, 1976.

A central data bank of courses has been developed from which all schools may choose. The program of studies in each school was matched with the expertise and knowledge of faculty and the needs and interests of students.

Under the phase-elective system, the school year was divided into four, nine-week sessions. Every nine weeks, students--with help from parents, teachers, and guidance counselors--chose what they wanted to take from a variety of phase electives.

The decision to adopt this instructional mode throughout the system has caused some concern among those responsible for developing job entry skills. The nine-week time frame seemed inadequate for some skill areas and the non-sequential aspects of the instructional program seemed to lead to fragmentation. A study of enrollment and completion trends in vocational subject areas will give some indication if concerns are warranted.



## CONCEPTUAL FRAMEWORK

Paul Woodring (1964:286) stated that planners of many of the new programs being tried and advocates of the changes being urged had given little attention to the theories of learning. Many of the reforms have arisen from social and political pressures and widespread public discontent rather than new psychological discoveries. The movement has emphasized not ends but means which have been designed to promote more effective teaching and learning.

The non-graded system was an effort to get away from the rigidities of the graded system. The student was able to move through the instructional program at a pace best suited to him. The content was organized into a series of learning experiences from which the student made selections. (300)

The phase-elective course options provided the student with immediate goal satisfaction. The student's contact with failure was reduced. (298) The concept of phase-elective courses, usually of a duration of nine weeks was the best organizational structure to provide for continuous progress of individual students. (Daughtrey, 1974)

The literature did not reveal that any of the concepts of a phase-elective, non-graded, flexibly scheduled curriculum were inconsistent with learning theory or individual differences among students and teachers. It appeared that the new curriculum organization made a much better provision for individual differences than did the traditional plan of secondary schools. Woodring (1964:296) stated that a possible rationale could be based on psychological principles, ". . . but no such rationale has been formulated, and the plan appears to have developed independently of psychological theory." Educational administrators have taken the lead while psychologists have shown little interest in the problems of education. (303)

The concept of phase electives and the ultimate change in the pattern of student selection of courses are illustrated in the model on Page 35. The greater number of elective options and courses coupled with the non-gradedness and non-sequential aspects lead the student to more experimentation with a wider variety of courses. The longer time frame and sequential aspects of most vocational courses are diametrically opposed to the concept of phase-electives.

Traditionally the student had a choice between art, music, and vocational subjects as electives. Under

C O N C E P T U A L M O D E L

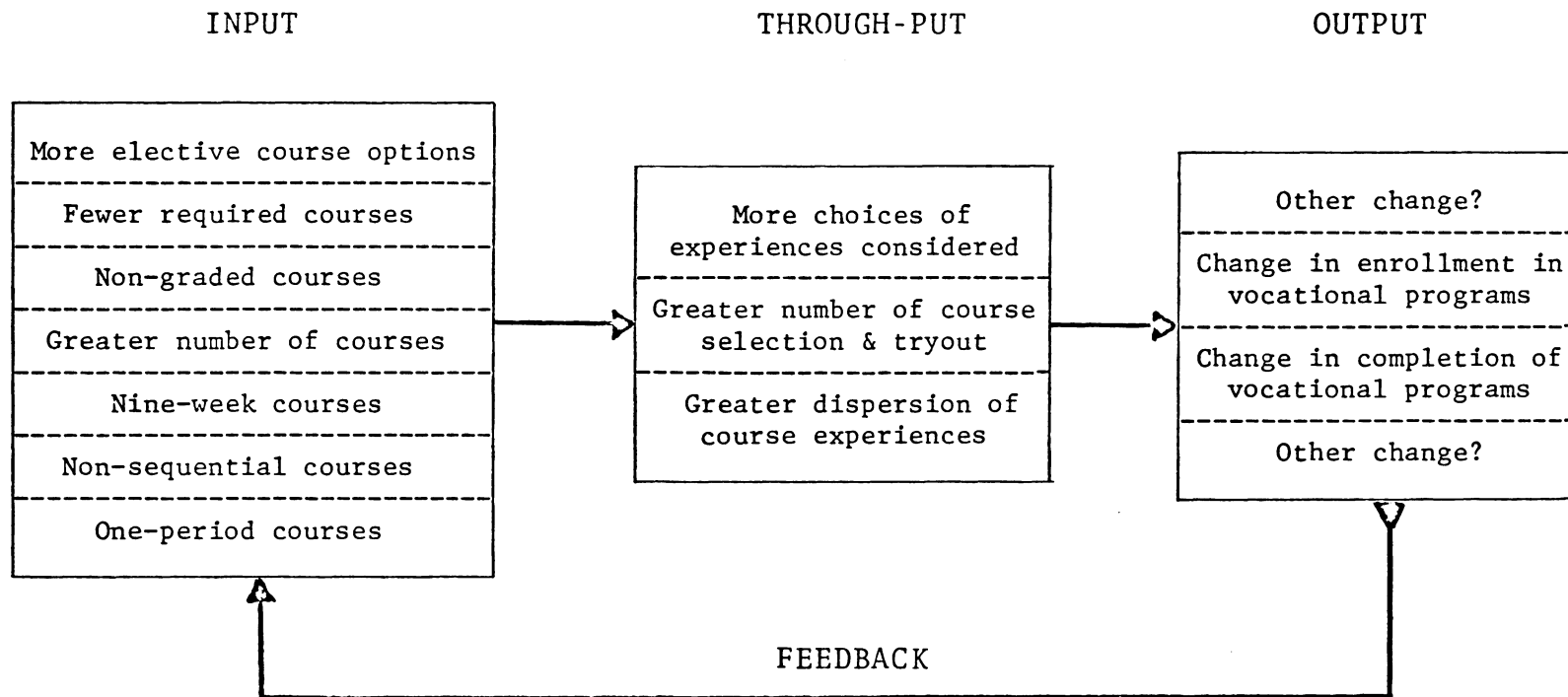


Figure 1

Possible Influence of Phase-elective, Non-graded Curriculum  
Upon Vocational Enrollments and Completions

the phase-elective concept, virtually every course becomes an elective. Consequently there is a greater dispersion of student interest and selection of electives.

If the number of students in a school remains fairly constant, it is conceivable that there would be a change in the enrollment pattern in traditional elective courses. At the same time, those courses requiring the students to commit themselves to a longer period of time in the school year would seem to permit less experimentation. Therefore a change in the enrollment and completion patterns in vocational education has been predicted by the investigator.

#### SUMMARY

The purposes of the review of literature and research for this study were: (1) to substantiate the need for change in the urban secondary curriculum, (2) to review research on non-graded, phase-elective curriculum organization in vocational subjects, and (3) to present descriptive information on the experimental program at Maury High School, Norfolk, Virginia.

The literature substantiated the need for curriculum change in urban secondary education. A non-graded, phase-elective curriculum is being widely

accepted by urban school divisions in their attempt to provide an instructional program to meet the needs of youth in the cities.

Very little research was available on phase-elective courses in vocational education. The limited research available indicated that the laboratory/workshop aspect of vocational courses necessitated longer periods of time and required special consideration in the scheduling of time patterns for courses. The development of skills required the sequential arrangement of many vocational courses.

The research indicated that students select a wider variety of courses under the phase-elective concept. The conceptual model illustrated the possible change in student selection patterns. This study adds a needed dimension to the research in reporting the enrollment and completion trends in vocational education in a large urban high school using the non-graded, phase-elective curriculum organization. As the change in curriculum structure and organization gains momentum, vocational educators need more information regarding the consequences of expanded curriculum options in vocational education subjects.

## Chapter 3

### PROCEDURES FOR THE STUDY

The purpose of this study was to determine the change in enrollments and completions in vocational programs at Maury High School, Norfolk, Virginia, when a phase-elective, non-graded curriculum was compared with a traditionally organized curriculum. The study was designed to allow the researcher to compare enrollment and completion data over a five-year period and to determine implications for vocational education.

The research methodology utilized in this study was ex post facto research, which falls under the general classification of descriptive research. The purpose was to secure evidence concerning a past event or condition and to ascertain the change and/or trend in vocational enrollments and completions over a five-year period. The time-series design was utilized as described by Campbell and Stanley. (1963:37)

Permission was obtained from the Assistant Superintendent for Research and Planning, Norfolk Public Schools, to conduct this study. Copies of the correspondence with respect to approval are found in Appendixes A and B.

## POPULATION

The population for this study was 11,002<sup>1</sup> students enrolled during the five-year period from September, 1970, through June, 1975, at Maury High School, Norfolk, Virginia. The total student population for each year was used in the study. The enrollment ranged from a low of 1,920 students in 1974-75 to a high of 2,430 students in 1972-73. (See Table I, Page 49) Students assigned to Maury High School, who elected to pursue vocational programs at the Norfolk Technical Vocational Center, were also included in the study.

The demographic characteristics of the student population were fairly constant over the five-year period. A detailed discussion is given in Chapter 4.

The students in the baseline years, 1970-71 and 1971-72, elected to pursue their vocational program under the traditional curriculum organization from September to June. The traditional curriculum program had one-year courses which met for 55 minutes a day, five days a week, for 180 days. The majority of the courses had prerequisites. The courses were assigned to a particular

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<sup>1</sup>This population was a duplicated count since some students were included for more than one year of the five.

grade level (i.e., English 9, English 10, English 11, English 12). The student earned one Carnegie unit of credit for the successful completion of the one-year course.

The students in the implementation year, 1972-73, and the two years following, 1973-74 and 1974-75, were enrolled in vocational courses in the phase-elective, non-graded curriculum organization. The courses in this curriculum organization have the following characteristics:

1. Phase-electives--nine-week, concept-centered elective courses. (Davis, 1974:59) The majority of courses have no prerequisites. Each course carries one-fourth unit of credit which is awarded to the student upon successful completion.

2. Non-graded structure--courses of study not assigned to a particular grade level (i.e. ninth, tenth, eleventh, twelfth). (60)

#### DATA COLLECTION

The total school enrollment for each of the five years was tabulated by sex and race. The mean percentile scores from standardized tests were tabulated for reading, English usage, spelling, math, social studies, and science for each of the five years. Demographic data relating to socio-economic characteristics were reviewed for the same period. The data were made available by the Division of Research and Planning, Norfolk Public Schools.



Baseline data were collected and tabulated for the school years, 1970-71 and 1971-72, by enrollment in vocational subjects and by the number of completions in each vocational program as defined by the Teacher's Guide for the Virginia Vocational Education Reporting System (1973). Baseline enrollment data were tabulated from the Norfolk Technical Vocational Center (NTVC) for students from Maury High School by vocational program for the 1970-71 and 1971-72 school years.

Enrollment data by vocational subject and completion data by vocational program, as defined by the Teacher's Guide for the Virginia Vocational Reporting System (1973), were collected and tabulated for the school years 1972-73, 1973-74, and 1974-75 for Maury High School. Enrollment data by vocational subject and completion data by vocational program, as defined by the Teacher's Guide, were collected and tabulated for students from Maury High School attending the Norfolk Technical Vocational Center for 1972-73, 1973-74, and 1974-75.

The enrollment data for 1972-73, 1973-74, and 1974-75 were tabulated from the Grade Analysis Reports compiled at the end of the first phase. The enrollment data for the baseline years, 1970-71 and 1971-72, were tabulated from the Enrollment Reports submitted to the Instructional Department on October 1 of each year by the principal.

Completion data for 1972-73, 1973-74, and 1974-75 were obtained from the Vocational Education Reporting System, Richmond, Virginia. (Appendixes C, D, and E) Prior to these years, the data were collected by the local school division and reported to the Division of Vocational Education, State Department of Education, Richmond, Virginia, by vocational program areas.

The program of studies offered for each of the five years under study was analyzed to determine the addition or deletion of vocational programs which would affect enrollment and completions in vocational subjects.

The total school enrollment for each of the five years was tabulated as reported on October 1. The data were collected from the Principal's Monthly Report to the Superintendent, Division of Research and Planning, Norfolk Public Schools.

#### DATA ANALYSIS

The problems investigated in this study were tested as null hypotheses:

H<sub>0</sub>1 There will be no significant change in the enrollment of students in vocational courses in a phase-elective, non-graded, flexibly scheduled curriculum as compared to enrollment of students in a traditionally scheduled program which had existed at Maury High School.

The time-series design was used to test the hypotheses. Campbell and Stanley (1963:41) stated that ". . . this design is particularly appropriate to those institutional settings in which records are regularly kept and thus constitute a natural part of the environment."

The data were plotted by program and by year for each program area. The enrollment data for each vocational program for each year were compared with the total enrollment in the school to determine the percentage change.

The completion data for each vocational program for each year were compared with the number of students eligible to complete, to determine the percentage change.

An analysis of the data was made to determine trends and/or changes in the enrollment and completions in vocational programs when a phase-elective, non-graded curriculum organization was compared to a traditional organization.

#### SUMMARY

The time series design was utilized to secure evidence and ascertain the change and/or trend in vocational enrollments and completions over a five-year period at Maury High School, Norfolk, Virginia.

The population for the study was 11,002 students assigned to Maury High School from September, 1970, through June, 1975.

Enrollment and completion data were tabulated by vocational program for each of the five years. Students assigned to Maury High School who elected to pursue a vocational program at the Norfolk Technical Vocational Center were included in the data collection.

The problems investigated were tested as null hypotheses by the time-series design. The data were plotted by program and year for each program area to facilitate comparison. Students in the first two years of the study had been enrolled in a traditionally organized curriculum. The students in the last three years had been enrolled in a non-graded, phase-elective curriculum organization.

Demographic characteristics of the population are given in Chapter 4. The findings in Chapter 5 will be used to determine if the hypotheses will be rejected or fail to be rejected. The information will be presented in table form accompanied by a narrative explanation.

## Chapter 4

### DEMOGRAPHIC CHARACTERISTICS OF POPULATION

Maury High School is located in Norfolk, Virginia. (Figure 2) The students were assigned to Maury High School by the geographic location of their homes, as defined by the policies of the Norfolk Public School Board. (Figures 3 and 4) The Norfolk School System adheres to federal guidelines in relation to attendance boundaries. These boundaries have not been changed since the 1970-71 school year. An urban renewal project which eliminated a densely populated area within the school's attendance boundaries caused a decline in the student enrollment after 1972-73. (Table I)

The urban renewal project also caused a minor change in the racial composition between 1970-71 and 1971-72. (Table I) The highest percentage of blacks during the five-year period (56.8 percent) occurred in 1970-71. Since that time, the percentage of black students has ranged from 47.3 percent in 1971-72 and 1972-73 to 50.7 percent in 1974-75. (Table I) The student population was almost evenly divided between black and white.

The male population has ranged from a high of 50.3 percent in 1970-71 to a low of 47.1 percent in

# STATE OF VIRGINIA

COUNTIES AND STANDARD METROPOLITAN  
STATISTICAL AREAS

INDEPENDENT CITIES

- |                    |                 |                  |
|--------------------|-----------------|------------------|
| 1 ALEXANDRIA       | 11 BALAZ        | 22 RADFORD       |
| 2 BRISTOL          | 12 HAMPTON      | 23 RICHMOND      |
| 3 BUENA VISTA      | 13 HARRISONBURG | 24 ROANOKE       |
| 4 CHARLOTTESVILLE  | 14 HOPWELL      | 25 SOUTH BOSTON  |
| 5 CLIFTON FORGE    | 15 LYNCHBURG    | 26 SOUTH NORFOLK |
| 6 COLONIAL HEIGHTS | 16 MARTINEVILLE | 27 STAUNTON      |
| 7 COVINGTON        | 17 NEWPORT NEWS | 28 SUFFOLK       |
| 8 DRYVILLE         | 18 NORFOLK      | 29 WAYNESBORO    |
| 9 FALLS CHURCH     | 19 NORTON       | 30 WILLIAMSBURG  |
| 10 FREDERICKSBURG  | 20 PETERSBURG   | 31 WINCHESTER    |
|                    | 21 PORTSMOUTH   |                  |

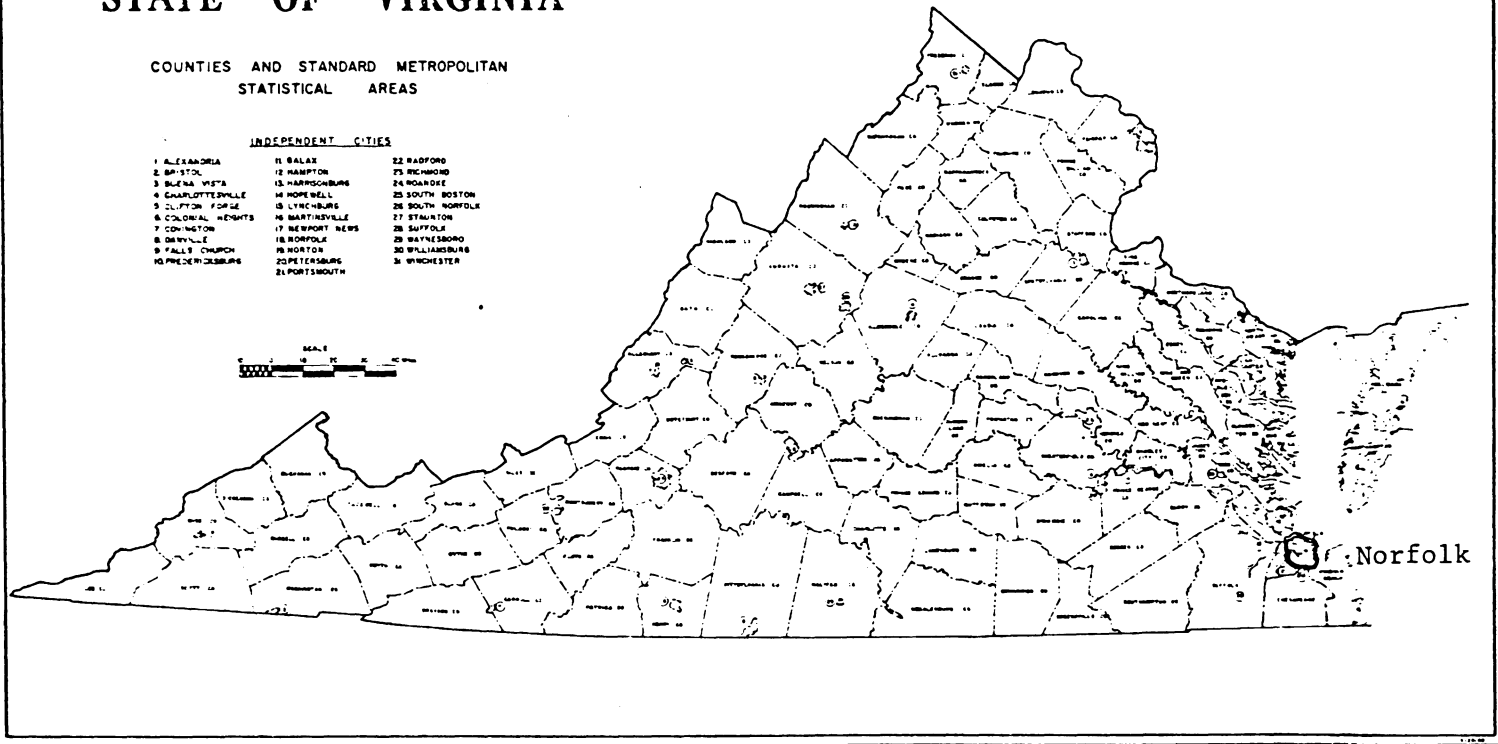


Figure 2  
Location of Norfolk, Virginia

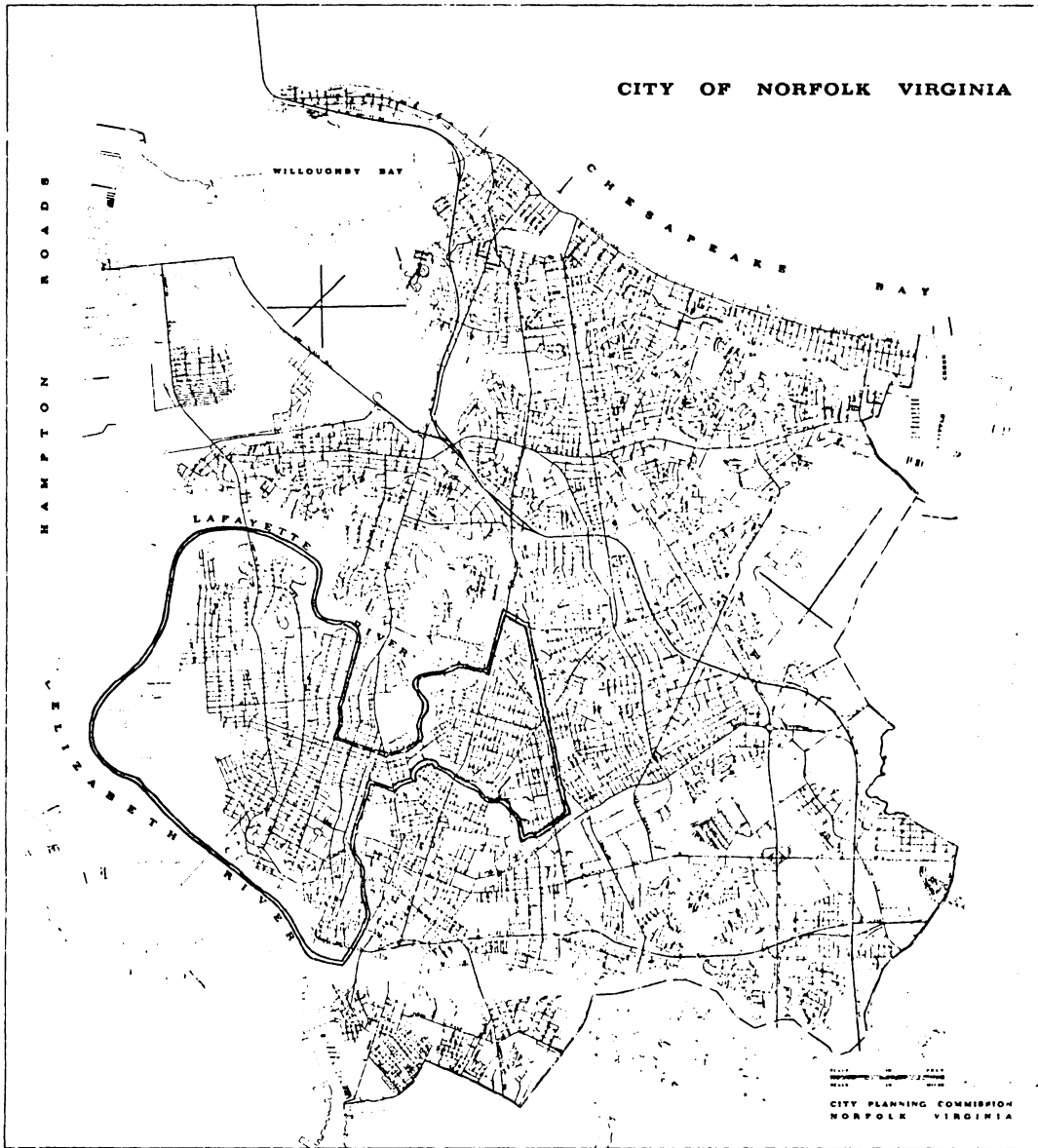
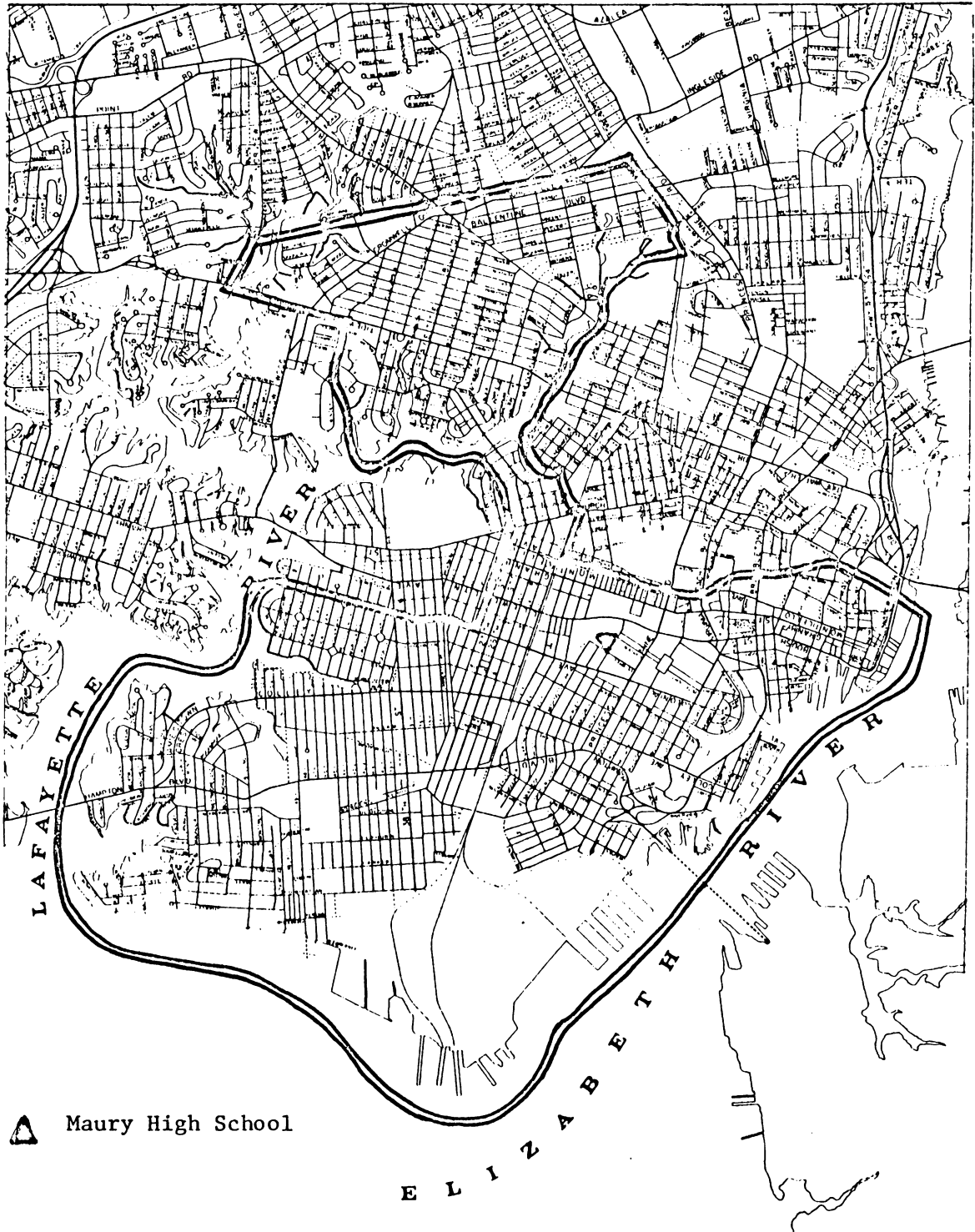


Figure 3

Maury High School Attendance District



△ Maury High School

Figure 4

Location of Maury High School in School Attendance District



Table I  
STUDENT ENROLLMENT AT MAURY HIGH SCHOOL  
BY YEAR, RACE, AND SEX

	1970-1971	1971-1972	1972-1973	1973-1974	1974-1975
Black	1288	1123	1150	967	975
Percentage	56.8	47.3	47.3	47.7	50.7
White	976	1236	1280	1062	947
Percentage	43.2	52.7	52.7	52.3	49.3
Male	1138	1159	1191	980	904
Percentage	50.3	49.1	49.0	48.3	47.1
Female	1126	1200	1239	1049	1016
Percentage	49.7	50.9	51.0	51.7	52.9
TOTAL	2264	2359	2430	2029	1920

1974-75. (Table I) This was a difference of only 3.2 percent during the five-year period. The ratio of males to females has remained almost constant.

Standardized test scores for the five-year period are shown in Table II. The percentile scores for 1970 were slightly lower than those for the following years. The scores for 1972 tended to be higher than those reported for other years.

The tests were administered in October of each year to the tenth and eleventh grade populations. Three different series of tests were administered during the five-year period. While the tests measured progress and ability in similar areas, the percentile norms were not established on the same national populations. The comparison should be very general. The greater number of scores, 63.3 percent, fell within the thirtieth percentile. Twenty percent of the scores were in the fortieth percentile, and 16.6 percent fell within the twentieth percentile.

The socio-economic information has been profiled for the city by the Division of Research and Planning, Norfolk Public Schools. Since racial balance is maintained by busing and attendance boundaries are in accordance with federal guidelines, the information can be applied to all secondary schools in the city. The

TABLE II  
 MEAN PERCENTILE SCORES  
 MAURY HIGH SCHOOL

Test	Year	Reading	English Usage	Spelling	Math	Social Studies	Science
Stanford Achievement	1970	24	24	32	35	22	24
Stanford Achievement	1971	36	32	44	43	30	34
SCAT/STEP	1972	39	36	36	40	38	43
SCAT/STEP	1973	37	31	33	35	38	38
SRA	1974	41	25	34	35	41	33

Source: Department of Testing, Division of Research and Planning,  
 Norfolk Public Schools, Norfolk, Virginia, 1975.

information shown in Tables III, IV, and V is discussed in the following paragraphs.

The economic status of Maury's population ranged from the most affluent to the most depressed neighborhoods in the city. About 53 percent of the students were entitled to free busing and 45 percent were eligible for free or partially free lunches.

Approximately 7.3 percent of the fathers and 6.8 percent of the mothers were college graduates, while 5.7 percent of the fathers and 4.9 percent of the mothers had less than a seventh grade education. The educational level of 28.5 percent of the fathers and 8.6 percent of the mothers was unknown. The majority of the parents were high school graduates--27.3 percent of the fathers and 40.1 percent of the mothers. (Table III)

The occupations of 24.2 percent of the fathers were unknown as were those of 10.6 of the mothers. Approximately 18.6 percent of the fathers were employed in administrative and professional positions. Only 9.8 percent of the mothers were employed in similar positions. Approximately 47 percent of the mothers and 5 percent of the fathers were unemployed. (Table IV)

In comparison with other large cities in Virginia, Norfolk had a higher percentage of its population in the low income bracket of \$1,000 to \$6,000 and a higher percentage in public assistance programs or on welfare. The

TABLE III  
 EDUCATIONAL LEVEL OF PARENTS BY PERCENTAGE  
 NORFOLK PUBLIC HIGH SCHOOL STUDENTS  
 1974-75

Educational Level	Father	Mother
Unknown	28.5	8.6
Sixth Grade or Less	5.7	4.9
Seventh through Ninth	9.3	9.8
Tenth through Eleventh	13.6	20.4
High School Graduate	27.3	40.1
One through Three Years College	8.4	9.5
College Graduate	3.9	4.7
Graduate Professional Training	3.4	2.1
TOTAL	100.1*	100.1*

\*Total sample size was 1,245. The total of the percents presented for any given item may not equal one hundred. The percents given for any category are as reported, but the no response category was not included.

Source: Division of Research and Planning, Norfolk Public Schools, Norfolk, Virginia, 1975.

TABLE IV  
 CATEGORIES OF OCCUPATIONS OF PARENTS BY PERCENTAGE  
 NORFOLK PUBLIC HIGH SCHOOL STUDENTS  
 1974-75

Occupation	Father	Mother
Unknown	24.2	10.6
Major Professional	3.8	.1
Lesser Professional	3.4	2.8
Administrator, Small Business	11.4	6.9
Clerical or Sales	8.0	14.3
Skilled Labor	17.8	4.7
Semiskilled Labor	12.2	6.4
Unskilled Labor	5.1	8.0
Unemployed	4.7	47.1
TOTAL	90.6*	100.9*

\*Total sample size was 1,245. The total of the percents presented for any given item may not equal one hundred. The percents given for any category are as reported, but the no response category was not included.

Source: Division of Research and Planning, Norfolk Public Schools, Norfolk, Virginia, 1975.

TABLE V  
 DOMICILE OF STUDENTS BY PERCENTAGE  
 NORFOLK PUBLIC HIGH SCHOOLS  
 1974-75

Domiciled With	Percent
Mother and Father	58.6
Mother and Stepfather	8.8
Father and Stepmother	2.0
Mother only	22.7
Father only	2.4
Relatives	5.1
Nonrelatives	.2
<b>TOTAL</b>	<b>99.8*</b>

\*Total sample size was 1,245. The total of the percents presented for any given item may not equal one hundred. The percents given for any category are as reported, but the no response category was not included.

Source: Division of Research and Planning, Norfolk Public Schools, Norfolk, Virginia, 1975.

number of families with female heads of household was comparatively higher, as illustrated in Table V. The per capita income was lower than in other large cities in Virginia with the exception of Portsmouth. (French, 1975:3)

Davis (1975:33) reported that Maury's dropout rate of 13.2 percent in 1970-71 was the highest of all secondary schools in the city and one of the highest in the state. The rate increased to 14.6 percent during the 1971-72 school year but declined to 12.9 percent in 1973-74 after the institution of the phase-elective, non-graded curriculum organization.

#### SUMMARY

There were no drastic differences in the population at Maury over the five-year period. Although the total school population varied from a high of 2,430 in 1972-73 to a low of 1,920 in 1974-75, the demographic characteristics of race, sex, and socio-economic status remained fairly constant.

The introduction of the phase-elective, non-graded flexibly scheduled curriculum organization did produce an increase in achievement scores and a decrease in the dropout rate. (Davis, 1975:33, 166) However, the



majority of achievement scores remained in the thirtieth percentile and the dropout rate remained one of the highest reported in the state.

## Chapter 5

### FINDINGS

The purpose of this study was to determine the change in enrollment and completions in the vocational programs at Maury High School, Norfolk, Virginia, when a phase-elective, non-graded curriculum was compared with a traditionally organized curriculum. The enrollment and completion data were tabulated for a five-year period: two years before the phase-elective program was implemented, one year of implementation, and two years after implementation. The demographic characteristics of the population involved in the study were reported in Chapter 4. The analyses of data collected were arranged as outlined in Chapter 3.

#### Enrollment

The vocational enrollment for the five-year period at Maury High School is shown by program in Table VI. Courses in health occupations were added to the curriculum at Maury in 1972. Students electing courses at the Norfolk Technical Vocational Center (NTVC) are grouped together. Enrollment shown was a duplicated count. If students were enrolled in both industrial arts and business education, they were counted in both program areas. The totals

TABLE VI  
 VOCATIONAL ENROLLMENT  
 MAURY HIGH SCHOOL  
 BY YEAR

Subject	1970-71	1971-72	1972-73	1973-74	1974-75
Business Education	651	475	675	523	532
Distributive Education	84	112	80	134	96
Health Occupations	---	---	75	99	97
Home Economics	258	236	390	268	323
Industrial Arts	550	601	827	557	518
NTVC	44	73	102	62	45
<b>TOTAL</b>	<b>1,587</b>	<b>1,497</b>	<b>2149</b>	<b>1640</b>	<b>1611</b>

represent all students enrolled in all vocational areas for each year. The total enrollment in vocational education was greatest during the implementation year of the phase-elective, non-graded curriculum organization. The total enrollment figures indicate a decline in the number of students electing vocational courses in the two years after the phase-elective program was implemented. This is particularly apparent in the enrollment in industrial arts and at NTVC.

Figure 5 graphically illustrates the enrollment by vocational program and year. The number of students is shown on the vertical axis. The vertical broken line "X" indicates the introduction of the phase-elective, non-graded curriculum. There was an increase in the enrollment during the implementation year in all program areas with the exception of distributive education. There were no enrollments in health occupations at Maury High School before 1972. Enrollments tended to drop in all areas, with the exception of distributive education and health occupations the second year of the experimental program. While enrollments continued to drop in industrial arts and at NTVC, there was a slight increase in business education and home economics. The enrollment in health occupations seemed to stabilize.

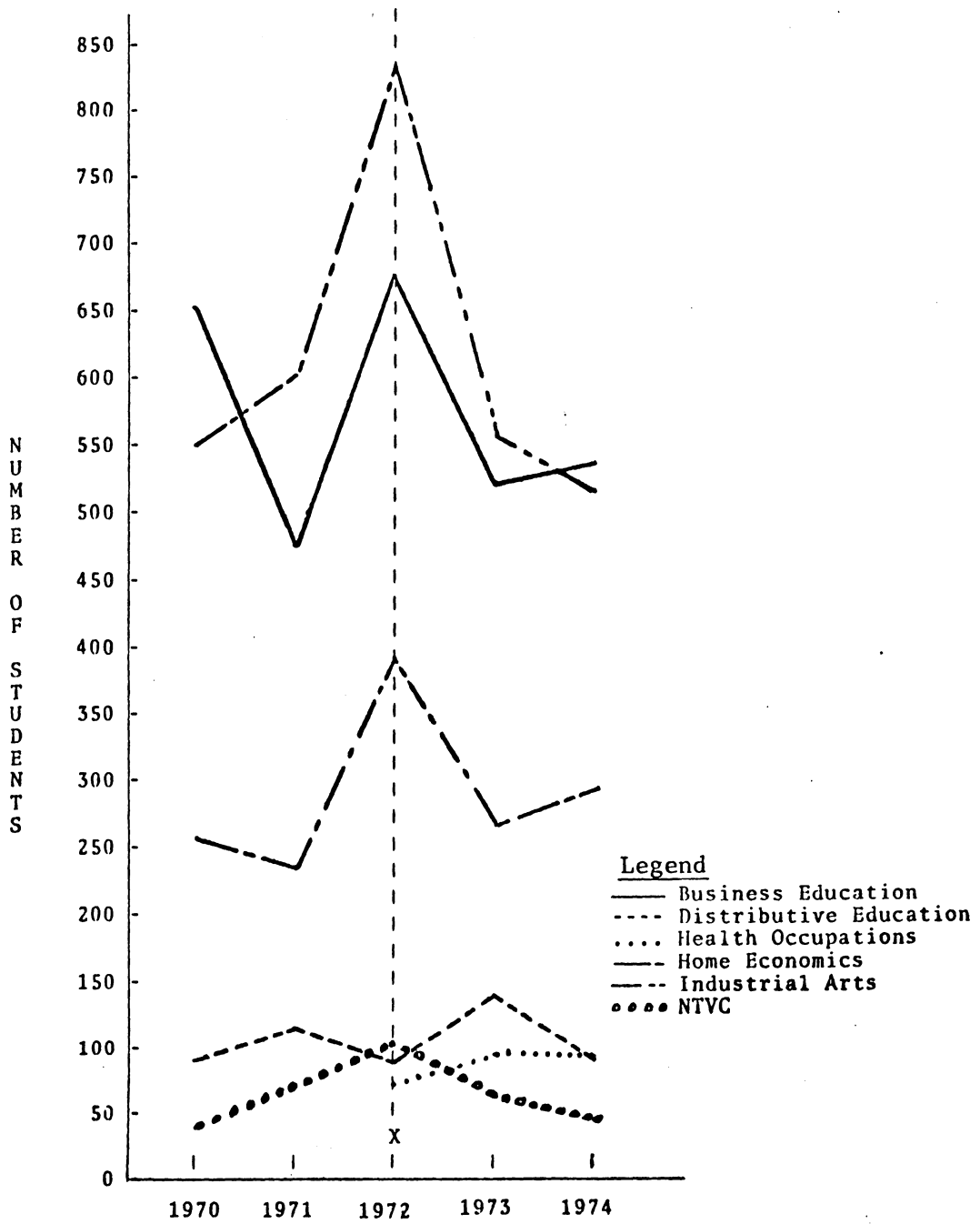


Figure 5  
 Vocational Enrollment by Program and Year

The erratic enrollment in distributive education may have been the result of a change in teaching personnel in 1972. The staff in the other areas tended to remain constant.

Enrollment in vocational programs as a percentage of the total school enrollment is shown in Table VII, and graphically illustrated in Figure 6. Since the total school enrollment has decreased each year since 1972, the percentage of enrollment in vocational subjects is a more accurate representation than just the number of students as presented in Table VI. Table VII and Figure 6 indicate that enrollment in industrial arts and at NTVC still declined while business education and home economics increased. It should be noted that there was an increase in the percentage of students enrolled in vocational education programs as compared to the total number of students enrolled at Maury during the five-year period.

The enrollment of Maury students at NTVC by vocational program is shown in Table VIII. The practical nursing program at NTVC accounts for the students enrolled in health occupations. A course in occupational home economics was added to the curriculum in 1973 at NTVC. Most of the courses in business education remained at the comprehensive high school; therefore, the greatest number of students was enrolled in trade and industrial education.

TABLE VII  
 VOCATIONAL ENROLLMENT AS COMPARED TO  
 TOTAL SCHOOL ENROLLMENT  
 (Percentages)

Subject	1970-71	1971-72	1972-73	1973-74	1974-75
Business Education	28.75	20.14	27.78	25.78	27.71
Distributive Education	3.71	4.75	3.29	6.60	5.00
Health Occupations	-----	-----	3.09	4.88	5.05
Home Economics	11.40	10.00	16.05	13.20	16.82
Industrial Arts	24.29	25.48	34.03	27.45	26.98
NTVC	1.95	3.09	4.20	3.06	2.34
<b>TOTAL</b>	<b>70.10</b>	<b>63.46</b>	<b>88.44</b>	<b>80.97</b>	<b>83.90</b>

63

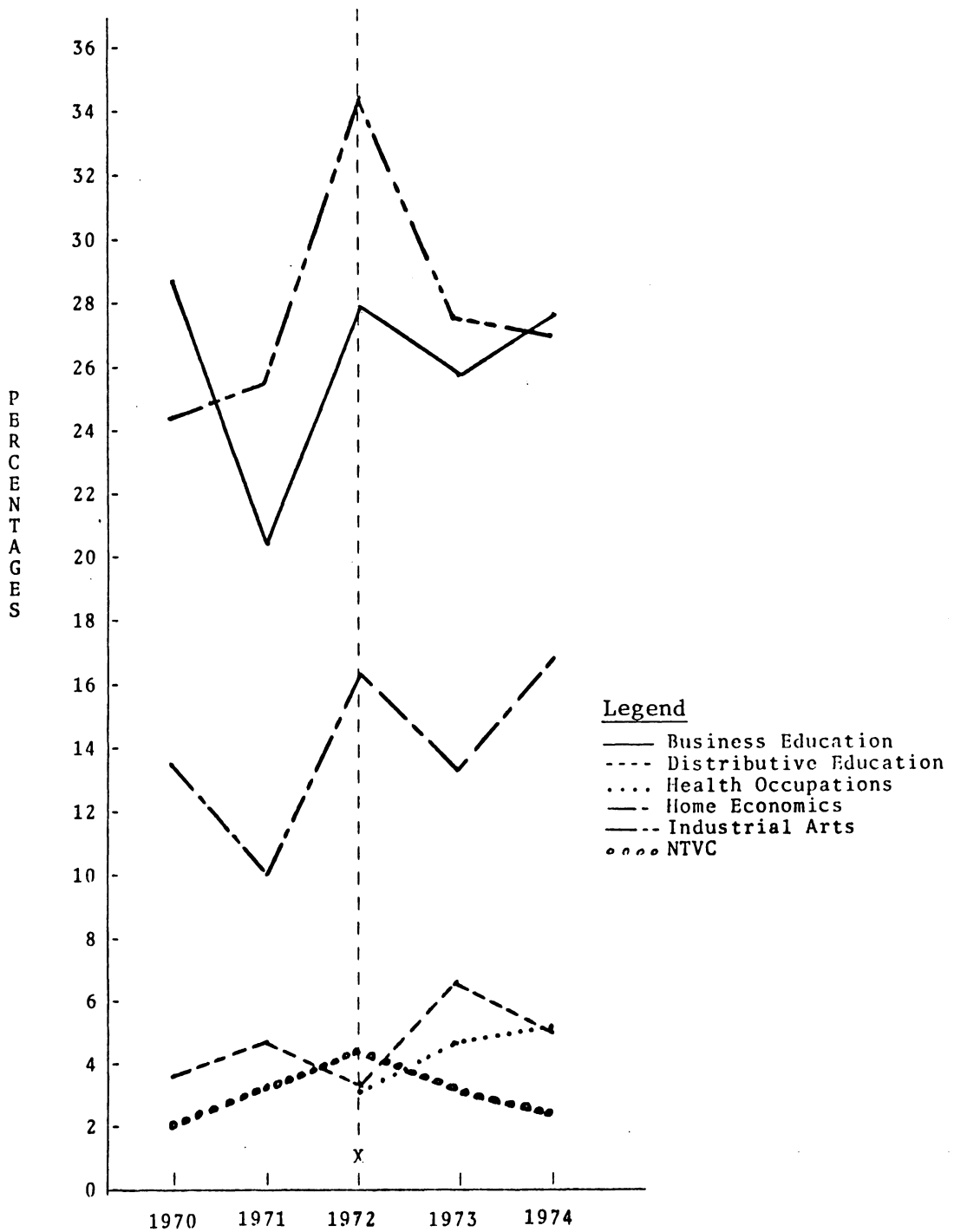


Figure 6

Vocational Enrollment as a Percentage of Total School Enrollment by Program and Year



TABLE VIII

ENROLLMENT OF MAURY HIGH SCHOOL STUDENTS AT  
NORFOLK TECHNICAL VOCATIONAL CENTER  
BY VOCATIONAL PROGRAM

Subject	1970-71	1971-72	1972-73	1973-74	1974-75
Agriculture	1	2	2	0	1
Business Education	6	4	8	6	5
Health Occupations	3	4	7	3	8
Home Economics	--	--	--	1	3
Trade & Industrial	34	63	85	52	28
<b>TOTAL</b>	<b>44</b>	<b>73</b>	<b>102</b>	<b>62</b>	<b>45</b>

Table VIII shows that more students were enrolled during the implementation year of the phase-elective, non-graded program than any other year. Enrollment declined each succeeding year after implementation of the phase-elective program. The addition of courses in health occupations at Maury as well as in occupational home economics and reprographics at NTVC tended to attract a larger percentage of students to vocational programs.

### Completions

The number of students eligible to complete vocational programs is shown in Table IX. There were no completions reported in home economics and industrial arts at Maury during the five-year period. Because the program in agricultural education did not meet the state criteria for completions, there were no students enrolled who were eligible to complete. The students enrolled in the advanced courses in business and distributive education were considered eligible to complete. Students enrolled in one-year programs and the second year of a two-year program at NTVC were considered eligible to complete. The total completions at Maury High School and NTVC are shown in Table X. All students completing programs at NTVC are included under this designation regardless of program completion area. The completions in health occupations were not included since the program at

TABLE IX  
 NUMBER OF STUDENTS ELIGIBLE TO COMPLETE  
 SELECTED VOCATIONAL PROGRAMS  
 MAURY HIGH SCHOOL

Subject	1970-71	1971-72	1972-73	1973-74	1974-75
Business Education	74	90	125	117	133
Distributive Education	59	65	62	67	46
NTVC	44	73	102	46	40
TOTAL	177	228	289	230	219

TABLE X  
 COMPLETIONS IN VOCATIONAL EDUCATION  
 FROM MAURY HIGH SCHOOL

Subject	1970-71	1971-72	1972-73	1973-74	1974-75
Business Education	60	81	48	102	55
Distributive Education	33	50	19	39	21
NTVC	39	48	71	30	25
<b>TOTAL</b>	<b>132</b>	<b>179</b>	<b>138</b>	<b>171</b>	<b>101</b>

Maury High School had not been in existence for the entire five years. The large number of students enrolled during the 1972-73 school year may account for some of the increase in completions in business education in 1973-74. There was also a change in the reporting procedure for business education the same year which may have had an inflationary effect.

The percentage of completions as compared to those eligible to complete is shown in Table XI. The percentage of students completing vocational programs declined during the implementation year of the phase-elective, non-graded curriculum. The percentage of completions had been relatively stable during the two preceding years. The percentage of completions at NTVC steadily declined from 1972-73 through 1974-75. The percentage of completions in each of the areas was less for 1974-75 than for any other year. This would indicate fewer students completed vocational programs under the phase-elective, non-graded curriculum organization.

The percentage of completions as compared to those eligible to complete for each year and program area are graphically illustrated in Figure 7. Some visual comparisons can be readily observed. The percentage of completions steadily declined at NTVC, while those in other areas have not established a pattern.

TABLE XI  
NUMBER OF STUDENTS ELIGIBLE TO COMPLETE  
SELECTED VOCATIONAL PROGRAMS  
(Percentages)

Subject	1970-71	1971-72	1972-73	1973-74	1974-75
Business Education	81.08	90.00	38.40	87.18	41.35
Distributive Education	55.93	76.92	30.65	58.21	45.65
NTVC	88.64	65.75	69.61	65.22	62.50
TOTAL	74.58	78.51	47.75	74.35	46.12

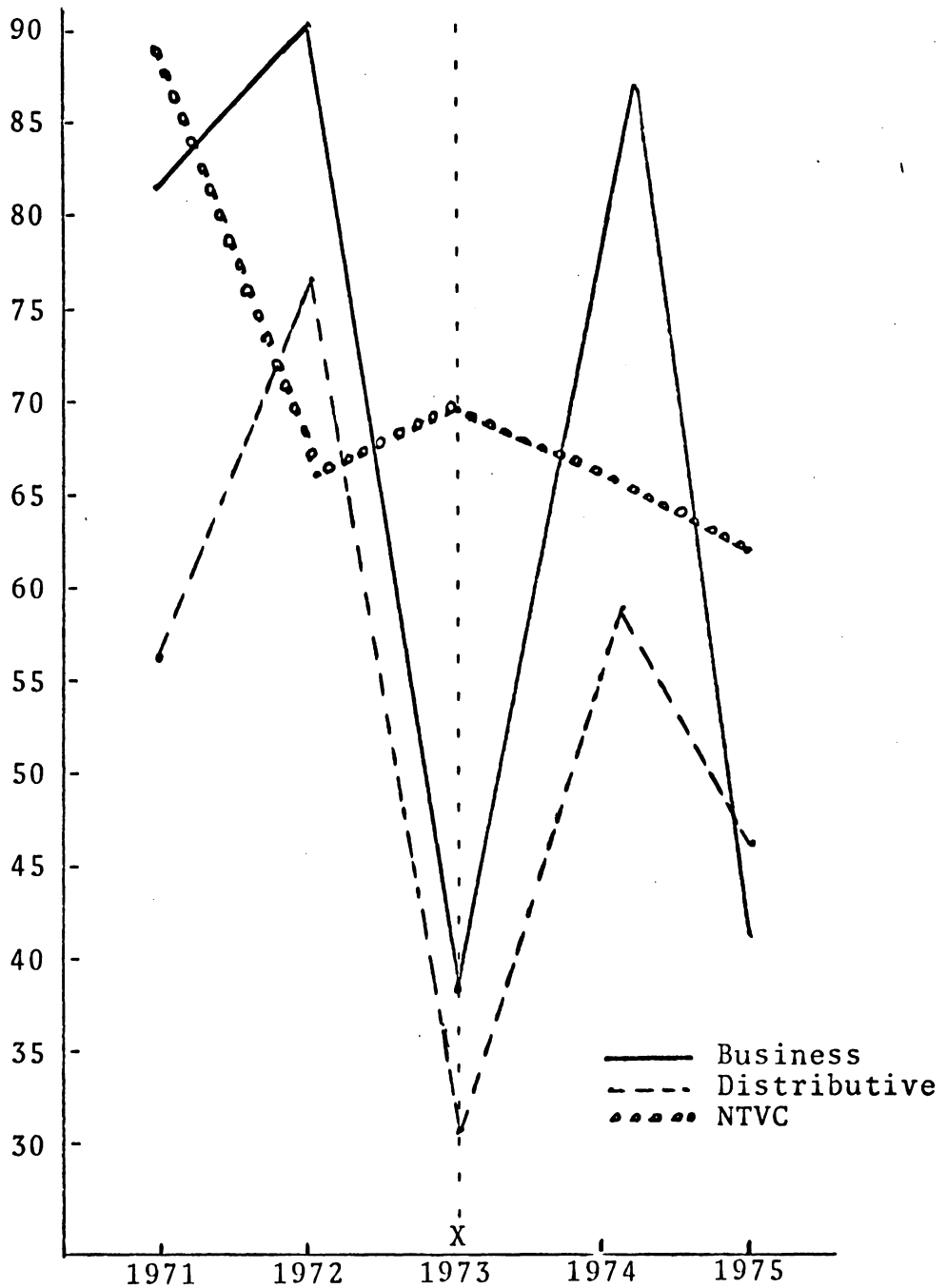


Figure 7

Percentage of Completions in Vocational Education  
as Compared to Those Eligible to  
Complete by Year and Program

Beginning in 1972-73 the Division of Vocational Education, Virginia State Department of Education, initiated a statewide reporting system. The reporting procedures during the last three years of the study were changed slightly each year. This would account for some of the inconsistencies in completion data.

### Test of Hypotheses

Hypothesis one was stated in the null form as follows:

$H_0$ 1 There will be no change in the enrollment of students in vocational courses in a phase-elective, non-graded, flexibly scheduled curriculum as compared to enrollment of students in a traditionally scheduled program which had existed at Maury High School.

The data indicated that there had been a change in the enrollment in vocational courses at Maury High School after the implementation of a phase-elective curriculum organization. During the implementation year, there was an increase in all program areas except distributive education (Figure 6). However, the enrollments declined the following year. The decline continued into the fifth year in industrial arts and at NTVC, but an increase in enrollment in business education and home economics was indicated. The total enrollment in vocational programs as compared with the total enrollment increased during the five-year period. (Table VII) The hypothesis was rejected.



The second hypothesis was stated in the null form as follows:

H<sub>0</sub>2 There will be no change in the number of students completing vocational programs in a phase-elective, non-graded, flexibly scheduled curriculum as compared to the number of students completing vocational programs in a traditionally scheduled program which had existed at Maury High School.

The completion data was less conclusive. Completions at NTVC decreased steadily during the five-year period (Table XI) while completions in business education and distributive education failed to establish a pattern. However, the percentage of total completions as compared to those eligible to complete was less in 1974-75 than it was during the implementation year, 1972-73, or during the first year of the study, 1970-71, as shown in Figure 8. Because of this decrease, the hypothesis was rejected.

#### SUMMARY

The findings of this study were divided into two areas: enrollments and completions in vocational education programs. Data were collected and tabulated for a five-year period during which a phase-elective, non-graded curriculum was implemented at Maury High School, Norfolk, Virginia. The data were tabulated and plotted to

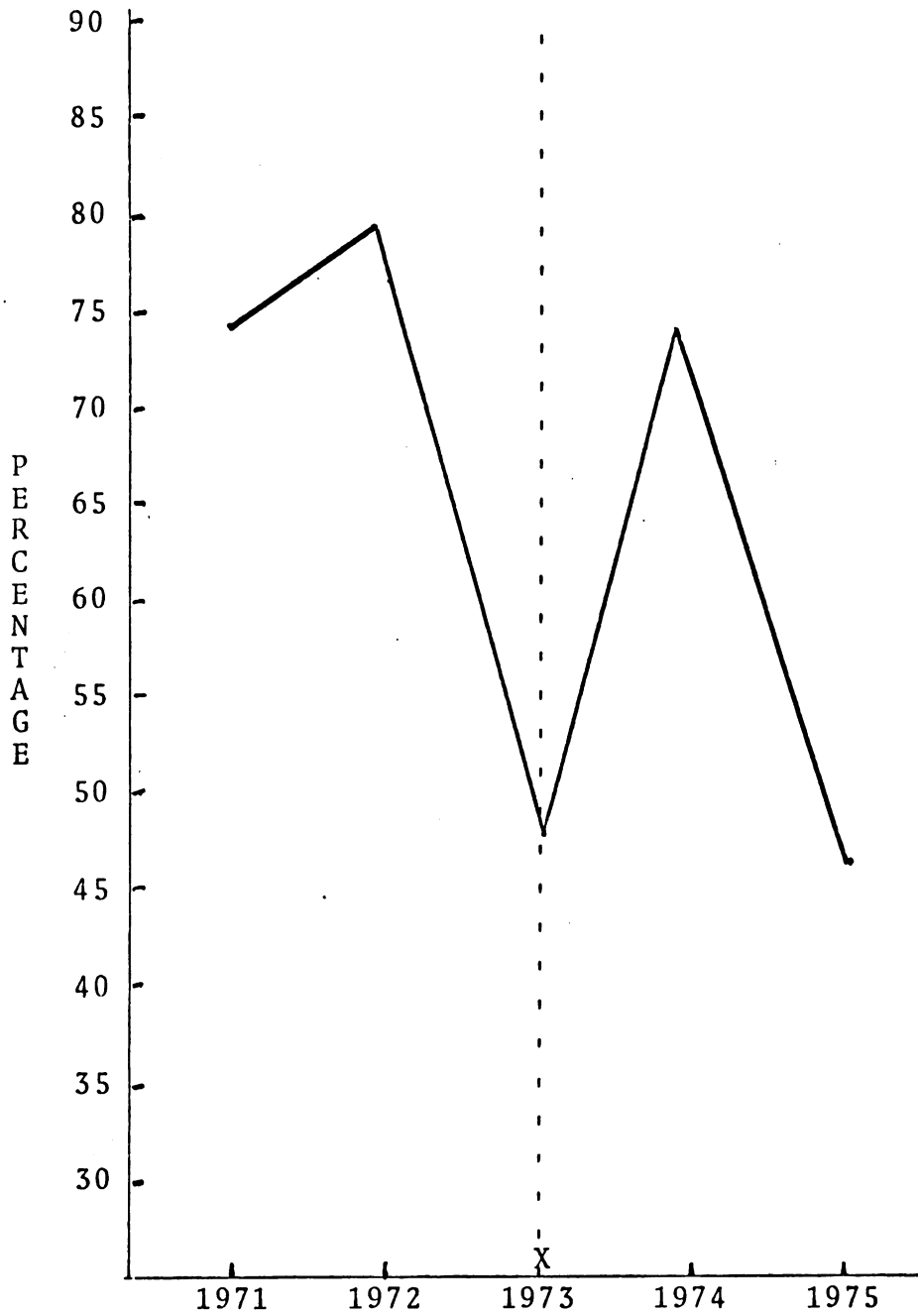


Figure 8

Percentage of Completions in Vocational Education  
as Compared to Those Eligible to Complete by Year

illustrate graphically changes and trends in enrollment. The results were shown in Tables VI, VII, VIII, and Figures 5 and 6.

Completion data were collected and tabulated for the five-year period. The results were shown in Tables IX, X, and XI. The percentage of total completions as compared to the number of students eligible to complete vocational programs was illustrated graphically in Figure 8.

The data disclosed there had been a change in the enrollment in vocational courses with the implementation of a phase-elective, non-graded curriculum. The completion data were not conclusive by vocational programs. However, there was a change in the total number of completions over the five-year period. The total number of completions was less in 1974-75 than in 1970-71.

## Chapter 6

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### SUMMARY

##### Purpose of the Study

The purpose of this study was to determine change in enrollment and completions in vocational programs in the phase-elective, non-graded, flexibly scheduled curriculum in Maury High School, Norfolk, Virginia. The data were compared with the enrollment and completions in vocational education in a traditionally organized and scheduled curriculum in the same high school. The time period of the study was five years.

##### Statement of the Problem

Two basic problems were investigated:

1. Will there be a change in student enrollment in vocational courses in a phase-elective, non-graded curriculum when compared to student enrollment in vocational courses in a traditionally scheduled curriculum organization which had existed at Maury High School?

2. Will there be a change in the number of students completing vocational programs in a phase-elective, non-graded, flexibly scheduled curriculum as compared to the number of students completing vocational programs in

a traditionally scheduled program which had existed at Maury High School?

Evidence was gathered concerning a past event in order to ascertain the change and/or trend in vocational enrollments and completions over a five-year period. The time series design was utilized to analyze data.

### Population

The population consisted of 11,002 students who were enrolled at Maury High School from September, 1970, through June, 1975. The demographic characteristics of the student population were fairly constant over the five-year period. The population ranged from a low of 1,920 students in 1974-75 to a high of 2,450 students in 1972-73. Students assigned to Maury High School who elected to pursue a vocational program at the Norfolk Technical Vocational Center were included in the study.

### Data Analysis

The total school enrollment for each of the five years was tabulated by sex and race. The mean percentile scores from standardized tests were tabulated. Demographic information on socio-economic status was reviewed and tabulated.

Baseline data were collected and tabulated for the school years 1970-71 and 1971-72 by enrollment and

completions in vocational programs. The data were plotted by program and year for each vocational field.

The enrollment and completion data under the phase-elective, non-graded curriculum were collected and tabulated for the years 1972-73 through 1974-75.

All enrollment data were compared with the total enrollment in the school for each of the five years under study to determine percentage of change.

The completion data for each vocational program for each year were compared with the number eligible to complete to determine the percentage of change.

The time series design was utilized to ascertain the change and/or trend in vocational enrollments and completions over the five-year period.

### Findings

The data indicated that there had been a change in the enrollment in vocational courses after the implementation (1972-73) of a phase-elective, non-graded curriculum organization. There was an increase in enrollment in all program areas with the exception of distributive education during the implementation year. While there was an initial increase during the implementation year, the enrollments decreased the following year. The decline continued in industrial arts and at the Norfolk Technical Vocational Center, but an increase was shown in enrollment

in business education and home economics. The total enrollment increased during the implementation year but decreased in each succeeding year. (Table VI, Page 59) However, the percentage of students enrolled as compared to the total student enrollment (Table VII, Page 63) increased during the period 1970-71 through 1974-75.

Examination of the completion data did not reveal a pattern in any vocational area; however, the completions at the Norfolk Technical Vocational Center decreased steadily during the five-year period. The percentage of completions compared to those eligible to complete was less in 1974-75 than any other year under study.

## CONCLUSIONS

Based on the findings, the following conclusions were drawn:

1. The initial implementation of a phase-elective, non-graded curriculum does increase enrollment in vocational programs. The increase in enrollment may be associated with the removal of required courses and the non-graded aspect of the phase-elective curriculum organization. Students have more flexibility in the selection of courses.

2. Although enrollment in vocational courses increased with the implementation of a phase-elective,

non-graded curriculum, completions tended to decrease. The increased number of course options which could be selected on a nine-week basis provided the opportunity for students to change courses. Therefore, fewer students completed vocational programs as defined by the State Department of Education. The non-sequential aspects of the phase-elective curriculum organization prevented the reporting of completions under the current criteria imposed by the State Department of Education.

3. Enrollment in vocational programs tended to decline after the initial implementation of a phase-elective, non-graded curriculum. After the initial experimentation, students seemed to select electives in the program areas requiring a specific number of phases for graduation.

4. Enrollment and completion patterns in vocational education seemed to be less stabilized in the phase-elective, non-graded curriculum organization than under the traditional program. The wider variety of course options may have permitted the student more experimentation and exploration of electives.

5. There tended to be a decrease in the number of students who selected multi-period vocational courses; therefore, it can be concluded that the vocational curriculum should be evaluated in terms of time



requirements and sequential arrangement of courses. Students in vocational courses might be encouraged to select phase courses that will lead to program completion.

With the widespread interest in phase electives, other school divisions contemplating changes in their course structure should find the results and conclusions of this study of value in planning for vocational programs.

Although the findings and conclusions cannot be generalized to all secondary school programs, the fact that the Norfolk Public School System was under court-ordered desegregation for both teachers and students causes one to assume that there would be similarities in all Norfolk Secondary Schools. As the phase-elective, non-graded curriculum is expanded from Maury to include other secondary schools, the findings and conclusions of this study should be considered carefully.

Hopefully, these conclusions will be helpful to other school systems in Virginia and other states in the nation considering a similar curriculum change. Other school systems in making generalizations are cautioned to examine the uniqueness of this study. They should be particularly aware of the size of the school, the urbanization of the location, and the demographic characteristics of the population.

## RECOMMENDATIONS

The following recommendations are made for further study, research, and action:

1. Follow-up studies should be conducted by Norfolk Public Schools to develop patterns of student enrollment in and completions of vocational courses and programs. The phase-elective, non-graded curriculum organization could lead to fragmentation of a vocational program. A study of student selections and completions of phases will give information for the evaluation of vocational curriculum.

2. This study should be replicated in other areas with comparable school size and student population in order to ascertain more explicitly the effects of a phase-elective, non-graded curriculum on the enrollment and completions in vocational programs.

3. A study should be made of student competencies developed in a phase-elective, non-graded curriculum as compared with those developed in a traditional curriculum. This information would be helpful in the evaluation of phase electives in relation to skill development.

4. Further investigation should be undertaken to ascertain if the location of vocational courses away from the home school and in a technical vocational center has an effect on student enrollment.

5. Corrective action should be taken to offset the decline in the enrollment and completions at NTVC. Action might include the modification of the curriculum organization at NTVC, a study of student attitudes toward transportation, a study of teacher acceptance of phase electives, and better coordination of counseling services between the home school and NTVC.

6. Emphasis should be placed on exploration and tryout of vocational programs early in the student's secondary program of studies. Limited opportunities are currently available in the junior high school for exploration of vocational programs; consequently, students tend to experiment with several vocational areas in senior high school which tends to decrease program completions. Phases in vocational education should be developed for the junior high school student.

7. Intensified courses compatible with the phase-elective, non-graded curriculum organization should be developed. At the present time, senior intensified courses may be offered by a school division. These courses are less than 36 weeks in length and may be offered only at the twelfth grade level for seniors who are graduating and do not have a marketable skill. The phase-elective, non-graded curriculum organization appears to be conducive to the development of intensified courses without regard to grade level.

8. With the current emphasis on the development of job-entry skills by the Standards of Quality,<sup>2</sup> any change in curriculum organization should enhance the enrollment and completions in vocational education programs. Serious consideration should be given to the decline in the number of completions and the decrease in the enrollment in vocational programs under the phase-elective, non-graded curriculum organization.

9. Completion criteria should be reviewed by the Virginia State Department of education to permit more flexibility in vocational education programming. Currently, the criteria for completions, as specified by the State Department of Education, Richmond, Virginia, is based on the length of the course and the number of periods per day. Consideration should be given to developing competency-based criteria for completions without regard to length and/or amount of time a student spends in a given vocational program.

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<sup>2</sup>Section 2 of Article VIII of the Constitution of Virginia provides that standards of quality for the several school divisions shall be determined and prescribed from time to time by the Board of Education, subject to revision only by the General Assembly.

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## APPENDIXES

APPENDIX A  
LETTER OF REQUEST TO  
NORFOLK PUBLIC SCHOOLS

1600H Foxridge  
Blacksburg, VA 24060  
November 14, 1975

Dr. John McLaulin  
Assistant Superintendent for Research  
Norfolk Public Schools  
800 East City Hall Avenue  
Norfolk, Virginia 23510

Dear Dr. McLaulin:

Permission is requested to use data on Norfolk Public Schools for a research study in connection with my doctoral dissertation. The tentative topic is "Implications for Vocational Educators Contemplating the Implementation of a Phase-Selective Curriculum." I will need enrollment data on the five (5) senior high schools and the technical center. I will also need data on the enrollment and completions in vocational subject areas in the same schools.

My research design is not complete at this time. I anticipate having to establish equivalency of student body by socio-economic background, race, sex, and achievement. Would this be possible without equating individual students? My advisor seems to think it would be acceptable to establish the equivalency of the school population if the system has had to do this for other projects and/or programs.

I would appreciate your approval. At a later date, I am sure I will need some assistance from your staff in the collection and interpretation of data.

Sincerely yours,

Shirley B. Wilson

smr

APPENDIX B

LETTER OF APPROVAL FROM  
NORFOLK PUBLIC SCHOOLS .



ADMINISTRATION BUILDING, 800 EAST CITY HALL AVENUE  
NORFOLK, VIRGINIA 23510  
November 25, 1975

Mrs. Shirley B. Wilson  
1600H Foxridge Apartments  
Blacksburg, Virginia 24060

Dear Mrs. Wilson:

Permission is hereby granted for you to use data pertaining to Norfolk Public Schools as a part of your doctoral dissertation project. When you have completed the details of your research design I suggest that you contact either me or Dr. Stofflet in order that we can be of most assistance to you.

Best wishes to you in your program.

Sincerely,

John C. McLaulin  
Assistant Superintendent  
Division of Research and Planning



APPENDIX C

LETTER OF REQUEST TO  
STATE DEPARTMENT OF EDUCATION  
RICHMOND, VIRGINIA

1600H Foxridge  
Blacksburg, VA 24060  
February 16, 1976

Mr. Lloyd M. Jewell, Jr., Supervisor  
Statistical Services for Vocational Education  
Division of Educational Research and Statistics  
Virginia State Department of Education  
Richmond, VA 23216

Dear L. M.:

I am attempting to study vocational enrollments and completions at Maury High School over the past five years beginning in 1970-71. This will give data for two years before we went into phase electives and for three years after we adopted this concept.

There is no difficulty in obtaining enrollment data by program/course in Norfolk. I have some doubts as to whether or not I can get completion data by program on Maury students. Would you have this data available? If not, could it be retrieved?

My hypothesis for the study is that we have had no change in enrollment and completions. I believe we have, and that is what I am attempting to prove.

If I could have access to records, I would be happy to extract the data I need if it is available.

Please let me know what data you have, and if I can have access to records.

Thank you for your assistance.

Cordially yours,

Shirley B. Wilson

smr

APPENDIX D

REPLY FROM STATE DEPARTMENT OF EDUCATION  
RICHMOND, VIRGINIA

**COMMONWEALTH of VIRGINIA****STATE DEPARTMENT OF EDUCATION  
RICHMOND, 23218**

February 18, 1976

Ms. Shirley Wilson  
1600H Foxridge Apartments  
Blacksburg, Virginia 24060

Dear Ms. Wilson:

Your letter of February 16 in regard to the data on completions at Maury High School was received this morning.

We have on computer tapes certain completion data for Maury vocational education students beginning with the 1972-73 school year. In addition, we have follow-up data on computer tapes for the same years.

If you could be more specific as to the data needed on these students, I see no reason why we could not provide it for you. We would need approval of the Norfolk school division in order to release the data and we would probably have to get you to provide tapes in order to transfer the information from the tapes that we have here.

You may want to call Betsy Harding and discuss with her the specific information needed for your study. Betsy's telephone number is: (804) 786-2066.

If I can be of further assistance, please let me know.

Sincerely yours,

Lloyd M. Jevell, Jr.  
Coordinator  
Vocational Education Research  
and Statistical Information

LMJ/dss

cc Betsy Harding

APPENDIX E  
LETTER OF TRANSMITTAL



**COMMONWEALTH of VIRGINIA**  
**STATE DEPARTMENT OF EDUCATION**  
**RICHMOND, 23218**

MAR. 1 8 1976

March 17, 1976

Mr. James Augustine  
Systems Analyst  
Norfolk City Schools  
Administration Building  
800 E. City Hall Avenue  
Norfolk, Virginia 23510

Dear Jim:

Enclosed are record layouts for the 1972-73, 1973-74, and 1974-75 Vocational Education Secondary files, which are being mailed to you today under separate cover. Each file consists of two tape volumes, and each is sorted by division code, school code, and O.E. code. Each file is unlabeled, 800 BPI.

Please forward the appropriate information to Shirley Wilson.  
Let us know if we can be of further assistance.

Yours sincerely,

Betsy Harding

BH/ds

Enclosures

**The vita has been removed from  
the scanned document**

A PILOT STUDY OF THE PHASE-ELECTIVE CURRICULUM  
IN MAURY HIGH SCHOOL IN NORFOLK, VIRGINIA  
AND IMPLICATIONS FOR VOCATIONAL  
EDUCATION PROGRAMS IN THE  
COMMONWEALTH

by

Shirley Burgess Wilson

(ABSTRACT)

The purpose of this study was to determine change in enrollment and completions in vocational programs in a phase-elective, non-graded, flexibly scheduled curriculum in Maury High School, Norfolk, Virginia, through comparison with the enrollment and completions in vocational education in a traditionally organized and scheduled curriculum in the same high school. The time period of the study was five years. The time series design was utilized to analyse data.

The population consisted of 11,002 students who were enrolled at Maury High School from September, 1970, through June, 1975. The population ranged from a low of 1,920 students in 1974-75 to a high of 2,450 students in 1972-73. Students assigned to Maury High School who elected to pursue a vocational program at the Norfolk Technical Vocational Center (NTVC) were included in the study.

Conclusions reached included: (1) initial implementation of a phase-elective, non-graded curriculum increased enrollment in vocational programs, (2) enrollment in



vocational programs tended to decline after the initial implementation of a phase-elective, non-graded curriculum, (3) completions tended to decrease with the implementation of a phase-elective, non-graded curriculum, (4) enrollment and completion patterns seemed to be less stabilized in the phase-elective, non-graded curriculum program, and (5) the number of students selecting multi-period vocational courses tended to decrease.

Recommendations included: (1) follow-up studies should be conducted by Norfolk Public Schools to develop patterns of student enrollment and completions of vocational programs in the phase-elective, non-graded curriculum, (2) this study should be replicated in other areas with comparable school size and student population in order to ascertain more explicitly the effects of a phase-elective, non-graded curriculum on the enrollment and completions in vocational programs, (3) a study should be made of student competencies developed in a phase-elective, non-graded curriculum as compared with a traditional curriculum, (4) further investigation should be undertaken to ascertain if the location of vocational courses away from the home school in a separate technical-vocational center has an effect on student enrollment, (5) corrective action should be taken by the Norfolk Public Schools to offset the decline in enrollment and completions at the Norfolk Technical Vocational Center from Maury High School, (6) emphasis should be placed on

exploration and tryout of vocational programs early in the student's secondary program of studies, (7) intensified courses compatible with the phase-elective, non-graded curriculum organization should be developed, (8) changes in curriculum organization should enhance the enrollment and completions in vocational programs to reflect the current emphasis on job-entry skills, and (9) completion criteria should be reviewed by the Virginia State Department of Education to permit more flexibility in vocational programming.