R E P O R T R E S U M E S

ED 019 395 VT 000 683

THE FLORIDA STUDY OF VOCATIONAL-TECHNICAL EDUCATION.

FLORIDA ST. DEPT. OF EDUCATION, TALLAHASSEE

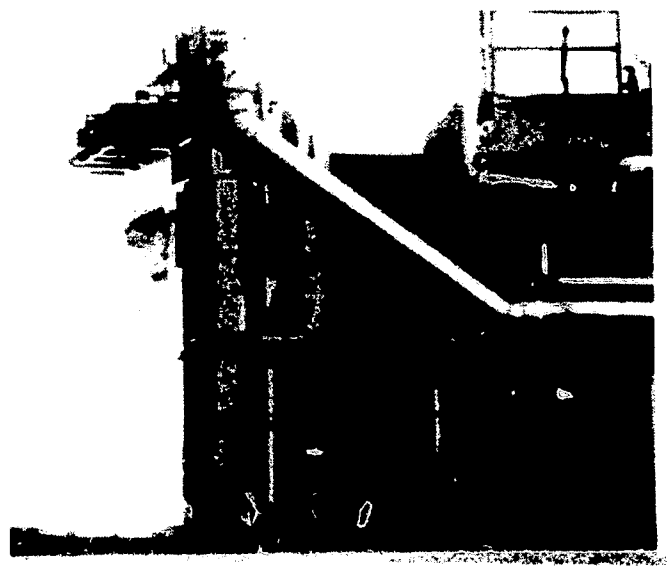
PUB DATE 65

EDRS PRICE MF-$0.75 HC-$5.68 140P.

DESCRIPTORS- *VOCATIONAL EDUCATION, *TECHNICAL EDUCATION, *ADULT EDUCATION, INDUSTRIAL ARTS, JUNIOR COLLEGES, POST SECONDARY EDUCATION, DEAF, GUIDANCE PROGRAMS, PHYSICAL FACILITIES, LABORATORY EQUIPMENT, BLIND, FINANCIAL NEEDS, FINANCIAL SUPPORT, ADMINISTRATIVE ORGANIZATION, AREA VOCATIONAL SCHOOLS, *PROGRAM PLANNING, POPULATION TRENDS, STATE PROGRAMS, HIGH SCHOOLS, EMPLOYMENT TRENDS, FLORIDA,

ANALYSES OF FACTORS THAT AFFECT VOCATIONAL, TECHNICAL, AND GENERAL ADULT EDUCATION IN FLORIDA ARE PRESENTED THROUGH (1) ANALYSIS OF AVAILABLE PERTINENT DATA CONCERNING POPULATION GROWTH AND DISTRIBUTION, (2) FACTUAL PRESENTATION OF THE EXISTING PROGRAMS OF VOCATIONAL AND TECHNICAL EDUCATION, (3) ACCUMULATION AND CLASSIFICATION OF DATA SHOWING NEEDS FOR SUITABLY TRAINED PERSONNEL FOR VARIOUS TYPES OF EMPLOYMENT, (4) PROJECTION OF PROGRAMS AT VARIOUS EDUCATIONAL LEVELS FOR SPECIFIC TRAINING RELATED DIRECTLY TO JOB NEEDS, (5) INVENTORY AND EVALUATION OF EXISTING VOCATIONAL AND TECHNICAL SHOPS AND LABORATORIES AT HIGH SCHOOL CENTERS AND JUNIOR COLLEGES, (6) ANALYSIS AND PROJECTION OF FINANCIAL REQUIREMENTS TO SUPPORT AN IMPROVED AND MORE COMPREHENSIVE PROGRAM OF VOCATIONAL AND TECHNICAL EDUCATION, (7) DESCRIPTION AND ANALYSIS OF EXISTING PATTERNS OF EDUCATIONAL ORGANIZATION AT STATE, AREA, AND LOCAL LEVELS, AND (8) DEVELOPMENT AND APPLICATION OF CRITERIA FOR LOCATING VARIOUS PROGRAMS AND FACILITIES FOR VOCATIONAL-TECHNICAL EDUCATION IN FLORIDA. RECOMMENDATIONS FOR EACH LEVEL AND EACH AREA OF VOCATIONAL-TECHNICAL EDUCATION INCLUDE--(1) FUNDS SHOULD BE PROVIDED FOR THE COMPILATION OF A COMPREHENSIVE CLASSIFIED INVENTORY OF EMPLOYMENT NEEDS ON A YEARLY BASIS, (2) PERIODIC STUDIES OF VOCATIONAL AGRICULTURE SHOULD BE MADE IN ORDER THAT APPROPRIATE CURRICULUMS MAY BE DEVELOPED, AND (3) AN ANALYSIS SHOULD BE MADE TO DETERMINE WHICH HOME ECONOMICS PROGRAMS FOR GAINFUL EMPLOYMENT ARE IN GREATEST DEMAND. (PS)

The Florida Study of Vocational-Technical Education



Published by the
STATE DEPARTMENT OF EDUCATION
Tallahassee, Florida
THOMAS D. BAILEY, Superintendent

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December 10, 1964

Dr. Thomas D. Bailey
State Superintendent of Public Instruction
Tallahassee, Florida

Dear Dr. Bailey:

In compliance with our agreement dated February 25,1964, I am transmitting to you this Report of the Study of Vocational, Technical and General Adult Education.

The Report covers all aspects of the problem set forth in the comprehensive outline that was agreed upon. It provides summaries and analyses of data which should be helpful to boards of education and school administrators generally. It is our hope that it may be useful to your Board and to the members of the Florida Legislature in the preparation of legislation necessary for enlarging and strengthening the State's program of occupational education at the various levels of public education.

We are indebted to numerous individuals and agencies for their splendid assistance and cooperation. Both state and county departments of education have provided the data upon which the Report is based.

It is our sincere hope that the Report will be helpful to all who are concerned with the development of an adequate program of Vocational-Technical Education in Florida.

Respectfully yours,

Doak S. Campbell,
Director

DSC:emc

Recommendations

THIS REPORT has presented analyses of factors that affect vocational, technical and general adult education in Florida. It has presented the essential elements of an adequate state-wide program to meet the needs for occupational education for all of the people of the State.

In the light of the findings here presented the following recommendations are presented for consideration by the appropriate authorities.

1. In order that occupational education bear a justifiable relationship to manpower needs a continuing inventory of employment and employment needs in the State must be available.

It is recommended that funds be provided for the compilation of a comprehensive, classified inventory, and for continuing such inventory regularly from year to year.

It is suggested that a proper agency to provide this service is the Research and Statistics Department of the Florida Industrial Commission.

2. The high schools of Florida must continue to reorient their vocational agriculture programs to the developing field of modern agriculture.

It is recommended that periodic studies of trends in agriculture be made by the Division of Vocational, Technical and General Adult Education in cooperation with the College of Agriculture of the University of Florida in order that appropriate curricula may be developed.

3. Continued emphasis should be given to agribusiness in the high schools with further development of this program.

It is recommended that this program be extended into a limited number of junior colleges.

4. In order for Home Economics to benefit fully from funds to be provided through federal legislation, more emphasis will need to be given to Home Economics programs that are related directly to gainful employment.

It is recommended that an analysis be made at once to determine the types of such programs that are in greatest demand.

5. *It is recommended* that preparatory occupational programs in business and distributive education be greatly expanded in Florida's high schools and junior colleges.

6. A comprehensive guidance program which is an integral part of the total educational effort must be available in order that all students may receive maximum benefits from the educational services of the schools. Florida falls far short of the desired minimum of guidance services in many of its schools.

It is recommended that each county school system in the State that has not already done so, provide at least one properly qualified guidance counselor for each 400 students in its high schools and junior high schools.

It is further recommended that the higher institutions that are responsible for the training of counselors give greater emphasis to occupational guidance.

7. Temporary occupational facilities in use at high school centers, vocational schools, and junior colleges should be replaced. Their early replacement is essential to the improvement of the on-going vocational and technical program in the State.

It is recommended that the replacement of these facilities should be placed high on any system of priorities that may be established

for the construction of vocational and technical education facilities.

8. *It is recommended* that a carefully planned program of new construction be implemented to provide for the construction of needed facilities at the various centers which are designated as area vocational education schools.

The facilities to be constructed at properly designated centers should be justified in terms of a proposed instructional program which is geared to potential employment opportunities and the number of students necessary to assure an acceptable rate of laboratory and student station utilization.

9. *It is recommended* that State policy with regard to the assignment of priorities for new construction be re-examined.

Consideration should be given to liberalizing State regulations regarding the use of Capital Outlay and Debt Service and Matched Building funds so as to provide more freedom to construct facilities of an instructional nature which are needed to fulfill the requirements of a comprehensive educational program.

10. Consideration should be given to the possible use of a standard building components system in the construction of laboratory and shop facilities for occupational education.

It is recommended that a careful study be made to determine the feasibility of such a system and whether sufficient savings in cost can be made to justify it.

11. *It is recommended* that early attention be given to the reorganization of school centers in the less populous counties of the State so as to make possible a more effective occupational education program as well as the reduction of the per pupil costs for administration.

12. *It is recommended* that increased financial support be provided for occupational education on both the State and local levels. The increase in funds should broaden the minimum program of education that is made available to the pople of Florida and should be an integral part of the Minimum Foundation Program of Education.

13. *It is recommended* that the allocation of vocational units to the several counties and to the community junior colleges be based on an objective formula using either a ratio of vocational units to basic instructional units or a school population ratio. In either case, the number of units allocated should provide support for an adequate program of occupational education. Furthermore, funds for the support of vocational and technical units allocated should be transferred at the State level to the appropriate minimum foundation program.

14. *It is recommended* that consideration be given to increasing the value of vocational units so as to reflect the higher costs of operating vocational and technical programs.

It is further recommended that some form of grants-in-aid be made available to counties and community junior colleges to assist financially with the initiation of new programs of occupational education. Federal funds may be used with considerable effectiveness in this regard.

15. *It is recommended* that a constant value be placed on all vocational and technical units available for use in the same minimum foundation program, or in cases of transfer of units between programs.

16. *It is recommended* that the "legislative freeze" on vocational units used for cooperative education be removed.

17. *It is recommended* that consideration be given to the elimination of the discrete compartimentalization of vocational unit allocations. It would appear that an allocation of units designated as vocational but not specified as to major service area would be sufficient earmarking to control the use of units.

18. *It is recommended* that the allocation of noncredit units for occupational programs in junior colleges be established as a part of the Minimum Foundation Program for Junior Colleges, and that the allocation of units to support this program be based on an objective criterion related to the number of persons requiring occupational education services.

19. *It is recommended* that coordinate action among the several divisions of the State Department of Education, covering the relationships between occupational education and the other components of the total educational program, be made a matter of first priority.

Special attention should be given such action until substantial progress shall have been achieved in this direction.

20. The Division of Community Junior Colleges maintains no professional staff for supervision of the several occupational studies at the junior college level. It depends upon the specialists in the Division of Vocational, Technical and General Adult Education for such supervisory services. Its professional staff, therefore, is small in number. With the growth of the community junior colleges in number and size, the central staff is too limited to perform the duties that are expected of that Division.

It is recommended that a limited number of professional personnel be added to the Division of Community Junior Colleges who can (1) provide effective coordination between the junior colleges and the several program area specialists, (2) assist the junior colleges with problems involving accreditation, and (3) carry forward research services essential to a state-wide system of community junior colleges.

21. The Division of Vocational, Technical and General Adult Education maintains a fairly large professional staff for the supervision of occupational and related educational services at both the high school and junior college levels. The number of such personnel is not adequate to provide for the necessary expansion of the state-wide program.

It is recommended that substantial additions be made to the professional staff of this Division.

22. *It is recommended* that regulations for certification of teachers be re-studied and revised so as to provide reasonable uniformity and at the same time such flexibility as may be needed in order to make it possible to secure and maintain teachers with the desired qualifications.

23. *It is recommended* that the law that provides for the transportation of students (Ch. 236.053) be so amended that transportation units may be provided for students attending area vocational education schools on the same basis as for those attending community junior colleges.

Criteria

It is recommended that the following criteria be used as guide lines in determining the location and development of area vocational education schools in Florida.

1. Population

Criteria are indicated for two types of schools: A, where an existing high school or junior college is designated as an area vocational education school, and B, where a separate area vocational education school is to be established.

In either case, no new area vocational education school should be approved which would tend to reduce the enrollments in existing institutions, especially in those already marginal in terms of student population and other factors which affect the quality of the program.

In any area where the population is sufficiently large to support more than one area vocational education school, it is essential that clear differentiation be made as to function, level of programs and types of students to be served.

A. Criterion: *The geographic area to be served by an existing institution which is designated as an area vocational education school must have a population sufficiently large to assure a minimum ADA of 150 full-time equivalent day-time students enrolled in the vocational and technical program.*

An existing institution, either a comprehensive high school or junior college, can support an addition to its operation at lower cost than can be accomplished by establishing a new institution to serve the same number of vocational and technical students. An existing institution has the administrative and operating staff and it provides library and other supporting education services. Furthermore, the additional students supported by adding a vocational program tends to diffuse the operating expenses over a larger number of students who, consequently, derive the benefits of a larger institution.

For these reasons the designation of an existing institution as an area vocational education school would require a less stringent population criterion than would the establishment of a new and separate area school.

B. Criterion: *The geographic area to be served by a separate institution which is designated as an area vocational education school must have a population sufficiently large to assure a minimum ADA of 300 full-time equivalent day-time students enrolled in the vocational and technical program.*

The Study Staff recognizes that there will be local conditions which may possibly require the establishment of separate area vocational education schools. In some school systems existing high schools may serve the role of "parent school"

while sending students to an area vocational education school for vocational and technical education courses. In some of the larger counties, there are existing vocational and technical education schools which are currently performing a reasonably satisfactory service and which may be designated as area vocational education schools. However, before new and separate institutions are established, conclusive evidence should be presented which clearly indicates that existing institutions cannot assume the responsibility for the vocational and technical education program. Furthermore, every effort should be made to make all existing specialized institutions more comprehensive.

This criterion is projected in view of the fact that a separate institution must have a minimum administrative staff in addition to the required teaching staff in order to service the vocational-technical programs. Such staff would necessarily include at least a principal or director, a guidance counselor and a librarian. Furthermore, if a broad program of adult and related educational services is to be provided, provision for additional personnel will be required.

2. Employment Opportunities

Criterion: *The educational program of an area vocational education school must bear a justifiable relationship to employment opportunities for graduates in the area to be served as well as in the larger labor market area.*

In the application of this criterion a thorough occupational survey must be conducted in order to determine employment opportunities and the potential number of students to be served.

While in more populous areas this criterion is fairly easy to apply, in the counties with relatively sparse population there are usually also extremely limited opportunities for employment, both as to number and variety. In such cases the vocational program of area vocational centers must be justified in relation to employment opportunities in the nearest metropolitan centers or even in the State as a whole.

3. Relation to Present and Possible County and Multi-County Organizational Patterns

Criterion: *An area vocational education school should be so located that it will be within commuting distance of the students to be served.*

This criterion should apply whether the area vocational education school serves a single county or a multi-county unit. Except in cases which involve extenuating circumstances, multi-county areas for this purpose should coincide with planned or existing multi-county areas for junior colleges.

The geographic areas that were planned for junior colleges were developed so as to provide educational services within an area described by a thirty-five mile radius for 99 per cent of the total population of the State. Accordingly, the need for development of a more effective multi-county organization to provide any type of educational services for the greatest number of the State's population should be clearly demonstrated before modifying the existing pattern.

4. Relation to Present and Needed Legal Provisions

Criterion: *An area vocational education school must comply with the provisions of the Vocational Education Act of 1963, as well as with State laws that apply.*

The Vocational Education Act of 1963 defines the term "area vocational education school" in terms of four types of institutions that may be so designated. It also requires that the school be "available to all residents of the State or an area of the State designated and approved by the State Board."

The Act further requires that, in the case of a separate technical or vocational school or the department or division of a junior college which provides vocational education in no less than five different occupational fields, the school admit as regular students both persons who have completed high school and persons who have left high school.

Numerous Florida laws bear directly or indirectly upon the question of the placement, development, regulation and support of area vocational education schools. Discussions concerning them appear in the body of the Report.

Florida law makes it possible for two or more contiguous counties to establish or acquire "area-vocational-technical centers." However, the law specifically restricts such action where a county board is party to an agreement with another county or counties for the acquisition or operation of a junior college. (Florida Laws, 1963, Ch. 220.63).

5. Present and Needed Financial Structure

Criterion: *Substantial evidence must be presented showing the ability and the willingness of citizens and school officials within the area to be*

served to provide adequate financial support to fulfill the minimum requirements of the Minimum Foundation Program for Education, as well as the State Plan for the Improvement of Vocational, Technical and Related Educational Services as adopted by the State Board for Vocational Education.

Cooperating counties in multi-county organizational arrangements should contribute to the support of the vocational and technical program in a manner determined to be equitable. Due consideration should be given to local financial ability and the extent of student participation in the program of the area vocational education school.

6. Interest and Attitude of Local Administration and Supporting Public

Criterion: *Substantial evidence must be presented indicating that the school administration, as well as the people to be served, are in accord with the purposes to be served by the area vocational education school; that they consider this institution to be an essential, integral part of the total program of public education and not as a separate and less important part of that program.*

Care must be taken to see that other considerations, however meritorious in themselves, are not accorded undue weight in relation to this criterion. Community pride and availability of physical facilities whose chief attractiveness lies in the fact that they have been declared surplus, provide examples of influences that are frequently encountered.

7. Facilities

Criterion: *Modern educational facilities adequately equipped should be planned and located so as to serve the greatest number of people with as little duplication as possible.*

Facilities should be provided that comply with acceptable standards for a modern vocational and technical program. Obsolete, inadequate buildings and equipment should not be tolerated.

Facilities planned should provide for a high rate of space utilization. In areas of high concentration of population a maximum of space utilization should be required before any duplication of facilities is permitted.

In sparsely populated areas where the enrollment potential is low, travel distance, potential space utilization, curriculum needs and facility costs should be taken into account before facilitest are duplicated. Exception should be granted only under rare, extenuating circumstances.

Chapter 1

Background of the Study

RECENT DEVELOPMENTS in the American economy have brought many manpower problems to the attention of our citizens. Advancing technology is continuously demanding new skills and new understandings on the part of men and women who constitute the working force of our nation. The impact of automation upon employment is being keenly felt. Technological advancement produces the need for the retraining of countless numbers of workers.

A related problem of great significance is objectified in the number of young Americans who drop out of school before graduation or who terminate their formal education at high school graduation without having acquired any training that fits them for gainful employment. The social as well as the economic consequences of this condition constitute a problem of great magnitude.

In recognition of such needs as are here indicated both state and federal legislation has been recently enacted. The Congress of the United States enacted in 1963 Public Law 88-210, popularly known as the Perkins Bill, and referred to as the Vocational Education Act of 1963. This Act authorizes vocational education programs broader in scope than those now available.

Public Law 88-210 provides not only the broad general outline of the boundaries within which vocational-technical education may be developed, but it also provides for liberal federal funds to be used by the several states in accordance with terms stated in the laws.

Evidence of Florida's readiness for an expanded statewide program of vocational-technical education is seen in the Enactment of Ch. 63-524, Laws of Florida in the 1963 session of the Florida Legislature. The law, in part, reads as follows:

> To assist the legislature in future implementation of the amendment to Article XII of the State Constitution, if adopted, the State Board of Education is directed to conduct a study of future needs of higher education in Florida with special attention to vocational-technical education, including vocational training at the State School for the Deaf and Blind. This Study shall include identifying the needs of the State for Vocational-Technical education, describing the role of existing institutions in providing such education, and proposing a plan for the long-range development, including organization, finance, and location of institutions which may be needed to provide vocational-technical education. The report of the study shall be made available to the 1965 legislature.

In accordance with the provisions of the above Act the State Board of Education secured the services of Doak S. Campbell to outline a proposed state-wide study of vocational-technical education, to select the necessary personnel and to serve as Director of the Study.

By action of the State Board of Education on February 25, 1964 a budget was approved and an agreement made with Associated Consultants in Education, Inc., with which Dr. Campbell is associated, to carry forward the Study. It was agreed that a full report of the Study would be made to the Board of Education before December 15, 1964.

It should be pointed out that in the event there is any change in the amount of the anticipated appropriations by the Congress in support of Public Law 88-210, or any delay in making such appropriations available, the problems related to the development of an adequate program of vocational-technical education will be none the less urgent and critical.

Methods and Limitations of the Study

The methods employed in the development of this Study include: (1) analysis of available

pertinent data concerning population growth and distribution, (2) factual presentation of the existing programs of vocational-technical education, (3) gathering and classifying data showing needs for suitably trained personnel for various types of employment, (4) projection of programs at various educational levels for specific training related directly to job needs, (5) inventory and evaluation of existing vocational and technical shops and laboratories at high school centers and junior colleges, (6) analysis and projection of financial requirements to support an improved and more comprehensive program of vocational and technical education, (7) description and analysis of existing patterns of educational organization at state, area and local levels, and (8) developing and applying criteria for locating various programs and facilities for vocational-technical education in Florida.

Certain limitations are confronted which tend to restrict both the breadth and the depth of the Study. These limitations arise principally because of two conditions. One is the brief time allowed for the completion of the Study. In order for the report of the Study to be of practical use it must be in the hands of the State Board of Education not later than December 15, 1964. This will allow time for the Board to mature any proposals that may require attention by the 1965 legislature. Within the time available it is not possible to produce a comprehensive study covering each and every aspect of vocational-technical education in Florida.

Also, there is an obvious lack of certain types of comprehensive data upon which to base conclusions and recommendations. Wherever possible, primary sources have been used. Secondary sources from which information has been drawn are properly documented. Within the time available few inquiries could be effectively made calling for direct information. Thus, it has been necessary in some instances to rely upon local studies and spot checks for information.

Historical Statement

Although much of vocational education has been informal and rudimentary throughout man's history, it has become a part of the organized educational system in comparatively recent times.

As viewed at the beginning of the present century, America had been primarily an agricultural society since its origin. The need for trained mechanics, artisans and farmers had been recognized as early as 1862 with the passage of the Morrill Act, which established the land-grant colleges. The opportunities thus provided, however, did not assist the groups they were intended to benefit. Neither mechanics nor farmers were able to leave their jobs to attend a distant institution for courses that were primarily technical or engineering in nature.

After the turn of the century needs for a general nationwide program of vocational education became more and more pressing. The beginnings of industrial expansion, however, demanded a different kind of worker and imposed different conditions upon his employment. Instead of needing an extended training period in which to learn all the skills of his craft, the industrial worker needed only to know that part of the total production process for which he was responsible.

Production demands of the First World War and immigration restrictions imposed during the early 1920's created further complications. Whereas Europe had formerly provided an almost inexhaustible supply of skilled, semi-skilled and unskilled labor to supplement employment needs, it became necessary to meet labor demands almost exclusively with American workers and to train and upgrade them to meet labor market requirements. Women were also entering the labor force in greater numbers, although employment opportunities for them continued to be highly restricted.

Fortunately, however, far-sighted individuals had seen these problems developing and became concerned over their implications. They observed with interest the training programs being conducted in Europe for entry into trades and industry at all levels of skill. Scattered experiments in this country, the beginnings of business education in private and public schools, domestic science and agriculture in some secondary schools, and reports of several study commissions describing the urgent need for training programs were so convincing that several states in the early 1900's were persuaded to establish vocational education programs supported entirely with state funds.

Production pressures coupled with these developments secured the passage in 1917 of the Smith-Hughes Act, the first continuing federal appropriation for the support of vocational education. It provided for financial assistance on a graduated scale to be matched equally from state

and local funds for establishing training programs in trade and industrial occupation, home economics and agriculture. Although the Law recognized the importance of preparing women for their responsibilities in the home and on the farm, funds for home economics were included in the trade and industrial allotment.

During the depression of the 1930's several temporary measures were passed which continued federal support for vocational education. In addition, this period saw the first provision for distributive education in recognition of the growing need for training in the merchandising of goods and services. With the passage of the George-Barden Act in 1946, this provision was also included in the continuing federal appropriation. A number of other emergency measures such as those establishing the WPA, CCC and NYA were also passed in the 1930's. These agencies included some training provisions, but they were largely administered outside the public school structure.

As the clouds of war once more loomed upon the horizon, the War Manpower Training Program got underway. Trainees were screened by federal manpower and employment agencies, and facilities of the public schools were widely used in conducting the training programs.

In the late 1950's and early 1960's unemployment became an increasingly serious problem. To combat the threat of unemployment and to aid economically depressed areas, the Area Redevelopment Act and the Manpower Development and Training Act were passed. These also were joint enterprises. Trainees were selected by the several state employment offices representing the United States Department of Labor and programs of training were provided through local school authorities.

During the 1950's several acts or amendments to existing laws were passed by the Congress providing for training in additional occupations or services. In 1956, for example, the George-Barden Act was amended to support training programs for fisheries occupations and for practical nurses and persons in other health-related occupations. In 1958 the National Defense Education Act reemphasized the importance of technician training and the need for area vocational education programs.

Federal legislation supporting vocational education has come along in rather piecemeal fashion in answer to specific needs. In 1961, however, an intensive study of the vocational education acts and the total vocational education program was launched by the late President Kennedy. The findings of the President's Study Panel served as the basis of a new law—the Vocational Education Act of 1963 (Public Law 88-210). This Act continues to provide for vocational education in specific occupational fields such as agriculture, home economics, and, for the first time, training for office occupations. But it also reflects the twin factors of population mobility and shifting labor demand, and recognizes the need of many workers for basic education before they can benefit from job training. It takes into consideration the inter-relatedness of jobs, job evolution and the changing character of employment, and stresses the common elements in training programs which consider the continuing needs, interests and abilities of all people in the occupational structure.

Trends Affecting Occupational Education

Mature consideration of appropriate types of structure for the organization of occupational education in Florida should take into account any trends that can be identified.

In most of the states education for the development of specialized vocational competency is administered as an integral part of the state and local systems of public education. There are a few notable exceptions to this practice. Wisconsin, for example, administers its federally reimbursed program of vocational education under a separate State Board for Vocational Education with its own budget and taxing powers. New Jersey has independent county boards for vocational education with separate budgets and taxing powers. But even where such separation is administratively structured, much specialized vocational education is provided by local school systems as part of the regular educational program. This results in apparent duplication of service.

In some states specialized vocational education is separated administratively only at the local level, and this only for certain occupational fields, most commonly for industrial and technical education. In these same states, local school systems also provide vocational education in such fields as home economics, agriculture and office occupations, with cooperative part-time programs covering industrial occupations.

There are significant variations in the institutional organization for specialized vocational

education. These variations are found within most states, often reflecting local or regional conditions or preferences.

Certain typical organizational patterns can be identified and some of these relate to recognizable circumstances. In most local school systems, for example, vocational curriculums in home making, office occupations, agriculture and distributive education are commonly offered as part of "comprehensive" high school programs. Eighty per cent of the high schools of the nation offer business education, one half of the high schools of the nation offer federally reimbursed vocational home economics and one third of the high schools provide curriculums in vocational agriculture.[1] It is a rare exception for secondary level curriculums in these vocational fields to be offered in other than the high schools of local school systems. These are curriculums which can be offered with some effectiveness and value by the employment of one or more teachers for each curriculum in a given school. The facilities required are little more extensive than those for such other high school subject fields as science, foreign languages and physical education.

The greatest variations in organizational patterns are for schools offering vocational curriculums in industrial and technical occupations. Fewer than ten per cent of the nation's high schools offer such curriculums and these are mostly in larger cities. The remaining industrial and technical curriculums are provided in separate schools of various types, which often serve a whole school system or several school systems on an area basis.

There is a unique characteristic of industrial and technical education which fosters these variations in organizational plans. For such programs to be effective many different curriculums must be offered. In some larger school systems or area schools, as many as thirty different curriculums are required to serve the occupational objectives of students and the manpower needs of the communities. Each curriculum requires at least one instructor with specialized qualifications and calls for expensive facilities appropriate to that curriculum alone. Investments for such courses cannot be economically or educationally justified unless there are sufficient numbers of capable students who desire each occupational employment objective, and sufficient employment demand for the placement of graduates. These conditions are not found in many "comprehensive" high schools nor in the communities they serve for a large number of industrial and technical occupations.

Many of the separate schools also offer similar instruction for post-secondary students, "out-of-school" (regular school) youth and adults. In some places these schools are associated with or are a part of junior colleges. It is in these separate schools that great variations of organization are found. There appears to be no dominant pattern. Such institutions include trade and technical high schools, area vocational schools, technical institutes, special state schools, two-year junior colleges, four-year colleges, and universities. A recent U. S. Office of Education survey listed forty-eight different institutional titles of publicly supported schools offering industrial and technical curriculums.[2]

An alternative type of institution, especially for industrial and technical curriculums, is partially separated but also associated with "comprehensive" high schools. In this plan of organization, students receive their specialized vocational instruction in a separated, often centralized, school during half of the school day or during alternate weeks. The remainder of their school time is devoted to the continuation of general education at a "parent" high school. Such a school serves students from several high schools in a school system or high schools in several systems on an "area" basis. An increasing number of such schools has developed in recent years in many states, including one at Manatee County in Florida. While such schools have some limitations and problems, they combine many of the virtues of both the separate vocational school and the comprehensive high school in an economic and workable manner.

There are some definite trends as to the types of institutional organization for providing post-high school vocational education. Provision for occupational education at this level underwent a period of expansion beginning about twenty-five years ago. The prevailing pattern at that time was for separate institutions, vocational junior colleges or technical institutions. Many of these schools continue to operate in their original form but a significant number have been combined with other phases of post-high school education. Approximately ten years ago California reorganized most of its junior colleges as

[1] Grant Venn, *Man, Education and Work*, American Council on Education, Washington, D. C., 1964. pp. 74-77.

[2] Venn, *op. cit.*, pp. 85-86.

comprehensive schools with technical or vocational divisions.

In the eastern states this trend has been followed, especially in recent years. Some nine years ago, for example, North Carolina instituted a number of Industrial Education Centers offering vocational education at both the high school and post-high school levels. Within the past year these schools have been reorganized by making them divisions of junior colleges and separating from them the high school level instruction. Plans for new schools in Illinois, New York and Pennsylvania call for a similar type of organization.

Another trend can be recognized with respect to the kinds of post-high school vocational curriculums. Most of the earlier offerings at this level were related to industry and engineering. In recent years, however, the school programs have been widened to include curriculums in the service, distribution, health and business occupations. In some institutions curriculums in agriculture and homemaking are also included.

There is reason to believe that current and predicted conditions that relate to youth and employment will foster a continuance of these trends. More highly specialized qualifications are required for initial employment in most occupational fields. Semi-skilled and unskilled workers are proportionately less in demand. Partly because of these conditions and partly because of population growth disproportionate to the size of work force required, more youth are finding greater difficulty locating suitable employment when they leave high school. Expanded and more varied post-high school vocational education will, therefore, be needed to meet these conditions.

Basic Points of View

Certain basic points of view have been assumed in the pursuit of this study of vocational-technical education. First and foremost is the proposition that the State of Florida accepts responsibility for providing appropriate educational opportunity for all of its people. This is interpreted to mean that each individual should have opportunity to develop his knowledge, skills and aptitudes to the full extent of his capabilities and desires. The objectives should be: to enable the individual (1) to live with contentment to himself, (2) to contribute a measure of good to the society of which he is a part, and (3) to make a living while doing so.

It is further assumed that any phase of the educational process that contributes to any of the above objectives is a legitimate field for public education and is entitled to the time, emphasis and financial support required to achieve reasonable success.

Applied to the field of vocational-technical education, the above stated objectives require that the curriculum for the education of any individual incorporate those elements that promote his growth as a person, as a citizen and as an employable unit in our economy.

Under this concept lies the basic assumption that vocational-technical education is not treated as something separate and apart from the academic components of education. In a very real sense all education involves occupational objectives and is composed of many elements, academic and technical, in varying proportions and on different educational levels. Thus, any administrative arrangement or curriculum organization that places these essential components in separate categories or in separate institutions tends to confuse rather than simplify the real objectives to be achieved through our schools.

For occupational education at the higher levels, such as education for the professions of law and of medicine, the blending of the academic and scientific aspects of the curriculum on the one hand, with the applied and technical aspects on the other, is generally accepted. However, at the high school and undergraduate college levels, the acceptance of the unity of the arts and sciences together with the necessary technical studies is far from common practice. There is the general assumption that the term, "quality education," applies specifically and exclusively to purely academic education, and conversely, that vocational or technical components have no possible part in "quality education."

This concept ramifies in many directions and produces many confusions and frustrations. For example, many people assume that vocational education, where provided, is a means of taking care of the non-intellectual students, that it is a place for the failures, the misfits, the troublemakers. This concept is found among parents as well as faculty members and administrators. It assumes a class distinction which is entirely contradictory to the American concept of equality of educational opportunity because its bases are artificial. It must be assumed that occupa-

tional education is a necessary and integral part of the total educational process.

Furthermore, there must be articulation and coordination of vocational-technical education with all other aspects of education at any given time. This "lateral" coordination is not easy to achieve, especially in those schools or communities in which academic studies and vocational studies are treated as entirely separate aspects of education.

A second basic assumption is that an effective program of vocational-technical education requires that the program at any level be properly articulated with the educational program that immediately precedes or follows. Education is a continuing process, each succeeding step being based on what has gone before.

A third assumption is that vocational-technical education must be flexible so that it can continually be adapted to the changes in the training requirements of specific jobs to be done. Working under this assumption it is necessary that current information concerning the number of individuals needed for each specific type of employment be available. Furthermore, it is necessary that detailed descriptions of the necessary skills for each kind of job be available for the use of those charged with planning programs of vocational-technical education.

A fourth basic assumption is that provision of equal opportunity for occupational education is necessarily conditioned by a number of factors that relate to some aspects of population. In those areas of sparse population, for the most part, we find the absence of opportunities for vocational education. For example, in five of the sixty-seven counties of Florida home economics is the only vocational program. In twenty-two other counties vocational programs are limited to agriculture and home economics.

One chief reason for this condition is apparent. It is not educationally or financially feasible to provide even two or three programs of vocational education in the small schools. Moreover, if at least one program should be provided in each and every high school in the state, the opportunities in many of the counties would still be far from equal because individuals would be limited as to choice of appropriate programs. The only feasible plan requires that in a single institution within the reach of the students in a given area, a comprehensive program of vocational-technical studies comprising at least five approved curriculum areas be provided.

Such institutions cannot reasonably be wholly detached from an institution that provides an academic program where necessary studies related to vocational training are available.

Thus, it seems clear that vocational (or occupational) education, in order to be available to all, must be in an institution, or in a complex of related institutions, large enough to provide a comprehensive program of both academic and vocational-technical instruction. Such an institution, whether serving the needs of a single county or a multi-county unit, will normally be a comprehensive high school or a community junior college. Where the size and peculiar needs of the population of an area justify it, a separate center for occupational education may be indicated. Where such need appears to exist, adequate provision must be made for the academic components of a total program to be available.

Definitions

For the purposes of this Study the following definitions of terms have been accepted:

Occupational Education

The total range of educational effort which prepares individuals for entrance into or advancement within an occupation or a group of occupations as distinct from instruction leading to either a baccalaureate or a professional degree.

The field of occupational education is considered to be a broad spectrum with specific regions of the spectrum requiring different types and levels of occupational skills.

At one end of the spectrum is found "Vocational Education," which for the most part emphasizes manipulative skills with certain basic cognitive skills, but requires a minimum of application of mathematical and scientific concepts. More specifically it is the training of individuals in the skills needed for employment in a particular job.

At the other end of the occupational spectrum is found "Technical Education," which strongly emphasizes either mathematical and scientific concepts, or organization and management skills. It may also emphasize the theory which underlies these skills, but provides a lesser emphasis on the manipulative skills. Those technical occupations which rely extensively upon organization and management theory rather than on mathematical and scientific concepts may be called semi-professional occupations.

Between the two extremes is a region where there is a tendency for the mathematical and scientific concepts and the manipulative skills to approach a balance.

The two definitions (technical and vocational) as used here describe zones on the spectrum which overlap. Thus, it is not intended that the definitions be completely separate and distinct, but that they may be useful in describing certain tendencies or certain broad categories of skills which are required for occupational success.

The terms here defined do not refer to the grade level or type of educational institution where the instruction is offered.

Vocational or technical programs may be offered in high schools, adult schools, junior colleges or in separate technical and vocational schools. However, the nature of technical education with its scientific orientation would, for the most part, serve persons who have completed a high school curriculum.

Any further narrowing of the definitions, any further attempts at describing the type of person being trained, or any further attempts at indicating the specific occupation or groups of occupations the training is expected to serve will have to be found within the course content of a given program or curriculum.

As an example, a number of institutions in a school system might be training persons as electronic technicians. One of these institutions might be training technicians to perform high-level technical services emphasizing the cognitive-scientific-mathematical area. Another institution might be offering training in electronics where the emphasis is on the balance between manipulative-cognitive skills. A third institution might be offering vocational training in electronics with emphasis on manipulative skills. Also, it is possible that these three levels of training might all be offered within one institution.

The definitions as used here attempt to describe the broad scope of occupational education in a very general way. In the final analysis the individual educational institution, as it attempts to provide training for selected occupations, will have to describe the type of individuals it is training, the skills which are possessed by these individuals and the type of occupation in which the trainee can function effectively.

General Adult Education

Under the above definition "General Adult Education" would not be included as occupational education. General adult offerings do not specifically emphasize occupational placement upon completion of a given course of study. However, the fact has been well established that occupational placement is coming to depend more and more upon the individual's level of general education as well as upon his occupational skills. For this reason "General Adult Education" is included as a part of the Study.

Related Educational Services

Also to be included in this Study is that education which is related to vocational education and which, although not supported by vocational units or set forth in special curricula, may assist in the vocational success of the individual.

Subjects closely related to occupational education such as business education courses, non-vocational home economics, industrial arts, etc. which are offered in the junior high schools, high schools and junior colleges of Florida are included in this Study under the term "related education."

Individuals and Agencies Participating in the Study

The development of this Study has involved many individuals, agencies and organizations. Special reference is made to the State Department of Education, its Divisions of Vocational, Technical and Adult Education, Vocational Rehabilitation, Instructional Services, Administration, Research and of Community Junior Colleges. These offices have freely provided information and members of their professional staffs have been available for consultation.

Superintendents of public instruction, junior college presidents, local and area directors of vocational and adult education and school principals have provided valuable information and have facilitated visits to local institutions by members of the professional staff of the Study.

Other state agencies include the Florida Industrial Commission and the Board of Control.

Special mention is also made of the Florida Education Association, the Florida State University Library and the Florida Chamber of Commerce.

Chapter 2

Population and Employment Factors

TWO PRINCIPAL FACTORS, population and employment, provide the basis for determining the nature and the scope of a state's program for occupational education. In considering every aspect of vocational, technical and general adult education, from the development and operation of a specific program in a local school to the overall program for the entire state, one must take account of the interrelationship of these two factors.

Many different aspects of the state's population must be taken into account. The total population of the state and of its various subdivisions, the distribution, density, mobility, the educational level, the age structure—these and other related characteristics require identification, analysis and interpretation.

Similarly, conditions that relate to present and potential employment of the people of the state must be taken fully into account. Data concerning the number and the nature of jobs of all kinds, their locations, the skills required for their performance and conditions related to recruitment and employment must be made available to those who are charged with the responsibility of determining the details of the State's program of occupational education.

Data dealing with population and employment are here presented with primary reference to the problem of locating and developing area vocational education schools for the State of Florida in accordance with the purposes and provisions of existing federal and state legislation. Public Law 88-210 and Chapter 63-524, Laws of Florida, 1963, are of particular significance in relation to this problem.

Data concerning population and employment are presented on both a state-wide and a county basis. The data for the state as a whole are intended to provide a background for the consideration of specific items that relate to counties or groups of counties.

Because of the importance of the relationship between the population of the counties of the State and the question of the size and location of facilities and programs for occupational education, the materials that deal with both population and employment are presented in relation to five groups of counties that are arranged according to size of population.

Population

Every aspect of public education in Florida is constantly confronted with the continuous rapid increase of the state's population. The provision of educational services for ever-increasing numbers of people requires that additional professional personnel and facilities be added each year. Extraordinary effort is necessary in order to meet the needs occasioned by population increase alone, to say nothing of the need for improving and expanding educational services.

The extent of the need for expansion is indicated by the fact that between 1950 and 1960 the population of Florida increased by 78.7 percent, reaching a total of 4,951,560. This was the highest percentage of increase among all of the states. Furthermore, the numerical gain in population during the ten-year period was exceeded only by that of California. The dramatic population increase is further shown by the fact that Florida now ranks ninth among the states of the Union, having moved from twenty-seventh place in 1940 and twentieth place in 1950.

The annual growth of population is currently estimated to be 240,000 of which number 170,000 are accounted for as net migration, i.e., the excess

TABLE 1

PROJECTED GROWTH OF FLORIDA'S POPULATION
(SHOWN BY AGE GROUPS)

Series A[1]

Age Group	1960 Census April 1	1965 Projection July 1	1970 Projection July 1	Estimated Difference 1960–1970
Under 5	541,101	593,090	741,835	200,734
5–19	1,263,200	1,651,154	1,978,677	715,477
20–49	1,868,428	2,138,219	2,618,780	750,352
50–64	725,702	852,559	1,033,037	307,335
65 and Over	553,129	701,861	877,574	334,445
Total Population	4,951,560	5,936,883	7,259,903	2,308,343

Series B[2]

Age Group	1960 Census April 1	1965 Projection July 1	1970 Projection July 1	Estimated Difference 1960–1970
Under 5	541,101	581,445	701,102	159,911
5–19	1,263,200	1,596,956	1,875,297	612,097
20–49	1,868,428	2,055,297	2,410,809	542,381
50–64	725,702	818,915	951,271	225,569
65 and Over	553,129	668,733	801,778	248,649
Total Population	4,951,560	5,721,346	6,740,167	1,778,607

Source: Bureau of Economic and Business Research, University of Florida.
[1] Series A assumes a net interstate migration of 1,500,000 persons between 1960 and 1970.
[2] Series B assumes a net interstate migration of 1,000,000 persons between 1960 and 1970.

of in-migration over out-migration, and 70,000 by natural increase due to excess of births over deaths.[1]

A detail of these estimates with distribution according to age groups is shown in Table 1. Further evidence of the continued steady growth of population is seen in the estimate of 5,639,000 as of July 1, 1963, and projections for 1970 that range from 6,740,167 to 7,259,903.[2] A further projection indicates that Florida's population will reach 8,322,400 by 1974.[3]

The magnitude of the State's obligation for the support of public education is indicated by the fact that the population of the age group 5-19 will reach an estimated 1,875,297 to 1,978,677 by 1970. This group includes individuals to be served from the first grade through the junior colleges (Table 1).

Of course not all of these individuals will attend public elementary schools, high schools and junior colleges. A considerable number will enroll in privately supported schools. Many of them will be enlisted in the armed services. However, an estimated 85 to 90 per cent will be enrolled in the various types of public schools in Florida. Even on the basis of the conservative projection in Table 1, Series B, the age group 5-19 should reach 1,875,297 by 1970. Assuming that 85 per cent of the people in this group would be enrolled in public schools, the number would reach 1,664,002.

One basis for comparison with this estimate is found in the projections of school enrollments by the Research Division of the State Department of Education. Table 2 shows these enrollments from 1946-47 to 1962-63 with projections to 1967-68. By applying the same rate of increase the school enrollment, grades 1-12, in 1969-70 should reach 1,550,195.[4] Considered in relation to the above estimate of 1,664,002, the difference of 113,807 would scarcely take care of those who will be enrolled in junior colleges and in private schools.

The total enrollment in Florida public high schools (grades 10, 11, and 12) in 1961-62 was 183,132. This was 16.2 per cent of the total school enrollment in that year. Assuming that this percentage will remain somewhat constant, the enrollment in grades 10-12 in 1967-68 should reach 235,010.

It is reasonable to expect that the development of a broader program of occupational education would increase high school enrollment to more

[1] Florida Development Commission, *Population of Florida, Booklet No. 14,* (undated) pp. 1-22.
[2] Bureau of Economic and Business Research, *Provisional Estimates of the Population of Florida Counties, Bulletin No. 11,* (Population Series, Nov., 1963), p. 5.
[3] *1964 Kiplinger Forecast of Florida's Population Growth During the Next Ten Years by Localities,* Washington: The Kiplinger Washington Editors, 1964.

[4] This figure on enrollment should not be confused with figures on ADA used in subsequent chapters.

TABLE 2

TOTAL ENROLLMENT IN FLORIDA SCHOOLS, GRADES 1–12

School Year	Enrollment [1] (1–12)	Increase Over Previous Year	Per Cent Increase Over Previous Year
1946–47	428,489	12,730	3.06%
1947–48	446,672	18,183	4.24
1948–49	466,958	20,286	4.54
1949–50	491,205	24,247	5.19
1950–51	522,854	31,649	6.44
1951–52	553,970	31,116	5.95
1952–53	598,708	44,738	8.08
1953–54	645,136	46,428	7.75
1954–55	697,776	51,640	8.16
1955–56	752,907	55,131	7.90
1956–57	823,759	70,852	9.41
1957–58	895,880	72,121	8.76
1958–59	959,222	63,342	7.07
1959–60	1,016,842	57,620	6.01
1960–61	1,075,742	58,900	5.79
1961–62	1,131,502	55,760	5.18
1962–63	1,188,975	57,473	5.08
1963–64	1,247,135E	58,160E	4.89E
1964–65	1,299,459E	52,324E	4.20E
1965–66	1,349,332E	49,873E	3.84E
1966–67	1,400,585E	51,253E	3.80E
1967–68	1,450,678E	50,093E	3.58E

SOURCE: *Florida School Bulletin*, December, 1963.
E Estimated
[1] Not including Kindergarten.

than 20 per cent of the total high school enrollment. This would indicate a total high school enrollment of 290,000 by 1967-68.

The number of graduates from these high schools in 1961-62 was 43,717.[5] Of this number 21,546, or 49.29 per cent, did not go on for further formal education or training. Only 2,279, or 5.21 per cent, entered technical, trade or other schools for occupational training.

With the enlargement of opportunities for occupational training for high school graduates, it seems reasonable to assume that this number and percentage will substantially increase. The extensive development of occupational programs in the junior colleges should be a primary factor in effecting such an increase.

Still another group, the drop-outs, constitute a part of the potential student body for occupational training. In 1961-62 there were estimated to be approximately 18,000 dropouts from Florida's public schools. Due to the operation of the compulsory school attendance law, it can be assumed that a large majority of these pupils are of normal high school age. Whatever the causes of the dropouts, conscious efforts to rehabilitate them will draw heavily upon the services that provide occupational training.

[5] Research Division, State Department of Education.

Distribution and Density

The distribution and density of population in Florida are marked by wide variation among the 67 counties of the State. For convenience in the presentation of various aspects of population in relation to a state-wide program of vocational-technical education, the several counties have been divided into five groups according to size of population. They have been designated as groups A, B, C, D, and E.

Group A is composed of fourteen counties, each with a population below 10,000.[6] These counties are largely rural and are very sparsely populated. Most of them have followed a similar pattern of growth. From 1950 to 1960 the population declined in seven of these counties while in six, it increased at a rate less than one-half the rate of growth of the state as a whole. Only one county in this group, Okeechobee, increased its population at a rate higher than that of the entire state (Table 3 in the Appendix).

In this group of counties the density of population in 1960, stated in terms of the number of inhabitants per square mile, ranged from 3.6 in Liberty County to 26.7 in Union County. Considered in relation to the average of 104 inhabitants per square mile in the state taken as a whole, the sparsity of population becomes significant when considered in relation to the development of any educational program.

With specific reference to vocational, technical education, no one of these counties can provide its people with a minimum program (at least five areas) without becoming a part of a multi-county unit. All but Liberty and Franklin counties are presently included in an attendance area related to an existing or planned junior college. It may be possible for pupils in Liberty County to be served by an area school in Leon County. However, it is probable that arrangements will have to be made for housing pupils from these counties at some area vocational education school.

Group B is composed of eighteen counties each with a population numbering between 10,000 and 19,999.[7] These counties are also largely rural and are somewhat sparsely populated. Six of them declined in population from 1950 to 1960, while

[6] Baker, Calhoun, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Lafayette, Liberty, Okeechobee, and Walton.
[7] Bradford, Charlotte, Citrus, Clay, De Soto, Hardee, Hendry, Hernando, Holmes, Jefferson, Levy, Madison, Nassau, Sumter, Suwannee, Taylor, Walton, and Washington.

the rest increased in population at a rate below the rate for the state as a whole (Table 9 in the Appendix). Since 1960 the population in each of these counties has increased, and in six of them the rate of increase has been higher than the rate for the state during this period.

The density of population in the counties of this group, while greater than that in the counties in Group A, still falls far below the average for the State. The range is from 8.9 inhabitants per square mile in Hendry County to 44.4 per square mile in Bradford County.

The sparsity of population in each of these counties indicates the unlikelihood that any one of them could supply a sufficient number of students to sustain an area vocational education school without participating in some type of multi-county unit. Each of these counties could participate in an existing or planned multi-county unit.

Group C consists of thirteen counties each having a population numbering between 20,000 and 49,999.[8] While these counties are not densely populated, they are more urban in character than are those in Groups A and B. From 1950 to 1960 each of these counties experienced an increase in population, five of them at a rate higher than the rate for the state as a whole (Table 15 in the Appendix). The exceptions were Columbia, Gadsden, Jackson and Putnam counties. The rate of population growth during the ten-year period ranged from 4.5 per cent in Jackson County to 142.8 per cent in Collier County.

Although population density in the counties of Group C is considereably greater than that in Groups A and B, in no county in this group does the population density equal that of the state as a whole. The range is from 10.5 inhabitants per square mile in Collier County to 90.6 in Gadsden County.

While there are considerable numbers of vocational programs in high schools that are situated in these counties, provision of a minimum of programs in five areas does not appear in any one center.

Each of the counties in this group either contains a junior college or is a part of a multi-county junior college area that is in operation or under consideration.

Group D is composed of eleven counties each having a population numbering between 50,000 and 99,999.[9] These counties differ from those in the previously named groups in a number of respects. They are more urban in character and they approach the state level of population density. The rate of growth from 1950 to 1960 ranges from 29.9 per cent in Alachua County to 166.7 in Sarasota County.

One possible cause for this significant relationship is the fact that in the sparsely populated counties the scope of the curriculum in the high schools is severely limited both as to academic and occupational studies. This condition tends to increase the number who drop out of school before graduation. The availability of a sound program of occupational studies would tend to upgrade the total educational level of a county.

Age Structure of the Population

The number and proportion of the population who compose certain age groups may have a bearing on the nature of the program of occupational education. Two age groups appear to have special significance in this respect. These are the group who are eighteen years of age and under and, therefore, include the individuals who would normally be in school or who would just have completed a high school course; and the group who are sixty-five years of age and over, most of whom are retired from active remunerative employment.

The population of these groups as they appear in the several counties of the state provide some variations that may be significant in relation to occupational education. Data relating to age structure are presented for Florida counties that are grouped according to number of inhabitants as previously indicated.

In the counties that comprise Group A, with the exception of Franklin County, the median age of the population falls below the median age of 31.2 for the state as a whole (Table 3). The range is from 23.2 years in Okeechobee County to 31.3 years in Franklin County.

The preponderance of low average age in these counties is further reflected by the percentage of the population who are eighteen years of age and under. The average percentage of the total population that are in this age group ranges from 36.9 per cent in Glades County to 44.6 per cent in Okeechobee County. In the state taken

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8 Collier, Columbia, Gadsden, Highlands, Indian River, Jackson, Martin, Osceola, Pasco, Putnam, St. Johns, St. Lucie, and Santa Rosa.

9 Alachua, Bay, Lake, Lee, Leon, Manatee, Marion, Monroe, Okaloosa, Sarasota and Seminole.

as a whole, 35.2 per cent of the population are in this age group. One possible explanation for the high percentage in these counties is that the young people tend to leave the home county after they complete their high school work. As is shown later, these are the counties with the lowest employment opportunities. Thus, there is little incentive for high school graduates to remain in their home counties.

The percentage of the population who are sixty-five years of age and over is relatively low in this group of counties. In only two of them is the percentage in this age group higher than the percentage for the state as a whole (11.2 per cent). The range is from 5.1 per cent in Gulf County to 13.4 per cent in Franklin County (Table 3). In five of the counties in this group the rate of growth exceeds the rate of the state as a whole (78.7 per cent), (Table 21 in the Appendix).

The density of population varies considerably, from 36.8 inhabitants per square mile in Marion County to 209.3 in Seminole County. While there are considerable numbers of programs of vocational and technical education in these counties, a majority provide fewer than the minimum of five required for an area vocational education school.

Each of these counties contains a public junior college or is a designated area for the future development of a junior college. The development of an area vocational education school with at least a minimum program appears to be possible in each county in this group.

Group E is composed of eleven counties each having a population numbering more than 100,000.[10] Each is highly urban and is densely populated. In six of these counties the rate of population increase from 1950 to 1960 exceeded the rate for the state as a whole. The rate of increase ranges from 49.8 per cent in Duval County to 371.1 in Brevard County (Table 27 in the Appendix).

The density of population in each of these counties exceeds that of the state as a whole. The range is from 114.1 inhabitants per square mile in Polk County to 1584.2 in Pinellas County. The population in each of these counties is sufficiently large to provide within the reach of all of its citizens full programs of occupational education at both the high school and junior college levels.

[10] Brevard, Broward, Dade, Duval, Escambia, Hillsborough, Orange, Palm Beach, Pinellas, Polk and Volusia.

Educational Level of Population

The educational level of the population bears an important relationship to the factor of educational opportunity as well as opportunity for employment. Many factors doubtless operate to cause the different levels of education in the several counties of the state. With a single exception, there is a positive relationship between the population of a county and the number of years of schooling completed by its inhabitants. This is indicated by the data shown in the following table.

TABLE 3

AVERAGE EDUCATIONAL LEVEL OF POPULATION IN FLORIDA COUNTIES GROUPED ACCORDING TO SIZE OF POPULATION

Group	No.	Years of Schooling Completed		Median
		Low	High	
A	14	7.7	9.6	8.4
B	18	8.0	10.8	8.8
C	13	7.5	10.9	9.6
D	11	9.5	12.1	11.0
E	11	9.7	12.1	11.3
Totals	67	7.5	12.1	10.9

One possible cause for this significant relationship is the fact that in the sparsely populated counties the scope of the curriculum in the high schools is severely limited both as to academic and occupational studies. This condition tends to increase the number who drop out of school before graduation. The availability of a sound program of occupational studies would tend to upgrade the total educational level of a county.

In Group B the median age of the population varies widely from county to county. The range is from 23.5 years in Jefferson County to 44.8 in Charlotte County. In only five of the eighteen counties in this group is the median age above the median for the state (31.2 years). The high median age in Charlotte County is attributable to the large influx of retired persons in recent years.

The percentage of the population in this group who are eighteen years of age and under ranges from 26.4 per cent in Charlotte County to 44.9 per cent in Madison County. In only three of the eighteen counties of this group is the percentage of the population in this age group lower than the percentage for the state as a whole (35.2 per cent). This would indicate that the

younger people tend to move away from their home counties after they leave school.

The percentage of the population who are sixty-five years of age and over shows considerable variation in this group of counties. The range is from 5.8 per cent in Hendry County to 20.8 per cent in Charlotte County.

The median age of the population in the counties in Group C ranges from 22.6 years of age in Santa Rosa County to 38.8 years in Osceola County. In five counties, Highlands, Indian River, Martin, Pasco and Putnam, the median age of population is above the median for the state (31.2 years).

The percentage of the population who are eighteen years of age and under in this group of counties ranges from 30.9 per cent in Osceola and Pasco counties to 42.9 per cent in Jackson County. In only three of these counties is percentage lower than that for the state as a whole. As was stated in reference to the counties in Groups A and B, the indication here is that the young people tend to leave the county at an early age.

The percentage of the population in these counties who are sixty-five years of age or older ranges from 5.5 per cent in Santa Rosa county to 23.0 per cent in Pasco County. In six of these counties the percentages range well above the percentage for the state.

In the counties included in Group D the median age of the population ranges from 22.7 years in Okaloosa County to 41.1 years in Manatee County. In these counties there is a high percentage of people who are sixty-five years of age and over. In only two of these counties, Manatee and Sarasota, is the median age greater than that of the State.

The percentage of the population in these counties who are eighteen years of age and under ranges from 29.5 per cent in Manatee County to 43.1 per cent in Okaloosa County. In six of the eleven counties in this group the percentage is higher than the percentage for the state as a whole (35.2 per cent). In other words, the counties of this group approach what might be considered as a normal age distribution.

The percentage of the population who are sixty-five years of age and over ranges from 3.2 per cent in Okaloosa to twenty-two per cent in Manatee. In seven of these counties the percentages are lower than for the state as a whole.

In the eleven counties included in Group E the median age of the population ranges from 23.9 years in Escambia County to 44.9 years in Pinellas County. The median age in all but five of these counties is lower than the median for the state. In only two, Pinellas and Volusia is the median age substantially above that for the state as a whole. This is due principally to two factors: the large number of retired persons and fairly good employment opportunities.

The percentage of the population in these counties who are eighteen years of age and under ranges from 25.5 per cent in Pinellas County to 42.2 per cent in Escambia County. In Broward, Dade, Palm Beach, Pinellas and Volusia counties the percentage in this age group is below that for the state.

The percentage of the population in these counties who are sixty-five years of age and over varies rather widely. The range is from 5.2 per cent in Escambia County to 24.9 per cent in Pinellas County. In only four of these counties, Broward, Palm Beach, Pinellas and Volusia, does the percentage exceed that for the state as a whole.

Summary and Comments on Population

The following observations concerning certain aspects of Florida's population would seem to be of some significance in relation to the state's program of vocational-technical education.

1. Despite its extensive area, Florida has become largely an urban state. Almost three-fourths of the entire population live in urban communities. This concentration of population in densely populated areas adjacent to large metropolitan centers leaves large areas of the state sparsely populated. (See Map 1 in the Appendix).

Population density ranges from 3.6 inhabitants per square mile in Liberty County to 1,584 in Pinellas County. In fifty-two of the sixty-seven counties of the state the density of the population is substantially below the state average of 104 inhabitants per square mile. In thirty-three of the sixty-seven counties there are fewer than twenty-five inhabitants per square mile.

Persistent efforts to maintain high schools in the sparsely populated areas of the state have resulted in the maintenance of large numbers of high schools with enrollments so small that effective educational programs are not possible. One result, as is shown in Chapter III, is that in such areas opportunities for vocational-technical education are practically non-existent. The alter-

native seems clear. Area vocational education schools must be located so that they can serve a student body sufficiently large to justify and adequately sustain at least a minimum number of needed occupational curriculums which will include those that are specified in the Vocational Education Act of 1963.

2. The median age of the population in the various counties of the state may provide some clues to the nature of their occupational needs. Variations from county to county run from 22.6 years in Santa Rosa County to 44.9 years in Pinellas County. The median for the state as a whole is 31.2 years. In the main, two age groups: 18 years and younger, and 65 years and older, affect the level of median age. Each of these groups calls for particular treatment in relation to the state's program of vocational, technical and general adult education.

3. The high concentration of persons who are sixty-five years of age and over poses no particular problem regarding occupational training in most of the counties. However, they constitute an increasing responsibility for a varied program of general adult education. It is significant that the incidence of this group in the several counties ranges from 3.2 per cent in Okaloosa County to 24.9 in Pinellas County. The size of the population of a county bears little relationship to the proportion of the population who are in this age group.

4. The proportion of the population who are eighteen (18) years of age or younger bears a direct relationship to the size and sparsity of the population in most of the counties. The counties with the highest percentage of population in this age group also have the lowest median age, the smallest percentage of age 65 and over, and the lowest educational level in terms of school grade completed.

5. All but two of the sixty-seven counties of Florida are included in areas that are presently served by community junior colleges or areas that have been approved or are under consideration as community junior college areas. The two exceptions are Franklin and Liberty counties. It seems clear that if the young people in these counties are to have the opportunity to receive occupational education appropriate to their needs, provision must be made whereby they can be in residence in an adequate area vocational education school. It is possible that in some other counties pupils in remote sections will also require provision for such residential facilities.

Employment

This section of Chapter II deals primarily with the employment of Floridians, as can best be determined from current data and predictions of future trends in employment in Florida.

For convenience the section is divided into five subsections as follows: (a) desirability of full and useful employment, (b) how Floridians are currently employed, (c) employment trends, (d) expanding employment opportunities, and (e) comments on the role of occupational education in Florida.

Desirability of Full and Useful Employment

It is presumed in this Study that full and useful employment opportunities will be available for Floridians who have salable skills and who wish employment. This presumption sets aside such matters as unpredicted, possibly unpredictable, recessions and depressions, as well as the possibility of reduced employment opportunities due to increasing worker productivity and automation.

It is recognized that work is perhaps the greatest single activity of a person during his lifetime. This statement is true of both men and women, although perhaps not so obviously true of women. However, approximately a third of the national work force consists of women; furthermore, homemaking is undoubtedly an occupational role, although the monetary compensation is small.

Gainful work from the standpoint of the individual is a means of providing for creature needs, and at the same time for realizing one's potential for accomplishment. As a member of society the employed individual can contribute his share to the common good. Hence, any condition that denies one the opportunity to work tends to consign him to an existence in which the staisfaction of his needs is jeopardized; dignity is lost and respect of peers is diminished.

Satisfaction and self-realization, however, hinge also on the compatibility of the nature of the work with the individuals's personal characteristics—aptitudes, abilities, interests, values, etc. The more nearly perfect matching of the work to the unique characteristics of the individual, the greater the probability that his work will become a valued and valuable activity. In short, we are obligated as a society to try to equip people with employable skills—those particular skills that are compatible with their personal attributes. Vocational education and vocational counseling, there-

fore, must be contributing, reciprocal activities.

The economic well-being of the State depends largely upon our success in the occupational education of our citizens. Lack of gainful employment on the part of some citizens automatically reduces the economic well-being of others. Because of our sense of humanitarian values, we quickly resort to welfare, relief, and assistance programs to assure at least a minimal livelihood for the involuntarily unemployed. We do so unhesitatingly, but not without reflection which reveals the fact that each of us suffers to the extent that unemployment exists. Every citizen must realize the great personal stake he has in assuring that all citizens are employable; i.e., that they are equipped with skills which are salable.

There are many consequences of unemployment, some of which have already been alluded to. In addition to personal disintegration there is a related social disintegration of which crime and delinquency are the chief manifestations. Also, there is the loss by society of the fruits of labor, and the diminution of the effective compensation of those who are employed, due to the obligation which society assumes for providing a minimal standard of living for the unemployed.

In summary, the employment of each individual is necessary for the realization of both personal and societal goals. Furthermore, each individual should be engaged in that employment activity which is most compatible with his personal characteristics. Such matching of personal and job characteristics is the responsibility of occupational counseling. Inasmuch as failure to employ all individuals who seek work results in personal loss and a drain on the economy of society, it appears obligatory that the society take whatever measures are available to it to heighten the probability that each individual will secure employment. One safeguard which might be taken is to assure that each individual may receive training that will develop employable skills in him. Doing so should be regarded as a necessary step by the society if it wishes to preserve its economic integrity.

Current Employment of Floridians

The data which appear in this section have been gathered from many sources and are presented as the most recent data available. None has been collected in the field by the Study Staff; all are drawn from documents produced by federal and state governmental agencies as noted. Here and there apparent conflicts might be noted in comparable data drawn from two sources. In some cases the conflict is attributable to the fact that the two sets of data having been drawn from different years; other instances can be attributed to differences between agencies in data gathering and reporting methods, and to category definitions.

This section contains information about the current employment of Floridians on a statewide basis and on the basis of county groups as described earlier. In addition other data are presented which bear on employment and employment trends in the recent past; e.g., establishment of industrial plants, numbers of people employed in major industrial classifications, etc.

State-wide Employment

Brood Industrial Classifications:—The data for the following comparisons are drawn from Tables 3 through 37 in the Appendix.

Agriculture.—Reports of the Bureau of Economic and Business Research reveal that in March, 1963, approximately 91,000 Floridians were engaged in agriculture of a total work force estimated to be 1,889,050. The total Florida population at that time was estimated to be 5,640,000.[11] Thus, approximately 33 per cent of Floridians were gainfully employed and of those employed approximately 5 per cent were engaged in agriculture.

Three years earlier, approximately 101,250 Floridians were engaged in agriculture out of a total work force estimated to be 1,796,350. Thus, in the three year period the total work force increased by a factor of 1.05 while the numbers engaged in agriculture decreased by a factor of .90. The net loss of people engaged in agriculture during that period was 10,250.

Prior to this period the U. S. Bureau of the Census reports that between 1954 and 1959 the number of farms in Florida decreased by 9,140, and the number of farmers, farm managers and farm laborers decreased by 27,959.[12] In this same period the average size of farms increased from 316 to 338 acres; there was a reduction in the number of farms of less than ten acres in size from 10,453 to 8,648; and a similar decrease in the number of farms of 1000 and more acres from 2,072 to 1,764.

Despite the decrease in number of farms and farm workers during the period, farm output has

[11] Bureau of Economic Research, University of Florida.
[12] U. S. Bureau of the Census, United States Census of Agriculture: 1959. II, p. 146.

increased.[13] The greater output is directly attributable to improvements in productivity by mechanization, management and chemical pest control.

Florida agriculture is conducted by two kinds of farmers, the commercial farmer and the farmer who simultaneously gains income from other employment or retirement. The commercial farmers constituted 52 per cent of all farmers but accounted for products worth $691,613,000 or 97.5 per cent of all farm products which were sold. Furthermore, commercial farmers hired all but 3,057 of the 56,822 persons who were hired as regular or seasonal workers.

Manufacturing.—In March, 1960, 214,300 Floridians were engaged in manufacturing occupations. By the same month in 1963, 13,750 additional people were so employed, thereby giving a total of 228,050.

The 1963 work force in manufacturing represents an increase in the 1960 work force by a factor of 1.05. The overall 1963 estimated population represents a 1.14 increase over the 1960 population. Therefore, it would seem that over this three-year period manufacturing grew at a slower rate than did the total population. However, the absolute increase in manufacturing workers was 13,750.

The growth factor in manufacturing of 1.05 is exactly equal to the growth factor of 1.05 which represents the increase in all non-agricultural employment for the same period, 1960-1963. Thus, it would appear that manufacturing grew at the same rate as the general economy, but the rate of growth in the economy did not keep pace with the population growth. Quite likely this difference in rates is attributable to increases in the population group who are of retirement age and of those who are too young to be numbered in the work force.

Construction.—In March, 1960, 118,350 Floridians were engaged in construction occupations; in 1963 this number had decreased by 11,850 to 106,500. Thus, the 1963 figure represents a growth factor of .90, which indicates a negative growth and stands in marked contrast to the growth factor of 1.05 for the non-agricultural economy and to the population growth factor for the same period of 1.14. (It might be added parenthetically that this period coincided with a recession in the construction of private dwellings in the State.)

[13] See Table 33 of Appendix.

Transportation and Public Utilities.—In 1960, 100,450 Floridians were employed in occupations relating to transportation and public utilities. By 1963 the number had increased to 100,850, an increment of 400 persons.

The growth factor for this broad occupational category is 1.0, which indicates no appreciable growth and is in contrast to the growth rates of 1.05 and 1.14 for the non-agricultural economy and the population, respectively.

Wholesale and Retail Trade.—In 1960, 367,000 Floridians were employed in wholesale and retail trade occupations. In 1963, 15,700 persons were additionally employed, to yield a total of 383,400.

The growth factor in wholesale and retail trades was 1.04, just slightly less than the growth factor for the general non-agricultural economy.

Finance, Insurance and Real Estate.—In March, 1960, 87,050 persons were employed in finance, insurance and real estate occupations. By 1963 this number had increased to 87,750, a gain of 700 persons.

The growth factor for this occupational classification was 1.01. It, too, fell below the factor for the general non-agricultural economy.

Service.—In March, 1960, 220,900 Floridians were engaged in service occupations. By the same month in 1963, 25,400 additional people entered this broad occupational category to increase the total number to 246,300.

The growth factor for service occupations was 1.16, which is substantially greater than the growth factor for the non-agricultural economy, 1.05, and greater than the factor for the general population of 1.14.

Government.—In 1960, 211,250 Floridians were engaged in governmental occupations. This number had increased to 250,000 by 1963, a gain of 38,750 persons.

The growth factor for the broad category of government is 1.18, which exceeds the rate of growth for non-agricultural economy and for the general population.

All other Non-agricultural.—In 1960, 377,050 persons were employed in all non-agricultural occupations for which data have not already been given. By 1963, this number had decreased to 363,450, a net loss of 13,600.

The growth factor for this occupational category is .97, which is substantially less than for the combined non-agricultural occupations and for the general population.

Summary

If 1960 is used as a base year, then rates of growth through 1963 can be calculated for nine occupation classifications on a state-wide basis. The average growth rate was 1.05. The nine occupational categories might be classified as follows:

Faster than Non-Agricultural Economy	
1. Government	1.18
2. Service	1.16
Equal to Economy	
3. Manufacturing	1.05
Slower than Economy	
4. Wholesale and Retail Trade	1.04
5. Finance, Insurance and Real Estate	1.01
6. Transportation and Public Utilities	1.00
7. All other Non-agricultural	.97
8.5 Construction	.90
8.5 Farming	.90[14]

In terms of numbers of employees, the occupational categories are ranked as follows:

Classification	Number Employed, 1963[15]
1. Wholesale and Retail Trade	383,000
2. All other Non-agricultural	363,000
3. Government	250,000
4. Service	246,000
5. Manufacturing	228,000
6. Construction	106,000
7. Transportation and Public Utilities	101,000
8. Agriculture	91.000
9. Finance	87,000

It is notable that the third and fourth largest classifications in terms of the number of employees, Government and Service, grew at a substantially greater rate than the average growth of all other economic categories and at a slightly greater rate than the rate of population increase during the 1960-1963 period.

New Industrial Plants, 1958-1962

During the five-year period from 1958-1962, approximately 3,784 new industrial plants were established in Florida. It was estimated that these plants collectively would employ 114,928 persons.

In six counties two or fewer industrial plants were established. These counties are Flagler, Gilchrist, Glades, Holmes, Hendry and Liberty. It was estimated that these new plants would employ an aggregate of 402 persons.

In six counties 200 or more plants were established. These counties were Broward, 323; Dade, 1272; Hillsborough, 209; Orange, 221; Palm Beach, 216; and Pinellas, 238. It was estimated that these new plants would employ an aggregate of 66,832 persons. These six counties gained 66 per cent of all new plants and 58 per cent of all new workers.

Male Employment in Selected Occupations

Data are presented in Tables 37 (Appendix) which relate to numbers of Florida males in 1950 and 1960 who were employed in fifty-three occupations. In 1950 a total of 296,921 were employed in these occupations and in 1960 the total was 483,526. The growth factor for the three-year period is 1.63.

Of the occupations which are listed the five with the greatest number of employees in 1960 are as follows:

Occupation	*Growth Factor*	*1960 Employees*
Truck and tractor drivers	1.73	45,923
Sales-Retail trade	1.40	35,346
Carpenters	1.24	30,138
Construction laborers	1.47	24,571
Auto mechanics and Repairmen	1.47	19,550

These five occupations account for slightly less than a third of the number of persons who were reported as employed in the 53 categories. Of the five occupations, only "truck and tractor drivers" grew at a greater rate than that designated as the mean growth rate of all occupations combined.

The five occupations which had the greatest proportionate growth during the 1950-1960 period were:

Occupation	*1960 Employees*	*Growth Factor*
Draftsmen	3,489	3.72
Banking and other finance managers (salaried)	5,362	3.23
Managers (Construction, salaried)	6,999	3.16
Foremen (Manufacturing)	8,597	3.11
Excavating, grading and road machine operators	8,352	3.10

[14] The rate for farming is equal (employed farmers, 1960) = (employed farmers, 1963).
[15] Rounded to nearest thousand

Growth in the number of employees in these occupations during the ten-year period was approximately at twice the rate of the mean growth in all occupations which were listed. The aggregate number of employees in this group is approximately seven per cent of the entire work force employed in the fifty-three occupations shown in Table 37 (Appendix). However, the increase in absolute numbers is substantial and significant.

Female Employment in Selected Occupations

Statistics are presented in Table 36 (Appendix) that show the number of female Floridians who were employed in 1950 and 1960 in each of thirty-four occupations. In 1950 there were 130,339 female employees in these occupations and in 1960 there were 269,035. The growth factor over the decade was 2.06, which indicates a doubling of the work force of women in these occupations during this period.

Of the thirty-four occupations listed, the five which employ the largest number of persons are:

Occupation	*Growth Factor*	*1960 Employees*
Secretaries	3.52	40,050
Sales-retail trade	1.61	38,530
Waitresses	1.76	27,095
Bookkeepers	2.27	23,185
Cashiers	2.47	14,152

These five occupations account for fifty-three per cent of the females who were employed in all occupations that were listed. It is notable that the number employed in three of the five occupations—secretaries, bookkeepers and cashiers—grew at a faster rate than did the number of all occupations combined. (All of the five occupations which employed the greatest number of males grew during the decade at a slower rate than the average rate for all male occupations.)

The work force in five of the female occupational categories grew at a rate more than double the mean rate for all female occupations which were listed. These were:

Occupation	1960 *Employees*	*Growth Factor*
Receptionists	3,519	4.83
Bank tellers	2,588	4.66
Hospital and institutional attendants	6,824	4.60
Stock clerks and Storekeepers	1,296	4.19
Office machine operators	3,459	4.14

These five occupations account for approximately six per cent of all females who were listed as employed in the thirty-four occupations in 1960.

Employment by County Groups

Broad Industrial Classifications

Information relating to employment in county groups appears in Tables 7, 8, 10, 14, 19, 20, 24, 26, 31, and 32 in the Appendix. Some of the more pertinent of these data appear in the two tables which follow. Table 4 shows for each county group the order of the broad occupational categories according to number of employees.

TABLE 4

BROAD OCCUPATIONS RANKED ACCORDING TO NUMBER OF EMPLOYEES WITH COUNTY GROUPS

Occupation	County Group[1] A	B	C	D	E
Agriculture	3	1	3	6	9
Manufacturing	4	4	5	5	4
Construction	8	8	7	7	7
Transportation and Public Utilities	7	7	8	9	6
Wholesale and Retail Trade	5	5	2	3	2
Finance, Insurance, and Real Estate	9	9	9	8	8
Service	6	6	6	4	1
Government	1	3	4	1	5
All Other Non-agricultural	2	2	1	2	3

[1] *Group A.* Population less than 10,000, 14 counties; Baker, Calhoun, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Lafayette, Liberty, Okeechobee, Union, Wakulla.
Group B. Population 10,000—19,999, 18 counties; Bradford, Charlotte, Citrus, Clay, De Soto, Hardee, Hendry, Hernando, Holmes, Jefferson, Levy, Madison, Nassau, Sumter, Suwannee, Taylor, Walton, Washington.
Group C. Population 20,000–49,999, 13 counties; Collier, Columbia, Gadsden, Highlands, Indian River, Jackson, Martin, Osceola, Pasco, Putnam, St. Johns, St. Lucie, Santa Rosa.
Group D. Population 50,000–99,999, 11 counties; Alachua, Bay, Lake, Lee, Leon, Manatee, Marion, Monroe, Okaloosa, Sarasota, Seminole.
Group E. Population greater than 100,000, 11 counties; Brevard, Broward, Dade, Duval, Escambia, Hillsborough, Orange, Palm Beach, Pinellas, Polk, Volusia.

The rankings in Table 4 reveal that agriculture is a primary employer of persons in counties up to 50,000 in population, but that it rapidly decreases in importance for the groups of counties having the larger populations. In fact, fewer persons are employed in agriculture in the counties of the largest population group than in any other occupational category. The industrial categories of "wholesale and retail trade" and "service" increase their rank order of importance as county group population increases. The "government" classification reveals no particular trend through the five county groups; however, it is a primary employer of persons in

all county groups except for the counties in the largest population group.

The tabular data also reveal that the rankings of industrial classifications within counties change as county group size increases. County groups that are adjacent in respect to aggregate populations are more similar than any pairs of county groups which differ appreciably in population. In one sense, these data reveal that each of these county groups has a somewhat unique economic identity, except for county groups A and B which are quite similar.

The data in Table 5 show the growth factors for each broad occupation in each county group, the growth factor for each group on a state-wide basis, and the mean growth factor for each of the county groups. These factors are based on 1960 and 1963 employment statistics. Thus the growth factors reveal changes that occurred during the three year period.

Many observations can be drawn from the data in Table 5 which may have varying degrees of interest for different readers. Consequently, each reader should seek in the table

TABLE 5

GROWTH FACTORS, 1963–1960, FOR BROAD OCCUPATIONS ON COUNTY GROUP BASIS

Occupations	Groups of Counties					Ave. State Growth
	A	B	C	D	E	
Agriculture.....	.94	1.01	1.06	1.06	.78	.90
Manufacturing.....	.97	.93	1.14	1.05	1.07	1.05
Construction.....	.90	.81	.88	1.06	.88	.90
Transportation and Public Utilities...	1.44	.93	.99	1.04	1.00	1.00
Wholesale and Retail Trade.....	1.12	.96	1.04	1.06	1.04	1.04
Finance, Insurance and Real Estate..	1.00	1.19	1.10	1.20	.98	1.01
Service.....	.86	1.35	1.06	1.13	1.11	1.14
Government.....	1.14	1.11	1.16	1.19	1.19	1.18
All Other Non-agricultural.....	.88	.96	1.03	1.00	.95	.97
Average County Growth[1].....	1.01	1.01	1.07	1.09	1.03	1.04

[1] The average growth factors which appear in this row take into account all broad occupations except agriculture. They would not change appreciably, if at all, if agriculture were taken into account.

the information that will be of interest to him. However, some observations seem to be of general significance. First, each county group seems to be quite different from other groups with regard to the comparative growth rates of the occupations which constitute the major part of its economy. Second, the county groups are experiencing different rates of economic growth, the greatest proportional growth occuring in counties whose populations range from 20,000 to 100,000. Third, by considering the data in Tables 4 and 5 simultaneously it is possible to determine the rate of growth for each ranked occupation. For example, in County group A "government" has a growth factor of 1.14. The mean State-wide growth rate for "government" is 1.18, which indicates that County group A lags slightly in this regard. However, inspection of all growth-rates for County group A reveals that "government" ranks second in rate of growth among the occupations and that its rate far exceeds the mean growth rate of 1.01 for County group A. Data shown in Table 4 reveal that more persons are employed in the "government" category than in any other. Thus, it would appear that there is considerable growth in the major occupational category of that county group.

Establishment of New Industrial Plants

A summary of the number of new plants which were established in Florida during the period 1958-1962 and the expected numbers of people to be employed in them appear in Table 6. Detailed data for individual counties showing the number of new plants and the expected number of employees appear in Tables 4, 10, 16, 22, and 28 in the Appendix. The data in Table 6 are shown according to county groups.

TABLE 6

SUMMARY BY COUNTY GROUPS OF NEW PLANTS AND EXPECTED EMPLOYMENT, 1958–1962

	County Groups					
	A	B	C	D	E	Total
New plants	76	121	192	369	3030	3784
Expected employees	1927	3503	6291	14059	89108	114928

When general population characteristics are taken into account, it appears that County group E received new plants and new employees beyond what might be expected. Although only 67 per cent of the population resides in these counties, 80 per cent of the new plants and 78 per cent of the expected number of new employees were located there. County groups B, C, and D received only from 55 per cent to 72 per cent of new plants and employees which they could reasonably expect if plants and employees were distributed according to population.

Incidence of Out-of-County Employment

Approximately 5.23 per cent of employed Floridians work in a county other than the one of their residence. Stated in terms of numbers, this group which commutes over county lines for employment is slightly greater than 90,000.

In nine counties twenty per cent or more of the employed residents work outside the county of residence. This is true for three of the fourteen counties in Group A (population less than 10,000): Union, 30.30 per cent, Wakulla, 30.24 per cent, and Liberty, 25.27 per cent. It is also true for four of the eighteen counties in Group B (population 10,000-19,999): Bradford, 29.27 per cent, Walton, 28.99 per cent, Clay, 26.52 per cent and Holmes, 23.83 per cent. Santa Rosa County, with 23.83 per cent working outside the county, is the only county in Group D with more than 20 per cent.

The great number of commuters must be taken into account when considering all data that have been presented to this point. For example, the number of employees in "government" work in Leon County is inflated by residents from surrounding counties who are employed in state offices. Consequently, the planning of future education centers, particularly of a vocational nature, must be done with the full knowledge that in many cases county employment data do not reveal as much meaning as maybe imputed to them. For educational planning of the kind that is anticipated by this report a more reasonable unit for appraising needs for occupational education would be areas composed geographically contiguous counties that are economically interdependent.

Employment Trends

The prediction of employment trends, except of the very broadest kind, involves such a complexity of formulation and masses of historical employment statistics that it lies beyond the scope and resources of the Study group. Even if these necessities were provided in full measure it would still be unlikely that predictions which time would prove to be accurate could be made about the future of particular occupations and the numbers of people who will be engaged in them. Certainly it could not be done except upon a broad base, perhaps the State, and only for the near future, perhaps not more than five to ten years.

The data in Tables 4 and 5, previously presented, reveal the numbers of people from each county group who are engaged in employment designated by broad occupational categories, and the growth factors for each of these occupations on a county group and state-wide basis. Although the base for the growth factors is a mere three-year period, one can establish some concepts about what the future holds *if the same forces operate in the future with the same effect that they have done in the past.*

The data that have been presented relating to agriculture show rather clearly that the work force engaged in agriculture has been decreasing. But how one should regard its future, especially as that future relates to vocational education, is problematical. First, despite the decline in the number of workers, it is obvious that agriculture will not disappear from the Florida economy. As a matter of fact, it is predicted that the cash value of farm products will increase annually for the foreseeable future despite the declining work force.

Second, the nature of agriculture is changing and as a consequence the nature of vocational education must change, too, in order to assure qualified potential employees. By implication it is not unlikely that changing agricultural methods have caused the technological unemployment of many agricultural workers, while, at the same time there may have been a critical need for agricultural employees who are suitably trained.

Third, we have little knowledge about the number of new agricultural employees who are needed simply to occupy jobs made vacant by employee death, retirement and abandonment.

Fourth, dramatic scientific breakthroughs might occur which would invalidate the best formulated predictions. For example, Florida is favored with more coast line than any of the continental States; furthermore all of it is tropical or sub-tropical. Consequently, it does not seem improbable that Florida at some indeterminate time might become the food center of the United States as a consequence of theoretical developments in oceanography which would lead to oceanagriculture as a major industry.

In summary, a variety of intensive studies must be undertaken by the several state agencies for the purpose of amassing comprehensive employment data that will enable the formulation of relatively broad but accurate predictions of employment trends. Such studies must be continuous, not one-shot, and they must be sufficiently funded so that the task can be accomplished.

Some state agencies are actively engaged in planning such studies.

It is probable that comparatively few errors will be made in establishing vocational educational programs even in the absence of precise forecasts about broad and specific occupational trends. Two factors will prevent, or at least minimize, even gross errors. First, the State has lagged significantly in providing vocational education training and facilities. Consequently, considerable effort must be made just to bring training opportunities into balance with current needs. Second, the predicted and almost assured growth of the State, a predicted doubling of the population by 1974, will bring about needs for vocational education in virtually the entire spectrum of occupational activity. There would seem to be little reason to wonder whether persons who are trained in a given vocational skill will be able to find gainful employment requiring that skill. Rather, the question is more likely to be that of deciding which of many kinds of training ought to be offered, with the available resources in order to meet even the most pressing needs.

Earlier it was recommended that specific studies of particular occupations be made on a continuing basis in order to plan wisely for the establishment of vocational education programs. A study of this kind was completed recently by the Technical Education Section of the Division of Vocational, Technical and Adult Education of the Florida State Department of Education. The Technical Education Section personnel conducted a survey in February and March of 1964 to gather information about technicians. Responses were received from 1800 Florida firms and the results appear in Table 7.

Similar continuing studies should be conducted in a variety of occupations. The results of such studies will serve as a constant base for sound educational planning.

Tables 36 and 37 (Appendix) contain information showing the number of Floridians, male and female separately, who were employed in specific occupations in 1950 and in 1960. The last two columns of information are projections of the number that will be needed in each of these occupations in 1970. Projection A is based on the assumption that the number in each occupation will constitute the same percentage of the Florida labor force in 1970 as they did in 1960. The anticipated 1970 Florida labor force is 3,158,000 according to the 1964 Manpower Report of the President. Projection B is based on the assumption that the same rate of change in an occupation which occurred from 1950 to 1960 will also occur during the 1960-1970 period. These projections should not be regarded as of high-probable validity. However, they are interesting and thought-provoking and provide an indication of general trends. When Projections A and B differ substantially with respect to a given occupation, the reader will be well-advised to seek some middle ground between them.

Expanding Employment Opportunities

The well-being of a State and its citizens depends on gainful employment of those citizens who are of employable age. A State can take steps to provide for the expansion of employment opportunities for its citizens. Three of the many possible avenues through which such steps might be taken are here described.

First, steps should be taken which guarantee that youth will receive education and training that will cause them to be employable. Business, industry and government tend to choose sites for their installations that guarantee the availability of trained manpower. One device to attract such groups is to create a reservoir of trained talent. One aspect of the creation of such a reservoir of talent which is important but not obvious should be mentioned here. The act of creating a reservoir of employable persons suggests the necessity of abandoning the working principle that youth should be trained for jobs that are immediately or probably available in their particular geographic location in the State. It must be recognized that both youth and the work force are mobile, and furthermore that the responsibility for training youth is not to confine them to a particular geographic location, but in a sense to liberate them. It is predictable that some of them will leave the county in which they were trained; and, for that matter, some will leave Florida. However, such losses are readily compensated by the movement of highly trained people into the State.

Second, educational facilities must be established for providing occupational training throughout the life span of an individual. The obsolescence of old jobs, the emergence of new ones, and the constantly changing demands of a given job due to increasing technological and scientific knowledge make it mandatory to recognize that many adults will probably need to be retrained intermittently during their entire lives. The changing nature of the world of work makes

TABLE 7

1964 TECHNICAL EDUCATION SURVEY REPORT[1]— FLORIDA, 1964

Technology	Technicians Now Employed	Technicians Needed			
		Now	1965	1966	Total
1. Aeronautical	146	27	41	88	156
2. Chemical	722	45	184	202	431
3. Civil and Construction	2,273	183	502	516	1,201
4. Drafting and Design	2,616	265	646	640	1,551
5. Electrical	765	113	285	205	603
6. Electronics	2,509	196	655	786	1,637
7. Mechanical	1,318	123	422	395	940
8. Metallurgical	83	13	39	45	97
9. Tool and Die Design	237	31	107	106	244
10. Data Processing	555	57	179	226	462
11. Microminiaturization	16	16	43	54	113
12. Graphic Arts	1,119	87	204	297	588
	12,359	1,156	3,307	3,560	8,023

[1] The replies reveal that 8,023 technicians will be needed by 1966, an anticipated increase of 65 per cent in only two years.

a truism of the saying that "one must run very quickly just to stay even." Needless to add, the availability of such training facilities is a powerful inducement in predisposing business and industry to favor one location over another when deciding the optimal location for new installations.

Thirdly, the State can deliberately count on expanding employment opportunities simply by increasing the educational level of its citizens. It is historically true that as the educational level has increased so have the secondary needs of those who have been educated. Their secondary needs, by and large, are satisfied through consumption of more and different economic products. In short, greater emphasis on education inevitably leads to greater economic activity.

Comments on Occupational Education

The following comments concerning occupational education arise from the materials presented in this chapter. These comments are certainly not, nor are they intended to be, any kind of summary statement about the role of vocational education which might otherwise not be given proper attention.

As mentioned in the preceding section, a sensible system of occupational training facilities cannot be established so as to confine the facility to providing only those kinds of training for which employment opportunities exist or may become existent in the particular geographic locality of the training center. Some geographic areas are deprived in the sense of having few available employment opportunities. People are more mobile now than ever before.

The predicted manpower requirements for some types of employment are such that while it is obvious that the need to prepare people for such employment is pronounced, the absolute number of predicted jobs is sufficiently small that it would be economic folly to establish general training programs for such employment throughout the State. In short, it is quite probable that certain area training centers will, by economic necessity and common sense, be designated as state-wide training centers in particular occupations. Such designations might arise because of conditions mentioned above and, also, because the particular training facilities might be so costly as to preclude establishment of more than one or two installations in the entire State. If decisions such as these are made, then provision must be made for providing tuition scholarships, living stipends, etc. for prospective students from parts of the State which are not within commuting distance from the training site.

Occupational training should be executed in such a way that it simultaneously develops the employable skills and the literacy of the trainee. It must be recognized that a person must be an effective participant in his society as well as an effective participant in his job. Consequently, much care must be taken in the formulation of training programs to assure that both aspects of education are taken into account and are served.

Furthermore, training programs must be formulated in such a way that the learning which is imparted is salable, i.e., leads to economic competency, and is conducive to further learning on the part of the trainee. Safeguards must be deliberately sought which will prevent the training of people in so specifically limited a manner that they will become victims of technological

unemployment at the first instant the particular job begins its almost inevitable evolutionary change. The key here is to arm the trainee with that knowledge and competency that will permit him to grow and change with the changing conditions of his employment.

Although the "employment" section of this chapter has paid only slight attention to high-level technical and professional positions, it must be recognized that the need for vocational education at any level is strongly dependent on the training of high-level scientific and scholarly personnel. The contributions to knowledge which these two groups make have the consequence of determining the nature and magnitude of the world of work. The change in the nature of Florida agriculture which was described earlier in the chapter illustrates the dependency of occupations on theoretical contributions by scholars. Thus, it is obvious that occupational training must not be done at the expense of other educational activities.

Chapter 3

Occupational Education in Florida

OCCUPATIONAL EDUCATION below the professional level is an integral part of the state's system of public education. It is provided in various types of schools and adult centers but is found principally in high schools, junior colleges and separate technical schools.

The program is administered and supervised at the state level by the Division of Vocational, Technical and Adult Education under the State Superintendent of Public Instruction. It operates at the local level under the county boards of education and the county superintendents of schools.

Occupational education in the public schools of Florida is organized around five major occupational fields: agriculture, home economics, business and distributive occupations, industrial occupations and semi-professional or technical occupations.

In order to provide a fairly comprehensive picture of the nature and scope of the total program of occupational education, data concerning each of these fields are presented and discussed in some detail.

Vocational Agriculture

Vocational agriculture was one of the original occupational fields authorized under the 1917 Smith-Hughes Act. As offered in the high schools of Florida, it is an elective program offered in grades nine through twelve. In addition to classes for high school students, two other programs are offered: (1) a series of classes for Young Farmers, and (2) classes organized to augment the skills of experienced Adult Farmers.

Young Farmer and Adult Farmer classes are taught by the local vocational agriculture teacher or by a visiting teacher brought in to teach a special phase of agriculture. Each of these programs is jointly financed by federal, state and local governments.

During the 1962-63 school year 204 of Florida's 1700 school centers which include high school grades offered courses in vocational agriculture.[1]

Major emphasis in vocational agriculture throughout its history has been given with relative consistency to studies which contribute to the production aspects of agriculture. Basic agricultural information, scientific and technological bases of agriculture and certain aspects of agricultural engineering have been emphasized.

The course of study for vocational agriculture in the public high schools of Florida encompasses topics such as orientation and general information, supervised farming, animal science and plant science. It also includes studies in forestry, farm machanization, and management of home and farm business. In addition to these activities each vocational agriculture program sponsors a chapter of Future Farmers of America.

In recent years the production emphasis in vocational agriculture has been broadened to include many aspects of the field of agri-business. Agri-business is defined as including all the occupations concerned with marketing, processing, transporting and distributing agricultural products. This is Florida's largest business field.[2]

Data included in this chapter indicate that Florida farmers are decreasing in number, that the size of farms is increasing and that technological innovations are increasing the productivity of the land. Agricultural surpluses are a reality in many farm commodities. At first glance

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1 "Vocational Agriculture in Florida" (Division of Agricultural Education, State Department of Education, July, 1963) p. 1 (mimeographed).

2 *Florida Agribusiness*, State of Florida, Department of Agriculture, 1963, p. 4.

the data might appear to indicate that the need for vocational agriculture in Florida is diminishing. However, such a conclusion is not warranted, particularly when the total field of agri-business is considered.

The Florida Department of Agriculture estimates that 375,000 individuals in Florida are engaged in occupations which can be classified as either farming or agri-business. Also, ". . . about 3700 manufacturing plants in Florida used agricultural and forestry products as their principal raw material or produced mostly items for agriculture, such as fertilizer, or fruit and vegetable handling machinery."[3]

Enrollment in high school vocational agriculture, as shown in Table 1, gradually increased during the period 1956-1963. However the rate of enrollment increase has been declining and enrollments in vocational agriculture have been increasing at a slower rate than has enrollment in a number of other vocational areas.

TABLE 1

ENROLLMENT IN HIGH SCHOOL VOCATIONAL AGRICULTURE CLASSES IN FLORIDA BY TYPE OF CLASS[1]
1956-1963

Year	All Classes	Day Classes	Young Farmer Classes	Adult Farmer Classes
1956	12,461	11,050	379	1,032
1957	12,859	11,333	371	1,155
1958	13,528	12,045	336	1,147
1959	13,916	12,271	363	1,252
1960	14,027	12,411	452	1,164
1961	15,201	13,109	405	1,687
1962	15,676	14,038	370	1,268
1963	15,784	14,256	367	1,161

[1] Biennial Report, Superintendent of Public Instruction, State of Florida, 1960-62, p. 306, and unpublished reports for 1963-64.

The 1963 Vocational Education Act has important provisions for vocational agriculture.

Although earlier vocational acts closely tied educational programs in agriculture to directed or supervised practice on the farm, the 1963 Act removes the above qualifications and broadens the concept of agriculture. The provision, in part, is as follows: ". . . . any amounts allotted (or apportioned) under such titles, Act or Acts for agriculture may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects, whether or not such occupation involves work of the farm or the farm home, and such education may be provided without directed or supervised practice on a farm.[4]

The continuous challenge which agricultural education faces in Florida today is one of adapting traditional aspects of the program to the changing needs of the total field of agri-business. Technological developments in the field of Agri-business will have important meaning for agricultural education in the State of Florida. Technological advances in production agriculture, new developments in marketing, and innovations in the distribution of agricultural products, all point to increased employment opportunities for persons with technical training in the scientific and management aspects of agri-business.

The trends here suggested indicate that Florida's high schools must continue to reorient their vocational agriculture programs to the developing field of modern agriculture. These trends also suggest that a few of Florida's more appropriately located junior colleges may find it desirable to offer programs in agricultural technology to meet occupational demands in this field.

Home Economics

Home economics education is divided into two major types of programs, General Home Economics and Vocational Home Economics.

The content of General and Vocational Home Economics at any given grade level is similar, but additional requirements as to the length of class periods, student conferences and home visitations must characterize the vocational program. A vocational program at the high school level also sponsors a chapter of Future Homemakers of America or a chapter of New Homemakers of America. Teachers of Vocational Home Economics must have graduated from a college or university approved (by the State Board of Vocational Education) to offer teacher training in Vocational Home Economics.

General Home Economics is offered at the seventh and eighth grade levels, and it continues in grades nine through twelve.

Vocational Home Economics is offered in grades nine through twelve and is designed to serve persons over fourteen years of age who have become homemakers or are preparing to be homemakers in their own homes or who intend to seek gainful employment in occupations in-

[3] *Ibid.*

[4] U. S. Congress An Act to Strengthen and Improve the Quality of Vocational Education . . ., Public Law 88-210, 88th Congress. H. R. 4955, December 18, 1963 p. 8.

volving knowledge or skills developed in home economics instruction.

The instruction for homemaking is designed to contribute to the quality of family living. In the second category, concerned with gainful employment, the emphasis is achieved through instruction which will foster competencies in occupations that provide services to families in the home, to home-related social agencies, or in occupations which are supportive of the professional home economist.

Vocational Home Economics is offered at three different levels: at the high school level, at the post-high school level and through short courses for adults.

Table 2 shows enrollment in home economics classes for the period 1956-63.

TABLE 2

ENROLLMENT IN HOME ECONOMICS CLASSES IN FLORIDA SHOWN BY TYPE OF CLASS[1]
1956–1963

Year	All Classes	Day Classes	Evening Classes	Part-time Classes
1956	52,279	29,030	22,905	344
1957	56,046	30,574	25,122	350
1958	60,719	34,687	25,146	886
1959	54,560	36,749	16,986	825
1960	62,228	41,127	20,291	810
1961	70,948	46,967	22,992	989
1962	78,482	52,911	24,576	995
1963	95,639	67,484	26,947	1,208

[1] Biennial Report, Superintendent of Public Instruction, State of Florida, 1960-62, p. 306, and unpublished reports for 1963-64.

The Vocational Home Economics program at the high school level must, by regulation, encompass at least two years. This program at a given school may include a required comprehensive course, an advanced comprehensive course and a course in Modern Family Living, together with a combination of semester courses from one of the major instructional areas in Home Economics. These instructional areas are: Child Development; Personal, Family and Social Relations; Clothing and Textiles; Food and Nutrition; Housing and Home Furnishing; and Home Management and Family Economics.

Such programs at the high school level, for the most part, emphasize the homemaking part of the program with substantially less emphasis on gainful employment outside the home.

Home economics education, when it is offered at the junior college level, is predominately of a university parallel nature and is aimed at serving the needs of those students who are interested in preparing for professional positions in home economics upon completion of a baccalaureate program. Junior college programs may also contribute to preparation for home and family living, but little emphasis is given to gainful employment on completion of the two-year program.

The Vocational Education Act of 1963 has a number of important provisions that relate to home economics education. Under this Act "(1) . . . any amount allotted (or apportioned) under such titles, Act, or Acts for home economics may be used for vocational education to fit individuals for gainful employment in any occupation involving knowledge and skills in home economics subjects; (2) at least ten percentum of any amount so allotted or apportioned to a state for each fiscal year beginning after June 30, 1965, may be used only for vocational education to fit persons for gainful employment in occupations involving knowledge and skills in home economics subjects, or transferred to another allotment under subsection (a) or both. . . ."[5]

In order to benefit fully from federal legislation, additional emphasis will have to be given to providing educational offerings in home economics which lead to gainful employment.

Although this Study is concerned primarily with occupational education, the importance of related education cannot be overlooked. Much of home economics education is not directly occupationally oriented. More appropriately it can be called related education.

One of the recurrent themes in this Study points to the changes that are occurring in American society. These changes have been accompanied by important shifts in the structure of the American family and the mode of family living. In an economy of abundance the family has gradually changed from a producing unit to a consuming unit. Rarely in our present society do we find families that are self-sufficient economic units.

It is not unusual to find in the literature dealing with the family and family problems that recurrent emphasis is given to the trend toward the employment of both parents, to the lengthening in the human life span, to increased family mobility, to the increasing divorce rate and to the decline in family solidarity.

When the changing patterns of family relationship are viewed in their entirety, it is dif-

[5] U. S. Congress. *loc. cit.*, p. 8.

ficult to escape the conclusion that education designed to deal with this area of living is of vital importance. Adults, as well as girls and boys in their formative years, should have educational services available to them which would contribute to their competencies for the obligations and responsibilities of family living.

Distributive, Business, and Cooperative Education

Distributive Education

Curriculums in Distributive Education are designed to develop competencies for occupations which are concerned with the marketing and merchandising of goods and services. These occupations are found in many different types of business establishments, including retailing, wholesaling and manufacturing firms. They may also be found in firms that are engaged in storing and transporting goods and in firms concerned with financial and risk bearing pursuits.

Distributive education attempts to develop and add to skills and understanding that relate to such activities as selling, sale promotion, buying, business operation, marketing, management, etc.

Federal funds for support of distributive education first became available under the George-Deen Act of 1936, and were extended under the 1946 George Barden Act. These Acts allocated matching funds for the instruction of persons already employed in distributive occupations and for preparing youth for such occupations in part-time cooperative curriculums. Neither the George-Deen Act, nor any supplementary federal act up to 1963 provided matching funds for all-day, in-school preparatory curriculums. The omission of such provision was a departure from the provisions of earlier Acts, e.g., the Smith-Hughes Act, which made provisions for full-time pre-employment training, as well as for part-time and evening classes in the fields included in that Act. Because of this restriction of the federal Acts in the field of distributive education, most emphasis at the state and local level has been given to adult and part-time cooperative programs. Little emphasis has been given to full-time high school or full-time adult preparatory education in the field of distribution. This part of the distributive education program should be greatly expanded.

The Vocational Education Act of 1963 allows federal funds to be used to provide full-time preparatory distributive education for eligible youths and adults who wish to seek employment in a distributive occupation.[6]

Business Education

Business education has two major and distinct objectives. One objective is to provide general or basic business information which will serve the personal needs of students. The other objective is to provide adequate vocational preparation for those students who wish to enter employment in a business occupation or who wish to add to competencies required by a job in a business occupation which they currently hold.

The majority of high schools in Florida offer courses which may be subsumed under the heading of Business Education; however, in many high schools business education consists of only one or two courses such as personal typing, business mathematics or the like. Other high schools offer a broad range of elective courses in business and at the same time offer a comprehensive program aimed at providing students with the competencies needed to secure employment in an office occupation.

Vocational Office Education is a recently innovated in-school preparatory program designed for high school students interested in clerical and secretarial occupations. This program includes one-year and two-year curriculums which provide instruction suitable to such occupational objectives.

Vocational Office Education has been financed exclusively from state and local funds. For that matter, the vast majority of business education offerings have been financed from state and local funds. Neither the Smith-Hughes Act, nor the George-Barden Act made any provision for federal matching funds for support of business education offerings. However, the Vocational Education Act of 1963, (Section 8) specifically includes "business and office occupations."[7] It is the first of the Federal Vocational Education Acts to authorize the expenditure of federal funds in support of these occupations.

Cooperative Vocational Education

Cooperative Vocational Education is not a distinct occupational field as are Distributive Education and Business Education. Rather, it is a procedure for organizing educational offerings wherein business and industrial establishments cooperate with the schools by providing training-

[6] *Ibid.*
[7] *Ibid.*

on-the-job during the normal school day for students enrolled in the public schools.

A student in a cooperative program spends part of his day in the high school continuing his general education and studying subjects related to his area of employment. The remainder of the school day he learns by working at his job in the cooperating establishment.

In Florida, there are three Cooperative Vocational Education programs in operation. These are Cooperative Distributive Education (D. E.), Cooperative Business Education (C. B. E.) and Diversified Cooperative Training (D. C. T.). A fourth program, Cooperative Industrial Education, has been authorized, but is not currently in operation.

Cooperative Distributive Education and Cooperative Business Education are offered as distinct specialized curriculums, each enrolling students having similar appropriate occupational objectives. As the name implies, the Diversified Cooperative Training curriculum is for groups of students with a diversity of occupational objectives which may include distributive, business, health, agricultural and industrial occupations.

Some high schools offer all three of these cooperative curriculums; other schools offer only one or two of them. Cooperative Distributive Education or Cooperative Business Education is offered only when there are sufficient numbers of students with similar employment field objectives and sufficient employment opportunities in that field. The Diversified Cooperative curriculum is used in smaller high schools where there are too few students with the same occupational objective to justify one of the specialized cooperative curriculums. It is also found in larger high schools where the diversity of occupational objectives cannot be met by the specialized curriculums.

During the 1963-64 school year, 4,582 students were enrolled in cooperative education programs in Florida's high schools. (See Table 3). This enrollment represented an eight per cent increase over the 1962-63 enrollment of 3,970.

Enrollment during 1963-64, distributed according to sex, was male, 1955 and female, 2627.[8]

When the job placement of students in cooperative programs is coded according to the Standard Industrial Classification, the largest number of students (1,810) was placed in wholesale and retail trade occupations with service occupations (1,285) next in order. (This is shown in Table 4.)

[8] State Department of Education, Division of Vocational, Technical and Adult Education, "Enrollment Data, 1963-64, Cooperative, Business and Distributive Education," (mimeographed).

TABLE 3

ENROLLMENT IN COOPERATIVE, DISTRIBUTIVE, AND BUSINESS EDUCATION[1] IN FLORIDA 1956–1963

Year	Cooperative Business Education	Distributive Education (Cooperative)	Diversified Cooperative Training
1956	145	500	2,326
1957	245	586	2,441
1958	337	707	2,547
1959	386	683	2,866
1960	484	532	2,967
1961	460	560	2,568
1962	462	677	2,831
1963	548	906	3,128

[1] Biennial Report, Superintendent of Public Instruction, State of Florida, 1960–62, p. 306, and unpublished reports for 1963–64.

TABLE 4

COOPERATIVE EDUCATION PROGRAMS IN FLORIDA[1]— WORK PLACEMENT OF STUDENTS (1963–1964)

Industrial Classification[2]	CBE	DCT	DE	Total
Agriculture, Forestry, and Fishing	5	63	7	75
Mining	...	5	...	5
Contract Construction	10	72	2	84
Manufacturing	30	196	27	253
Transportation, Communication, Electric, Gas, and Sanitary Service	26	99	16	141
Wholesale and Retail Trade	78	1,094	638	1,810
Finance, Insurance, and Real Estate	132	255	28	415
Services	202	987	96	1,285
Government	13	55	...	68
Non-Classified Establishments	52	302	92	446
TOTALS	548	3,128	906	4,582

[1] State Department of Education, Division of Vocational Technical and Adult Education, "Enrollment Data, 1963–64, Cooperative, Business and Distributive Education," (mimeographed).
[2] Placement coded according to Standard Industrial Classifications.

Industrial Education

Industrial occupations have been defined as "any industrial pursuit, skilled or semi-skilled, trade, craft or occupation which directly functions in the designing, producing, processing or repairing of any manufactured product, and any service, trade or occupation which is not classified as agricultural, commercial, professional or homemaking."[9]

From this definition it is evident that industrial education is concerned with providing edu-

[9] Federal Security Agency, Office of Education, *Administration of Vocational Education*, Bulletin No. 1, 1949, p. 61.

cational services for one of the largest segments Florida's labor force.[10]

Industrial education in Florida includes the exploratory activities of industrial arts as well as the preparatory and supplementary vocational instruction for industrial occupations. It was one of the original occupational areas included under the Smith-Hughes Act of 1917, and throughout the years it has provided extensive educational opportunities for a broad range of occupations.

At different times during its history the Industrial Education section of the State Department of Education has included the usual trade and industrial program as well as certain adult vocational office programs, technical education programs and diversified cooperative training programs.

In 1953, Diversified Cooperative Training became a part of the Cooperative, Distributive and Business Education Section. In 1954, Vocational Office Education also became a part of the Cooperative, Business and Distributive Education Section, and in 1963 programs entitled Technical Education were grouped into a new section for that field in the Division of Vocational, Technical and Adult Education.

Thus, Industrial Education has not only provided continuing service for industrial occupations, but has nurtured programs in at least three other occupational fields.

Industrial Education in Florida presently provides (1) curriculums for secondary school youth who are regularly enrolled in school, (2) curriculums for out-of-school youth and adults and (3) courses for employed persons to upgrade them in their industrial occupations. Thus, Industrial Education encompasses both preparatory education for young people and adults who wish to enter selected industrial occupations and supplementary training for employed persons who wish to improve their occupational competencies.

A number of different organizational patterns are available for providing industrial education in the day programs. The basic philosophy underlying the different approaches is that it is desirable to provide industrial education to people where and when it will be most beneficial.

Despite shifts of some industrial education activities to other sections of the Division of Vocational, Technical and Adult Education, Industrial Education has maintained a relatively steady growth in enrollments. (See Table 5).

[10] Data in Tables 36 and 37, Appendix II, which list men and women employed in selected occupations in Florida, tend to support this conclusion.

TABLE 5

VOCATIONAL INDUSTRIAL EDUCATION IN FLORIDA[1]— ENROLLMENT 1955-64

Year	Individuals Participating
1955-56	32,309
1956-57	34,260
1957-58	34,291
1958-59	35,953
1959-60	36,029
1960-61	36,967
1961-62	38,156[2]
1962-63	36,459
1963-64	39,685

[1] Biennial Report, Superintendent of Public Instruction, State of Florida, 1960-62, p. 306, and unpublished reports for 1963-64.
[2] Up to and including 1961-62 technical education enrollments were included within vocational-industrial enrollments.

The Vocational Education Act of 1963 made certain new provisions with respect to Trade and Industrial Education, one of which should be noted here. This applies to instruction for single-skilled or semi-skilled occupations which do not require the kind or amount of training required for skilled occupations. For these single-skilled and semi-skilled occupations, Federal funds may be used in curriculums for in-school persons over fourteen years of age in courses which are operated for less than nine months per year and less than thirty hours per week, and without the requirement that a minimum of half the time be given to practical work on a useful and productive basis.[11]

Industrial Arts

There is some confusion as to the distinction between Industrial Arts and Vocational-Industrial Education due to failure to recognize the essential nature of these two distinct types of instruction and the relationship which exists between them. There are several explanations for this confusion, one being the inclusion of the word "Industrial" in the names of each. Both types of instruction often use the same or similar tools, equipment and materials. Also, there is some limited similarity in the operations, understandings and other learning outcomes. Both involve practical experience in shop work and they are often administered and supervised by the same personnel. At the state level in Florida, Industrial Arts is the responsibility of the Industrial Education Section of the Division of Vocational, Technical and Adult Education. This sec-

[11] U. S. Congress, *loc cit.*, p. 9, Section 10(e)

tion is also responsible for Vocational-Industrial Education.

There are important distinctions which should be recognized. Industrial Arts has unique and important functions in the total program of education and these ought not be jeopardized by unwarranted confusion. The prime distinction lies in the purposes of each. Vocational-Industrial Education has as its dominant purpose the preparation of students for employment in identified industrial occupations and the upgrading of workers already employed in such occupations. Industrial Arts, on the other hand, is not intended to provide specialized preparation for specific industrial occupations, although this may be the incidental and limited result for some students. Essentially, Industrial Arts is one of the "general education" offerings of the schools, serving those needs which most youth have in common.

As a general education subject, Industrial Arts, uniquely serves those needs which most students have that can be best met by instruction involving school shop and related experiences. There are several such needs but one of them has a special bearing on Vocational-Industrial and Technical Education. This need involves the arousal of interest and the discovery of aptitudes which are pertinent to both the choice and the further specialized preparation for employment in industrial occupations. In this sense, Industrial Arts is exploratory with respect to Vocational-Industrial and Technical Education.

If Vocational-Industrial and Technical Education are to fulfill their missions, it is essential that the students enrolled have the attitudes and capacities which are required and that they be interested in employment in the occupation for which they seek specialized preparation. To the extent that these characteristics exist for the students enrolled, the programs of Vocational-Industrial and Technical Education are more effective. Both the taxpayers and the students benefit from the exploratory function of Industrial Arts. This point of view is supported by the following statement: "Industrial Arts is an integral part of the total school program and should be available to all students at all grade levels. While Industrial Arts is general education, it is also related to and lays a foundation for vocational, technical and professional programs."[12]

The Industrial Arts program in Florida's public schools usually begins in grade 7 and continues through grade 12. The objectives at the junior high school level are somewhat different from objectives at the senior high school level. In the junior high school years, primary emphasis is given to exploratory and orientation activities. Exploratory experiences are offered in four or more areas. These areas include drafting, woodworking, metal work, graphics, power mechanics and electricity. The purposes of industrial arts at this level are: (1) to enable the student to become acquainted with the world of industry and technology, (2) to develop an appropriate degree of skill with tools, machines and processes, (3) to identify pupil aptitudes and abilities which will aid students in making more realistic choices of senior high school courses.[13] The nature of industrial arts offerings, when considered with the breadth and depth of other offerings in the junior high school years, may have direct relationship to later career choices of students. The breadth and depth of offerings in the junior high school years may also have a direct relationship to the number of students who become school dropouts. The nature of junior high school offerings in pre-occupational education and the place of guidance in the junior high school years are examined more extensively later in this chapter.

Two serious problems have bearing on much of what can be done in industrial arts education. First, in many cases facilities for industrial arts in Florida's schools are completely inadequate to serve the needs. Second, adequately trained Industrial Arts teachers are in very short supply. The situation is rapidly becoming critical. A recent Florida Industrial Arts Newsletter states that, "In 1963-64 it is estimated that fifty industrial arts teachers were graduated in Florida, yet only twelve of these accepted teaching positions. Recruitment of teachers from out-of-state has become increasingly difficult as other states are also faced with a teacher shortage. The shortage affects all counties, but the smaller counties with lower salaries feel the effect most."

Thus far, federal funds have not been allocated for the promotion of industrial arts education. This is due to the fact that Industrial Arts has been identified as part of the program of general education, which, as a whole, has not received federal aid. This means that if industrial arts education is to fulfill its important role in Florida, adequate funds must be provided at the state and local levels.

[12] *Industrial Arts Education in Escambia County, A Report of the Findings & Recommendations of the Survey Committee,* State Department of Education, May 1964, Tallahassee, Florida, p. 1.

[13] *Ibid.*

Technical Education

In 1963 Technical Education was established as a separate section of the Division of Vocational, Technical and General Adult Education. Prior to 1963 Technical Education was included in the Industrial Education Section. The identification of Technical Education as a separate section was in keeping with the rapid growth and broadening of technical occupations in fields such as engineering, business, health services, and agriculture.

Technical Education is a term which is just beginning to acquire meaning in this country. As defined in this Study, Technical Education is considered to be a part of the total spectrum of occupational education. Technical Education emphasizes mathematical and scientific concepts and organization and management skills, as well as the theory which underlies these skills. However, it requires less emphasis on the manipulative skills which characterize the crafts and similar occupational levels. Occupations which rely extensively on organization and management theory rather than mathematical and scientific concepts may in some cases be called semi-professional occupations.

Under this definition it is possible to classify certain curriculums in high schools, junior colleges and specialized schools as technical education or semi-professional education. In this study the two terms are used interchangeably.

Technical programs at the high school level include electronics, technology, mechanical design technology, technical illustration, architectural technology and technical mathematics. In specialized schools and in adult programs connected with high schools, similar curriculums are offered. During the school year 1963-64 Pinellas, Broward, Alachua, Seminole, Dade, Putnam, Escambia, Sarasota and Hillsborough counties offered one or more preparatory technical programs in their high schools. A total of 471 students were enrolled in these preparatory programs. Another 508 students were enrolled in post-secondary and supplementary courses of a technical nature.

Pinellas, Okaloosa, Volusia, Lake, Alachua, Orange, Escambia, Leon, Manatee and Palm Beach counties offered preparatory technical education at the secondary and post-secondary level as well as supplementary technical courses in specialized schools. Enrollment in secondary preparatory courses in these counties totaled 145 students. Post-secondary enrollments reached 2,396 students while supplementary offerings enrolled 2,615 students.

Table 6 lists the number of technical curriculums in the public junior colleges of Florida.

Eighteen of Florida's public junior colleges offered one-year or two-year technical curriculums or both in 1963-64. It is expected that Okaloosa-Walton Junior College, Polk County Junior College and the new junior colleges authorized for Monroe County, Leon County and Alachua County will also offer technical curriculums.

Some concern has been expressed nationally and also in Florida regarding the difficulty encountered in determining which occupational curriculums are classified as technical and which are not. Unfortunately there is no sharp delineation. Definitions accepted by junior colleges some times disagree with definitions accepted by high schools and by specialized institutions. To add to the confusion, industrial job classifications do not completely fit any of the discrete definitions. For this reason it is felt that the broad approach to definitions is defensible at this time.

It is expected that public junior colleges in Florida will continue to offer some technical curriculums at a higher level than those in the high schools and will include courses offered in most specialized institutions. A variety of offerings at all levels is demanded by the nature of our industrial South and the occupational objectives of our youth. Much of the confusion regarding technical education will be resolved as all institutions find better means of describing their programs and as they more clearly define the types of occupations for which they are preparing people.

General Adult Education

General Adult Education, although not strictly occupationally oriented, makes important contributions to occupational competency since it improves the quality of individual citizenship. It thereby contributes to a satisfying and useful life of employment in a selected occupation.

General Adult Education provides classes in the major areas of literacy, elementary and high school subjects, Americanization, citizenship, cultural and liberal education and civil defense. Offerings in this major area increased in scope during the decade, 1952-1962. From a total enrollment of less than 5,000 in 1952 the program grew to serve an enrollment of 121,166 in 1962-63.

During 1962-63 more than 5,000 persons were awarded high school diplomas or high school

TABLE 6

THE NUMBER OF ONE-YEAR AND TWO-YEAR OCCUPATIONAL[1] CURRICULA IN FLORIDA PUBLIC JUNIOR COLLEGES — 1963-64

County	Junior College	Semi-Professional	Technical	Business and Distribution	Industry and Service
Bay	Gulf Coast	1	4	9	0
	Rosenwald	1	0	1	0
Brevard	Brevard	0	4	5	0
Broward	Broward County	1	1	4	0
Columbia	Lake City	1	0	1	0
Dade	Miami-Dade	0	9	5	0
Escambia	Pensacola	2	5	2	0
	Washington	1	2	2	0
Jackson	Chipola	0	2	2	0
	Jackson	0	0	0	0
Lake	Lake-Sumter	3	1	6	0
	Johnson	2	0	1	0
Lee	Edison	0	0	6	0
Madison	North Florida	0	1	4	1
	Suwannee River	0	0	1	0
Manatee	Manatee	2	5	5	0
Marion	Central Florida	1	3	4	7
	Hampton	1	2	1	4
Palm Beach	Palm Beach	4	5	3	0
	Roosevelt	0	0	1	0
Pinellas	St. Petersburg	3	2	2	0
	Gibbs	1	0	3	0
Putnam	St. Johns River	0	2	1	0
	Collier Blocker	0	0	0	0
St. Lucie	Indian River	0	2	4	0
	Lincoln	0	0	1	2
Volusia	Daytona Beach	1	2	1	15
	Volusia County	0	1	4	9
TOTALS		25	53	79	38

[1] Author's interpretation of data supplied by Florida Junior Colleges on forms. Division of Community Colleges, State Department of Education, 1964.

equivalency diplomas through completion of the program of General Adult Studies. This number was more than ten per cent of the total number of high school diplomas awarded in Florida during that year.

General Adult Education offerings also include courses which are designed to assist vocational and technical education students to become more articulate, to read more effectively and to master mathematical and scientific skills used in their occupations. The importance of these offerings is well supported by the rising level of competency needed for successful performance in many areas of employment.

General Adult Education is presently financed from state and local funds, from student fees and from a small proportion of funds coming from federal sources which are provided for veterans' education. The impact of veterans' funds under P. L. 346 and P. L. 550 has diminished in importance, although in the years immediately following World War II and the Korean War these funds provided a substantial proportion of the funds for the support of General Adult Education.

Recent federal legislation reflects an increased awareness of the relationship of the level of general education to vocational success. The Manpower Development and Training Act of 1962 authorizes funds for education at the basic level for those unable to qualify for occupational training. The Vocational Education Act of 1963 includes within the term, vocational education, that instruction which is related to the occupation for which the student is being trained.

The Manpower Development and Training Act of 1962 and the Vocational Education Act of 1963 are particularly relevant to the work of General Adult Education since it is expected that basic literacy education must be provided for adults so as to enable them to receive the full benefits of occupational training.

Data included in Chapter II indicate that the proportion of older people is increasing in a number of Florida counties. Offerings in general adult education (in these counties) should be provided to meet the unique educational needs of older citizens. Also, many of these older citizens have extensive experience in many fields of endeavor. Age standards for employment of these older citizens should be re-examined. Many older citizens could serve as teachers for adult education offerings. There may be a need for greater decision making at the county level as to the fitness of senior citizens for limited educational service in adult education. An arbitrary cut-off point as to what is or is not appropriate service by people in this age group may mean that a county is unjustly deprived of one of its richest human teaching resources.

Institutions and People

Occupational Education in Florida is characterized by two major factors: first, the large variety of types of institutions that provide this type of education, and secondly, the many different types of people who are being served.

Institutions Offering Occupational Education

There are at least five generally known types of institutions which serve the educational needs of youth and adults of Florida. Elementary schools, junior high schools, high schools, junior colleges and universities are thoroughly established as having definite educational functions to perform.

A number of other public institutions offer occupational education and occupationally related education to many individuals similarly served by the institutions mentioned above. These include adult centers, adult high schools, vocational and technical centers and the Florida Institute for Continuing University Studies.

Figure I shows the types of public institutions which provide education in the State of Florida.

The definition of occupational education used in this study precludes the inclusion of university academic and professional programs and also junior college programs which are of a pre-professional or university transfer nature. This study also excludes services provided by the Florida Institute for Continuing University Studies. However, the occupational programs offered by the Florida School for the Deaf and Blind are treated briefly in this Study.

Pre-Occupational Education in the Junior High Schools of Florida

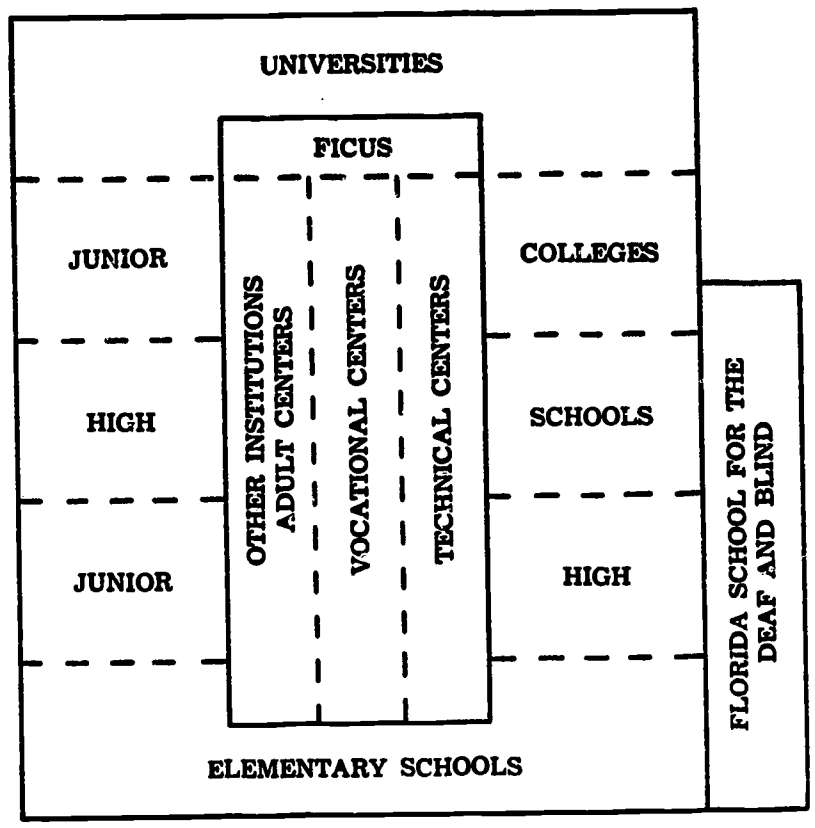
In this Study the term, junior high school, refers to any or all of grades seven, eight and nine whenever they appear in the given school center.

During the 1962-63 school year there were in Florida 44 school centers in which elementary, junior and senior high school grades were included, 152 school centers with junior-senior high school grades, and 189 school centers with junior high school grades only. Enrollment in grades 7-9 for the school year 1962-63 was 207,732.[14]

Instruction during the junior high school years is more appropriately called "pre-occupational" since it is not intended to lead directly to employment. However, it provides a vital service

FIGURE 1

TYPES OF PUBLIC EDUCATIONAL INSTITUTIONS IN THE STATE OF FLORIDA



by introducing students to various aspects of the world of work and to the nature of America's industrial society.

Pre-occupational orientation in the junior high schools of Florida is confined to studies in fields such as business, home economics, agriculture and industrial arts.

Prior to the junior high school years the student's only contact with studies related to occupations is through participation in craft and manual arts activities in the social studies program.

[14] *Florida Public School Data—1962-63*, State Department of Education, Division of Finance, (mimeographed) p. 1.

In the junior high school the student for the first time comes into contact with pre-occupational programs which are organized as distinct and separate classes.

These classes are important for a number of reasons. First, when they are available, a broader range of student interest may be served. Second, they are valuable in assisting students to make decisions regarding career goals on the bases of aroused interests and discovered aptitudes. Third, they provide experiences which may be of value in later occupational programs. Where such classes are lacking, the school is limited in the variety of services it can provide for students. The result is often similar to that which is pointed out in *Education for a Changing World of Work*—"many students feel that in view of the academic nature of the school program and the hierarchy of teachers' marks, they are failures and do not belong in school. . . . School, many of them conclude, is a waste of time."[15]

The report here cited also suggests that many problems which culminate in later dropouts have their origin in the elementary school, and that it may be time to take a hard look at the curriculums available for persons such as these.[16] The report stresses the importance of guidance and counseling as it relates to pre-occupational education. In a quote from Wolfbein it is suggested that the guidance function might become more and more a developmental process beginning down in the elementary grades instead of a discrete function which commences at some arbitrary later chronological age or school year.[17]

It is evident that the overall occupational endeavor in the public schools of Florida must include an adequate variety of activities in pre-occupational education for junior high school students. There is also considerable need in Florida for providing more guidance and counseling services during the junior high school years.

Occupational Education in Florida's High Schools

The public high schools of Florida show considerable variation from county to county as to grade organization, student body size, number of school centers and quality of occupational offerings.

As has been stated, in 1962-63 there were 152 school centers in Florida that were organized as elementary-junior-senior high schools (grades 1-12); 94 school centers organized junior-senior high schools (grades 7-12); and 29 school centers organized as four-year high schools (grades 9-12). Also there were a number of other school center organizations with high school grades.[18] The term "high school" as used in this Study, refers to any or all of the grades ten, eleven and twelve wherever they are found in a school center.

Florida's high schools in 1962-63 ranged in size from fourteen students for grade 10 in a 1-10 (grades) school in Madison County to more than four thousand students at Hialeah High School in Dade County.

Related to school size is the number of school centers operating to serve the educational needs of the residents of a given county. Here also wide variation occurs. As an example, in Jackson County, with an estimated population of 37,200 in 1963, there were eleven school centers with high school grades in operation, while in Broward County, with an estimated population of 398,700 in the same year, there were nine school centers with high school grades. The mean average daily attendance for Jackson County high schools was 126.9 students. The mean average daily attendance for Broward County high schools was 1,329 students.[19]

It is apparent even to the casual observer that the organization of school centers, the size of individual school centers and the related problem of the number of school centers in a county will each have a significant effect on the type and extent of educational offerings that may be available in a given high school and in the county as a whole.

Occupational curriculums offered in the high schools of Florida include vocational home economics, vocational agriculture, certain business and distributive education programs, trade and industrial education and technical education. The nature of the offerings in these occupational classifications has been discussed earlier in this chapter. At this point specific concern relates to the extent of the availability of occupational education in Florida's public high schools.

Information as to the incidence of occupational education in Florida's high schools was supplied by the State Department of Education and its Division of Vocational, Technical and Adult Education.

[15] *Education for a Changing World of Work*, Report of the Panel of Consultants on Vocational Education, U. S. Department of Health, Education and Welfare, Washington, 1963, p. 127.
[16] *Ibid.*, p. 183
[17] *Ibid.*

[18] *Op. Cit.* Florida Public School Data, p. 1.
[19] *Ibid.*

Some difficulty was experienced in summarizing the data for purposes of this Study. This difficulty revolved around the question as to what constitutes an occupational offering. For example, there are very few high schools in Florida which do not offer some business education courses. However, in many high schools the number of business offerings is very limited and, in some cases, include only personal typing, or "Typing I." Other high schools offer a broad range of business courses. Because of this disparity in business offerings from high school to high school, the only business programs which are classified as occupational are the Cooperative Business Education programs and the Vocational Office Education programs. Other business courses are classified as related education. Of course, some of these courses probably are occupational in nature.

The wide variation from county to county in the number of individuals to be served makes it difficult to arrive at an evaluation of the extent to which a county is meeting the occupational needs of its citizens. For example, a small county which offers only two or three occupational programs might actually be doing a better job of meeting the needs of its citizens than would a somewhat larger county which offers programs in all of the principal occupational areas.

As has been indicated in Chapters I and II of this Study, it will be necessary for the counties and agencies of the state to gather types of information that they have not gathered heretofore in order that a complete evaluation can be made of the breadth and quality of occupational service being provided in Florida's public schools.

Map 1 is a graphical representation of the information relating to occupational education in the high schools of Florida that was made available to the Study staff. From this map it can be seen that Franklin, Dixie, Clay, Charlotte and Collier counties offered no occupational education in their high schools other than home economics during the 1963-64 school year.[20]

In twenty-two counties, situated for the most part in the panhandle area of Florida and immediately to the west of Lake Okeechobee, only home economics and agriculture were offered. Taylor County offered only home economics and diversified cooperative training.

It is important to note that the counties which show the smallest number of occupational offerings are largely those counties which are included in Group A, as described in Chapter II. Those are counties with populations under ten thousand, largely rural and sparsely populated.

Bay and Monroe counties, which are included in Group B (10,000-19,999 inhabitants) do not provide courses in agriculture. They do provide courses in home economics, trade and industrial education and in diversified cooperative training. Thirteen of the eighteen counties in this group offer agriculture, home economics and diversified cooperative training.

Thirteen other counties have high schools which offer four of the five occupational areas that are listed. In each of these counties no technical education is provided in the high schools. Ten counties have high schools which offer all five of the occupational areas. Most of the counties in which the high schools offer four or five of the occupational offerings are either in Group D or Group E counties. The exceptions are Putnam and St. Lucie, counties in Group C, and Sumter County in Group B.

The over-riding problem which Florida must face exists in those counties where high school centers are too small to justify offering a comprehensive program of occupational education. In these counties means must be sought to increase enrollment in high school centers. This may mean consolidating small, inadequate high schools. In some cases it may mean that occupational programs must be offered in some sort of occupational center. Further development of this concept is presented later in this Study.

Occupational Education in the Public Junior Colleges of Florida

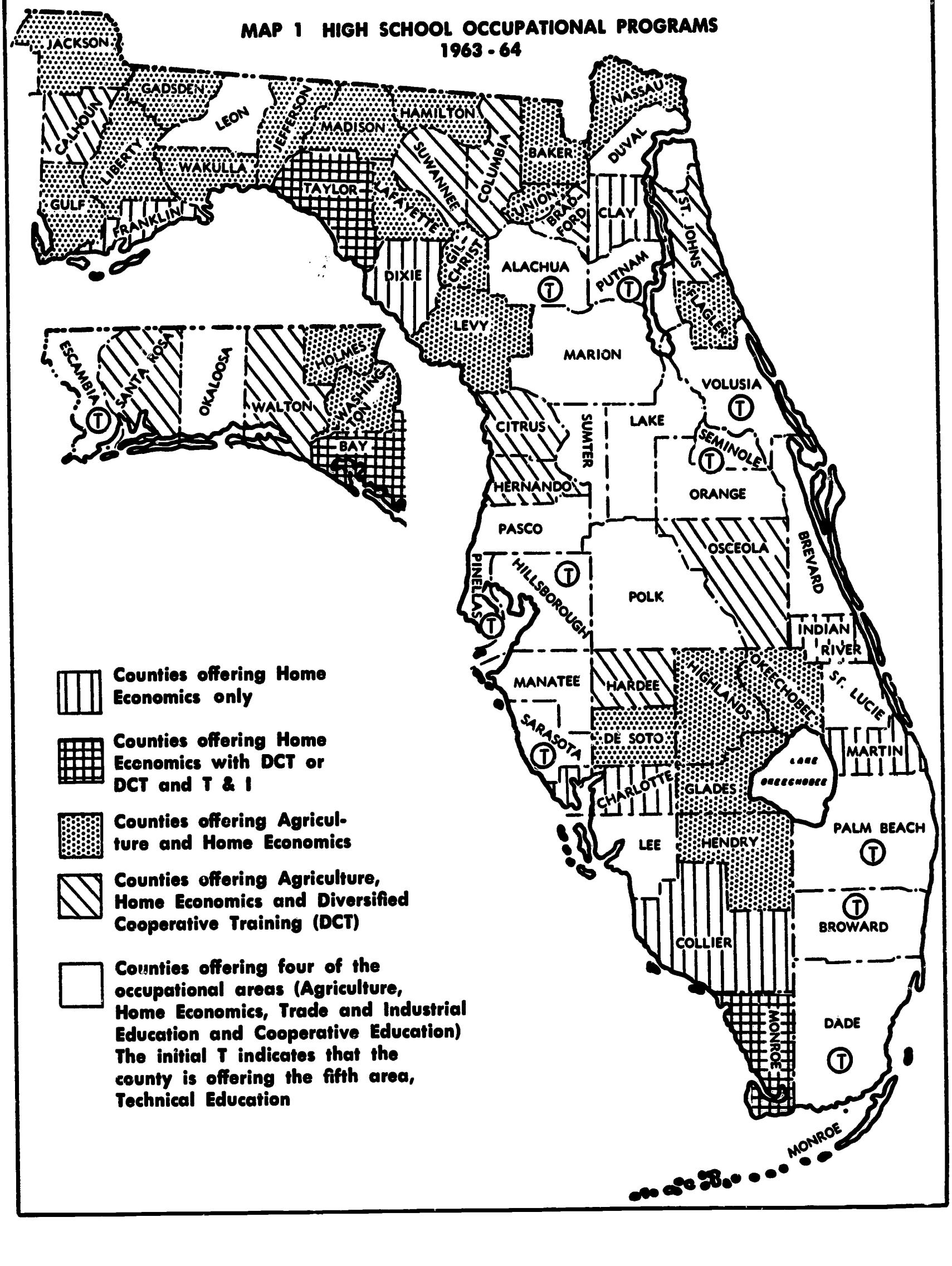
Florida's public junior colleges are operated as comprehensive, post-high school institutions and are administered as part of the public school system. During the 1962-63 school year junior college education was available within commuting distance of sixty-three per cent of the state's population.[21]

Polk County Junior College and Okaloosa-Walton Junior College opened in September of 1964, and Monroe County expects to have its junior college operating in September of 1965. With these three new junior colleges in operation junior college education will be available

[20] Data received from county superintendents indicate that occupational programs were offered in some counties that were not included on reports supplied by the State Department of Education. These apparently are programs which were either started at too late a date to be included on reports or were programs financed completely by the county.

[21] James L. Wattenbarger, "Changing Opportunities in Higher Education," Florida School Bulletin, State Department of Education, Tallahassee, Florida.

MAP 1 HIGH SCHOOL OCCUPATIONAL PROGRAMS
1963 - 64



Counties offering Home Economics only

Counties offering Home Economics with DCT or DCT and T & I

Counties offering Agriculture and Home Economics

Counties offering Agriculture, Home Economics and Diversified Cooperative Training (DCT)

Counties offering four of the occupational areas (Agriculture, Home Economics, Trade and Industrial Education and Cooperative Education) The initial T indicates that the county is offering the fifth area, Technical Education

within commuting distance of sixty-nine per cent of the state's population.[22]

Each public junior college in Florida is authorized to offer four major types of educational services.[23] First, each junior college is urged to provide, and in fact does provide, a program to meet the general education needs of its students. Secondly, every junior college provides programs specifically designed for students who wish to qualify for admission to the junior year of a four-year college or university. Third, each of Florida's junior colleges provides educational and cultural services to the communities which they serve. Fourth, many of Florida's junior colleges offer programs of an occupational nature which are designed to provide students with competencies that will enable them to secure employment upon completion of a specific occupational curriculum.

During the 1963-64 school year Florida's public junior colleges provided occupational education either in a preparatory curriculum or in occupational extension courses to 18, 312 individuals.

The number enrolled in each of the major occupational categories listed is shown in Table 7, which follows.

TABLE 7

ENROLLMENT IN OCCUPATIONAL CURRICULUMS[1] IN FLORIDA PUBLIC JUNIOR COLLEGES 1963-64

Occupational Program	One Year Program	Two Year Program	Total
Business and Distributive Curriculums	7,279	1,926	9,205
Technical Curriculums	2,578	2,751	5,329
Technical Extension	205	.....	205
Semi-Professional Curriculums	292	871	1,163
Industrial and Service Curriculums	1,867	543	2,410
Grand Totals	12,221	6,091	18,312

[1] State Department of Education, Division of Community Junior colleges, *Report of Technical and Terminal Occupational Enrollment, 1963-64.* (Mimeographed)

Each of Florida's junior colleges was visited by a member of the Study staff, and it was observed that all but two of these institutions offer either one-year or two-year occupational programs, or both. (See Table 6) The majority of these programs are designed to provide trained persons at the technical and semi-professional level in occupational fields such as engineering, dentistry, medicine, distribution and business.

[22] *Ibid.*
[23] Florida, *Revised Statutes*, (1963) C. 230, Sec. 47 (5).

Six of the Florida junior colleges provide programs which train persons in occupations such as carpentry, cosmetology, food service, electronics, etc. A few provide training at a number of different occupational levels including high level technicians. It was observed, however, that high quality offerings were not limited to technical programs. In some cases industrial and service programs appeared to be of better quality than some that were provided in certain technician programs. In other cases technical programs were superior in quality to the industrial and service programs.

The important point to be emphasized here is that both industrial programs and technical programs, that is, programs at different levels, may be of high quality and may both be offered by a junior college when the local situation indicates that this is where they should be offered.

As has been stated, only six of the twenty-eight junior colleges that were operating during the 1963-64 school year provided one-year or two-year vocational curricula; that is those not requiring high school graduation for admission. A number of other junior colleges offered extension and supplementary courses of a vocational nature.

In a number of counties other institutions are currently providing industrial programs so that at this time there may be no need for a junior college to develop such programs. In some counties development of junior college industrial programs should be considered as a possible approach to meeting the occupational training needs of people in the junior college service area. In every community junior college in Florida continued emphasis should be given to improving existing programs in technical programs to meet changing technological needs.

Occupational Education in Special Institutions

As has been mentioned earlier, a variety of institutions provide occupational training for youths and adults who are also served by regular high schools and by junior colleges. These have been designated as special institutions. They operate in a variety of ways in a number of different counties.

In some counties the name Vocational School refers to an organization for providing occupational education rather than to a school center as such. Alachua County Vocational School is an example of this type of organization. The occupational offerings sponsored by such "schools" are

offered in the regular school facilities of the county and, in some cases, in other public and private buildings. This type of organization generally exists in counties which either have not been able to finance specific facilities for this regular program of vocational education, or have not generated sufficient demand to justify separate facilities.

In a number of other counties the occupational needs of high school youth are met in a vocational or technical high school or center. Adult occupational offerings in these counties may be provided in the same center. Usually adult courses are provided in the evening program, but in some cases in separate classes in the day program. Stanton Vocational High School in Duval County, Brewster Vocational School in Hillsborough County, Orange County Vocational School, and Lively Technical School in Leon County are examples of these types of organization.

Still other counties maintain centers which are primarily concerned with adult occupational needs. Examples of this type of organization include Lindsey Hopkins Education Center in Dade County, Tomlinson Adult Education Center in Pinellas County and Escambia Adult Vocational School.

In Volusia County, the Mary Karl Division of Daytona Beach Junior College and the Vocational and Technical Division of Volusia County Community College are serving many of the occupational needs of adults, out-of-school youth and high school youth of Volusia County. As this Study is being completed, Pensacola Junior College is assuming administrative responsibility for all adult education, both general and vocational, in Escambia County. Offerings which have been located in a number of different centers in Pensacola will be established at a new Center for Adult Studies on the Junior college campus.

The examples here given do not represent all the combinations that exist in Florida. Rather, they are meant to serve as an indication of the extent of the service that is being performed by "specialized institutions." Also, these examples, when considered along with high school and junior college programs, indicate the extensive variety of plans and institutions that are currently in operation in Florida.

Adding to this complexity, many of Florida's counties have more than one institution that provides occupational education. Both Pinellas and Dade counties have comprehensive high schools which offer vocational subjects. Each has a junior college offering technical and semi-professional work of an occupational nature. Pinellas County has the Pinellas Technical Center, and Dade County has the Lindsey Hopkins Education Center. These two counties are good examples of what might be called counties with divided responsibility where occupational education is assigned to a number of different institutions. The majority of Florida's counties have adopted some form of divided responsibility.

Such division of responsibility is most effective in counties where the population is large enough to justify the recommended division. However, it is only effective when the lines of responsibility are clearly drawn and when continuous coordination and articulation take place among the institutions involved. Unfortunately, this minimum criterion for success has not been realized in all the counties where divided responsibility occurs. In a number of counties coordination and planning for the future have been inadequate.

It is extremely important that each county in Florida adopt a plan for occupational education. Such a plan must delineate responsibilities for different parts of the program and must provide the organization for different elements of the program to coordinate their activities.

The Florida School for the Deaf and the Blind

Vocational education has been an important part of the work of the School for the Deaf and the Blind throughout the entire period of its existence. Many of its students have received the training that enabled them to become substantial, self-supporting citizens. And, while the size of the student body has been severely limited because of the lack of adequate physical facilities and operative funds, the School has contributed a great deal to handicapped individuals and to the social and economic welfare of the State.

During much of the time the success of the various vocational programs in this institution was due largely to the work of a few dedicated teachers who worked sacrificially. Most of the time they worked under serious and discouraging handicaps. Before the opening of the new A. W. Pope Industrial Arts Building in September, 1963, the vocational program was restricted in a number of ways. The physical equipment was thoroughly inadequate. There were not enough teachers. The student body was too small to justify any considerable number of vocational

courses. Furthermore, there were those who believed that much of the effort devoted to certain limited types of vocational training was not justified.

The President's Biennial Report for 1960-62 shows that vocational or pre-vocational courses for the deaf included "printing and linotyping, shoe repairing, upholstery and refinishing, barbering, arts and crafts, elementary sewing, clothing, cosmetology, cooking, typing, cleaning and pressing, and leather craft."

The Report shows that vocational and prevocational courses for the blind included business education, boys' industrial arts, girls' home economics and crafts.

At least two official studies of the work of the School have been made and given currency during recent years. These are in addition to the internal studies that have been made by the administrative and teaching staff of the school.

The first of these studies was made by the Board of Control.[24] It takes issue with the traditional attitude of Schools for the deaf and the blind that assume full responsibility for occupational training. It points out the extremely limited choice that is open to the pupils. In recommending that the School re-examine its entire program of vocational training, it makes the following comment: "There is good reason why the School should not attempt to be a vocational training institution. . . . It is too small to offer a large variety of vocational courses. It has neither students nor faculty to permit more than a limited number of trades. It would be much better for the School to devote its efforts to those prevocational courses which serve also as valuable general education experiences."[25]

This Study also points out the need for vital relationship with various public and private agencies that are interested in serving handicapped people, particularly those that are concerned with vocational training and placement. One specific recommendation is as follows: "It is recommended that the Board of Control encourage the establishment of relationship between the Florida Council for the Blind, Vocational Rehabilitation Service and the Florida School for the Deaf and the Blind which will lead to the organization of an inter-agency committee, the function of which will be to formulate a program of vocational preparation and job placement for pupils at the D&B School which will make the most effective efficient use of the service of the participating agencies."[26]

A second study,[27] though less comprehensive, takes a similar point of view. Assuming that the School for the Deaf and the Blind cannot provide a full-scale program of vocational training suitable for the needs of its pupils, it emphasizes the importance of pre-vocational training as follows: "Pre-vocational or occupational training is a major need for the handicapped person of school age."[28]

This report emphasizes the importance of extending services for adults in cooperation with other agencies. It suggests a possible course of action as follows: "The two State residential schools (located on the same grounds) do not provide any services for the adult deaf and blind, and the facilities available were found to be inadequate in meeting current needs. Lately there have been some efforts among the State and school officials to get the Federal government to provide some funds (matched by the State) to establish a counseling, diagnostic, and training center at the school in order to take care of the adult deaf and blind, as well as student needs."[29]

This report especially commends a new development in the vocational education of the deaf in the following statement: "This will be the 'Florida Rehabilitation Facility for the Deaf' to be located at the Florida School for the Deaf. This will be a joint venture of the School and the Division of Vocational Rehabilitation."

In accordance with the findings and recommendations of these studies, the authorities at the School have been diligently re-studying their entire program. They are to be commended for the forthrightness with which they are taking advantage of an improved evaluation system which includes additional tests of ability and aptitude. The general up-grading of standards of proficiency in all vocational subjects is a wholesome development.

It is the opinion of the survey staff that the program of this institution is moving in the right direction.

The People Served by Occupational Education

The variety of institutions which have been organized to provide occupational education is, to some extent, an indication of the variety of individuals who need the service.

[24] *Study of the Florida School for the Deaf and the Blind.* Fla. Board of Control, Tallahassee, Florida, December 17, 1962.

[26] *Ibid.* p. 90

[27] *Report of the Education Subcommittee of the Governor's Committee on Employment of the Handicapped.* April, 1963.

[28] *Ibid.* p. 7.

[29] *Ibid.* p. 24

When age of students is considered, it becomes apparent that occupational needs begin to become important at about the age of sixteen, when pupils may legally leave the public schools. At this age many young people begin to question the value of their schooling and the potential dropout becomes a problem.

Dade County recently completed an investigation in depth of the dropout problem as it occurred in that county in junior and senior high schools. This study reported that the largest number of dropouts occurred in the tenth grade, more specifically in the seventh month of the tenth grade. This undoubtedly resulted from the fact that most youngsters passed the age of compulsory attendance while in that grade.[30]

The Dade County study indicated that lack of interest and the lure of the armed forces accounted for nearly half of the dropouts among boys, and that marriage, pregnancy or lack of interest accounted for almost two-thirds of the dropouts among girls.[31]

It is apparent that a large number of individuals who leave school do so because they are unable to find an educational program which has sufficiently vital interest for them. Moreover, the Dade County Study revealed that from one-fourth to one-third of the pupil losses occurred during the summer months when the students could not be reached by school personnel.

It has been suggested earlier that an individual does not become a dropout overnight, and it may be inferred that, despite their daily attendance, many individuals become psychological dropouts much earlier than the date they physically leave the school. The findings of recent studies of dropouts in Alachua and Hillsborough counties tend to confirm the Dade County findings.

The Division of Research of the State Department of Education in an article entitled "Florida School Dropouts" cites the problem that is created when young people enter the labor market without salable skills.

> "The seriousness and importance of the dropout problem should not be minimized. Unemployment is very real and the handicap faced by the student who leaves school before graduation can not be over-emphasized. Evidence indicates that the school dropout is the last to be hired and first to be fired. He is apt to be the one who is unemployed for the longest periods, and he is least able to adapt to changing employment demands."[32]

[30] Dade County Public Schools, *A Study of Dropouts, 1960-63.* (Miami, Dade County Public Schools), 1963. p. 32.
[31] *Ibid.* p. 31
[32] "Florida School Dropouts" (Division of Research, State Department of Education, March, 1964) p. 5. (mimeographed)

This article also provides an estimate of the number of students who were dropouts during the 1962-63 school year.

> "It is not known exactly how many Florida pupils drop out of school, but it is possible to make some rough estimates. Out of a total 1962-63 enrollment of 1,188,975 pupils, 206,150 withdrew during the year; 123,695 of these transferred to other schools within the state; but 82,455 were unaccounted for in reports. It is estimated that 63,665 of the pupils who withdrew transferred out-of-state or entered private schools. This leaves about 18,790 pupils who may have dropped out of the regular public school."[33]

The dropout, the out-of-school youth, then is one of the important groups of people in Florida that must be provided with opportunities for developing salable skills. It should be noted at this point that a special phase of the recently enacted "Poverty Program" is directed toward the provision of educational services for this particular group.

It is important to note that attempts have been made to analyze the dropout problem in only a few counties. It seems clear that this is a state-wide problem and that a continuing state-wide dropout study needs to be initiated from the state level.

It is not sufficient, nor is it beneficial to the economy of the state, to assume the attitude that these young people have had their opportunity for an education and that the state has discharged its responsibility to them. Furthermore, it is not beneficial to leave studies of this problem to chance. In many counties school authorities feel that they are unable to finance such studies from currently available revenues.

Two other groups of young people need and may desire occupational training. Many of the regular high school students who do not intend to seek admission to an institution of higher education may find more meaning in a program of occupational studies which will enable them to secure employment upon completion of a high school program. Also, many youths with handicaps of such a nature that they cannot benefit from participation in the regular high school offerings may need specialized occupational training.

In addition to the high school youth who need occupational education, there are many groups of adults in Florida who need occupational and occupational related education. The impact of automation and the concurrent demand for

[33] *Ibid.*

higher and higher levels of occupational skills have created the need for retraining of adults whose jobs no longer exist.

In addition to unemployed adults who need retraining, many adults are seeking to enter the labor market for the first time. This group includes young men and women who have been unsuccessful in their efforts to achieve academic and professional education in institutions of higher education. It also includes students on vacation who need funds from employment to support further education, young men and women being discharged from military service, and married women seeking to augment family income.

Another group of adults needs basic literacy education in order to participate in and to benefit from occupational education. This group includes adults who have not completed elementary or secondary education, refugees who need to develop competency in English, and adults with special types of handicaps.

The 1963 Vocational Education Act makes important provisions which will affect the various kinds of people to be served by occupational programs. This Act is very much "people centered" for it authorizes expenditures in accordance with individual State plans to meet the needs of any or all of the following groups of people.

". . . . (1) Vocational education for persons attending high school;
(2) Vocational education for persons who have completed or left high school and who are available for full-time study in preparation for entering the labor market;
(3) Vocational education for persons . . . who have already entered the labor market and who need training or retraining to achieve stability or advancement in employment;
(4) Vocational education for persons who have academic, socio-economic or other handicaps that prevent them from succeeding in the regular vocational education program. . . ."[34]

In order to meet adequately the occupational needs of such a varied group of people, it is evident that Florida must provide a variety of occupational programs designed to develop different levels of competency. Not only must there be a variety of programs at different skill levels, but Florida must provide opportunities for entrance into occupational curriculums at many different age levels.

Counseling and Guidance in Relation to Occupational Education

As has been stated previously, occupational education should be an integral part of the total educational effort in the public schools of Florida. If academic education and occupational education are to operate so as to serve the total needs of youth, it is essential that every effort be made to provide each student with the general and specialized education which will be of optimum benefit to him as well as to the adult society which he will enter.

A comprehensive guidance program which is an integral part of the total education effort must be available in order that the student may receive maximum benefit from the educational services provided by the school.

Guidance and counseling services are not concerned exclusively with college bound students or those who are looked upon as problem students. They must also provide services and information to all students, to teachers, to parents and to administrators.

A comprehensive guidance program provides services of at least six kinds: (1) orientation, (2) information about students, (3) information for students, (4) individual counseling with students, (5) placement and follow-up of students and (6) testing of students.

An organized orientation program is designed to help students who are changing levels within a school system (i.e., advancing from junior to senior high). It also helps transfers from a different school or school system become familiar with their new environment.

Providing information about students helps administrators, teachers, parents and students. Administrators are able to make teaching assignments and plan class schedules more effectively when they can take into account the different levels of student ability in the school, and the physical, mental, occupational, emotional and family needs of individual students. With these kinds of information available, teachers can do better program planning with students and can better provide for the individual's instruction.

Information for students may include pertinent facts about occupations, and also concern-

[34] U. S. Congress, *loc. cit.*

ing higher education. The nature of occupational information is, of course, particularly relevant to this Study. Occupational information of value to the student should include:

(1) The nature of work in the lives of people and in our society
(2) The nature of specific occupations
(3) The advantages and disadvantages that a particular occupation has for the individual student
(4) Personal, educational and experience requirements necessary for occupational success
(5) Opportunities for advancement within the occupation
(6) Need for personnel in a given occupation within the immediate area and within the state
(7) Overview of fields related to the occupation.

Individual counseling refers to meetings that the counselor has with a student to discuss his vocational, educational, and personal problems, his goals and his progress in achieving them. Such meetings should be designed to help the student make major decisions regarding goals and the means of achieving them. It is obviously beneficial for each student to have available someone who knows him and who cares about him, with whom he can discuss things that trouble him and with whom he can plan for the future. The counselor's activities complement rather than replace the guidance responsibilities of the individual teacher and the parent. The total educational effort of the school will benefit when each student has, in addition to his parents and his teachers, the assistance of a trained counselor.

Academic placement, job placement and follow-up studies are important aspects of the total program of counseling and guidance. Placement in an appropriate course of study at the proper level will do much to assure a student's continued interest and progress. Such placement involves an assessment of the student's goals in relation to his interests and abilities. Job placement in part-time and summer employment may help students explore career possibilities in a realistic fashion. Employment of this type may also help some students find ways and reasons to stay in school. A school-directed placement program for graduates cooperates with other agencies, (i.e., State Employment Service, local employers and local unions) and serves a variety of functions. This kind of program aids students in obtaining work appropriate to their qualifications and furnishes the school with immediate employer feedback as to the adequacy of the school's training program. It also helps the counselor to keep currently informed as to employment needs and requirements. Follow-up studies are valuable in evaluating any educational program. Such studies also serve to keep the school in touch with the dropout, and opens the possibility for helping him to continue his education in the various programs developed for his use.

The school's testing program is germane to most other aspects of a comprehensive guidance program. Tests that are properly administered, scored and interpreted in combination with other data can be of great value to the student helping him choose a program that will lead to achievement of realistic goals. Results of such tests can help parents to understand the unique potentialities and limitations of their children, and can provide teachers and administrators with a better understanding of the individual student, as well as the student body as a whole.

In order for each school in Florida to maintain a comprehensive guidance program as described above, it is necessary that a sufficient number of well-trained counselors be provided in each school. The Governor's Committee on Quality Education recommended in 1962 that each county provide qualified guidance counselors on the basis of one counselor to each four hundred students.[35] Public education in Florida is a long way from reaching this goal. At the present time the state's accreditation standards allow a minimum of one counselor for every 1000 students. During 1966-67 the student counselor ratio permitted by the standards will be one counselor for each 625 students. This standard applies to both junior and senior high schools.[36]

Many counties fall far short of achieving the present minimum standard. In thirty-four counties the average is over 1000 students for each certified counselor. Okaloosa, for example, has only one certified counselor to serve 6604 students in grades 7-12. In each of eight counties no certified counselors are reported. Only Dade and Pinellas counties approach the recommendations of the Governor's Committee on Quality Educa-

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[35] *Quality Education in Florida Public Schools*, A Report from the Governor's Committee on Quality Education (The Committee, Tallahassee, Florida. October, 1962). p. 78.
[36] *Accreditation Standards for Florida Schools*, State Department of Education, (1963), pp. 158 and 235.

tion as to the minimum number of counselors. In many counties the guidance programs in some schools meet or exceed the state's accreditation standards, while in other schools in the same county guidance programs are either totally inadequate or are nonexistent.

Guidance for Adults

The youth enrolled in the regular high school is not the only student who may need guidance services. The growth of adult education has reemphasized the need for counseling and guidance for adults. Retraining, and upgrading vocational and basic education offerings brought large numbers of adults back into the public schools. Many of these adults have been out of school for long periods of time, and they have many of the same needs as do the younger students.[37] They also need professional help in reaching appropriate educational and occupational decisions. Several counties already provide such services.

Professional personnel concerned with apprenticeship programs, industrial and technical education, general education and junior college programs have expressed concern over the work experience and training qualifications of guidance personnel. There is special concern regarding their attitudes toward occupational education. Present regulations require that counselors have three semester hours of course credit in occupational and educational information and that they participate in a supervised internship.[38] Although it is unlikely that the majority of counselors are completely lacking in occupational knowledge and understanding, the feeling among many teachers and administrators at all levels is that every effort should be made to broaden the counselor's understanding of the nature and worth of occupational education.

Summary and Conclusions

In this chapter the term vocational-technical education has been used interchangeably with the term occupational education to refer to the total range of offerings at all levels which prepare individuals for entrance into, or advancement within, an occupation or group of occupations.

Florida has been most fortunate to have had strong leadership at both the state level and the local level in providing vocational-technical education. As has been pointed out in this chapter, there is still much to be done. One of the major challenges that Florida faces is that of providing more adequate occupational education in the largely rural, sparsely settled counties. Also, Florida is faced with the necessity of continuously adjusting occupational programs in all counties to meet the changing needs of employment.

The following conclusions and comments appear pertinent for the future development of vocational-technical education in Florida:

(1) Many counties have failed to adopt any comprehensive plan for occupational education. Therefore, it would seem desirable that each consider the adoption of such a comprehensive plan which would clearly delineate responsibility for different parts of the program. Such a plan should also provide for the full cooperation and coordination among the different levels and institutions that participate.

(2) Preparatory occupational programs in business and distributive education are inadequate and should be expanded in Florida's high schools and junior colleges.

(3) While there is evidence that attention is being given to the broad field of agribusiness in agricultural education, there is need for continued emphasis and further development of this program.

(4) There is need for additional emphasis to be given to gainful employment in the field of home economics education.

(5) Pre-occupational orientation in the junior high schools should provide exploratory opportunities for all students who might wish to enter occupational programs at the high school levels.

(6) Continued emphasis should be given to the relationship between general adult education and occupational education.

(7) Greater use should be made of qualified senior citizens as teachers in general adult offerings.

(8) Vocational offerings in many junior colleges should be expanded, particularly in those counties and areas where other occupational education is limited.

(9) Continued attention should be given to the changing nature of technical occupa-

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[37] *Guidance Services for Adults*, Board of Public Instruction, Pinellas County (March, 1963) p. v.
[38] *Teacher Certification Regulations of Florida State Board of Education*, State Department of Education. (March, 1964), p. 52.

tions, and every effort should be made to provide qualified technicians in fields such as business, agriculture, and health.

(10) Every effort should be made to carry out the recommendation of the Governor's Committee on Quality Education—that each county provide qualified guidance counselors on the basis of one counselor to each four hundred students.

(11) Guidance and counseling services vary in extent and quality from county to county. In general, the services are far below a desirable minimum. It appears that guidance and counseling services should be provided in Florida's junior high schools. To aid the counties in providing these services, a special instructional unit for guidance should be allocated by the State.

(12) Additional emphasis should be given to the training of guidance counselors in the area of occupational education and occupational counseling.

Chapter 4

Physical Facilities for Vocational and Technical Education

THE PURPOSES of this chapter are to assess the adequacy of existing occupational education facilities, in terms of quantity and quality and to estimate the needs for new construction and equipment for the immediate future. Because of the necessary time limitation a complete and definitive study of the problems relating to physical facilities could not be made. The results of this study are estimates; however, the Study staff believes they are reasonably valid ones. The estimates provide an insight into the scope of the undertaking that lies ahead, financial and otherwise.

The provision of adequate physical facilities for occupational education is essential if Florida is to provide an effective program of education. The quality of the facilities that are provided and the extent to which their capacities are adequate to serve the needs of occupational education have considerable impact on the quality of occupational education offerings. As technology expands in relation to the growing rate of scientific progress, there will be an umprecedented need for constructing additional facilities for occupational education. Furthermore, because of the potential numbers of students involved, the need for efficiency and economy will require that costly facilities and equipment be planned to serve the most people with as little duplication as possible.

Procedures

As a part of the procedure for this phase of the Study, an extensive inquiry was directed to each public school system and public junior college of the State to obtain information about the location and number, and an evaluation of certain quantitative and qualitative aspects, of physical facilities for occupational education. Through the cooperation and assistance of county school superintendents, local directors of vocational and adult education, junior college presidents, school principals and others, questionnaires were completed which supplied much of the needed data.

Specific questions to be answered with regard to the adequacy of physical facilities for occupational education were as follows:

1. What physical facilities exist for vocational and technical education and where are they located?
2. How nearly adequate are these facilities in terms of capacity, equipment and function?
3. How much of the existing space is permanent and how much is temporary?
4. How many additional students will existing permanent facilities support?
5. How much will it cost to equip existing permanent facilities so that a more adequate program can be conducted in the existing space?
6. How much will it cost to replace existing temporary facilities?
7. How much will it cost to construct and equip new facilities which are needed to provide a more comprehensive program of occupational education?
8. What are the major problems involved in financing capital outlay needs for vocational and technical education?

Inventory of Existing Facilities for Occupational Education in High Schools and Vocational and Adult Centers

The data used in this analysis were obtained by questionnaire from county school systems. Respondents reported data about physical facilities that existed or were under construction in the summer of 1964. The data include the total number of permanent laboratories and shops and their square footage, the total number of student stations, and the number of students served daily.

Data from fifty-seven counties are included in the tabulation. These counties include approximately ninety-two per cent of the estimated number of the State's schools which have occupational education facilities.

Permanent Occupational Facilities

Data about current, permanent facilities for vocational and technical education programs in Florida are shown in Table 1. During the 1963-64 school year there were 1,867 permanent shops or laboratories serving 14,053 students daily in existing high schools and vocational and adult centers in the counties from which responses were received. These laboratories contained 40,694 student stations.[1] In short, each available student station in laboratories served approximately 3.47 enrollees during the 1963-64 school year.

There were 2,450,495 square feet of permanent space in these laboratories. The average number of square feet per student station was sixty, and the average per laboratory was 1,312 square feet. The average number of student stations per laboratory was twenty-two.

The 1,867 shops and laboratories were used an average of 7,325 periods daily out of a possible 11,202 periods. The utilization factor is approximately sixty-five per cent for daytime use, based on a six-period day.

There are no recognized standards by which the utilization of shops and laboratories can be measured. When compared with normally anticipated utilization of general classrooms, the room utilization factor for the laboratories is relatively low. Eighty to ninety per cent utilization is considered optimum for general classrooms. On the other hand, the room utilization factor for laboratories as found in this Study compares favorably with the utilization factor usually expected for such facilities as science laboratories.

These laboratories were used during the evening an average of 1,199 hourly periods. Total utilization, including day and evening usage, was approximately seventy-six per cent if based on a six-hour day. The data indicate that on the average each laboratory was used in excess of four periods each day.

During the periods in which laboratories were being used, available student stations were used approximately seventy-six per cent of the time. On the average, ten students used each laboratory during each period in which it was in use.

[1] For brevity the term laboratory is used to indicate both shops and laboratories.

The distribution of the number of permanent laboratories is shown in Table 1. The greatest number of laboratories are concentrated in the more populous counties of the state. This means, of course, that more facilities and a greater variety of laboratories are available to the students in the more populous counties of the state.

Temporary Occupational Facilities

The data included in Table 2 are based on the replies from fifty-seven counties. During 1963-64 there were 209 temporary laboratories used for vocational and technical education in the schools included in the returns. These 209 laboratories have 3,579 student stations which serve 8,709 students daily. There are 228,105 square feet in the laboratories. The average number of square feet per student station is 63.7, and the average square feet per laboratory is 1,091. The average number of student stations per laboratory is seventeen.

The 209 laboratories were used an average of 698 periods daily out of a possible 1,254. The utilization factor was approximately fifty-five per cent.

These same laboratories were used approximately 159 periods each evening. Total utilization based on a six-period day was approximately sixty-eight per cent. These data indicate that each laboratory was used on the average of about four periods each day.

The 3,579 student stations in the 209 laboratories were used by 8,709 students during the 857 periods daily. During the periods that the laboratories were in use, available student stations were in use approximately sixty per cent of the time. On the average, ten students used each laboratory during each period that they were in use.

Evaluation of Existing Facilities for Occupational Education in High Schools, Vocational Schools and Adult Centers

Determining the adequacy of physical space for occupational education involves more than merely counting the number of laboratories. It is also necessary to take into account the appropriateness of the existing equipment, and the overall functional adequacy of the facility.

Questionnaires which were sent to the school systems and the junior colleges requested an evaluation of the aforementioned factors. In each case, the respondent was asked to circle a number corresponding to a statement intended to place the particular facility on a scale of adequacy. The

TABLE 1

NUMBER AND CAPACITY OF PERMANENT OCCUPATIONAL SHOPS AND LABS LOCATED IN FLORIDA HIGH SCHOOL CENTERS, SUMMER 1964

County	Number of Shops and Labs	Number of Student Stations	Number Students Served Daily	Number of Square Feet	Number of Periods Used	
					Day	Evening
Alachua	31	616	2.464	40,440	137	25
Baker	7	161	677	7,371	29	1
Bay	20	963	1,584	26,806	95	.....
Bradford	8	128	697	7,254	34	.....
Brevard	42	961	3,099	60,261	190	6
Broward	29	650	1,155	37,540	153	54
Calhoun	8	227	417	7,730	27	3
Charlotte	6	162	479	10,736	15	4
Citrus	6	120	264	10,696	24	.....
Clay	.....	.....	.....	.....	.....	.....
Collier	8	189	702	10,751	35	.....
Columbia	15	892	1,377	15,424	72	20
Dade	213	4,639	14,746	331,232	705	223
De Soto	7	125	617	8,357	30	8
Dixie	5	72	415	13,124	19	.....
Duval	179	4,059	10,943	303,528	589	146
Escambia	36	828	3,505	43,864	125	7
Flagler	5	81	149	1,131	12	.....
Franklin	.....	.....	.....	.....	.....	.....
Gadsden	39	706	1,571	43,416	104	1
Gilchrist	5	68	302	7,400	19	.....
Glades	.....	.....	.....	.....	.....	.....
Gulf	13	218	511	12,383	30	3
Hamilton	15	229	587	19,024	37	.....
Hardee	.....	.....	.....	.....	.....	.....
Hendry	8	181	641	11,100	32	1
Hernando	8	204	495	8,525	22	.....
Highlands	19	358	983	33,628	72	.....
Hillsborough	162	4,356	15,266	203,143	810	59
Holmes	23	254	985	10,889	89	.....
Indian River	19	406	1,263	27,127	59	9
Jackson	33	471	1,678	39,471	96	30
Jefferson	7	127	379	8,486	36	1
Lafayette	.....	.....	.....	.....	.....	.....
Lake	34	520	1,505	42,727	126	1
Lee	25	663	2,737	39,190	81	.....
Leon	7	159	914	7,967	42	.....
Levy	14	236	693	15,270	57	3
Liberty	2	27	90	3,493	8	.....
Madison	16	269	590	17,609	49	4
Manatee	38	727	1,707	65,951	120	6
Marion	35	626	2,055	50,128	161	68
Martin	8	112	627	754	29	11
Monroe	.....	.....	.....	.....	.....	.....
Nassau	12	180	881	11,974	45	.....
Okaloosa	33	533	3,571	38,575	108	32
Okeechobee	2	62	280	2,400	10	1
Orange	135	3,192	10,060	168,724	572	56
Osceola	.....	.....	.....	.....	.....	.....
Palm Beach	114	2,334	7,371	115,180	310	92
Pasco	16	260	741	10,867	73	4
Pinellas	145	3,063	22,351	171,820	993	124
Polk	83	1,567	8,320	112,940	219	27
Putnam	7	150	317	8,859	38	2
St. Johns	7	160	565	7,050	30	.....
St. Lucie	8	179	438	7,520	37	.....
Santa Rosa	27	613	1,383	32,934	91	34
Sarasota	24	540	2,182	33,647	106	73
Seminole	27	560	1,525	37,600	98	35
Sumter	10	179	584	11,212	31	.....
Suwannee	.....	.....	.....	.....	.....	.....
Taylor	3	75	542	4,180	16	.....
Union	3	54	145	5,134	13	.....
Volusia	46	961	508	52,143	141	24
Wakulla	.....	.....	.....	.....	.....	.....
Walton	.....	.....	.....	.....	.....	.....
Washington	10	212	420	10,810	24	1
STATE	1,867	40,694	141,053	2,450,495	7,325	1,199

TABLE 2

NUMBER AND CAPACITY OF TEMPORARY OCCUPATIONAL SHOPS AND LABS LOCATED IN FLORIDA HIGH SCHOOL CENTERS, SUMMER 1964

County	Number of Shops and Labs	Number of Student Stations	Number Students Served Daily	Number of Square Feet	Number of Periods Used	
					Day	Evening
Alachua	3	96	166	5,160	14	9
Baker	.....	.....	.....	.....	.....	.....
Bay	16	307	186	26,110	61	21
Bradford	8	78	371	6,700	26	.....
Brevard	4	93	186	2,800	17	.....
Broward	1	20	20	1,200	.....	6
Calhoun	2	40	120	2,900	9	.....
Charlotte	.....	.....	.....	.....	.....	.....
Citrus	3	42	130	2,628	9	3
Clay	.....	.....	.....	.....	.....	.....
Collier	.....	.....	.....	.....	.....	.....
Columbia	.....	.....	.....	.....	.....	.....
Dade	2	24	40	1,200	4	1
De Soto	.....	.....	.....	.....	.....	.....
Dixie	.....	.....	.....	.....	.....	.....
Duval	12	272	382	6,500	49	.....
Escambia	27	472	1,109	30,805	89	27
Flagler	.....	.....	.....	.....	.....	.....
Franklin	.....	.....	.....	.....	.....	.....
Gadsden	.....	.....	.....	.....	.....	.....
Gilchrist	1	6	.....	300	.....	.....
Glades	.....	.....	.....	.....	.....	.....
Gulf	3	53	53	680	53	2
Hamilton	4	36	140	2,660	12	2
Hardee	.....	.....	.....	.....	.....	.....
Hendry	.....	.....	.....	.....	.....	.....
Hernando	.....	.....	.....	.....	.....	.....
Highland	1	23	115	822	5	.....
Hillsborough	8	197	389	23,426	40	6
Holmes	3	.....	54	1,092	3	.....
Indian River	.....	.....	.....	.....	.....	.....
Jackson	6	73	197	4,050	20	8
Jefferson	.....	.....	.....	.....	.....	.....
Lafayette	.....	.....	.....	.....	.....	.....
Lake	2	63	102	1,491	7	.....
Lee	3	83	136	2,410	10	.....
Leon	33	636	1,287	36,068	137	52
Levy	1	27	78	400	4	.....
Liberty	.....	.....	.....	.....	.....	.....
Madison	.....	.....	.....	.....	.....	.....
Manatee	2	40	58	3,400	10	1
Marion	1	16	90	600	5	.....
Martin	.....	.....	.....	.....	.....	.....
Monroe	.....	.....	.....	.....	.....	.....
Nassau	.....	.....	.....	.....	.....	.....
Okaloosa	20	105	1,547	12,836	13	14
Orange	8	179	443	17,875	42	.....
Osceola	.....	.....	.....	.....	.....	.....
Palm Beach	15	283	681	14,337	42	4
Pasco	.....	.....	.....	.....	.....	.....
Pinellas	.....	.....	.....	.....	.....	.....
Polk	.....	.....	.....	.....	.....	.....
Putnam	2	40	63	6,880	12	1
St. Johns	3	18	18	1,220	6	.....
St. Lucie	3	75	78	3,612	16	.....
Santa Rosa	.....	.....	.....	.....	.....	.....
Sarasota	1	20	55	720	3	.....
Seminole	.....	.....	.....	.....	.....	.....
Sumter	8	117	251	5,173	19	.....
Suwannee	.....	.....	.....	.....	.....	.....
Taylor	1	30	18	720	1	.....
Union	.....	.....	.....	.....	.....	.....
Volusia	.....	.....	.....	.....	.....	.....
Wakulla	.....	.....	.....	.....	.....	.....
Walton	.....	.....	.....	.....	.....	.....
Washington	1	.....	26	600	2	2
STATE	209	3,579	228,105	8,709	698	159

scales used and the state-wide results of the findings are presented below. Table 3 includes a county by county summary of the findings.

Evaluation of the Capacity of the Existing Shops and Laboratories

The questionnaire included a scale designed to gauge the adequacy of the size of existing laboratories. The scale statements are:

1. The number of students enrolled exceeds the number of students that can be accommodated in the laboratory so that instruction is restricted.
2. The number of students enrolled can be accommodated poorly.
3. The number of students enrolled can be accommodated satisfactorily.
4. The laboratory can accommodate additional students satisfactorily should conditions require it.

Table 3 includes a summary of the evaluations made by the respondents. One hundred and forty-two laboratories were reported as housing more students than desirable with the result that instruction was restricted. Two hundred and seventy-seven laboratories were reported as accommodating very poorly the students enrolled. Only 191 laboratories were reported as having the capacity to accommodate additional students. Seven hundred and sixty laboratories were reported as being capable of accommodating the enrollments housed satisfactorily.

The data indicate that approximately thirty-one per cent of the laboratories were not of adequate capacity to serve the students who were enrolled in courses which were taught in them. Approximately fourteen per cent of these facilities can accommodate additional students. Fifty-five per cent of the laboratories were reported as satisfactorily accommodating the students enrolled in classes taught in them.

Evaluation of the Space in the Existing Shops and Laboratories

A scale intended to assess the adequacy of space in existing laboratories was also included in the questionnaire. Although space and capacity are inseparably related, student work stations when crowded into too little space may cause the laboratory to be over-crowded or otherwise inefficient as a teaching facility. The evaluation was intended to measure this factor. The scale statements are:

1. The amount of space provided for the laboratory is totally inadequate for the purpose used and the numbers of students served and it inhibits instruction.
2. The amount of space provided is too little for the purpose used and the number served and it functions poorly.
3. The amount of space provided is satisfactory for the purpose used and the number served.
4. The amount of space provided is more than adequate for the purposes used and the number served and could accommodate additional students satisfactorily.

A summarization of the data appears in Table 3. Of the 1,354 laboratories evaluated, 807, or sixty per cent, were regarded as providing a satisfactory amount of space. About ten per cent of them were regarded as having inadequate space for the program, and therefore, restricted instruction in the courses taught in them. The space in 272 laboratories was reported as too little for the program and the students served, thus causing the space to function poorly. Another 145, or ten per cent, of the laboratories have more than adequate space and could accommodate additional students.

Evaluation of Equipment in Existing Shops and Laboratories

Up-to-date, adequate, and appropriate equipment is essential for instruction in occupational education. The equipment enables the teaching of practical applications and provides direct experiences in the development of skills. Without it instruction must be confined to the study of theory from a textbook. This is quite ineffective.

An estimate of the adequacy of the equipment which was used in existing laboratories was obtained. The scale statements were:

1. The equipment provided is either obsolete or inappropirate for the purpose used and the number served.
2. The equipment provided is not adequate in amount to accommodate the number served, but is otherwise satisfactory.
3. The equipment is satisfactory in terms of appropriateness and amount for the purpose used and the number served.
4. The equipment is more than adequate for the purpose used and number served and could accomodate additional students if conditions require it.

The summarized data about the adequacy of equipment appear in Table 3. Approximately

TABLE 3

EVALUATION OF SPACE AND EQUIPMENT IN PERMANENT OCCUPATIONAL SHOPS AND LABS LOCATED IN FLORIDA HIGH SCHOOL CENTERS—SUMMER 1964

	Evaluation															
	Capacity				Space				Equipment				Combined			
County	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Alachua	8	16	5	0	7	7	15	0	6	14	9	0	5	7	15	2
Baker	0	2	3	2	0	2	3	2	2	1	4	0	1	3	3	0
Bay	0	1	4	4	0	0	8	1	2	2	4	1	1	2	5	1
Bradford	1	5	4	0	1	5	3	0	0	5	4	0	5	1	4	0
Brevard	0	6	18	7	0	8	17	6	2	2	27	0	4	6	17	4
Broward	3	2	21	1	2	3	21	1	1	7	19	0	2	4	21	0
Calhoun	0	0	4	4	0	0	6	2	0	1	4	3	0	2	3	3
Charlotte	0	1	4	0	0	1	4	0	0	1	4	0	0	0	5	0
Citrus	0	3	4	1	0	2	5	1	0	3	5	0	1	2	3	2
Clay	.....				.....				.....				.....			
Collier	0	1	3	4	0	0	7	1	1	0	5	2	0	0	7	1
Columbia	0	5	7	0	0	5	7	0	1	6	5	0	0	4	8	0
Dade	12	27	81	9	14	30	78	8	8	29	86	7	15	23	63	20
De Soto	4	1	0	0	4	1	0	0	1	4	0	0	0	1	4	0
Dixie	0	1	4	0	0	1	4	0	0	0	5	0	0	0	5	0
Duval	2	10	105	6	1	7	110	4	1	17	104	2	18	2	103	1
Escambia	4	6	17	2	5	3	19	2	5	8	15	1	8	1	17	3
Flagler	0	1	2	1	0	2	1	1	0	1	2	1	1	0	2	1
Franklin	.....				.....				.....				.....			
Gadsden	0	6	17	5	0	5	21	2	0	8	19	1	1	5	19	3
Gilchrist	3	0	2	0	2	0	3	0	1	1	3	0	1	0	2	2
Glades	.....				.....				.....				.....			
Gulf	6	3	3	0	5	3	3	0	6	3	3	0	6	6	0	0
Hamilton	0	1	10	4	0	2	9	4	0	2	11	2	0	2	10	3
Hardee	.....				.....				.....				.....			
Hendry	0	1	7	0	0	0	8	0	0	1	7	0	0	0	8	0
Hernando	0	0	1	5	0	0	1	5	0	0	1	5	0	0	1	5
Highlands	1	3	11	3	1	3	8	6	2	6	9	1	0	4	12	2
Hillsborough	5	31	72	11	6	35	68	7	1	22	91	2	4	32	74	6
Holmes	9	0	8	2	4	5	8	2	0	13	4	2	2	10	6	1
Indian River	1	1	2	10	1	2	2	9	1	5	8	5	0	0	6	8
Jackson	3	2	13	3	3	2	15	1	6	9	5	1	1	5	12	3
Jefferson	0	2	4	0	0	1	5	0	2	2	2	0	0	0	5	1
Lafayette	.....				.....				.....				.....			
Lake	1	1	15	6	1	1	17	4	1	5	14	3	1	1	13	8
Lee	3	6	6	4	4	4	8	3	4	9	6	0	4	6	8	1
Leon	0	3	2	0	0	3	2	0	2	2	1	0	0	2	2	1
Levy	1	2	8	3	0	2	10	2	0	4	8	2	1	1	12	0
Liberty	0	0	1	1	0	0	1	1	0	0	2	0	0	0	2	0
Madison	0	3	3	9	0	0	8	7	2	4	8	1	2	2	8	3
Manatee	3	3	14	7	3	8	9	7	2	1	17	7	6	6	8	8
Marion	6	5	14	9	5	6	14	8	8	11	13	2	7	6	17	4
Martin	0	1	5	0	0	0	5	1	0	2	4	0	0	1	5	0
Monroe	.....				.....				.....				.....			
Nassau	1	4	3	0	0	3	5	0	2	3	3	0	0	1	7	0
Okaloosa	9	6	14	1	6	8	15	1	5	15	9	1	11	6	12	1
Okeechobee	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0
Orange	29	22	36	7	29	23	35	7	20	29	40	5	21	27	44	2
Osceola	.....				.....				.....				.....			
Palm Beach	12	22	29	14	16	18	26	7	10	31	31	5	25	13	34	5
Pasco	3	2	9	1	1	3	10	1	1	7	7	0	2	1	12	0
Pinellas	7	18	57	12	6	20	59	7	1	19	59	14	2	12	67	11
Polk	0	10	34	6	1	9	36	4	1	12	25	5	0	5	40	4
Putnam	0	5	2	0	0	4	3	0	0	4	2	1	0	3	4	0
St. Johns	0	0	6	0	0	0	6	0	0	2	4	0	0	0	6	0
St. Lucie	0	0	5	2	0	0	6	1	0	1	6	0	0	0	5	2
Santa Rosa	1	6	4	6	1	6	5	5	2	7	7	1	2	4	7	4
Sarasota	0	6	7	6	0	5	9	5	0	5	10	4	1	4	10	3
Seminole	0	2	21	1	0	3	20	1	0	2	21	1	0	2	21	1
Sumter	3	2	6	0	1	3	7	0	1	3	7	0	2	3	6	0
Suwannee	.....				.....				.....				.....			
Taylor	0	0	3	1	0	0	4	0	0	1	3	0	1	0	3	0
Union	0	0	3	0	0	0	3	0	0	3	0	0	0	0	3	0
Volusia	0	6	12	10	0	4	17	7	0	8	13	7	0	4	17	7
Wakulla	.....				.....				.....				.....			
Walton	.....				.....				.....				.....			
Washington	1	6	3	1	0	4	6	1	1	4	6	0	3	1	7	0
State Total	142	277	760	191	130	272	807	145	111	367	793	95	170	233	822	137

fifty-eight per cent of the laboratories have equipment which is satisfactory in appropriateness and quantity to serve the purposes intended for them. Approximately seven per cent of the laboratories reported have equipment more than adequate for their purposes and the number of students served. Eight per cent of the laboratories reported contain equipment which is either obsolete or inappropriate. The remaining twenty-seven per cent do not contain adequate equipment to serve the students.

Combined Evaluation of Shops and Laboratories

A scale was included to allow the respondents to give an overall evaluation of the equipment, space, capacity and functional adequacy of existing permanent shops and laboratories. This evaluation was intended to provide a reasonably accurate estimate of the number of spaces which were used as laboratories, but were not originally designed for the specific purpose for which they are being used. It was intended further to provide an assessment of the functional adequacy of those laboratories planned specifically for the purposes they serve. The scale statements are:

1. The laboratory was not designed for the specific purpose being used.
2. Laboratory functions poorly for the purpose for which it was designed.
3. Laboratory functions satisfactorily for the purpose for which it was designed.
4. Laboratory functions exceptionally well for the purpose for which it was designed.

The data in Table 3 include summaries relating to the combined evaluation of the laboratories. One hundred and seventy, or twelve per cent of the laboratories in use were not designed for the purpose for which they were being used. Another 233, or seventeen per cent, of the laboratories were found to be functioning poorly for the purposes for which they were designed. Eight hundred and twenty-two, or sixty-one per cent of the laboratories were regarded as satisfactory, and another 137, or ten per cent, were functioning expectionally well. Seventy-one per cent of the existing permanent laboratories were regarded as satisfactory.

Inventory of Existing Facilities for Occupational Education in Junior Colleges

The data used in this analysis were obtained by questionnaire from the Florida public junior colleges. Data were gathered about facilities which existed or were under construction in the summer of 1964. The data reported are summarized in Tables 4, 5, and 6. All of the existing junior colleges responded to the questionnaire.

Permanent Occupational Facilities

Data about the number of permanent laboratories, student stations, students served daily and laboratory utilization are included in Table 4. During 1963-64 one hundred and thirty permanent laboratories served an average of approximately 7,519 students daily. The laboratories contained 3,050 student stations and 165,785 square feet of floor space. On the average each student station served 2.47 students daily. Each laboratory contained an average of 1,275 square feet and approximately twenty-three student stations. Each laboratory served an average of 57.8 students each day. The laboratories provided an average of approximately 54.4 square feet per student station.

The 130 laboratories were utilized an average of 562 periods daily during the daytime schedule, and 259 periods during the evening. This was an average utilization of 4.3 periods per laboratory during the day, and two periods per laboratory during the evening. Based on a six-period day the laboratories were used approximately seventy-two per cent of the time. If both day and evening use are considered, the laboratories in junior colleges were used on the average of 6.3 hourly periods per day or approximately thirty-two periods per week.

During the periods that the laboratories were used, available student stations were used approximately thirty-nine per cent of the time. On the average nine students used each laboratory during each period in which it was in use. This utilization is considered to be relatively low. A utilization factor approaching 65 to 75 per cent seems possible, considering past experience with science and similar types of laboratories.

The total amount of laboratories space for occupational education in the junior colleges was reported to be 265,069 square feet. Permanent laboratory space was 165,785 square feet, which is 62.5 per cent of the total space available for occupational education. Of the 208 laboratories reported in the inventory, 130, or 62.5 per cent, were permanent.

Data included in Table 4 also show the distribution of permanent laboratories as to their location in the various junior colleges. It should be noted that the junior colleges located in the more populous centers of the state have a larger num-

TABLE 4

PERMANENT FACILITIES FOR OCCUPATIONAL EDUCATION LOCATED AT FLORIDA PUBLIC JUNIOR COLLEGES

Junior College	Labs	Student Stations	Students Served Daily	Square Feet	Periods Used	
					Day	Evening
Brevard	.....	.....	230	.....	.....	18
Central Florida	5	57	189	2,537	25	.....
Chipola	3	60	50	4,848	14	.....
Miami-Dade	12	267	1,615	15,678	30	16
Daytona Beach	6	87	162	6,572	24	9
Edison	.....	.....	.....	.....	.....	.....
Gulf Coast	.....	.....	.....	.....	.....	.....
Indian River	.....	.....	.....	.....	.....	.....
Broward	15	505	611	19,786	31	40
Lake City	4	114	85	5,820	.....	15
Lake-Sumter	5	112	128	5,800	.....	.....
Manatee	6	110	302	8,350	91	43
North Florida	7	136	147	6,760	29	10
Okaloosa-Walton	.....	.....	.....	.....	.....	.....
Palm Beach	15	320	1,555	14,845	88	24
Pensacola	8	166	457	12,854	46	22
St. Johns River	1	25	38	660	3	.....
St. Petersburg	18	516	1,089	30,729	35	8
Gibbs	.....	.....	.....	.....	.....	.....
Hampton	8	184	179	5,119	50	23
Jackson	3	60	330	3,364	16	1
Johnson	.....	.....	.....	.....	.....	.....
Lincoln	.....	30	16	2,300	6	3
Roosevelt	1	19	40	650	4	2
Rosenwald	.....	.....	.....	.....	.....	.....
Suwannee River	.....	.....	.....	.....	.....	.....
Volusia	13	213	221	16,342	60	25
Washington	.....	69	75	2,771	10	.....
Polk	.....	.....	.....	.....	.....	.....
STATE TOTAL	130	3,050	7,519	165,785	562	259

ber of technical laboratories, while those in the smaller, less populous counties tend to have relatively few or none.

Temporary Occupational Facilities

Data about the number of temporary laboratories are summarized in Table 5. There were 78 temporary laboratories in use during the 1963-64 school year. The laboratories contained 99,284 square feet of temporary space and 1,432 student stations serving 2,669 students daily. The average number of square feet per student station in the temporary laboratories was 69.3, and the average number of square feet per laboratory was 1,273.

Temporary laboratories were used an average of 184 periods daily and 111 periods during the evening. Each laboratory was used about four periods per day, or twenty periods per week. Based on a six-period day, the utilization factor was sixty-three per cent.

If a six-period day is used as the basis for calculating the potential, student station utilization in the laboratories was approximately thirty-one per cent. During the periods that the laboratories were in use, student stations were utilized approximately forty-seven per cent of the time. On the average each laboratory served thirty-four students each day and approximately eight students for each period during which the laboratories were used.

Evaluation of Existing Permanent Facilities for Occupational Education Located at Junior Colleges

A summarization of the data regarding the evalutions made by respondents of existing permanent facilities for occupational education in the junior colleges is presented in Table 6. The rating scales were the same as those discussed earlier in this chapter. Evaluation scales are not restated in this section.

TABLE 5

TEMPORARY FACILITIES FOR OCCUPATIONAL EDUCATION LOCATED AT FLORIDA PUBLIC JUNIOR COLLEGES

Junior College	Labs	Student Stations	Students Served Daily	Square Feet	Periods Used	
					Day	Evening
Brevard	8	194	7,500	342	18	39
Central Florida	1	9	400	29	3	.....
Chipola	.....	.....	.....	.....	.....	.....
Miami-Dade	8	190	12,965	1,134	36	12
Daytona Beach	32	580	56,320	541	96	24
Edison	.....	.....	.....	.....	.....	.....
Gulf Coast	3	42	2,720	165	9	13
Indian River	11	199	10,680	111	6	10
Broward	1	30	800	20	3	.....
Lake City	.....	.....	.....	.....	.....	.....
Lake-Sumter	5	75	3,500	58	6	1
Manatee	.....	.....	.....	.....	.....	.....
North Florida	.....	.....	.....	.....	.....	.....
Okaloosa-Walton	5	50	2,500	50	.....	6
Palm Beach	.....	.....	.....	.....	.....	.....
Pensacola	.....	.....	.....	.....	.....	.....
St. Johns River	.....	.....	.....	.....	.....	.....
St. Petersburg	1	6	9	83	.....	2
Gibbs	.....	.....	.....	.....	.....	.....
Hampton	.....	.....	.....	.....	.....	.....
Jackson	1	6	660	60	4	.....
Johnson	.....	.....	.....	.....	.....	.....
Lincoln	1	17	510	15	.....	3
Roosevelt	.....	.....	.....	.....	.....	.....
Rosenwald	.....	.....	.....	.....	.....	.....
Suwannee River	1	34	720	61	3	1
Volusia	.....	.....	.....	.....	.....	.....
Washington	.....	.....	.....	.....	.....	.....
Polk	.....	.....	.....	.....	.....	.....
STATE TOTAL	78	1,432	99,284	2,669	184	111

Evaluation of the Capacities of the Existing Laboratories

Information submitted by the respondents indicates that the laboratories in public junior colleges contained adequate space for the purposes and the number of students being served. Only nine laboratories, or eight per cent of the total, were reported to be functioning poorly. Two others, or 1.8 per cent of the total, were regarded as being crowded to the extent that instruction suffered. Fifty per cent of the laboratories were regarded as adequate and were accommodating the students satisfactorily. The remainder (40 per cent) were regarded as having the capacity to accommodate additional students should conditions require it.

Evaluation of the Space in Laboratories Located in Junior Colleges

Table 6 contains a summary of the data regarding the evalutions of the space in laboratories in public junior colleges. Sixty-nine laboratories, or sixty-one per cent, had satisfactory space for the purposes to be served and the students to be accommodated. Thirty-four laboratories, or thirty per cent, had more than adequate space and could accommodate more students should it become necessary. Only two laboratories were considered inadequate.

Evaluation of the Equipment in Occupational Shops and Labs Located at Junior Colleges

Sixty-six laboratories, or fifty-eight per cent of the total, were regarded as having satisfactory equipment for the program and for students to be served. Thirty-seven laboratories, or thirty-two per cent had sufficient equipment to accommodate additional students. Nine laboratories, or eight per cent, were regarded as lacking sufficient equipment to serve the students they were attempting to accommodate. Two laboratories, or 1.8 per cent, had obsolete or otherwise inappropriate equipment.

TABLE 6

EVALUATION OF SPACE AND EQUIPMENT IN PERMANENT LABS LOCATED AT FLORIDA PUBLIC JUNIOR COLLEGES

	Evaluation															
	Capacity				Space				Equipment				Combined			
County	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Brevard	0	2	10	0	0	2	10	0	0	2	10	0	2	0	10	0
Central Florida	0	4	1	0	1	3	1	0	0	0	5	0	1	2	2	0
Chipola	0	0	1	2	0	0	2	1	0	0	2	1	0	0	3	0
Miami-Dade	0	0	3	2	0	1	2	2	0	0	2	3	0	0	2	3
Daytona Beach	0	0	4	0	0	0	4	0	0	0	4	0	0	0	1	3
Edison	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gulf Coast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Indian River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Broward	0	0	2	8	0	0	7	3	0	0	2	8	0	0	1	9
Lake City	0	0	2	1	0	0	2	1	0	1	2	0	0	0	2	1
Lake-Sumter	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0
Manatee	0	0	6	0	0	0	6	0	0	0	0	6	0	0	0	6
North Florida	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6
Okaloosa-Walton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palm Beach	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	8
Pensacola	0	0	7	0	0	0	7	0	0	0	7	0	0	0	2	5
St. Johns River	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
St. Petersburg	0	0	0	10	0	0	0	10	0	0	10	0	0	0	10	0
Gibbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hampton	0	1	1	6	0	1	7	0	0	1	7	0	0	1	7	0
Jackson	0	2	2	0	0	1	3	0	2	0	2	0	1	0	2	0
Johnson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roosevelt	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Rosenwald	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Suwannee River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volusia	2	0	8	3	1	1	8	3	0	5	3	5	3	0	4	6
Washington	0	0	3	0	0	0	3	0	0	0	3	0	0	0	3	0
Polk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Total	2	9	57	46	2	9	69	34	2	9	66	37	7	3	56	47

Combined Evaluation of Occupational Laboratories Located in Junior Colleges

Respondents were asked to report a combined evaluation of their laboratories. The evaluation indicated that 103 of the 113 laboratories were regarded as satisfactory for the purposes to be served. Forty-seven laboratories, or 41.6 per cent, were functioning exceptionally well. Fifty-six laboratories, or 49.6 per cent, were functioning satisfactorily. Seven laboratories, or 6.2 per cent, were regarded as not designed for the purposes being served. Three of the laboratories, or 2.6 per cent of the total, were regarded as functioning poorly.

Financing the Cost of Occupational Education Facilities and Equipment

The problem of financing the costs of new facilities and equipment for occupational education will loom large if appropriate efforts are to be made to provide what is needed to support an adequate program. Until the present time no special funds have been available with which to construct facilities for occupational education. Constructing and equipping occupational laboratories have been accomplished with funds which were made available for constructing facilities for the regular school program and for community junior colleges.

Sources of Funds

Funds with which to construct occupational education facilities are available from three major sources. Each major source has a number of sub-sources from which money may be allocated for constructing and equipping facilities. There are limitations, either legal or regulatory, that restrict the purposes for which allocated money may be used.

Federal Funds

Basically there are four types of federal funds. Each can provide money for occupational education facilities if the need exists and requirements are met.

1. Public Law 815 allocates funds to school systems in which there was a marked increase in enrollment over a two-year period due to the impact of federal activity. For those school systems termed eligible, a stipulated amount per pupil is granted to the school system. The school system may then build needed facilities with the funds allocated to it. Generally, such funds have been used to construct elementary and secondary general education facilities.

2. The National Defense Education Act provides funds for the reimbursement of expenditures for equipment used for programs in mathematics, science, technical education and modern foreign languages. Title VIII of this Act provides funds to encourage the development of training programs for highly skilled technicians. Some of these funds have been used for equipping technical education facilities. These funds are granted on a dollar-for-dollar matching basis.

3. The Vocational Education Act of 1963 provides funds with which to construct occupational education facilities. One-third of the funds allotted to each state can be used only for (a) providing vocational education for persons who have graduated or dropped out of school, and for (b) constructing area vocational education school facilities. Funds under this act may be used to construct ". . . . instructional and auxiliary rooms and space necessary to operate a program of vocational instruction at normal capacity, such as classrooms, libraries, laboratories, workshops, cafeterias, office space and utility space." The costs of initial equipment for the above needed facilities and all necessary building fixtures and utilities, furnishings and instructional equipment are permissible expenditures.[2] The facilities may be constructed at high schools, area vocational education schools and at junior colleges, if designated as area vocational education schools in compliance with the intent of the Vocational Education Act of 1963. Funds used for the construction of area vocational education schools must be matched dollar-for-dollar.

4. The Manpower Development Training Act of 1962 provides funds for both constructing and equipping occupational shops and labs. Only a few facilities have been constructed under this Act.

State Funds

At least three types of state aid are available for constructing and equipping new facilities. These funds are not earmarked for any particular educational program, but are spent on a priority basis as determined by the State Board of Education.

1. Capital Outlay and Debt Service Funds. These funds are allotted to the school systems of the state at the rate of $400 per state allotted instruction unit. This portion of the state aid plan was an equalization grant until 1953, when it became a flat grant to the school systems of the state. The funds are spent on projects in order of priority of need as established by the county school system but within the framework of State Board of Education regulations. Only projects recommended as the result of a survey are eligible for CO and DS funds. For all capital outlay projects, other than those for junior colleges, occupational education facilities are considered as falling in Priority B; however, occupational education facilities can be placed in Priority A when they are to be constructed as a part of a new school plant or as a major addition to an existing one to provide needed pupil capacity. All teaching laboratories to be constructed at junior colleges are in Priority A. Funds to be spent on junior college projects must also be recommended by a survey and constructed in accordance with the priority regulations of the State Board of Education.

2. Matched Building Fund Act. The fund created by this Act provides a matching

[2] HEW. *Federal Allottments to States, Rules and Regulations.* (Aug., 1964), p. 12340.

grant to growing school systems. Money is allotted to school systems at the rate of $200 per pupil in average daily attendance for the number of pupils which exceeds that of the preceding year. The state allocation must be matched by an equal amount from local sources. These funds are allocated for those pupils in attendance at grade one-through-twelve schools. The money may be used to pay for constructing a school building and "for the reconstruction of a school building which must be replaced or rebuilt because of fire, storm or other Providential reason." State Board regulations require that in every case needed classrooms shall have first priority.

3. Junior College Construction Fund. Money for this fund is appropriated each biennium by the Legislature and allocated to the individual junior colleges. Projects are determined on the basis of a survey. Project priority lists are also prepared and submitted to the State Board of Education for approval in accordance with existing law and regulations. Occupational education facilities can be built and equipped with funds from this source without discrimination wherever the need exists.

4. Higher Education Bond Amendment. Article XII of the Constitution of Florida was amended in 1963 to authorize the issuance of bonds for capital outlay at institutions of higher learning, including junior colleges and certain vocational-technical schools. The proceeds of the gross receipts, taxes on utilities, telephones, natural and manufactured gas and so on is placed in a trust fund known as the "Institutions of Higher Learning and Junior Colleges Capital Outlay and Debt Service Trust Fund." This fund is administered by the State Board of Education, which is given the power in the Amendment to obtain funds for acquiring, building, constructing, altering, improving, enlarging, furnishing or equipping capital outlay projects authorized by the Legislature in institutions of higher learning, junior colleges and vocational-technical schools.

The facilities for vocational-technical schools must be authorized by the Legislature as provided by Chapter 230, *Florida Statutes*. This Chapter requires that the County Board of Public Instruction before it can operate an area vocational-technical school must first obtain approval of the State Board of Education. Once a county board is authorized to acquire and operate an area vocational school the Legislature may be asked to approve funds for the construction of facilities under the Higher Education Bond Amendment.

Local Funds

Facilities can be constructed and equipped with funds from local sources. There are no restrictions as to how these funds can be spent. The action of the County Board of Public Instruction is final.

1. Special School Tax District No. 1 Bonds. The county-wide bond issue is a major source of funds for constructing all school facilities and providing equipment for them. A county may issue bonds equal to ten per cent of the non-exempt assessed valuation of real property in the county. A bond issue for an amount greater than ten per cent of the non-exempt assessed valuation has to be approved by the State Board of Education. Not more than six mills may be levied to retire the total bonded indebtedness unless approved by the State Board of Education. Occupational education facilities may be constructed from these funds at the discretion of the local board of public instruction.

2. Building and Bus Reserve Fund. County school boards are permitted to levy up to two mills, if approved by the freeholders, for the purpose of constructing school buildings, purchasing furniture and equipment and purchasing buses. Funds voted by the freeholders may be spent for any type of facilities needed so long as they are for school purposes.

3. County and District Funds. Funds received from current millage levies for support and maintenance may be used for construction purposes. Although some county school systems have constructed facilities using funds from current revenues, it is doubtful that a substantial volume of school facili-

ties can be constructed from this source of funds.

4. Special Acts and Racing Commission Funds. Several county school systems have received racing commission funds for the purpose of constructing school facilities. Special acts of the Legislature have made it possible for county school systems to construct buildings and to retire the indebtedness for their construction with revenues from the racing commission and other sources. Such acts may authorize the expenditure of special funds for the purpose of constructing schools in any county.

Occupational Education Facilities Constructed During Past Five Years

Although there are several possible sources of funds, the actual construction of facilities for occupational education has not kept pace with the need. The fact that so many laboratories are of a temporary nature, both in public schools and in junior colleges is evidence of this fact. Also, the fact that only about half of the students who can benefit from such programs are now being served reflects the lack of facilities.

Table 7 includes data showing the number of laboratories constructed during the past five years. Also summarized in this table are data comparing the number of classrooms and other instructional facilities constructed during the same period. These data do not show the facilities constructed with local funds; however, complete data on facilities constructed from state funds are included.

TABLE 7

NUMBER AND TYPE OF OCCUPATIONAL FACILITIES CONSTRUCTED DURING THE FIVE-YEAR PERIOD, 1959–1964

	Type and Number of Facilities				
Year	Class Rooms	Other Instructional Facilities	Occupational Education Facilities[1]	Percent Occupational Facilities of Total	Total Number of Rooms Constructed
1959–60.....	1934	224	68	3.05	2226
1960–61.....	1653	249	105	5.23	2007
1961–62.....	1582	224	89	4.70	1893
1962–63.....	1633	299	142	6.84	2074
1963–64.....	1377	574	225	10.34	2176

Source: Records of the School Facilities Planning Section, State Department of Education, Tallahassee, Florida.
[1] Includes industrial arts and business education facilities.

The number of occupational education facilities constructed annually has increased since the 1959-60 school year. The rate of increase in the construction of occupational laboratories increased from 3.05 per cent of the total number of rooms constructed in 1959-60 to 10.34 per cent in 1963-64. It is believed that the change in State Board Regulations in 1962 enabled local school boards to construct facilities more nearly fitted to their instructional needs than was possible under the more rigid priority regulations that existed in prior years. It would seem desirable to provide further changes in regulations so as to permit more freedom to construct facilities of an instructional character that are needed to fulfill the requirements of a comprehensive educational program.

Projection of Occupational Facilities Needs to 1970

The need for occupational education facilities projected to 1970 appears in this section. One should realize that making such a projection is difficult due to a number of uncontrollable variables. These include population increases, varying dollar costs of construction, varying equipment costs, changing needs of programs, and of students in relation to employability, and the changing value of the dollar.

Estimated Needs in High Schools

The projection here presented is based on the following set of assumptions and is limited by them to an indeterminate extent:

1. Each permanent laboratory in a high school should serve 70 enrollees per day in occupational education.
2. Laboratories should contain an average of twenty-two student stations.
3. Laboratories should contain an average of sixty square feet per student station, or a total of 1,320 square feet each.
4. Construction costs are estimated at $15.00 per square foot. No corrections are made for changes in the value of the dollar, since such corrections can be made at any time.
5. Since both laboratory and student station utilization appeared to be satisfactory, no

correction for undercapacity is given for facilities at high schools, vocational schools and adult centers. It is assumed that the number served by the permanent laboratories in 1963-64 was their desirable capacity. Adjustments are made in the capacity of existing laboratories to reflect an estimate of statewide capacity.

6. All temporary facilities are assumed to be in need of replacement.

7. Enrollment projections are converted to average daily attendance which is in turn used as the base for estimating the number of enrollees in occupational education at the high school, vocational school and adult levels.

8. Approximately fifty per cent of Florida senior high school youth should be enrolled in some kind of occupational education other than preparation for college up to the time they drop out of school or graduate.[3]

9. No change is assumed in the level at which occupational education is offered.

Procedures Used

The procedures used were intended to produce reasonable estimates. The procedures were as follows:

1. The average daily attendance for the years to 1970 was estimated by using State Department of Education estimates of enrollment and National Education Association's projections for 1970.[4]

2. The estimated average daily attendance was used as the base for computing the number of potential occupational enrollees at the secondary school level.

3. The adjusted capacity of existing facilities was deducted from the potential enrollees to determine the number of occupational enrollees to be housed. The adjusted capacity was determined to be 153,319 students.

4. The number of occupational laboratories needed was calculated, using the assumptions outlined in the preceding pages.

5. Total area shown in square feet was estimated by obtaining the product of the number of laboratories and the average size in square feet per laboratory found in the analysis discussed in a preceding section of this chapter.

6. The cost for construction was obtained by multiplying $15.00 per square foot by the estimated number of square feet needed annually to 1970.

7. The cost of equipment was determined by estimating the number of student stations needed and multiplying the result by an estimated cost per student station. The cost of equipment per student station is a highly variable figure, depending on the type of laboratory being equipped. The figure used is intended to be an estimate of average costs for all types of laboratories.

8. Total costs are the sum of the estimated construction and equipment costs.

Cost Estimates

Table 8 includes the estimated costs, 1964 to 1970. In order to meet adequately the needs of all students who should benefit from occupational education instruction, an initial expenditure of approximately $79,000,000 appears to be needed. In subsequent years an expenditure of approximately seven million dollars per year will be required to fulfill the continuing needs for occupational education. It is estimated that in the year 1969-70 approximately $11,600,000 will be needed if we assume that only the needs for that year accumulate.

These estimates of need are indeed extensive. This is due to the fact that so little has been accomplished to fulfill the needs for occupational education. Temporary facilities have been used extensively. Obsolete buildings discarded from the regular program have also been used. Furtheremore, major efforts in recent years have been made to keep up with growing classroom needs.

To meet these needs new ways to reduce construction costs must be found. Every available funding source must be utilized. Local school systems must contribute extensively to the support of this program. State aid grants for initiating these programs also must be provided. State and local resources plus Federal resources must be utilized. Economy in planning and construction must be the watchword.

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[3] See Chapter II.
[4] NEA, *Financing the Public Schools*, the Association: Washington, D. C. 1962, p. 107.

TABLE 8

PROJECTED COSTS OF OCCUPATIONAL EDUCATION FACILITIES AT THE HIGH SCHOOL, VOCATIONAL SCHOOL, AND ADULT LEVELS

Year	Average Daily Attendance[1]	Occupational Enrollees	Student Stations Needed	Number Occupational Labs	Number Square Feet	Cost of New Construction	Cost of Needed Equipment[4]	Total Costs
1964–65	1,120,234E	268,832	38,504	1750	2,310,000	$34,650,000	$44,433,616	$79,083,616
1965–66	1,163,124E	279,150	3,465	157	207,240	3,108,600	3,998,610	7,107,210
1966–67	1,207,304E	289,753	3,534	160	217,200	3,168,000	4,078,236	7,246,236
1967–68	1,250,484E	300,116	3,421	155	204,600	3,069,000	3,947,834	7,016,834
1968–69	1,293,484[2]	310,436	3,440	156	205,920	3,088,800	3,969,760	7,058,560
1969–70	1,364,117[3]	327,388	5,650	256	337,920	5,068,800	6,520,100	11,588,900

E Based on Enrollment Estimates of the Division of Research, State Department of Education.
[1] ADA is 86.2 enrollment.
[2] ADA for 1968–69 entry is estimated by adding 43,000 to previous estimate. This is the approximate average annual increase.
[3] Based on NEA projections with kindergarten removed. NEA, *loc. cit.*, p. 107.
[4] Equipment costs are estimated at $1154 per student station. This is an overall estimate of cost based on experience in equipping a variety of occupational laboratories. These estimates are based on data supplied by the State Department of Education.

Estimated Needs in Junior Colleges

Estimates for occupational facilities in junior colleges are made by using the following set of assumptions. The estimates are limited by these assumptions and other variable factors to an indeterminate extent.

1. Each permanent laboratory in a junior college should serve 64 enrollees per day in occupational education.
2. Laboratories should contain an average of twenty-three student stations.
3. Student stations should be used an average of approximately seventy per cent of the time during which the laboratories are in use.
4. Laboratories should be used an average of four periods per day.
5. Laboratories should contain an average of 1,635 square feet.
6. Construction costs are estimated at $18 90 per square foot which is that currently being used by the State Department of Education. No corrections are made for changes in the value of the dollar.
7. All temporary facilities are assumed to be in need of replacement.
8. No change has been assumed regarding the responsibility that the junior college has for vocational and technical education.

Procedures Used

The procedures used are intended to produce estimates and are as follows:

1. The full-time equivalent enrollments for the years to 1970 were derived from State Department of Education estimates and by a curve extension technique.
2. The estimated full-time equivalent enrollment in occupational education courses was estimated by determining the percentage that the full-time occupational enrollment was of the 1963-64 total full-time enrollment in junior colleges. Part-time enrollees were considered as three-tenths of a full-time equivalent enrollee.
3. The capacity of the existing laboratories was deducted from the estimated number of enrollees to determine the number of occupational enrollees to be housed.
4. The number of occupational laboratories needed was calculated by dividing the number of enrollees to be served by the number of enrollees one laboratory would serve daily.
5. Total number of square feet was estimated by multiplying the number of laboratories by the average size of the laboratories derived from data furnished by the State Department of Education on current practices in planning technical laboratories.
6. Cost of construction was obtained by multiplying $18.00 per square foot by the estimated number of square feet needed annually to 1970.
7. The cost of equipment was determined by estimating the number of student stations needed and multiplying the number of student stations by $560 per station. The figure

used is an estimate derived from data concerning the cost of equipping various type laboratories and is intended to be an estimate of average costs for equipping all types of laboratories.

8. Total costs are the sum of the construction and equipment costs.

Cost Estimates

Table 9 includes the estimated costs for constructing and equipping occupational education facilities in junior colleges for the years 1965 to 1970. An initial expenditure of more than six million dollars is needed to house the enrollees in occupational education in 1965-66. In subsequent years through the 1969-70 school year approximately $2,000,000 to $2,300,000 will be needed annually. It is the opinion of the Study Staff that these estimates are realistic. They may be too conservative, particularly since no change is assumed in the role of the junior college with regard to area vocational education responsibilities for high school youth. It is assumed, however, that the combined estimates made in the two sections of this chapter dealing with facility needs should account adequately for the total estimated cost of the program and that funds when made available can be spent where they are needed without reference to hard and fast institutional lines.

Summary and Conclusions

The findings in this chapter provide evidence that facilities for occupational education in Florida are far from adequate to meet the needs of existing vocational and technical programs. Furthermore, the data show that if the growing needs for occupational facilities are to be met, there must be a substantial increase in the amount of funds made available for constructing facilities for occupational education.

The data show a great variation among the counties of the state with regard to the number of facilities in use. For the most part, facilities for occupational education programs in the high schools are located in the larger population centers. Occupational education facilities found in the smaller counties are limited largely to laboratories for home economics, agriculture and, in a few cases, industrial arts. There is a definite need for facilities in the less populus areas to fulfill the needs for vocational and technical education.

Similarly, in the public junior colleges the evidence shows that there is a considerable difference among the various junior colleges as to the number of occupational laboratories available for use. Junior colleges located in the smaller, less populous areas of the state have very few or no vocational and technical facilities, while in those located in the more populous counties the facilities are more extensive. This condition is not entirely consistent with the needs of the state as a whole. More extensive facilities must be provided to serve the less populous counties to fulfill the needs that exist for occupational training in these areas as well.

The following statements summarize the more pertinent findings regarding the questions raised in the beginning of this chapter:

1. In 1963-64 there were 1867 permanent laboratories serving 141,053 students daily in existing high schools and in vocational and adult centers in the 57 counties supplying data. These laboratories were being used approximately 65 per cent of the time during which they were available for use. In addition, there were 209 temporary laboratories serving 8,709 students daily.

2. Of the total number of laboratories in high schools evaluated by the respondents, 71 per cent were reported as accommodating the students satisfactorily or exceptionally well. Twelve per cent of the laboratories in permanent facilities were not designed for the purposes for which they were currently being used. Another seventeen per cent were found to be functioning poorly for their intended purposes. The data indicate that approximately 29 per cent of the permanent laboratories in use need to be improved. Further, the data indicate that utilization of the laboratories is what might be reasonably expected. Under the conditions that prevail, however, ways should be sought to enroll additional students who need competencies which may be taught in existing facitities where these are appropriate to employment opportunities.

3. Permanent occupational laboratories in public junior colleges served 7,519 students daily during 1963-64. The 130 permanent laboratories were utilized approximately thirty-two hourly periods per week. The student station usage was approximately 39

TABLE 9

ESTIMATES OF NEEDS FOR OCCUPATIONAL EDUCATION FACILITIES IN PUBLIC JUNIOR COLLEGES, 1965–1970

Year	Full Time Equivalent Enrollment	Full Time Occupational Enrollment	Student Stations Needed	Labs Needed	Square Feet Needed	Cost of New Construction	Cost of Equipment	Total Costs
1965–66	52,273[1]	14,520	2,231	97	158,575	$ 2,854,710	$ 3,502,670	$ 6,357,380
1966–67	60,114[1]	16,698	782	34	55,590	1,000,620	1,227,740	2,228,360
1967–68	68,143[2]	18,929	805	35	57,225	1,030,050	1,263,850	2,293,900
1968–69	75,316[2]	20,921	713	31	50,685	912,330	1,119,410	2,031,740
1969–70	82,490[2]	22,914	713	31	50,685	912,330	1,119,410	2,031,740

[1] Enrollment estimates of the State Department of Education taken from *1965 Legislative Budget Request.*
[2] Enrollment estimates were made by curve extrapolation techniques based on an index derived from past enrollment experience.
[3] An index of .36 is used to express the numerical relationship between enrollment in occupational courses and full time equivalent enrollment in the public junior colleges.
[4] An average cost per student station was derived from data furnished by the State Department of Education. An estimated cost of $1570 per student station has been used.

per cent. The student station use was below that which has been achieved in the use of laboratories of other types; therefore, a higher usage should be expected. In addition there were 78 temporary laboratories in use during the same period.

4. Evaluation of permanent occupational facilities by the respondents indicate that approximately 91 per cent of the laboratories in use in junior colleges were functioning at least satisfactorily. Approximately three per cent were regarded as functioning poorly while the remainder were reported as not designed for the purpose for which they were being used. It would appear that for the most part existing permanent laboratories in junior colleges were satisfactory. The most acute problem with regard to existing space needs was at Daytona Beach Junior College, which had the largest number of temporary facilities.

5. The financing of occupational facilities may be accomplished through the use of funds from many sources depending upon whether the facilities are to be located at high schools, junior colleges or in separate institutions. Money available from the State has necessarily been restricted in its use for these purposes, but a liberalization of State policy regarding the use of CO and DS and Matched Building Fund money would increase the potential contribution from the State. The use of the funds derived from the Higher Education Bond Amendment and federal funds under the Vocational Education Act of 1963 seem to provide the greatest potential for the construction of occupational facilities at junior college and high school vocational and technical centers. This is likewise true for the construction of facilities at separate institutions which may be designated as area vocational education schools.

6. Total estimated needs for construction and equipment for high schools in 1964-65 approximates $79,000,000 and for junior colleges in 1965-66, approximately $6,000,000. Estimates indicate that the needs for both will continue to grow at the rate of approximately $9,500,000 per year until the 1969-70 school year. In the 1969-70 school year the needs at both junior colleges and high schools will increase by approximately $13,500,000 assuming that each year's needs have been met.

In conclusion, the Study Staff suggests that deliberate consideration should be given to all possible ways to reduce the cost of providing needed facilities for vocational and technical education programs. Steps must be taken to assure that laboratories are constructed so as to permit maximum utilization of the space and student stations available. Great care must be exercised in selecting the specific centers at which the construction of occupational facilities will take place. Furthermore, a large enough number of students must be assembled at established centers to obtain a higher rate of both room and student station utilization than was found to be the case in most instances considered in this Study.

Careful planning must precede the construction of actual facilities. Planning which is based on sound educational decisions and which recognizes the changing nature of occupational curriculums and patterns of employment within the state.

Additionally, study should be given to the pos-

sible use of a standard building components system in the construction of laboratory and shop facilities. Such a system has been tested in California, where considerable savings were realized by school districts participating in the development program. An additional advantage of the building components system approach is that more flexibility can be planned into the finished building so as to make changes more economically possible in order to satisfy changing curriculum needs. Other advantages of the system include quality control for the components at the factory and more rapid erection at the site. The Study staff urges that this approach be given careful study and that an extensive test be undertaken at the earliest possible date.

Chapter 5

Financing Vocational and Technical Education in Florida

ASSUMING that a system of schools is well organized and administered, the amount of public school money available will determine to a large degree the quality and scope of a state's program of education. The methods of school financing are also of vital importance to maintaining and improving the quality and scope of the state's educational services. Further, the extent to which the total needs of education are recognized in the state finance plan will determine largely the effectiveness with which these needs can be met.

The purpose of this chapter is to consider the problem of financing vocational, technical and related education in Florida and to assess it in relation to the total problem of providing adequate support for education at the public school, adult and junior college level.

The financing of vocational and technical education is examined now as a part of a related whole and also as a distinct function of education. Because of this approach, this chapter considers as background those essential factors that have a bearing upon the financing of all public education in Florida as well as those considered pertinent to an adequate vocational and technical program. A guiding principle in this assessment shall be that the purpose of public education is to provide educational opportunities for all children, youth and adults that will prepare them for productive citizenship, in keeping with individual choices and abilities, and that every community will be provided sufficient school revenues to finance an adequate educational program to accomplish this purpose.

The following questions seem pertinent in discussing this problem.

1. What ability does Florida have to support its schools?
2. What effort is Florida making to support its schools?
3. How nearly adequate is this effort?
4. What effort is being made to support vocational and technical education?
5. From what sources do funds for vocational and technical education come? How much and in what proportions?
6. How much is being spent for vocational and technical education?
7. How much does it cost to offer a comprehensive program of vocational and technical education?
8. What are the major problems and issues in the financing of vocational and technical education?
9. What recommendations should be made with regard to the financing of vocational and technical education in order to expand and improve the services offered?

Florida's Ability to Support Public Education

The ability of a state to support its educational program may be measured in a number of different ways. One measure that is widely used to determine ability to support public educational services is total personal income. It seems reasonable to assume that the more money people have, the more able they are to pay for educational services.

The number of individuals to be educated is also a factor in determining the ability of a people to pay for education. The use of the latter factor assumes that if the income available has to be spread over a larger number who need

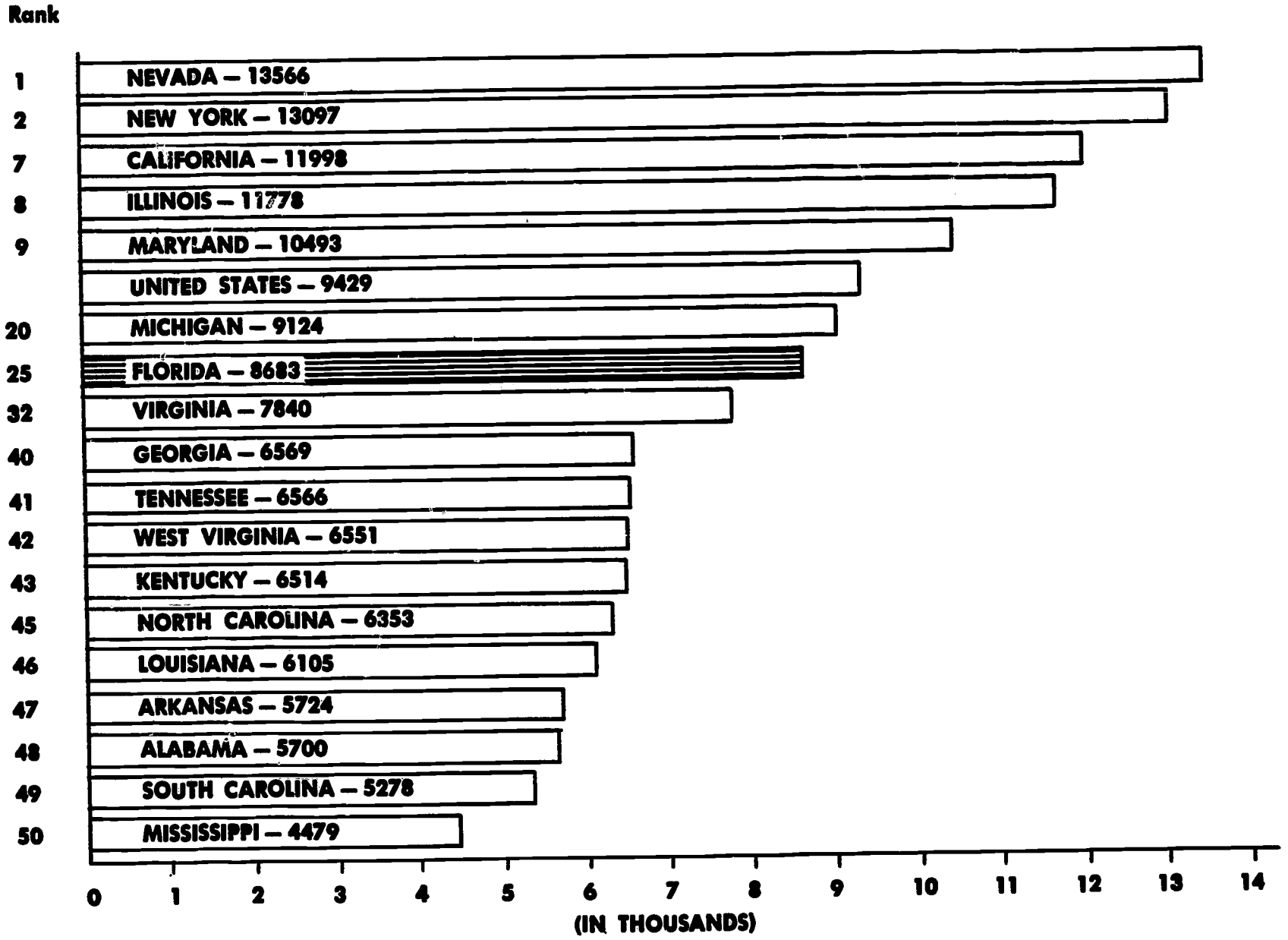
education, the less there will be to spend on each individual. Consequently, it can be assumed that a more accurate measure of ability is an index which relates total personal income to the number to be served.

Chart 1 includes information on the personal income per child of school age in 1962 for selected states. Florida ranks higher in this respect than the twelve states in the Southeast and is twenty-fifth in the nation. The national average personal income per child was $9429, while Florida's income per child was $8683, which is approximately ninety-two per cent of the national average. It is also interesting to note that Florida's income per child was approximately ninety-four per cent greater than Mississippi's, which was the lowest in the nation, and forty-two, thirty-six and thirty-one per cent greater than Louisiana, North Carolina and Georgia, respectively.

Another ability measure often used is the ratio of the number of school-age children to the number of wage earners in the adult population. This index provides a rough measure of the wage earners per child to be educated. The information graphically presented in Chart 2 reveals the fact that Florida ranked high on this index, being tenth in the nation and the highest of the twelve states in the Southeast in 1961.

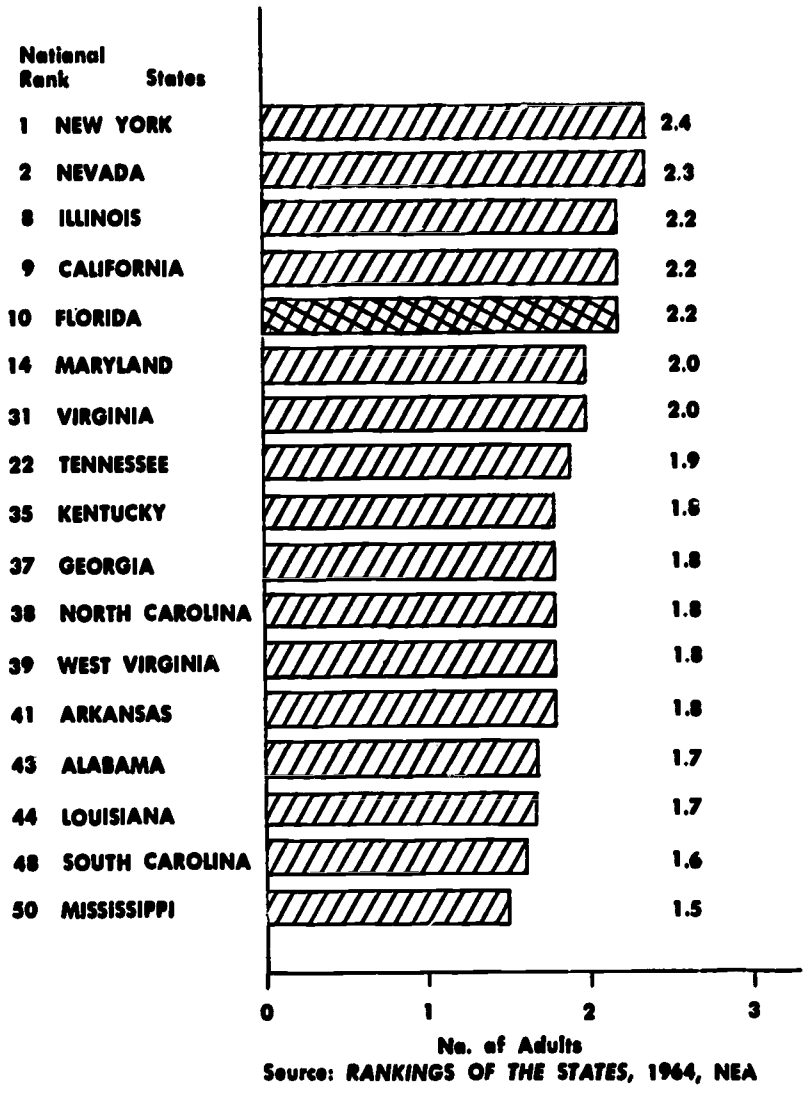
Interpreting the limited data presented herein, it seems reasonable to conclude that Florida is more able to support education than are the other states of the Southeast, but is less able than are one-half the states of the nation. It is

CHART 1
PERSONAL INCOME PER CHILD OF SCHOOL AGE (5-17), 1962
SELECTED STATES – HIGHEST AND LOWEST



Source: *RANKINGS OF THE STATES*, 1964, NEA

CHART 2
RATIO OF ADULTS TO SCHOOL AGE CHILDREN – 1961 FOR SELECTED STATES



Source: *RANKINGS OF THE STATES*, 1964, NEA

apparent that if Florida is to buy educational opportunity equal to the average for the nation, it must either allocate more of its public tax revenues for schools, obtain more education for the money it spends, or increase its tax revenues and allocate the additional funds thus produced to schools in order to offset the apparent lower ability to support public education.

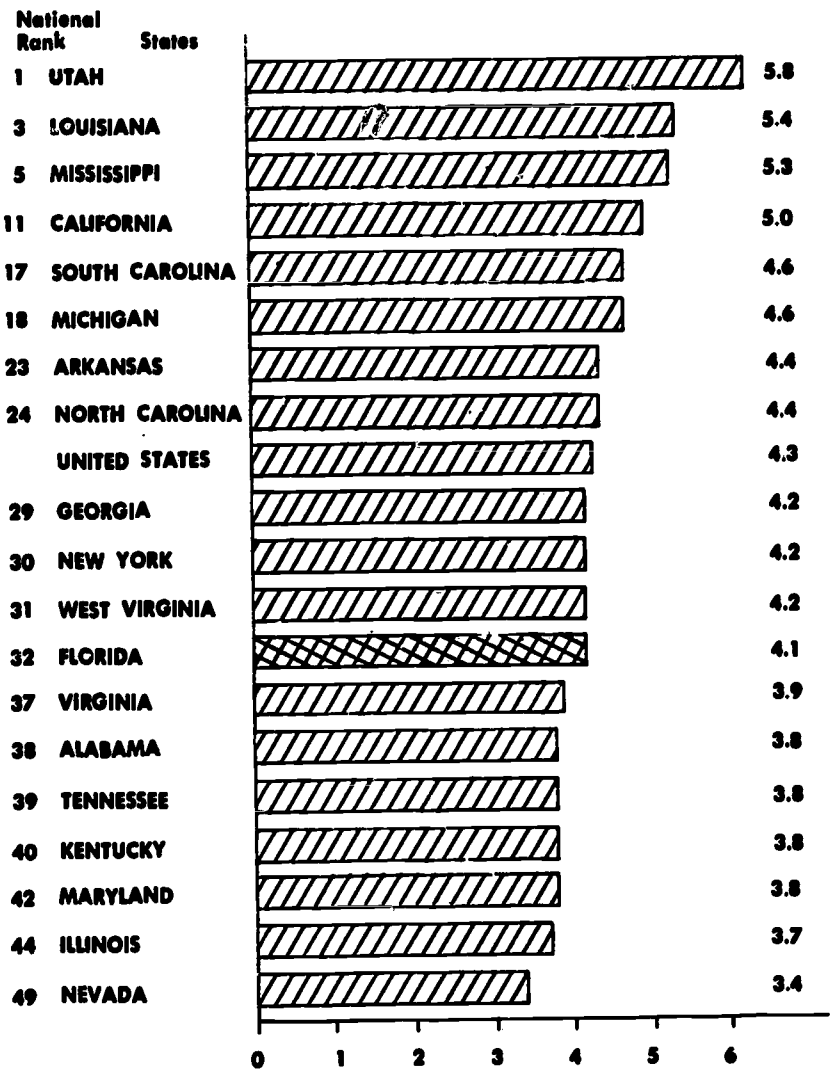
Florida's Efforts to Support Public Education

What kind of effort is Florida making to support its public schools? It seems reasonable to assume that a wealthy state can spend more on education than a poor one can spend. On the other hand, it is possible for a state to make up for low ability by spending a larger proportion of what it has for its public schools. A state that spends more may not necessarily be making the same effort as one that spends less.

No attempt is made here to give this topic exhaustive treatment. Florida's financial effort is examined in relation to one of the measures more extensively used for this purpose. This measure relates total public school revenue receipts to total personal income and indicates the proportion of total personal income that is allocated to school revenues. It is intended to show the extent of the people's willingness to support their public school program.

Data included in Chart 3 show the ranks of selected states and the percentage of total personal income allocated to pay for public education in 1962. Florida's relative position was thirty-second, with 4.1 per cent of its income allocated

CHART 3
TOTAL PUBLIC SCHOOL REVENUE RECEIPTS, 1962-63, AS PER CENT OF PERSONAL INCOME, 1962 FOR SELECTED STATES

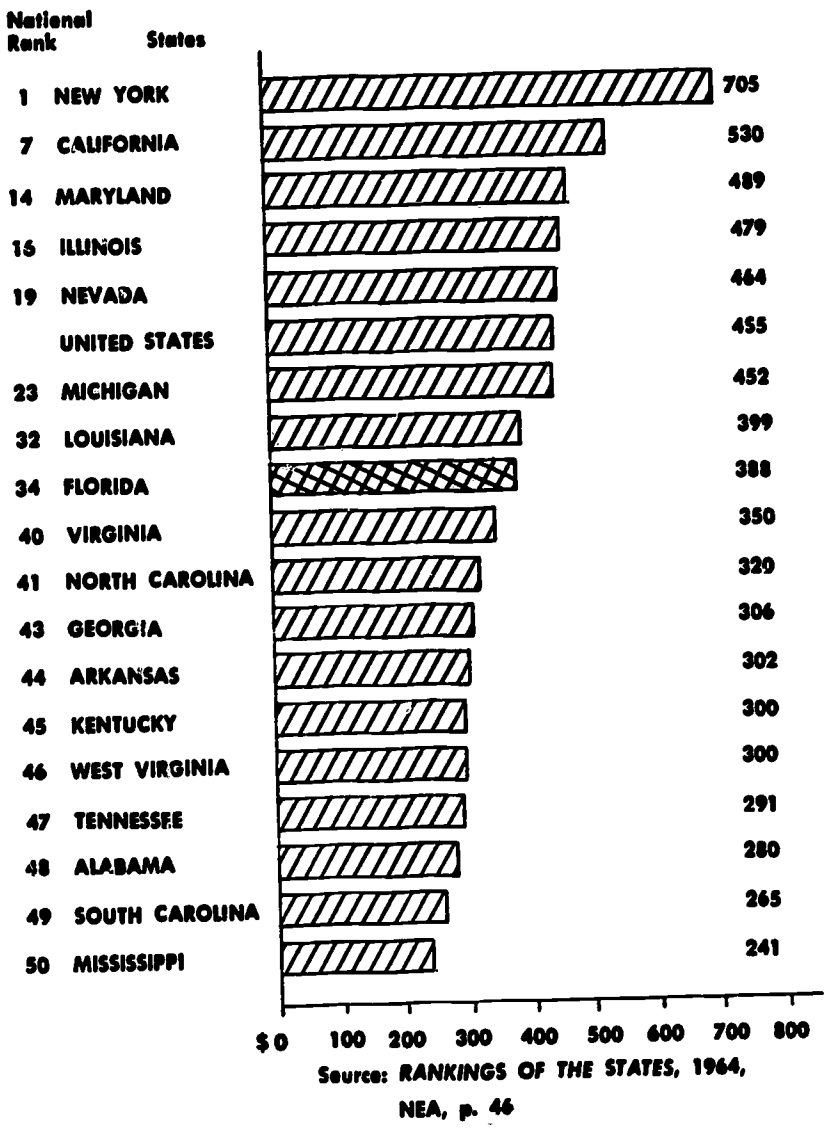


Source: *RANKINGS OF THE STATES*, 1964 NEA, p. 38

to public school revenue receipts. The average for the nation was 4.3 per cent. Only four of the twelve Southeastern states were lower than Florida in this respect. Louisiana, North Carolina and Georgia devoted 5.4 per cent, 4.4 per cent and 4.2 per cent, respectively, of their income to support education. Louisiana was third in the nation and Mississippi was fifth. Louisiana was making an effort approximately thirty two per cent greater than that made by Florida, while Mississippi's effort was approximately twenty-five per cent greater.

These data indicate that Florida's effort to support education was neither as great as that in most of the states in the Southeast, nor as high as its ability indicates it should be. It would appear that Florida could allocate more funds for education without overburdening its people. If Florida made the same effort as that made by Louisiana, its expenditures would approach the estimated expenditures per pupil made by California in the 1963-64 school year. Whereas it can be seen in Chart 4 that Florida ranked thirty-

CHART 4
ESTIMATED CURRENT EXPENDITURE FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS PER PUPIL IN ADA, 1963-64 FOR SELECTED STATES



Source: *RANKINGS OF THE STATES, 1964*, NEA, p. 46

fourth in the nation and spent $388 per pupil, California ranked seventh with an expenditure of $530 per pupil.

The Ability and Effort of Florida's Counties to Support Public Education

Are the county school systems in Florida supporting education as well as they are able to do? This question may be approached in a similar manner as was used in considering the state as a whole.

Ability and Expenditures Per Pupil

Total expenditures per pupil at the county level do not represent what the taxpayers of the county are allocating from local revenues for school purposes. Chart 5 shows the current expenditures per pupil in ADA for 1962-63 in which funds from all sources allocated to the county systems for school purposes are included. The comparisons made in Chart 5 provide some representation of the level of expenditure and possibly the adequacy of expenditures. They do not, however, tell the complete story about a county's ability or its effort to support education.

The index of taxpaying ability is used by the State Department of Education to determine the ability of the counties of the state to support the minimum state required program. This index has been widely accepted as the best indicator of the ability of a school system to contribute to the support of its minimum program of education. This index is discussed in detail in another section of this chapter. Suffice it to say at this point that the index includes several factors that indicate in a variety of ways the ability of the people in a county to support their schools.

Map 1 is presented to portray graphically the relative position of the counties in the state with respect to their ability to support their schools. Dade County, according to the index, is the most wealthy and has the greatest ability, by far, to contribute to the state's minimum program. On the other hand Glades, Levy, Dixie, Holmes, Walton, Liberty and Wakulla are the poorest and have the least ability according to the index to contribute to the state's minimum program.

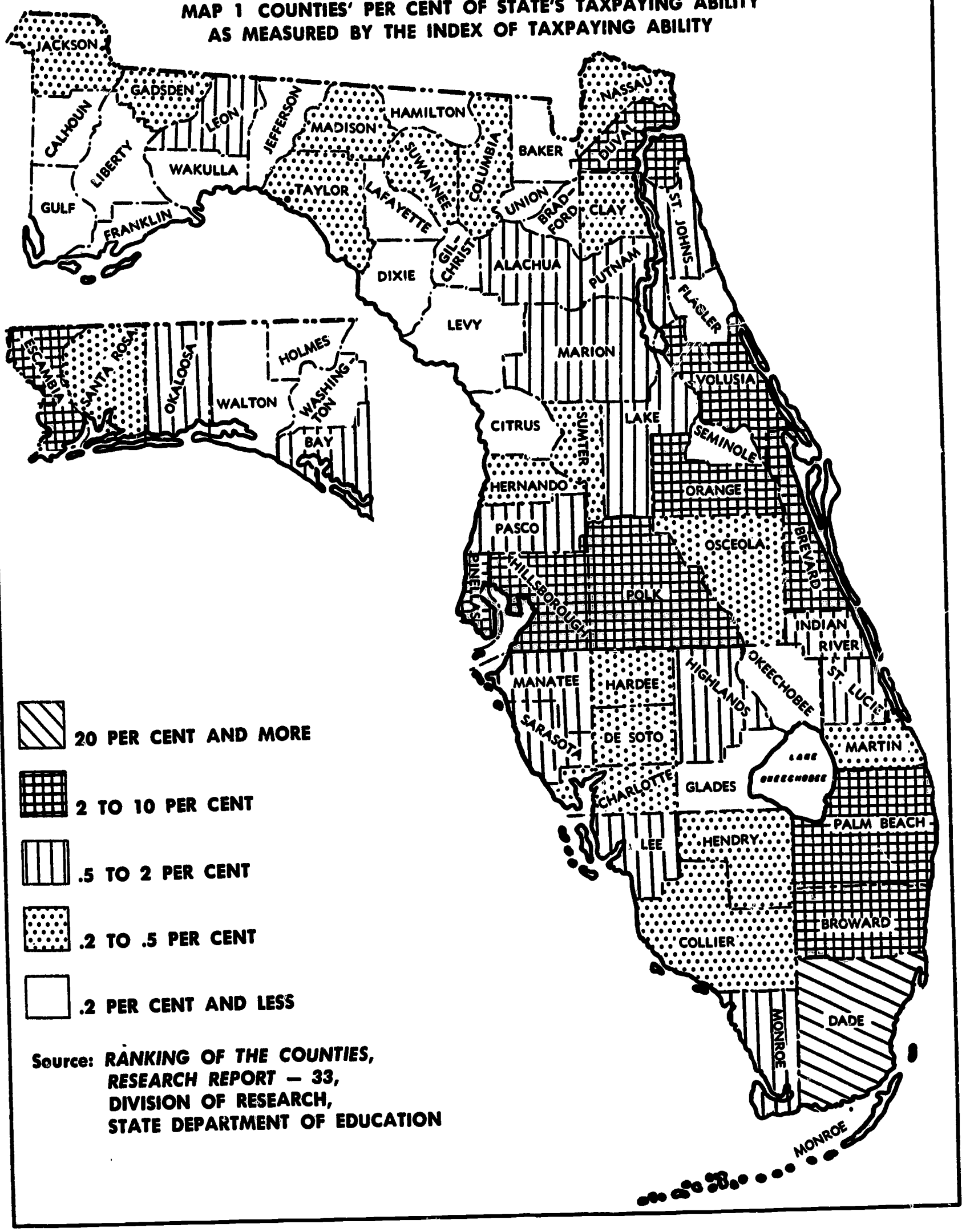
It should be noted, however, that the counties with the greatest wealth are not the counties spending the most money per pupil for education. Cases in point are Duval and Hillsborough counties. While these two counties are high on the ability scale, according to the index, they ranked sixty-six and fifty-six, respectively, in expenditure per pupil for the education. At the other extreme Glades, Wakulla and Liberty are spending $490, $448 and $416, respectively. Dade, on the other hand, would be expected to spend more money per pupil since it was ranked the wealthiest county in the state. However, it ranked seventh with an expenditure of $407 per pupil.

CHART 5

CURRENT EXPENDITURES PER PUPIL BY COUNTY – 1962-63

Source: *RANKING OF THE COUNTIES, 1963, Division of Research,* State Department of Education, (May, 1964) pp. 14-15

MAP 1 COUNTIES' PER CENT OF STATE'S TAXPAYING ABILITY AS MEASURED BY THE INDEX OF TAXPAYING ABILITY



20 PER CENT AND MORE

2 TO 10 PER CENT

.5 TO 2 PER CENT

.2 TO .5 PER CENT

.2 PER CENT AND LESS

Source: *RANKING OF THE COUNTIES, RESEARCH REPORT — 33,* DIVISION OF RESEARCH, STATE DEPARTMENT OF EDUCATION

Expenditures for Administration

Data presented graphically in Chart 6 show the relative ranks of the counties in the state with regard to their expenditures per pupil in ADA for administration in the 1962-63 fiscal year. The median county expenditure was ten dollars and nineteen cents ($10.19), which is approximately one-third of the highest county expenditure and approximately three times the lowest. Many of the more populous counties, such as Pinellas, Hillsborough, Duval, Polk, Palm Beach and Dade, are found to be among the lowest one-third with respect to expenditures per pupil for administration, while many of the least populous counties fall in the upper one-third. These data strongly suggest that the smaller, less populous counties tend to spend more per pupil to administer their programs than do the more populous ones. The fact that these counties operate smaller school units requiring more principals and other administrative personnel to administer fewer pupils is perhaps a contributing factor of considerable significance. Likewise, many of the smaller counties have high salaried board members which may contribute to the high per capita cost for administration.

Several observations seem pertinent at this point. Data presented in previous chapters of this report indicate the deficiencies in the smaller rural counties in the state, including the inadequacy of vocational and technical education. The data presented in the preceding paragraphs indicate that more money per pupil is being spent in many of the rural counties. Furthermore, the data seem to show that the smaller rural counties have inefficiently organized programs of education which usually cost more to operate while at the same time they provide fewer educational opportunities for their people.

Financial Effort

A look at the effort made by each county reveals information of some significance. The data portrayed in Map 2 indicate the interests that the people in the counties of the state have shown to allocate funds beyond the local effort required by the state to participate in the minimum program. All counties have allocated some revenues beyond the minimum. All but three, Hamilton, Jackson and Okaloosa, have allocated funds in excess of one hundred per cent more; twenty-eight counties, two hundred per cent more; and nine counties, three hundred per cent more. It is interesting to note the extent to which the small rural counties have exceeded the minimum required effort. It might be inferred from these data that the minimum required effort under the Minimum Foundation Program of all counties is too low, and that each county appears to be able to support a more nearly adequate and a more comprehensive program than is now being expected of it. On the other hand, the adequacy level of the Minimum Foundation Program may be too low, thus making it necessary for all school systems of the state to spend beyond the minimum in order to provide the program they now have. Based on the evidence in this Study, the level of occupational education provided under the Minimum Foundation Program could be substantially improved. Therefore, it may perhaps be concluded that the school systems should spend more money for a more adequate minimum program.

An analysis of the effort that is being made by the counties is provided by Map 3. This map portrays the amount of public school revenue from local sources as a percentage of personal income. The use of this measure assumes that the amount of money spent by a people in support of their schools in relation to total income is a measure of their willingness to pay for education.

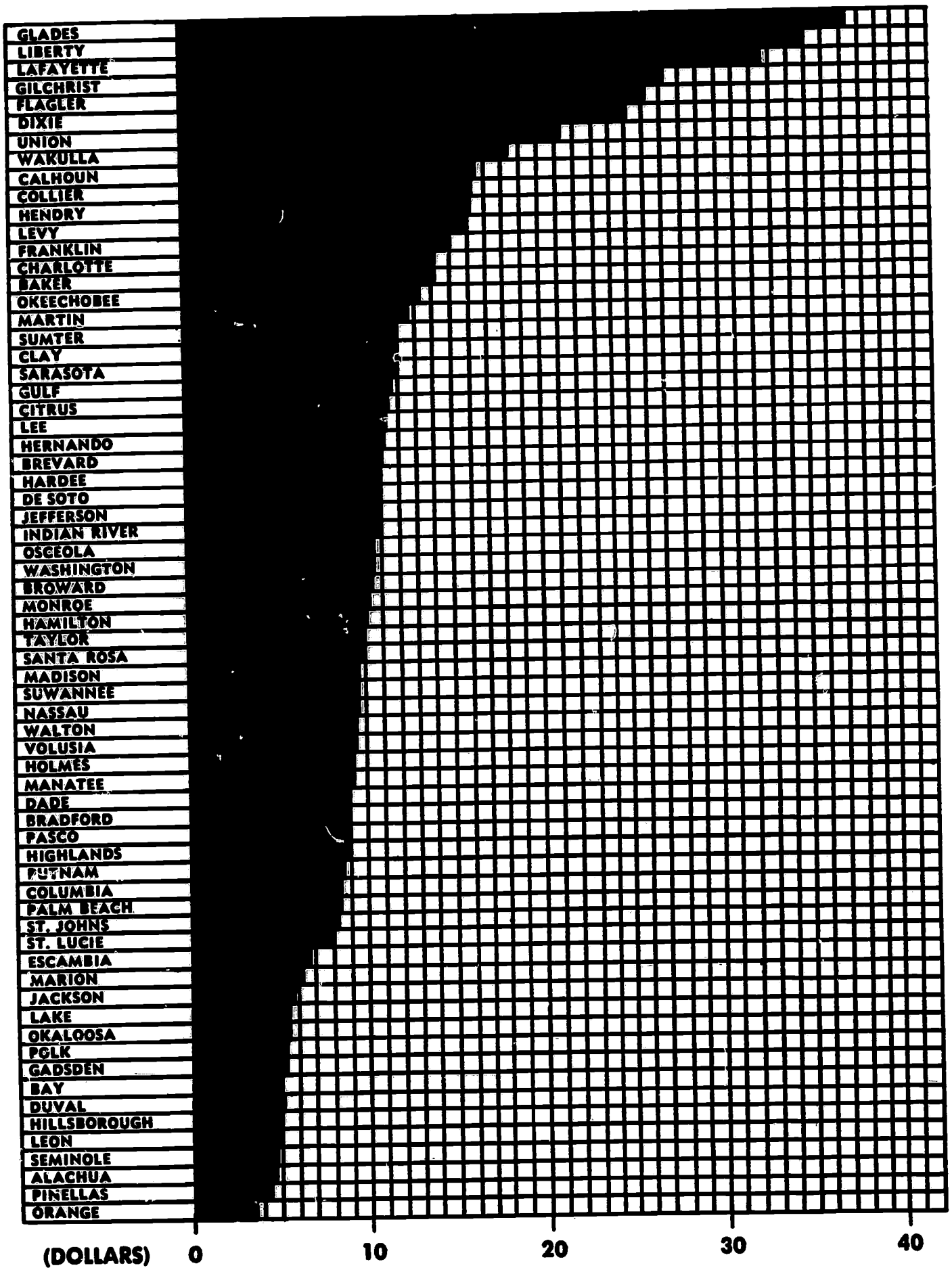
As a group, with but few exceptions, the small rural counties appear to be making an effort in line with their ability as is shown in Map 1. Such counties as Gulf, Franklin, Glades, Dixie and Okeechobee are examples of small counties with low ability but which appear to be making an effort greater than might be expected of them. Other counties such as Manatee, St. Lucie, Martin and Citrus also rank high on the effort scale in comparison with other counties. Duval and Hillsborough are examples of counties that appear to be making less effort comparatively than other counties of comparable size and wealth.

Vocational and Technical Education and the Minimum Foundation Program

Florida's Minimum Foundation Program School Law was intended to make it possible for every school child in Florida, regardless of where he or she lives, to receive equal minimum opportunities for an adequate education. It also was intended to provide for the joint support of these educational opportunities through the combined

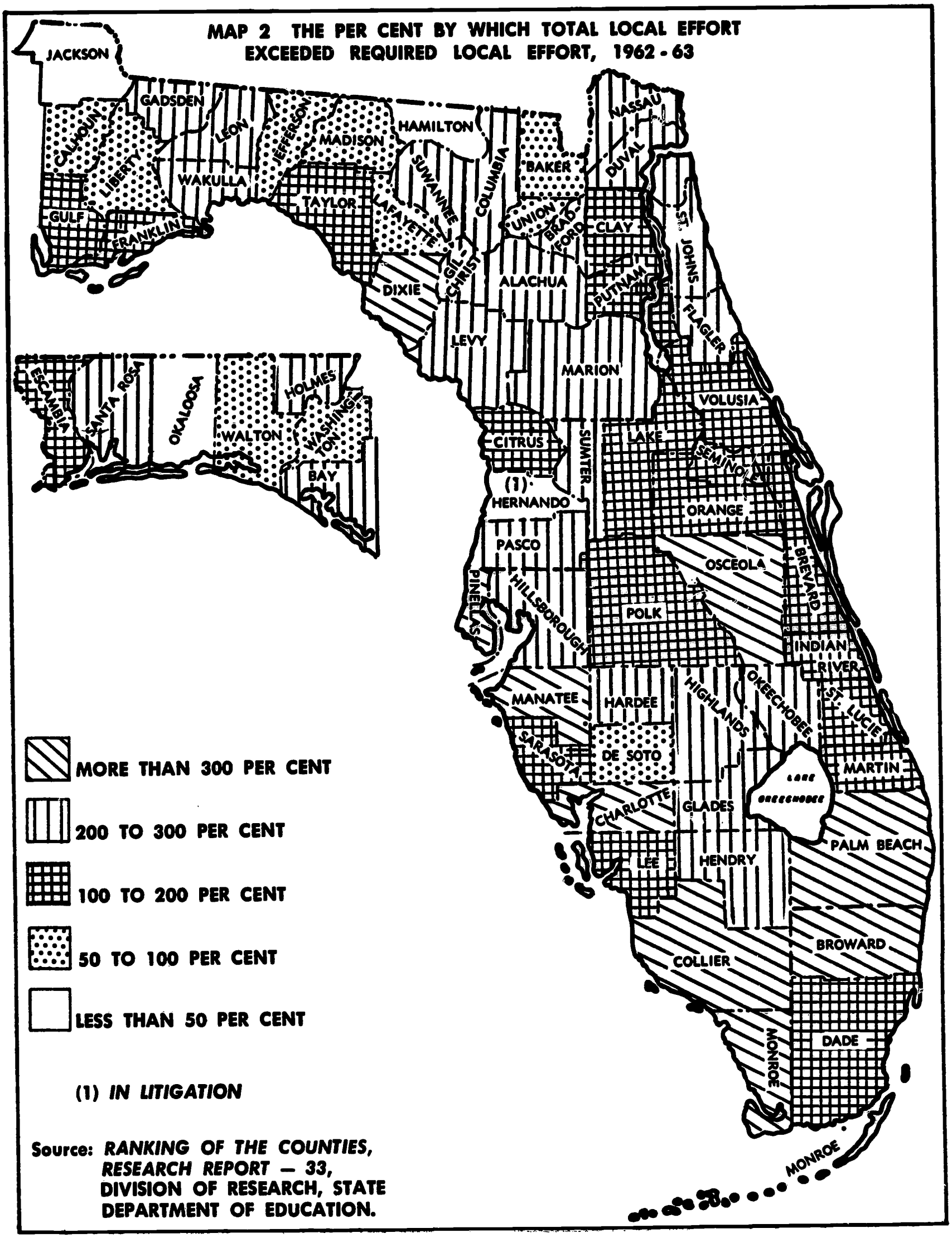
CHART 6

EXPENDITURES PER PUPIL IN ADA FOR ADMINISTRATION 1962 – 1963



Source: *RANKING OF THE COUNTIES, 1963, Division of Research,* State Department of Education, (May, 1964) pp. 14-15

MAP 2 THE PER CENT BY WHICH TOTAL LOCAL EFFORT EXCEEDED REQUIRED LOCAL EFFORT, 1962 - 63



MORE THAN 300 PER CENT

200 TO 300 PER CENT

100 TO 200 PER CENT

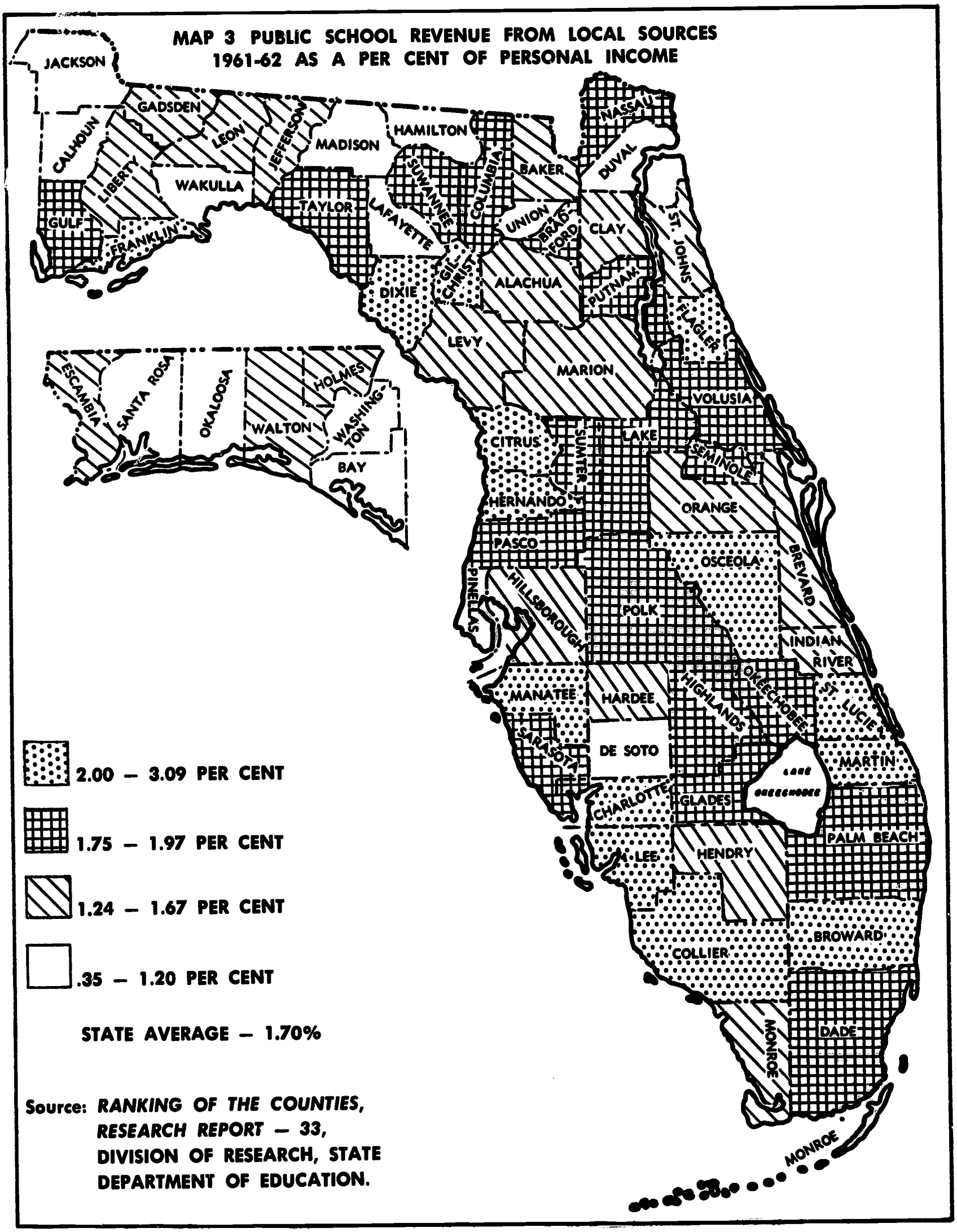
50 TO 100 PER CENT

LESS THAN 50 PER CENT

(1) *IN LITIGATION*

Source: *RANKING OF THE COUNTIES, RESEARCH REPORT — 33,* DIVISION OF RESEARCH, STATE DEPARTMENT OF EDUCATION.

MAP 3 PUBLIC SCHOOL REVENUE FROM LOCAL SOURCES 1961-62 AS A PER CENT OF PERSONAL INCOME



2.00 – 3.09 PER CENT

1.75 – 1.97 PER CENT

1.24 – 1.67 PER CENT

.35 – 1.20 PER CENT

STATE AVERAGE – 1.70%

Source: *RANKING OF THE COUNTIES, RESEARCH REPORT – 33,* DIVISION OF RESEARCH, STATE DEPARTMENT OF EDUCATION.

efforts of the several counties and the state.[1] The program provides financial support for teachers' salaries, transportation, other current expense and capital outlay. The amount of money provided by the county school systems of the State is equal to twenty-five per cent of the total calculated cost of the Minimum Foundation Program for the preceding year. This amount represents the total county minimum financial effort. The total county minimum financial effort is subtracted from the total calculated cost of the Minimum Foundation Program for the state to determine the state's share. Each county's contribution to the Minimum program is calculated by multiplying its Index of Taxpaying Ability by the dollar amount that the counties collectively are required to provide.[2]

In calculating each county's share of the cost of the minimum program, some standard of measure was needed to determine the relative ability of the various counties to pay for their programs. Property assessments could not be used because of the wide range in assessment practices. Reportedly these range from twenty-seven to one hundred per cent of actual cash value among the various counties. To provide the needed measure, the Index of Taxpaying Ability was developed. The factors used are those for which objective data are available and which, in one way or another, indicate the relative ability of the people in a county to support their schools. The factors now used are:

1. Sales tax collections
2. Number of gainfully employed workers, excluding government and farm workers
3. Value of farm products
4. Assessed value of railroad and telegraph property
5. Automobile license tag sales (passenger cars);[3]

The foregoing factors are given numerical values, weighted and combined into a mathematical formula which is used to determine each county's proportion of the local contribution to the minimum program.

In calculating the total cost of the minimum program, the basic measure of educational need is the instructional unit. Basic instructional units needed are calculated by using the total average daily attendance in grades one to twelve for the regular program and are based on the average daily attendance for the previous year. The number of pupils per instructional unit ranges from seventeen to twenty-seven, depending on the size and location of the school by which the units are earned. Schools with three hundred or more pupils in ADA are allowed one basic instructional unit for each twenty-seven pupils. In sparsely settled areas where small isolated schools are maintained and in other schools under certain other conditions, one instructional unit is allowed for less than twenty-seven pupils, varying from ten to twenty-seven, depending on the circumstances.

Other units are earned also which contribute to the total cost of the program. Among these units are "ratio units," "kindergarten units," "administrative and special instructional service units (ASIS)," "exceptional child units," "vocational education units," "units for adult education," and "supervisory units."

Units for vocational and technical education are approved each year on a current basis within the limits set by the legislative budget. Within the number of units allowed for each major service, the general practice followed by the State Department of Education is to allocate one instructional unit for each qualified vocational teacher who renders approved instructional services for vocational classes maintaining a minimum average daily attendance of one-half that required for a basic instructional unit for schools of equal size.

Fractional parts of units are allowed for part-time teachers and for teachers with less than five hours of approved instructional service per day for one hundred and eighty days during the school year. For part-time teachers a fraction of a unit is based on a minimum of nine hundred hours of instruction as the equivalent of a full-time teacher maintaining a minimum average daily attendance of ten students in vocational classes. Vocational units allocated are included at the same dollar value as other units in computing the total cost of the minimum program. Also, vocational units, along with basic instructional units and other special instructional units, form the base from which is calculated the ASIS units earned for the total program.

The Legislature approves the number of "vocational units" which each major vocational edu-

[1] State Department of Education, *for our children . . . Florida's Education Program*, 1961. p. 25.
[2] Division of Research, State Department of Education, *The Florida Index of Taxpaying Ability and the Required County Effort*, (January, 1964) pp. 1-16.
[3] State Department of Education, *loc. cit.*, p. 27.

cation service may allocate each fiscal year when it approves the biennial budget for the public schools. Budget requests from the State Department of Education are based upon subjective estimates formulated from requests by the various counties and modified by the several state supervisors for each of the major service areas. State supervisors preparing the estimates of need preliminary to budget requests have no objective basis—no formula—for use in determining the actual need for "vocational units" in the several counties. Each county in need of increasing its allocation of units is required to submit an application for new and additional units. If units are available and the proposal to increase the number of units is justified and meets minimum standards of teacher qualifications and program, requests are usually granted.

The Minimum Foundation Program also provides funds for capital outlay purposes making it possible for the state to share in the cost of providing needed school facilities. This is accomplished by providing as a part of the support of the total program $400 per state-allotted instruction unit per year for school construction purposes. The county school boards may use this money either on a current basis or to service local or state bonds used to finance needed school facilities.

In rapidly growing counties state assistance is provided in order to construct needed classrooms to meet expanding needs. These funds are in addition to the $400 per instructional unit. Under this part of the program the state allots $200 per pupil in ADA for the number which exceeds the ADA for the previous year. The amount allotted by the state must be equally matched with local funds by the participating counties.

Occupational education at the secondary school level has shared only to a very limited extent in the allocation of funds for building construction. While no funds have been earmarked for any one phase of the total education program, it must be recognized that financing of facilities for occupational education has not kept pace with the need for services. The facilities problem is treated at length in Chapter IV of this Report.

Financial Support of Occupational Education in the Junior College Program

The basic unit of financial support in the public junior college program is the instructional unit. The number of instructional units allocated to a lawfully operated public community junior college is determined from the average daily attendance in the junior college. Attendance may not be counted more than once in determining units. Community Junior College instructional units are computed separately from other units in the county. One instructional unit is allocated to a junior college for each twelve students in average daily attendance for the first four hundred and twenty.[4] ADA is defined by Regulations of the State Board of Education as the number of full-time equivalent students, and one ADA unit is equal to eight hundred and ten class hours of attendance.[5]

In addition to instructional units each junior college is allotted an administrative and special instructional services unit for each eight instructional units, or proportionate part thereof, and a student personnel services unit for each twenty instruction units, or proportionate part thereof.

In addition funds are allocated for current expense, transportation and capital outlay and debt service.

The total cost of the Minimum Foundation Program for each community junior college is calculated separately and is the sum of the calculated amounts for instructional salaries (based on the number of instruction units times their stated value), transportation costs, current expenses and capital outlay and debt service needs.

Each participating county's share of the Minimum Foundation Program costs is computed as five per cent of ninety-five per cent of the calculated yield of six mills of taxes levied on the non-exempt assessed valuations of the state multiplied by each county's Index of Taxpaying Ability.

The amount of state allocation to each junior college is calculated to be the difference between the total cost of the program for each college and the county's share of the cost of the program for each college. This is subject to certain deductions such as unused instructional units or differences between instructional salaries included in the program and those paid instructors.

Units for occupational education in the community junior college program come from at least two sources—vocational units allocated to the county board for the vocational program, and community junior college instructional units

[4] *Florida Statutes*, 1963, Chapter 63-495.
[5] *State Board of Education Regulations*, 1964, Chapter 130-8, p. 128-A. Also, State Department of Education, *Estimated Cost of the Florida Minimum Foundation Program for Public Junior Colleges*, 1963-65, p. 4.

allocated directly to the junior colleges. Information supplied by the State Department of Education indicates that several vocational and general adult units are used by the junior college administration in several institutions. The needs for the vocational units to be used by a junior college, if assigned by the county board, are established in accordance with exxisting State Department of Education policy and regulations. The costs of many of the programs for which these units are used are reimbursable under federal programs which comply with the requirements of the *State Plan for Vocational Education.*

Because of certain variations in regulations and administrative policies of the two divisons of the State Department responsible for the administration of the units, problems both financial and administrative have developed. These problems are discussed in more detail in a latter section of this chapter.

Financing the Adult General Education Program

The Adult Education Program engages exclusively in courses which contribute to the general educational needs and purposes of adults. While classes offered in this program are nonvocational in nature and for the most part parallel to the work offered in elementary and secondary schools, the Adult Education Program can make contributions to the training of adults in selected occupations. One important contribution is to raise the level of general education to meet the requirements for success in many occupational courses.

County boards of public instruction are authorized by law to provide for the general educational needs of adults. The program is presently financed with funds from federal, state and local sources. Student fees are also a source of support. During the years following World War II and the Korean War, and to a much lesser degree during recent years, veterans' funds under P. L. 346 and P. L. 550 have been a source of income for the support of the program.

Recent federal legislation, including the Manpower Development and Training Act of 1962, the Vocational Education Act of 1963 and the Economic Opportunity Act of 1964, authorizes funds which, along with other purposes, may be used for adult general education. The MDTA Act authorizes funds for basic education to help those unable to benefit from occupational training. The Vocational Education Act of 1963 provides for the support of occupational training as well as that education which may be needed for a student to benefit from occupational training. Under the Economic Opportunity Act funds are available to provide basic education to persons with less than a fifth grade education.

The principal source of financial support for adult general education is the Minimum Foundation Program. The basic unit of support in the program is the adult education unit. Adult education units are allocated for both full-time and part-time teachers who are properly qualified. One instructional unit is allowed for each qualified full-time teacher employed. Units for part-time teachers are earned in accordance with whichever of the following yields the smaller amount: (1) the sum of all student hours of attendance in classes taught by part-time teachers divided by 13,500 or (2) the sum of the hours of instructional service rendered by part-time teachers divided by 900. The sum of units earned by full-time and part-time teachers is the number earned by the school system, except that additional allocations may be made where full-time teachers are employed during the eleventh and twelfth months.

Adult education programs may operate under any one of four different plans, two of which provide for the administration of the program in conjunction with either vocational or high schools and junior colleges. Where the Adult Education Program operates as a part of the community junior college, the program is placed under the general administrative control and direction of the president of the college.

Adult education units are allocated directly to the school systems earning them. In cases where the Adult Education Program is under the direction of the junior college administration, the adult education units are assigned by the school system to the college. These units are administered in accordance with State Board of Education rules and regulations governing the Adult Education Program.

Expenditures for Vocational and Technical Education

Expenditures for vocational and technical education include not only state and local funds, but also funds from federal sources. Federally supported programs are offered in the public high

schools, vocational schools, technical centers and certain other public institutions having adult and post-secondary programs of less than college grade.

The Smith-Hughes Act enacted by Congress in 1917 was the first federal legislation to aid vocational education.[6] This Act provided aid to the states to train people for work in industry and on the farm and to prepare women for homemaking. The George-Reed Act of 1929, the George-Ellzey Act of 1934 and the George-Dean Act of 1936 expanded and provided permanent authorization for the then existing fields of vocational education and provided funds for the field of distributive occupations. The Vocational Education Act of 1946, the George-Barden Act, replaced the George-Dean Act and authorized increased funds for the further development of vocational education.

In 1956, Title III of the Health Amendments Act, Amended Vocational Education Act of 1946 and increased aid to the states to encourage training in practical nursing and other health occupations. Also in 1956, an Act was passed providing for the promotion of the fishing industry and allocated funds for vocational education in the fishery trades and industry and distributive occupations. The National Defense Education Act, Title VIII, provided funds to encourage the development of training programs for highly skilled technicians.

Federal funds available for all of the programs described in the preceding paragraphs are granted on a dollar-for-dollar matching basis. Each state must submit a plan outlining the scope and nature of vocational programs offered by the state. The United States Commissioner of Education must approve these plans as being in accordance with the provisions of the various vocational education acts before a state can receive federal funds.

In 1961 and 1962 the Congress enacted two additional measures providing funds for vocational education. The Area Redevelopment Act of 1961 provided aid to regions suffering from persistent high unemployment. It provided a three-year plan to train unemployed and the underemployed for available jobs.

The Manpower Development Training Act of 1962 extended training similar to that under the Area Redevelopment Act to all parts of the country, becoming effective in 1963. Under the terms of the Manpower Development Training Act training may be offered for any occupation in which there is "reasonable expectation" of employment. Projects under this Act are carried out with the joint approval of the State Board of Vocational Education, the U. S. Department of Labor and the U. S. Department of Health, Education and Welfare.

The Vocational Education Act of 1963 authorized federal grants to states to assist them to maintain, extend and improve existing programs of vocational education, to develop new programs of vocational education and to provide part-time employment for youth who need the earnings from such employment to continue their training on a full-time basis. It is noted at this point that, for the first time, federal vocational funds are made available for construction. This represents a significant change in federal policy. The funds allocated under this Act may be used as follows:

1. To provide occupational training for:
   (a) Persons attending high school
   (b) Out-of-school youth and part-time high school youth who are available for full-time study in preparation for entering the labor market
   (c) Persons in the labor market who need training or retraining to gain job stability or advancement
   (d) Persons with academic, socio-economic or other handicaps which prevent them from succeeding in the regular vocational education program
2. To provide teacher training, special experimental and demonstration programs, program administration and supervision, instructional supplies and equipment, program evaluation, etc.
3. To construct area vocational education facilities.

The funds estimated to become available to Florida under this Act are as follows:

1964	$1.5 million
1965	3.07 million
1966	4.6 million
1967	5.8 million

The law places limitations on the use of certain portions of these funds. At least one-third of each state's allotment through July 1, 1968, can be used only for vocational education for persons

[6] HEW. *Digest of Annual Reports of State Boards for Vocational Education*, 1962.

either who have not yet graduated or who have dropped out of high school and for the construction of vocational facilities. Not less than three per cent of each state's allotment must be used for ancillary services and activities described in (2) above. Further, the United States Commissioner is withholding ten per cent of the total appropriation for research, training and experimental programs. Still further, state and local expenditures may not be reduced below present levels. However, federal funds under this act do not have to be matched for the 1964 fiscal year except that federal funds used for the construction of area vocational education schools must be matched on a fifty-fifty basis for each project.

Expenditures for vocational education in Florida have continued to increase over the years. Table 1 presents data reflecting the total expenditures including local, state and federal funds for vocational education since 1957-58. From 1957-58 to 1962-63 total expenditures including those for home economics and agriculture increased by 63.8 per cent. Funds for vocational agriculture increased 26.4 per cent. Home economics funds increased 78.9 per cent during the same period. Funds for trade and industrial education and distributive, cooperative and business education increased 78.6 per cent and 48.9 per cent, respectively.

Federal funds have served as an important stimulus for the support of vocational programs. Federal funds have increased more rapidly than have local and state funds. Table 2 includes data on the increase of federal funds expended for vocational education. Total federal funds expended for all services in the state increased 130.2 per cent from 1957-58 to 1962-63. Federal funds for vocational agriculture declined by approximately thirty-three per cent from 1957-58 to 1962-63. Federal funds for home economics increased 40.2 per cent for the same period while distributive, cooperative and business education funds decreased to 87.9 per cent of the 1957-58 level. On the other hand, federal funds for trades and industrial education increased 315.2 per cent between 1957-58 and 1962-63.

By comparison Table 3 shows the expenditures for major services from local and state funds from 1957-58 to 1962-63. Local and state funds for all services increased 56.9 per cent during this period. Vocational agriculture funds increased 31.7 per cent for the same period. (Note that there was a decline in federal funds for this same period). Funds for home economics increased 81.1 per cent and trade and industrial and distributive cooperative and business education funds increased 53.7 per cent and 49.9 per cent, respectively. While all of these are matching programs, there seems to be no constant relationship between the amount of federal funds and the local and state expenditures.

Chart 7 shows a comparison of the rate of increase in expenditures for occupational education with the rate of increase in enrollment in all major services and the corresponding increase in the number of special instructional units allocated to occupational education. One would expect that the rate of increase in each would be approximately equal. However, this is not the case. The differences are explained as being the result of a freeze of instructional units by the Legislature and a continually increasing value of these units. Total enrollment appears to have no direct relationship either to expenditure, or to the number of units, since an enrollee in a course in occupational education may be in attendance for varying lengths of time from a few days to several months, and may be counted more than once if enrolled in more than one course during the reporting period.

Some Problems and Issues in the Financing of Vocational and Technical Education

During the course of this Study, various persons in both state and local capacities of leadership in the program were asked to comment on problems and issues that relate to the financing of vocational and technical education in the state. Superintendents of public instruction were sent questionnaires, several local directors of vocational and technical education were interviewed, as were personnel from the State Department of Education. Visits were made by Study Staff members to each community junior college in the state to observe facilities and programs and to talk with persons responsible for vocational and technical programs in these institutions.

Through the use of the foregoing procedures and the analysis of the data presented in this report, several problems and issues have been identified. They are discussed in the following Paragraphs.

Vocational Unit Allocations

In the 1963-64 fiscal year the State of Florida allocated 1880.47 units for vocational education. These units were used for high school and adult

TABLE 1

TOTAL EXPENDITURES BY MAJOR INSTRUCTIONAL SERVICE BY YEAR IN FLORIDA VOCATIONAL AND TECHNICAL EDUCATION, 1957-58 TO 1962-63, YEAR AND AMOUNT

Service	1957-58		1958-59		1959-60		1960-61		1961-62		1962-63[1]	
	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index
Vocational Agriculture	$1,362,226	100	$1,424,947	104.6	$1,448,178	106.3	$1,472,543	108.1	$1,625,619	119.3	$1,721,683	126.4
Home Economics	2,187,068	100	2,426,514	110.9	2,562,621	117.2	2,851,342	130.4	3,419,436	156.3	3,912,504	178.9
Trades and Industry	2,735,686	100	3,178,857	116.2	3,382,939	123.7	3,472,321	126.9	4,225,481	154.5	4,886,438	178.6
DCT Business and Distribution	1,504,362	100	1,726,986	114.8	1,757,092	116.8	1,806,472	120.1	2,070,835	137.7	2,239,308	148.9
STATE TOTAL	$7,789,342	100	$8,757,304	112.4	$9,150,830	117.5	$9,602,678	123.3	$11,341,371	145.6	$12,759,933	163.8

SOURCE: State Superintendent's *Biennial Report*—1960-62.
[1] Galley proofs—*Ibid.*, 1962-64.

TABLE 2

FEDERAL FUNDS FOR VOCATIONAL-TECHNICAL EDUCATION BY MAJOR SERVICE AND BY YEAR FOR FLORIDA SCHOOLS

	Vocational Agriculture	Home Economics	DCBE	Industrial Technical	State Total
1957–58					
Amount	$112,389	$112,807	$ 25,599	$173,675	$424,470
Index Number	100	100	100	100	100
1958–59					
Amount	$ 82,971	$102,614	$ 25,996	$240,305	$451,886
Index Number	73.8	90.9	101.6	138.4	106.5
1959–60					
Amount	$ 81,153	$ 98,965	$ 24,553	$477,583	$682,254
Index Number	72.2	87.7	95.9	275.0	160.8
1960–61					
Amount	$ 88,158	$102,091	$ 28,850	$429,990	$648,999
Index Number	78.4	90.5	112.7	247.6	152.9
1961–62					
Amount	$ 95,848	$140,370	$ 29,463	$525,860	$791,541
Index Number	85.3	124.4	115.1	302.8	186.4
1962–63					
Amount	$ 75,326	$158,201	$ 22,504	$721,100	$977,131
Index Number	76.0	140.2	87.9	415.2	230.2

SOURCE: *Biennial Report*, Superintendent of Public Instruction, State of Florida.

TABLE 3

LOCAL-STATE FUNDS FOR VOCATIONAL-TECHNICAL EDUCATION BY MAJOR SERVICE AND BY YEAR FOR FLORIDA

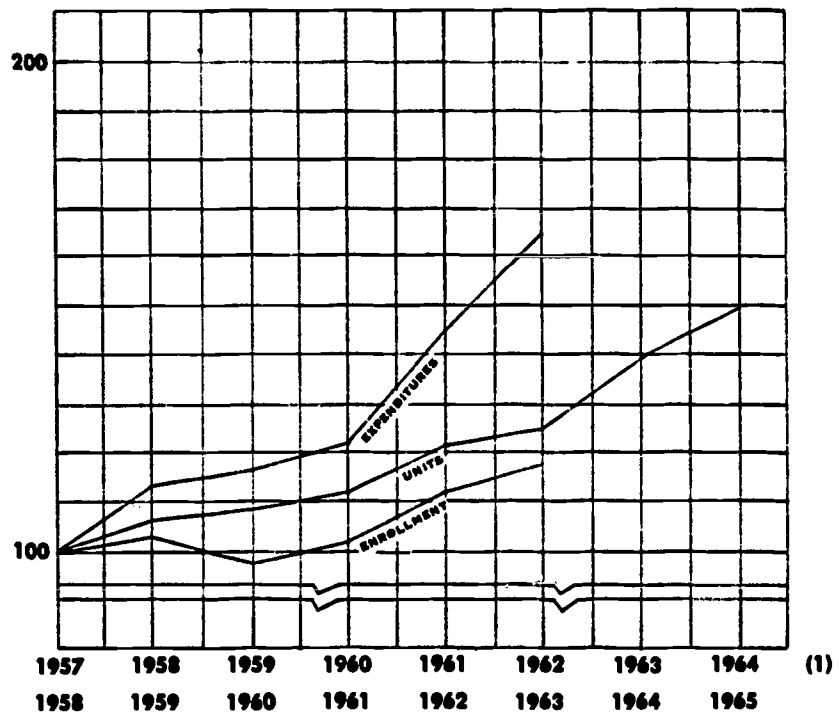
	Vocational Agriculture		Home Economics		DCBE		Trades and Industry		All Services	
	Amount in Dollars	Index	Amount in Dollars	Index	Amount in Dollars	Index	Amount in Dollars	Index	Amount in Dollars	Index
1957–58	1,249,837	100	2,974,261	100	1,478,763	100	2,563,011	100	7,364,872	100
1958–59	1,341,976	107.4	2,323,900	112.0	1,700,990	115.0	2,938,552	114.7	8,305,418	112.8
1959–60	1,367,025	109.4	2,463,656	118.8	1,732,539	117.2	2,905,356	113.4	8,468,576	115.0
1960–61	1,384,385	110.8	2,749,251	132.5	1,777,622	120.2	3,042,331	118.7	8,953,589	121.6
1961–62	1,529,771	122.4	3,279,066	158.1	2,041,372	138.0	3,699,621	144.4	10,549,830	143.2
1962–63	1,646,357	131.7	3,756,112	181.1	2,216,804	149.9	3,936,541	153.7	11,555,814	156.9

SOURCE: *Biennial Reports*—1956–57 through 1962–63, State Superintendent of Public Instructiou, State of Florida, Tallahassee, Florida.

courses in home economics, agriculture, industrial education, technical education, distributive and cooperative education, vocational office education and business education. Data presented in Table 4 show the number of units allocated and used by each county in the state. The number allocated per county ranged from one unit in Dixie County to 269.14 units in Dade County. Dade received 119.9 units more than Pinellas, which ranked second (to Dade) in the number of units used. Hillsborough, Orange, Duval and Broward county school systems followed with 140.7, 120.7, 111.5 and 103.3 units, respectively. Most school systems were allocated units for agriculture and home economics. Thirty-four counties were allocated no units in industrial education, and twenty-four counties no units in distributive and cooperative education.

A further look at this problem discloses what appears to be further inequities in the allocation of vocational units. To test the equity of the allocations, ratios were computed of the total number of vocational units allocated to each county in relation to the average daily attendance of the previous year. The assumption is that the need for vocational education is directly related to the school population in a county. The data as shown in Table 4 reveal a wide variation in the ratio of units to county average daily attendance in grades 1-12. For example, the lowest ratio, one unit to 218.84 ADA, is found in Glades County, and the highest is in Palm Beach County with one unit to 1846.6 ADA. The state average is one unit to 547.72 ADA. One can only conclude that the current basis for the allocation of vocational units is not an equitable one.

CHART 7
RATE OF INCREASE IN ENROLLMENTS, INSTRUCTIONAL UNITS AND EXPENDITURES FOR VOCATIONAL EDUCATION, 1957-1958 to 1964-65



(1) ESTIMATED

It seems evident that an objective basis is needed with regard to the types of units allocated to the counties. In the past units have been parceled out within strict occupational compartments. Furthermore, units once earned and established in use continue to perpetuate themselves whether or not occupational training opportunities and demands continue to exist. The framework within which the units are controlled and administered reflects the premise that the occupational structure of the state consists of discrete compartments carefully labeled agriculture, home economics, and so on. The changing nature of occupational education is not reflected in the allocation system so as to permit changes and additions to suit changing technological patterns. Furthermore, the Vocational Education Act of 1963 makes it possible to do away with this compartmentalization insofar as the use of federal funds is concerned.

It would appear that an allocation of units earmarked as vocational, but not so discretely compartmentalized, would encourge the growth of vocational programs in whatever occupations the demand may exist at the county level. Further, it would appear reasonable that the allocation of the numbers of units should be geared to an objective formula providing for a more equitable distribution based on some reasonable unit which reflects the need for occupational education at the county level. Data supplied from Hillsborough County reflect the results of a recent study of vocational education in that county. Their records show that approximately forty-two per cent of the high school graduates in Hillsborough County make application to enter college. In 1961, 16,730 students were enrolled in grades 10-12 in Hillsborough County. Vocational courses were provided for 3600 of the approximately 9,000 students who, presumably, will terminate their formal education at the completion of the twelfth grade or before graduation. Data in Table 4 show that Hillsborough County now offers a broader and more comprehensive program of vocational education than do most other school systems. The point is that while there are several good programs in the state, both superintendents' opinions and the facts show that the vocational program as it is now operated, reaches too few of the potential students.

Findings reported in Chapter III of this Report provide rather conclusive evidence that occupational programs in most counties are not adequate. To do the job that needs to be done, more units are needed to reach larger numbers of students who should benefit from this program.

Value of Vocational Units

There are at least two problems that are related to the legally assigned value of vocational units.

First, the value assigned to these units reflects an amount for teachers' salaries based on the assumption that the recruitment and pay of teachers of occupational subjects are comparable with those of academic subjects. Several county directors of vocational education and a number of superintendents report that the present value of units makes it impossible for county boards to compete with business and industry, salary-wise, for highly qualified individuals needed for quality instruction in occupational programs.[7] While this problem is not peculiar to the employment of occupational teachers since some academic teachers are similarly affected, it probably causes a more serious handicap to the occupational program. Furthermore, current practice requires smaller classes for vocational subjects than is required for most academic subjects.

Vocational programs are more expensive to operate than are other educational programs.

[7] Replies to inquiries made by letter to superintendents of public instruction and directors of vocational and adult education.

TABLE 4

RATIO OF VOCATIONAL UNITS TO AVERAGE DAILY ATTENDANCE IN FLORIDA SCHOOLS — 1962-63

	1963-64 Vocational Units	1962-63 ADA (1-12)	Ratio of Vocational Units to ADA
Alachua	46.28	15,880	343.12
Baker	3.40	1,908	561.12
Bay	30.78	14,614	474.78
Bradford	5.20	3,470	667.30
Brevard	57.68	31,315	543.53
Broward	103.30	67,840	656.72
Calhoun	7.03	1,816	258.32
Charlotte	1.49	2,329	1,563.08
Citrus	5.10	2,071	406.07
Clay	3.20	4,531	1,415.93
Collier	2.70	3,772	1,397.03
Columbia	11.40	5,163	452.89
Dade	269.14	176,604	656.17
De Soto	4.30	2,251	523.48
Dixie	1.00	1,227	1,227.00
Duval	111.50	102,856	922.47
Escambia	74.20	40,086	540.24
Flagler	2.40	1,031	429.58
Franklin	1.80	1,411	783.88
Gadsden	16.60	9,271	558.49
Gilchrist	2.60	762	293.07
Glades	2.60	569	218.84
Gulf	3.20	2,519	787.18
Hamilton	7.00	1,964	280.57
Hardee	5.40	2,784	515.55
Hendry	3.90	2,131	546.41
Hernando	5.29	2,476	468.05
Highlands	8.14	4,864	597.54
Hillsborough	140.70	80,559	572.55
Holmes	9.10	2,722	299.12
Indian River	6.40	5,711	892.34
Jackson	19.80	8,240	416.16
Jefferson	5.00	2,538	507.60
Lafayette	2.60	667	256.53
Lake	19.80	12,047	608.43
Lee	10.15	12,056	1,187.78
Leon	58.80	16,295	227.12
Levy	6.80	2,491	366.32
Liberty	2.00	755	377.50
Madison	11.91	3,704	310.99
Manatee	44.40	12,782	287.88
Marion	36.14	12,363	342.08
Martin	4.60	3,589	780.21
Monroe	9.08	7,409	815.96
Nassau	5.80	4,724	814.48
Okaloosa	26.80	13,300	496.26
Okeechobee	2.00	1,937	968.50
Orange	120.70	57,752	478.47
Osceola	8.40	3,859	459.40
Palm Beach	24.74	45,685	1,846.60
Pasco	12.80	6,715	524.60
Pinellas	149.50	58,735	392.87
Polk	82.54	43,873	531.58
Putnam	20.19	7,612	377.01
St. Johns	6.44	5,724	888.81
St. Lucie	14.84	8,583	578.36
Santa Rosa	13.60	6,613	486.25
Sarasota	32.15	13,881	429.58
Seminole	22.36	12,954	579.33
Sumter	9.40	2,985	317.55
Suwannee	10.00	3,864	386.40
Taylor	3.20	3,423	1,069.68
Union	2.40	1,078	449.16
Volusia	83.93	23,414	278.97
Wakulla	4.20	1,296	308.57
Walton	9.80	3,896	397.55
Washington	5.80	2,916	502.75
STATE TOTAL	1,880.47	1,026,214	

SOURCE: State Department of Education, *Biennial Report*, 1962-64, and unpublished reports of the State Department of Education, State of Florida, Tallahassee, Florida.

More expensive equipment is used in most occupational classes. Worn out and obsolete equipment must be replaced as needed. As occupational needs and programs change, new types of equipment are needed. The maintenance costs of this equipment are high. Instructional materials and supplies for occupational curricula are also very costly. The conclusion is that it costs more to offer most occupational courses than it does to offer the academic subjects.

The second problem referred to above has to do with the use of vocational units in the junior college program. Regular junior college units have been used for college credit terminal occupational programs that are offered by the junior colleges. However, several junior colleges are allocated vocational units by the counties in which they operate in order to conduct non-credit courses in occupational education. In 1963-64 the value of a vocational unit for teachers' salaries was $200 less for each of the three teachers' ranks than for a junior college unit. Likewise, the value of a vocational unit for "other current expenses" was $525, making the total difference in the value of the units at least $725. This means that a unit used for teaching a non-credit course for the junior college, and supported by a vocational unit, will receive less reimbursement than a regular junior college unit. This arrangement handicaps the program, is inequitable, and it places financial limitations on the college in expanding and developing non-credit programs.

Furthermore, reports from the junior colleges indicate that they are discouraged from using vocational units which may be more appropriate to non-credit courses than the regular junior college units because of the lower value of the vocational units. If junior colleges are to be encouraged to render needed services in occupational programs, adequate and equitable financial support is needed for non-credit courses as well as for the

regular program. There should be no difference in value of units used in the same program, providing all the other factors are equal.

Legislative Freeze of Vocational Units

In recent years, industrial education, distributive and cooperative education and adult education have suffered severe setbacks due to legislative freezes on vocational and adult education units. If an adequate program of occupational education is to be provided for the youth and adults of this State—an education that prepares them for employment upon high school graduation—occupational programs must be stimulated and encouraged, not impaired by severe reductions in funds.

The current freeze on distributive and cooperative education units must be lifted. Data presented in an earlier chapter indicate that many of the needs and demands of growing employment in Florida can be met with a more adequate program of cooperative and distributive education.

Funds Needed to Start New Programs

Facilities, equipment, teaching materials and supplies for occupational education are all more expensive than for most subjects taught as a part of the regular school curriculum. Because of the expense involved and the relatively small number of students taught in vocational and technical classes, boards of education have taken the position that available funds must be used to serve the largest number of individuals. This approach is sound from the standpoint of immediate recovery, but it does not provide the services needed to develop employability in high school students. To solve the problem of first costs required for initiating vocational and technical programs, special grants, either direct or matching, would help overcome the initial financial burden of providing expensive facilities, equipment and instructional materials and supplies.

Projections of Expenditures for High School and Adult Occupational Education; 1964-1970

Any attempt to project expenditures for vocational and technical education is at best an estimate. The control of a large number of variables confronts any effort to project needed expenditures. The amount of federal support, extent of local participation, state capability, the changing value of the dollar and population estimates are a few of the more important variables. Recognizing that these variables do exist, the approach that is used in this Study is necessarily based on certain assumptions. Several of these assumptions are listed as follows:

1. The percentage of federal support for vocational and technical education has varied from 5.16 per cent to 7.48 per cent over the last ten years. The total amount from the Federal government will increase as will the amount from the State. In more recent years federal support has been approximately seven per cent of the total.[8] It is assumed that federal funds will continue to be about seven per cent of the total support available for vocational and technical education.

2. Costs are projected on the basis of the dollar value during 1960-62. Corrections needed to compensate for any change in the value of the dollar can be made at any time.

3. Approximately 49.29 per cent of public high school graduates did not immediately go on to further education and training upon graduation from high school in 1962.[9] It is assumed that this rate of college entrance and consequent rate of entry into the world of work will continue.

4. The average number of pupils in ADA per basic instructional unit used to estimate the cost of the Minimum Foundation Program for the 1963-65 biennium was 26.83.[10] This same pupil ratio is estimated for the projection period included in this Report.

5. Approximately fifty per cent of Florida high school youth should be enrolled in some kind of occupational education other than preparation for college up to the time that they drop out of school or graduate. This assumption is based upon the premise that all of those pupils who do not go on to college need some kind of vocational education as preparation for work either at the high school level or as adults. These estimates are considered conservative, but are used as a basis for projecting needs.

6. Technical education will develop rapidly at the post high school level. The junior college

[8] *Biennial Reports of the State Superintendent of Public Instruction*, State Department of Education, Tallahassee, Florida.
[9] Division of Research, *Florida High School Graduates—1962*, Florida State Department of Education, (July, 1963), p. 4.
[10] *The Estimated Cost of the Florida Minimum Foundation Program—1963-65*, State Department of Education, Tallahassee, Florida, (October, 1962), p. 4.

TABLE 5

VOCATIONAL AND TECHNICAL INSTRUCTION UNITS ALLOCATED TO FLORIDA LOCAL SCHOOL SYSTEMS, 1960-65

Year	Number of Basic Instruction Units	Number and Percentage by Major Service Area										Ratio of Vocational Units to Total Basic Instruction Units
		Agriculture		Business Distribution DCT		Home Economics		Trades and Industries		All Services		
		Number	%	Number	%	Number	%	Number	%	Number	%	
1959-60	30,362	226.08	0.74	272.21	0.90	440.00	1.45	520.10	1.71	1458.39	4.8	1 : 20.8
1960-61	32,391	231.15	0.71	267.04	0.83	475.80	1.47	520.10	1.61	1494.09	4.6	1 : 21.7
1961-62	34,580	237.08	0.69	288.00	0.83	531.80	1.54	560.00	1.62	1616.88	4.7	1 : 21.4
1962-63	36,333	241.09	0.66	288.00	0.79	577.00	1.59	560.00	1.54	1666.09	4.6	1 : 21.8
1963-64	38,196	255.57	0.67	339.00	0.89	645.90	1.69	650.00	1.70	1880.47	4.9	1 : 20.3
1964-65E	40,430	259.00E	0.64	339.00E	0.84	697.00E	1.72	700.00E	1.73	2005.00E	5.0	1 : 20.2

SOURCE: Records and Reports of the Florida State Department of Education.

and institutions other than the high schools will assume total responsibility for technical education.

7. Annual school dropouts are estimated at 3.53 per cent of the students enrolled in grades 7-12. Because of relatively few school leavers before grade 7, the rate is approximately 1.49 per cent of those enrolled in grades 1-12.[11] No significant change is expected in this factor.

8. The high school student population will increase about 39 per cent during the period, 1963-1969.[12]

9. No change is assumed in the value of vocational units, and no inflation is considered.

Data presented in Table 5 show the number of vocational units allotted to local school systems in the state. It also shows the percentage that each county's units bears to the total number of basic instructional units. While the number of units for all services gradually increased during the period shown, the percentage that the total number of vocational units is of the total number of basic instructional units remained relatively constant. The largest variation between the ratio for the lowest and highest years was four-tenths of one per cent.

The number of units for vocational agriculture gradually increased from 1959-60 as shown in Table 5. However, the relative percentage that the number of agriculture units were allocated of the total basic units declined about one-tenth of one per cent for the six-year period.

The number of units for business education, distributive occupations and diversified cooperative training also show a gradual increase for this period. The percentage relationship of these units to basic instruction units declined by 0.06 of one per cent.

Data dealing with the units for home economics show the opposite trend. The number of units increased by more than 58 per cent, and the percentage relationship of the number of units to the total number of basic instruction units increased by 0.27 of one per cent.

Unit increases for the trades and industries amounted to approximately 35 per cent. The percentage relationship of these units to total basic units increased by 0.02 per cent, although this relationship fluctuated as much as 0.19 per cent during the period under study.

Table 5 also includes data showing the ratio of vocational and technical education units to total basic instructional units. It is significant to note that this ratio has varied only 1.6 points during the 1959-60 to 1964-65 period. The ratio has ranged from 20.2 : 1 to 21.8 : 1, basic instructional units to vocational units, respectively. This appears to be a relatively constant relationship.

Data presented in Table 6 deal with state and local expenditures per unit for vocational and technical education. Expenditures in the 1960-62 biennium ranged from a low of $5159 per unit for trades and industries to $6025 per unit for business education, DCT, and distributive education. The average expenditure for all major services during the biennium was $5411 per unit.

During the 1960-62 biennium, the state's share

[11] Based on an unpublished report prepared by the Division of Research, State Department of Education, using enrollment data for 1962-1963.
[12] See Chapter II.

TABLE 6

STATE AND TOTAL EXPENDITURES PER INSTRUCTION UNIT FOR VOCATIONAL AND TECHNICAL EDUCATION IN FLORIDA — 1960–1962 BIENNIUM

Major Service Area	Average Number Instruction Units a Year [1]	Total State Expenditures for Biennium [2]	Average Biennial Expenditure per Instruction Unit	Average Annual State Expenditure per Instruction Unit	Total Expenditures for Biennium [2]	State's Percentage of Total Expenditures
Agriculture	234.12	$2,679,796.00	$11,446	$5,723	$3,461,290.02	77.40
Business Education, DCT and Distribution	277.52	3,344,109.68 [3]	12,050	6,025	3,906,030.59 [3]	85.61
Home Economics	503.80	5,198,524.61	10,319	5,159	6,497,259.31	80.01
Trades and Industry	540.05	5,610,833.90	10,389	5,195	8,274,980.83	67.80
All Services	1555.49	$16,833,264.19	$10,822	$5,411	$22,139,560.75	76.00

SOURCE: [1] Records of the State Department of Education, Tallahassee, Florida.
[2] HEW, *Digest of Annual Reports of State Boards for Vocational Education*, 1961 and 1962.
[3] *Biennial Report of the State Superintendent of Public Instruction*, State Department of Education, Tallahassee, Florida.

TABLE 7

PROJECTED NUMBER OF BASIC AND VOCATIONAL INSTRUCTION UNITS NEEDED BY FLORIDA SCHOOL SYSTEMS — 1964–70

Year	ADA for Previous Year [1]	Average Number of Pupils Per Unit	Number of Basic Units	Number of Vocational Units	
				1 : 20.2	1 : 10
1964–65	1,076,876E	26.83	40,133E	1987	4013
1965–66	1,123,299E	26.83	41,867	2073	4187
1966–67	1,163,113E	26.83	43,351	2146	4335
1967–68	1,207,304E	26.83	44,998	2228	4500
1968–69	1,250,484E	26.83	46,608	2307	4661
1969–70	1,293,484 [2]	26.83	48,210	2387	4821
1970–71	1,364,117 [3]	26.83	50,843	2517	5084

E Based on enrollment estimates of the Division of Research, State Department of Education.
[1] ADA is 86.2 of enrollment (3 year average—1960–61, 1961–62, 1962–63.).
[2] ADA for 1969–70 entry is estimated by adding 43,000 to previous year's estimate. This is the approximate average.
[3] Based on NEA projection with kindergarten enrollments removed, NEA, *loc. cit.*, p. 107.

of the total expenditures for all vocational and technical education services was 76 per cent. The percentages reflecting the state's share for agriculture, business education, DCT and distributive education, and trades and industries were 77.40, 85.61, 80.01 and 67.80, respectively.

Expenditures from all sources during the 1960-62 biennium were $22,139,560.75. The average biennial expenditure per vocational unit was $14,233, while the average annual expenditure from all sources was $7,116 per vocational unit.

Table 7 includes data used to project the estimated number of both basic instruction and vocational units needed annually through the 1970-71 fiscal year. Estimates of average daily attendance are based on enrollment projections made by the Division of Research of the Florida State Department of Education. ADA is computed as 86.2 per cent of the enrollment during the 1960-61, 1961-62 and the 1962-63 school years.

The method used in computing the number of basic instruction units was to divide the projected ADA for the year preceding by 26.83. The divisor, 26.83, is the average number of pupils represented by one unit. This average was used by the State Department of Education in estimating the number of units needed for the 1963-65 biennium.[13]

Two different bases were used in projecting the number of vocational units needed by 1970-71. Projection A utilizes a ratio of vocational units to basic instructional units derived from the data used to estimate the needs of the Minimum Foundation Program for the 1963-65 biennium.[14] The ratio derived was one vocational unit to 20.2 basic instructional units.

Projection B assumes that enough vocational units will be available to provide occupational education services to all high school students in grades 9-12 who need and should profit from these services. If approximately fifty per cent of the students in grades 9-12 are to be served by some type of occupational education, a ratio of one

[13] *Estimated Cost of the Florida Minimum Foundation Program*, 1963-65, State Department of Education, Tallahassee, Florida.
[14] *Ibid.*

TABLE 8

PROJECTION OF EXPENDITURES FOR VOCATIONAL AND TECHNICAL EDUCATION IN FLORIDA FROM STATE AND ALL SOURCES — 1964–70

Year	Number of Vocational Instruction Units 1 : 20.2 Ratio	1 : 10 Ratio	State Expenditures: Per Instruction Unit[1] (1962 Dollars)	State Expenditures: Amount Based on 1 : 20.2 Ratio Projection A	State Expenditures: Amount Based on 1 : 10 Ratio Projection B	Total Expenditures—All Sources: Per Instruction Unit[1] (1962 Dollars)	Total Expenditures—All Sources: Amount Based on 1 : 20.2 Ratio Projection A	Total Expenditures—All Sources: Amount Based on 1 : 10 Ratio Projection B
1964–65.....	1987	4013	$5411	$10,751,657	$21,714,343	$7116	$14,139,492	$28,556,508
1965–66.....	2073	4187	5411	11,217,003	22,655,857	7116	14,730,120	29,794,692
1966–67.....	2146	4335	5411	11,612,006	23,456,685	7116	15,270,936	30,847,860
1967–68.....	2228	4500	5411	12,055,708	24,349,500	7116	15,854,448	32,022,000
1968–69.....	2307	4661	5411	12,483,177	25,220,671	7116	16,416,612	33,167,676
1969–70.....	2387	4821	5411	12,916,057	26,086,431	7116	16,985,892	34,306,236
1970–71.....	2517	5084	5411	13,619,487	27,509,524	7116	17,910,972	36,177,744

[1] No corrections for changes in the value of the dollar due to inflation or other causes.

vocational unit to ten basic instructional units will be needed. This ratio is simply derived. If occupational education services are currently serving approximately half the number that should be served, then twice the number of vocational units will be needed to serve twice the number of people. This increases the ratio of units from 1 : 20.2 to approximately 1 : 10.

Table 8 includes the projections of expenditures, excluding capital outlay, for each fiscal year through 1970-71 for occupational education at the high school and adult levels. The projections indicate that state expenditures, excluding capital outlay, for the 1969-71 biennium should be approximately $26,535,544 assuming no change in the ratio of vocational units to basic instructional units, no increase in the value of vocational units and no general inflation. The projected figure is approximately ten million dollars more than state expenditures for vocational education during the 1960-62 biennium. Using the same set of assumptions, total expenditures, excluding capital outlay, from all sources including state, local and federal, should approximate $34,896,864, which is approximately twelve million dollars more than expenditures from these sources during the 1960-62 biennium.

Data presented in Table 8 also show the estimated expenditures should a program of occupational education be provided to serve more adequately the needs of Florida. State expenditures based on Projection B will approximate 53.5 million dollars, which is approximately thirty-seven million dollars more than state expenditures for the 1960-62 biennium. Excluding capital outlay, total expenditures from all sources should approximate 70.5 million dollars for the 1969-71 biennium.

Projection of Expenditures for Community Junior College Occupational Programs 1964 to 1970

No attempt has been made to analyze the expenditures for occupational programs offered in the community junior college. In the first place, there is no reliable way to separate costs of occupational course offerings from other expenditures. In the second place, at least six junior colleges utilize vocational units allocated to the school systems for high school and adult programs. Expenditures for all high school and adult vocational units are included in the analysis of the regular vocational and technical programs discussed in a foregoing section of this chapter.

Projections of future needs in community junior colleges are based on the premise that a constant relationship exists between the need for non-credit occupational courses taught in community junior colleges and the number of students in ADA attending junior colleges in the state. A rationale has been developed, based on very limited data, to estimate the increase in expenditures needed to support non-credit courses in occupational education in the junior colleges of the state.

Rationale for Projections of Expenditures

Fall enrollments for 1963-64 in Florida junior colleges totaled 50,051 students. Approximately forty per cent of these students were enrolled in either the occupational or non-credit courses offered by the junior colleges. Twenty-five per cent of these students were enrolled in the seventy occupational fields available in the junior college program. Reports from junior colleges indicate that student enrollment in non-credit courses

averages about one ADA for each three students enrolled. Approximately seven per cent of the total number of students enrolled are in courses of the non-credit type. Therefore, one non-credit instructional unit should be provided for approximately each fifteen regular junior college units in order to strengthen and expand the occupational programs offered in the junior college.

Projected Expenditures for Non-Credit Courses in Junior Colleges

Data presented in Table 9 project expenditures for non-credit courses in junior colleges from 1965-66 through 1970-71. ADA figures used are based on projections of ADA used by the Research Division of the State Department of Education to estimate the cost of the Minimum Foundation Program for Junior Colleges for the 1965-67 biennium.[15] Basic instructional units are derived on the assumption that the ADA per basic unit will approximate that used for the needs for the 1966-67 fiscal year. The number of non-credit units is derived by using the ratio of one non-credit unit to fifteen basic units. Total expenditures were estimated by multiplying the number of non-credit units by the total estimated annual costs for basic junior college units, including the average salary costs per basic instructional unit and the costs for other current expense.

TABLE 9

ESTIMATE OF EXPENDITURES FOR VOCATIONAL TECHNICAL EDUCATION NON-CREDIT UNITS IN JUNIOR COLLEGES — 1965-71 [1]

Year	ADA of Previous Year	Number of Basic Junior College Units	ADA Per Basic Unit	Estimated Number of Non-Credit Units (1 : 15)	Estimated Expenditures for Non-Credit Units (Total Costs)
1959–60	6,198	528	11.7	....	.....
1960–61	8,052	764	10.5	....	.....
1961–62	11,955	1,117	10.7	....	.....
1962–63	16,310	1,315	12.4	....	.....
1963–64	21,380	1,616	13.2	....	.....
1964–65	28,987	2,172	13.4	....	.....
1965–66	40,667 [1]	2,889	14.1	193	1,351,000
1966–67	52,273 [1]	3,677	14.2	245	1,715,000
1967–68	60,114 [2]	4,233	14.2	282	1,974,000
1968–69	69,165 [2]	4,871	14.2	325	2,275,000
1969–70	79,540 [2]	5,601	14.2	373	2,611,000
1970–71	91,471 [2]	6,442	14.2	430	3,010,000

[1] Estimates used are those included in the Florida State Department of Education report, "1965 Legislative Budget Request."
[2] ADA estimates for 1968 to 1970 are the result of adding 15 percent of the previous years ADA to the ADA for each succeeding year.

[15] Division of Research, "Estimated Cost of the Florida Minimum Foundation Program for Public Junior Colleges, 1963-65," State Department of Education, Tallahassee, Florida, 1962.

Summary and Conclusions

Preceding chapters have demonstrated the inadequacy of the state's program and facilities for vocational and technical education, both in relation to the needs of an increasing population and the developing business and industrial requirements for trained manpower in highly skilled technical occupations. An expanded program to meet such needs will cost more money. New fiscal policies and procedures are also needed to guide the expansion of the program and to control the expenditure of the necessary additional funds.

Findings in this Chapter support the contention that Florida can afford to spend more money for needed educational services than it has been spending. It can provide the necessary funds and at the same time neither endanger its fiscal structure nor cause undue hardships on its people. This opinion is supported by the fact that Florida has more ability to support public education than any of the states in the Southeast and it is making less effort than most of them. If Florida were to make the same effort to support its schools as Louisiana is making, the per pupil expenditure would approximate that of California, which ranked seventh in the nation in the 1963-64 school year.

Florida county school systems vary widely in their ability to support education. Sparsely populated rural counties are the least able to spend money for education, yet many of them spend proportionately more money than do counties which are more financially able. One difficulty appears to be that the sparsely populated rural counties have too many small schools. This causes them to spend their money inefficiently and thereby to get less education for each dollar spent.

Many of these rural counties are making a greater effort than are some of the more populous and wealthy counties. However, as a group, most of the rural counties are making an effort in line with their ability to pay. One significant point stands out with regard to their willingness to pay for education—the data suggest that each county may be able to support a more nearly adequate program than is now being expected of it.

Florida's Minimum Foundation Program makes provision for the support of vocational, technical and related education. The basic unit for financial support is the "vocational unit" in the regular program. Basic instructional units allocated to junior colleges are also used to support occupa-

tional programs. The data indicate that an inadequate number of units has been allocated to support an effective program at either the high school or the junior college level. The current method used to allocate units seems to lend support to inequities as to the number of units allocated to the several counties of the state. This results in an uneven distribution of units among the major vocational services in relation to actual need. A system of allocation of units for high school and junior college programs should be devised which is based upon objective factors and not upon arbitrary decisions of the State Department of Education staff members. Furthermore, the freeze of units by the Legislature has impeded the development of programs for vocational and technical education during times when such programs should be expanding and increasing in number.

Funds for the support of vocational and technical education are derived from local, state and federal sources and from student fees. Approximately three-fourths of all funds spent for the support of vocational education come from state sources. Federal funds amount to approximately five to seven per cent of total expenditures for vocational education each year. The amount of federal funds will increase, but the state must match these funds on a dollar-for-dollar basis. Consequently state funds will also need to increase.

Expenditures for vocational and technical education, including home economics and agriculture, increased 63.8 per cent during the period from 1957-58 to 1962-63. State and local expenditures increased by 56.9 per cent for the same period while federal funds increased 130.2 per cent. The greatest increase in federal funds was for trade and industrial education, which amounted to 315.2 per cent.

Samples of opinions from local directors of vocational education, school superintendents, junior college presidents and others point to the need for increasing the value of vocational and technical instructional units. Evidence tends to support the contention that it costs more to operate a vocational and technical education program than it costs to operate the regular academic program.

Because of the cost of programs and the lack of qualified personnel readily available to plan and implement new programs of vocational and technical education, some form of grants-in-aid may be desirable in order to encourage the development of new programs in the appropriate institutions of the state.

In conclusion, the data here presented and their analysis show the need for expanding and improving the existing programs in vocational and technical education if the needs of the state are to be fulfilled. Estimates indicate that funds would need to be increased by approximately $1,000,000 each year even to maintain the status quo. If an adequate program is to be maintained, operating expenditures for vocational and technical education should be increased by more than one hundred per cent immediately, with a built-in increase of $1,000,000 per year to maintain the program at an acceptable level.

New policies and methods for allocating vocational and technical education funds must be developed so that an equitable distribution of funds can be made and that the needs of all students wherever they live can be met.

Chapter 6

Organization and Administration

THE ORGANIZATION and administration of vocational, technical and general adult education in Florida follows in most respects the patterns that have developed in the other states. Although there have been minor adjustments from time to time to conform with changing conditions, the general pattern has remained essentially unchanged.

In view of factors which affect both the nature and the scope of the expanding program of this phase of education, and its working relationships with the total program of public education, present and projected plans for organization and administration call for careful review at this time. The upward extension of occupational education to include the community junior college, and the necessity for closer liaison between the academic and occupational components of the total educational program are of particular importance in this respect.

The very nature of the organization for the administration and supervision of vocational, technical and general adult education has tended to contribute to the widely-held concept that occupational education must be something separate and apart from the main stream of education. Historically, this concept is easy to understand. From the beginning this important aspect of education was looked upon with a measure of condescension by both laymen and educators. Too often have occupational courses been regarded as a means of taking care of the non-academic students, the failures or the trouble-makers. It was deemed necessary in the beginning to reflect this distinction in the administrative organization at all levels. Hence, there are three official boards at the state level that are concerned with the field of vocational, technical and general adult education: The State Board of Education, the State Board for Vocational Education and the State Junior College Board.

Functions and Relationships of Separate Boards

The State Board of Education, a constitutional board, is the agency of the state which is responsible for the total program of public education. This board performs its functions mainly through the State Department of Education. The Department, through its several Divisions, endeavors to maintain uniform policies throughout all phases of public education in Florida.

Each of the other state-wide boards has been established by statute to operate within a limited, specific field of responsibility. Each operates within the framework of a Division of the State Department of Education.

The Division of Vocational, Technical and Adult Education is one of eight coordinate divisions of the State Department of Education. This Division, through its Director, is directly responsible to the State Superintendent of Public Instruction and through him to the State Board for Vocational Education.

Each of the other seven divisions of the State Department of Education is also directly responsible to the State Superintendent and through him to the State Board of Education. And, though the membership of the State Board of Education and the State Board for Vocational Education is composed of the same individuals, each board operates under its own laws, policies, rules and regulations.

The Division of Community Junior Colleges works through the State Junior College Board. This body is responsible to the State Board of Education.

The Division of Vocational, Technical and Adult Education is concerned with the develop-

ment and operation of programs of instruction of various types, most of which operate in close relation with the county school systems. It is not concerned with the over-all development of any particular high school or other education unit.

On the other hand, the Division of Community Junior Colleges is primarily concerned with the over-all development of a number of institutions in which vocational and technical education is but one part of the total educational program.

These diversities of purpose, in part, grow out of legislation which defines the purpose and structure of each board. For example, Chapter 229.8(9), Florida Statutes, requires that the State Board of Education constitute the State Board for Vocational Education for the purpose of maintaining a state-wide program of vocational and technical education in accordance with standards to be established by that Board. This arrangement is in conformity with the requirements of various federal enactments that relate to vocational, technical and general adult education.

It would appear, since the State Board of Education and the State Board for Vocational Education are composed of the same personnel, that the complete integration of vocational and technical education with the other components of the total program of public education could be assumed as a matter of course. However, this has not always been the case. The academic elements of the school program on the one hand, and the vocational and technical elements on the other, have not generally been coordinated either at the supervisory or the operational level.

It should also be pointed out that similar lack of coordination is found in a number of junior colleges. However, Chapter 228.14(4), Florida Statutes, explicitly defines the elements that may be included in the curriculum of the public junior college. They are as follows: (1) a program of general education consisting of classical and scientific courses in the thirteenth and fourteenth grades, parallel to that of the first and second years of work at a senior four-year state institution of higher learning; (2) terminal courses of a technical and vocational nature; and (3) courses for adults. Even so, the inclusion of vocational and technical work is permissive.

Also, when the act creating the first nation-wide pattern for vocational education was passed in 1917, it was generally understood and accepted that the obligation of the state to provide free public education for all of its citizens extended no farther than graduation from high school. This position was supported by the fact that at that time high school graduation which included vocational education in a particular field was ample preparation for many young people to enter directly into gainful employment. More recently, however, especially since the close of World War II, the level of expertness required for initial employment has been graduated upward, thus requiring a longer period of education before employment. In recent times, therefore, the necessity for including larger programs for vocational and technical education at the junior college level has developed with great force.

This upward extension of the necessary level of vocational and technical education tends to require re-thinking and reshaping of the organizational structure which has been so long the accepted pattern.

Historically, the State Board for Vocational Education has not been given authority for developing its various programs above the level of the high school. This is accounted for by the fact that the junior college as a part of the state's program of public education is a very recent development.

Coordination of Work of Divisions

In theory, at least, the State Department of Education, through the interaction of its several coordinate Divisions, provides for the orderly development of all aspects of public education. Because of the specialized interest of each Division in the particular educational area for which it is responsible, the essential unity of all aspects of the total program is difficult to maintain.

With respect to vocational, technical education, every Division in the State Department,[1] as well as the Division of Vocational, Technical and Adult Education, has its full measure of responsibility for occupational studies. Such responsibility, for the most part, is somewhat tenuous so far as most of the divisions are concerned.

Any lack of coordination that exists appears to be due primarily to the fact that the heads of the several Divisions, probably for lack of time, do not participate effectively in the development of over-all policies and procedures. Although relationships among the personnel of the Divisions are cordial and friendly, the facts are that coordination is difficult to achieve and is limited in scope.

[1] Administration, Community College, Finance, Instructional Services, Research, Teacher Education, Certification and Accreditation, Vocational Rehabilitation.

Functions of the Division of Instructional Services

The major function of the Division of Instructional Services is to promote leadership in the improvement of the instructional program of the public schools of Florida in all areas except vocational subjects and adult education. The vocational, technical, and adult-education instructional programs are the responsibility of the Division of Vocational, Technical, and Adult Education.

However, occupational preparation is conceived to be more than obtaining proficiency in a job. If the academic and the vocational education teachers at the high school level are to function in unison and cooperatively, the leadership at the state level must be guided by the foregoing concept in organizing and planning for curriculum development. This means that the Director of the Division of Instructional Services and the Director of the Division of Vocational, Technical, and Adult Education should make certain that the services performed by the staff of each division are so closely coordinated that both the vocational and academic components of the educational program are treated as essential parts of an integrated whole.

However, there is lack of evidence that the Division of Instructional Services has any part in the coordination of the work of occupational education with the total program in the schools. As a matter of fact this Division has little precise information regarding the details of the work of vocational, technical and general adult education. What is true in this respect at the State level is also true in many cases at the county and local level.

It has been assumed by the State Department of Education that the desired unity of purpose and coordination of action could be achieved by means of voluntary staff conferences at the divisional level. Except for the limitations of time indicated above, it is conceivable that the desired coordinate action could be accomplished.

It is strongly recommended that coordinate action among the several divisions be made a matter of first priority until such time as substantial progress has been achieved in this direction.

Should voluntary action at the divisional level fail to be effective, then appropriate administrative action would be indicated. The alternative would seem to be the provision of a coordinating office above the divisional level with primary responsibility for such coordination. Coordinate action at the state level will tend to make for essential unity at the real points of application, the county school systems.

Supervision

The administration and supervision of vocational, technical and general adult education are spelled out in minute detail in a State Plan.[2] This State Plan requires approval by the State Board for Vocational Education and also the United States Office of Education.

It has been assumed by those primarily concerned with occupational education that the supervisory program that has been developed through the years by the Division of Vocational, Technical and Adult Education can also extend its services into the various specialized fields in the junior colleges. This appears to be a feasible arrangement, provided that the supervisory personnel are prepared to serve the junior colleges in accordance with the purposes and structure of those institutions, and that the junior colleges maintain the conditions under which the services can be rendered effectively.

Serious attempts are being made to provide supervisory services in accordance with the concept stated above. Thus, the Division of Vocational, Technical and Adult Education maintains a full staff of supervisory personnel whereas the Division of Community Junior Colleges provides no such supervisory staff. It appears that some of the supervisory personnel are able to make the desired adaptation here referred to. However, there is some indication that others have not been able to achieve such adaptation.

Recent action by the Florida Vocational Association expressed strong preference for making the separate Area Vocational School the prevailing pattern and, in so doing indicated, a negative point of view regarding the placement of vocational, technical and adult education in the junior college.

In the interest of economy, as well as educational effectiveness, the coordination of the supervisory activities suggested above should be continued. It is the opinion of the Study Staff that special attention should be given to this very important aspect of the state's overall unified program of Vocational, Technical and Adult Education. It is scarcely conceivable that the plan cannot be made to work. However, it should

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[2] *State Plan for the Improvement of Vocational, Technical, and Related Educational Services.*

be kept in mind that any failure to make the present plan work satisfactorily would call for administrative adjustments including supervisory staff assigned to the junior college level.

Even though there may be some apparent conflict due to the differences in legislation referred to later, it does not appear that special legislation covering this problem is indicated.

The projected State Plan makes provision for "Assistant Directors (State Supervisors) and Area or Assistant Supervisors or Consultants of the Respective Vocational and Technical Education Services."[3] Among their other duties these individuals are charged with "assisting county superintendents, local directors, junior college directors of vocational and/or technical education, and other vocational education personnel in establishing and improving local and junior college programs."

Supervisory and consultant services require numerous specialists in the various types of occupational programs that are included in the state-wide program. These specialists, together with their specific duties and responsibilities in the program area they represent, are indicated in the State Plan.[4] It should be especially noted that the supervisory and consultant services are available at all levels of vocational and technical education—in the high schools, the community junior colleges, separate vocational and technical schools and adult classes.

This type of organization of the professional staff is intended to make it possible to provide essential unity of program for the individual student so that he may proceed from one grade level to another—high school, junior college or both, without any artificial break in the continuity of his program.

Staff Organization

The organizational structure of the two Divisions of the State Department of Education that have primary responsibility for vocational, technical and related educational services is set forth in their organizational charts.

Since the professional supervisory and consultant service personnel serve all areas, including the community junior colleges, the Division of Community Junior Colleges does not require the inclusion of such personnel within its organization. Thus, the organization of this Division requires relatively few professional personnel. The organization of the Division of Community Junior Colleges is shown by Chart 1.

The phenomenal growth of the number and size of community junior colleges during recent years would seem to indicate the need for providing certain additional professional personnel in this Division. This need is especially pressing in view of the imminent great expansion of vocational-technical programs in the community junior colleges.

The special need at this time is for individuals who can provide effective liaison and coordination between the community junior colleges and the several program area specialists in the Division of Vocational, Technical and Related Educational Services and can assist junior colleges in dealing with problems involving accreditation. Furthermore, there should be sufficient personnel to carry forward the research services that are essential to the proper operation of a statewide program in the community junior colleges.

Inasmuch as the responsibilities of the Division of Vocational, Technical and Related Educational Services cover a much broader range, and particularly since the professional supervisory and consultant services are all included in this Division, the organizational structure is necessarily much larger and more complex. This organization is set forth in minute detail in the *State Plan,* previously referred to, and is shown in outline in Chart 2.

In considering the projected expansion of the various educational programs in this important area, it seems clear that the demands upon this Division will be greatly increased. Enrollments in many program areas will be much larger. Many programs will be extended in depth. Coordination of the work in many types of situations will be in greater demand.

The Survey Staff has carefully studied the recommended additions to the professional staff in relation to the anticipated needs. It is their opinion that the need for these additions is real, and it is imperative. And, while it may not be feasible to add all of the suggested individuals at once, the entire number should be available within the next two to four years.

Supervision at the County Level

At the county and local levels there are directors with specific responsibility for the supervision of vocational education. In each of the larger counties, (50,000 population or over) an

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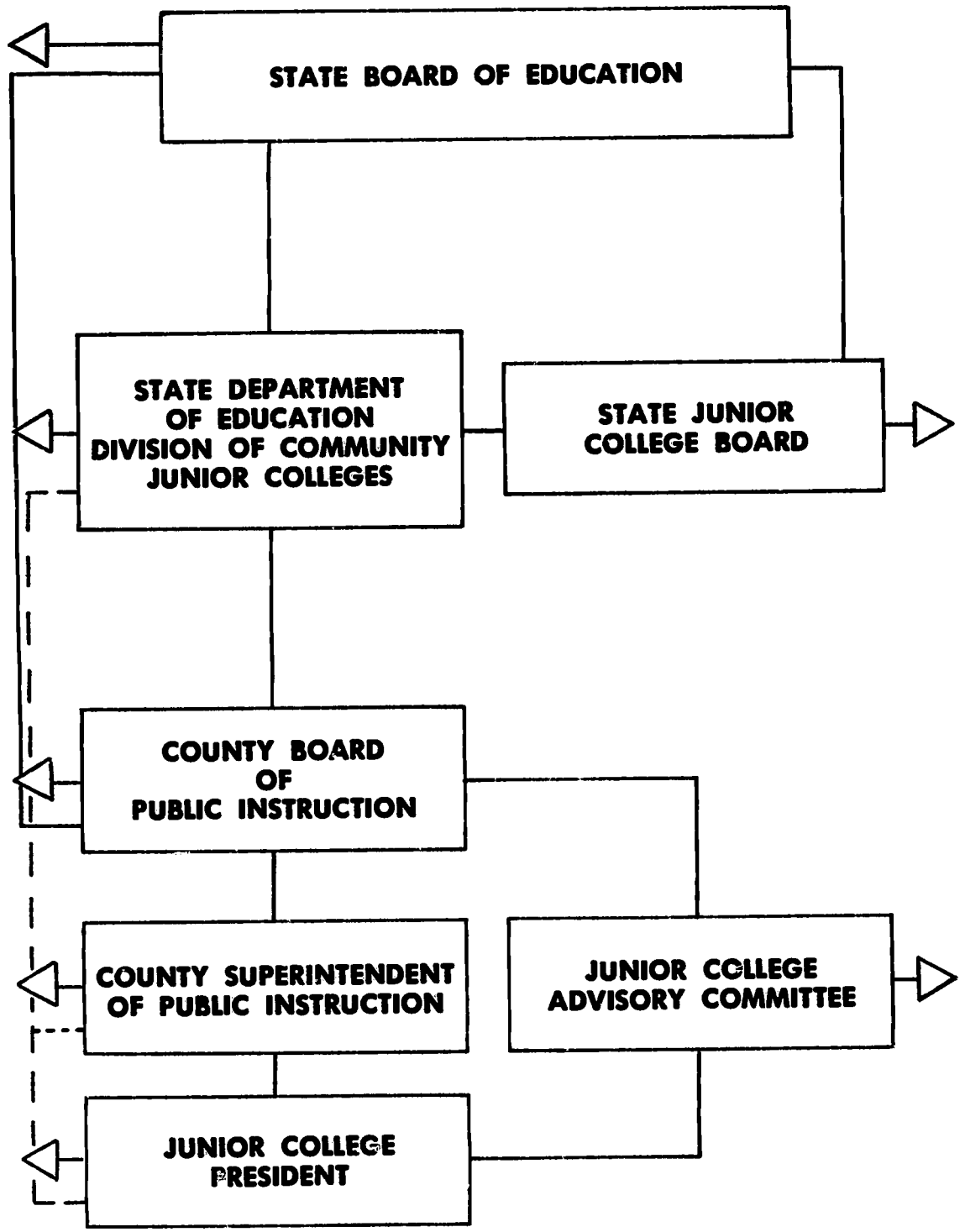
[3] *Ibid.*, Item 7.12, p. 9.
[4] *Ibid.*, Item a, p. 7.

CHART 1
JUNIOR COLLEGE ORGANIZATION IN FLORIDA



Governor, Chairman; Superintendent of Public Instruction, Secretary; Attorney General; Secretary of State; State Treasurer. Responsible for the development and general supervisory control of public education, kindergarten through university system.

State Superintendent acts as Executive Officer to the State Board. State Department staff serves in an administrative and supervisory position under the direction of the State Board of Education. The Department assists the Superintendent in providing professional leadership and guidance and in carrying out policy procedures and duties authorized by law or by the State Board of Education. The Division of Community Junior Colleges develops plans and recommends policies to the State Junior College Board and serves as its professional staff.

Five members. County Superintendent of Public Instruction, Secretary. Responsible for organization and control over all public schools in county. Develops policies governing operation and improvement of junior colleges in county.

Serves as Executive Officer to County Board. Responsible for efficient and adequate operation of school system in county. Recommends policies, standards, etc., to County Board.

Serves as ex-officio secretary to Junior College Advisory Committee. Responsible for internal operation of the junior college as delegated by County Board and County Superintendent.

Seven members appointed by Governor for four year terms — responsible for establishment of statewide policy regarding operation of public junior colleges, articulation and coordination with other institutions subject to approval of State Board of Education. Recommends establishment of new junior colleges. Reviews capital outlay requests, etc. Staff services are provided by Division of Community Junior Colleges, the Director of which serves as Executive Secretary of the Board.

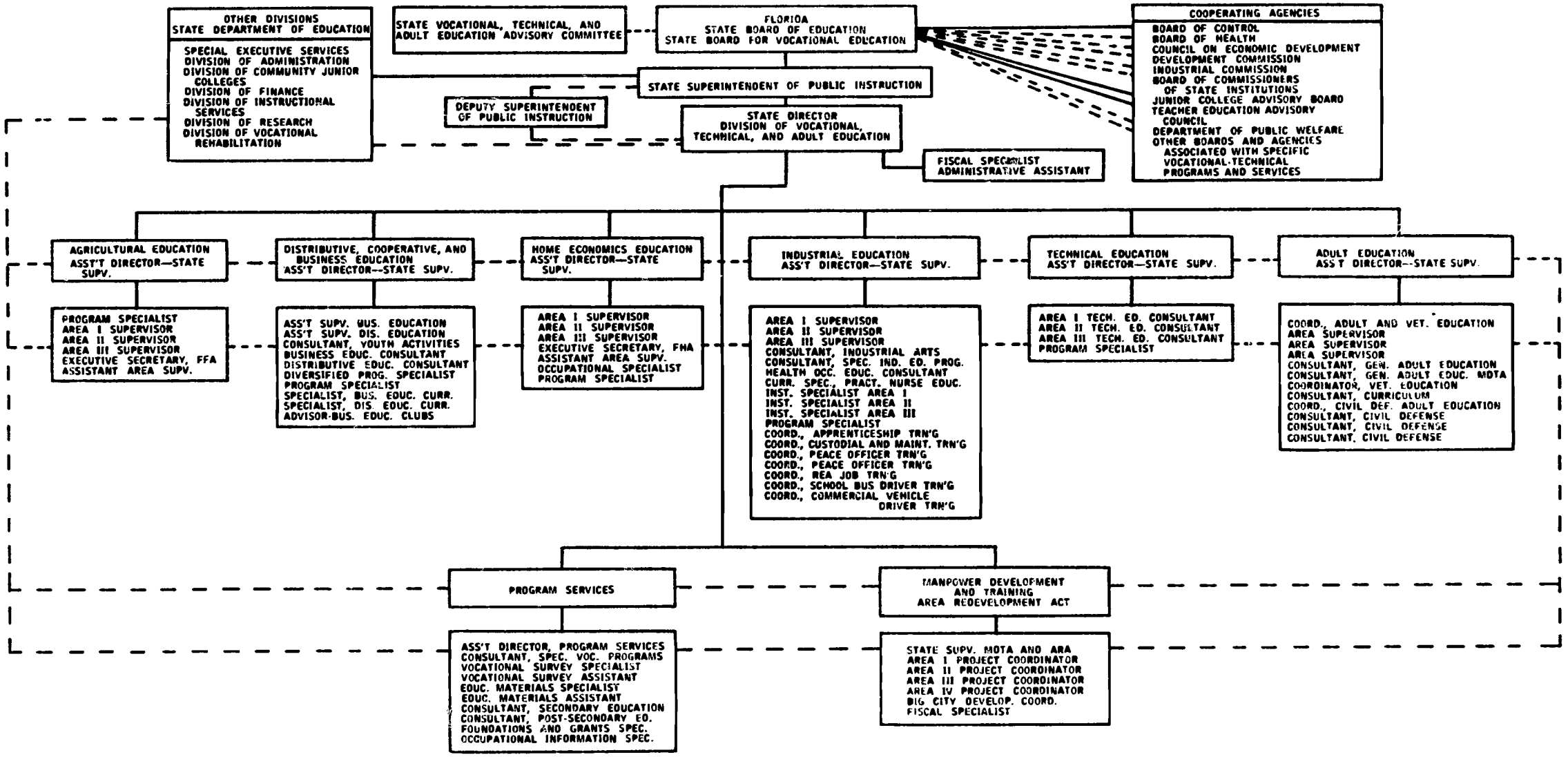
Five members (one county) with not more than nine members (two or more counties supporting college). Members nominated by County Board and appointed by State Board of Education. Works with president to develop policies for operation and development of junior colleges. Approves budgets—makes recommendations to County Board relating to policies at junior college.

CHART 2

DIVISION OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION

STATE DEPARTMENT OF EDUCATION

TALLAHASSEE, FLORIDA



assistant superintendent or local director of vocational education administers the county program of vocational and technical education under the county superintendent and the county board of public instruction. In such counties where eight or more instructional units are allocated in a given vocational area (service), the county board of public instruction is empowered to appoint an additional supervisor with competency in that particular area.

In the smaller counties (less than 50,000 population) in which fewer than eight instructional units are allocated for vocational education, the county board may appoint a local director, a supervisor or coordinator of vocational education, or it may designate one person in each vocational area (service) as a head teacher to assist the superintendent in the administration of each individual program.

Special administrative relationships with junior colleges have been developed in order that vocational and technical education may be properly coordinated. In those junior colleges which provide vocational and technical education such programs are administered by a director (or dean) of vocational and technical education. This officer is responsible for inter-service and special programs in his institution.

In those counties in which junior colleges are situated the local director for vocational and technical education is responsible to the county superintendent for all aspects of vocational and technical education except that which is administered by the junior college. However, the local director is responsible for coordinating inter-service and special vocational education programs in the county program and for maintaining liaison between the local employment service, the county supervisors of the various vocational services and vocational guidance personnel in the secondary schools and junior colleges.

The Area Vocational Education School

Because of special emphasis in recent federal and state legislation, the Area Vocational Education School requires special consideration at this time. It is apparent that in the minds of some this is a new type of educational institution that is separate and apart from existing institutions. However, this is not the case. The Vocational Education Act of 1963 (Public Law 88-210) provides a detailed definition as follows:

"(2) The term 'area vocational education school' means—

(A) a specialized high school used exclusively or principally for the provision of vocational education to persons who are available for full-time study in preparation for entering the labor market, or

(B) the department of a high school exclusively or principally used for providing vocational education in no less than five different occupational fields to persons who are available for full-time study in preparation for entering the labor market, or

(C) a technical or vocational school used exclusively or principally for the provision of vocational education to persons who have completed or left high school and who are available for full-time study in preparation for entering the labor market, or

(D) the department or division of a junior college or community college or university which provides vocational education in no less than five different occupational fields, under the supervision of the State Board, leading to immediate employment but not leading to a baccalaureate degree, if it is available to all residents of the State or an area of the State designated and approved by the State Board, and if, in the case of a school, department, or division described in (C) or (D), it admits as regular students both persons who have completed high school and persons who have left high school."[9]

Thus it will be seen that a prime consideration of the Law is the provision for the use of existing types of institutions to which facilities may be added in order to strengthen the program of vocational, technical and general adult education in a given attendance area. This provision makes for economy since it assumes that a given facility may serve the needs of students of various levels of educational achievement. It also provides against unnecessary duplication of such facilities.

Provision is also made for the establishment and development of new and separate institutions in areas where the use of existing institutions and facilities is not feasible. The determination of geographic areas to be served and the type of institution to be designated as the Area Vocational Education School call for a definition of conditions to be met and procedures to be followed. A principal purpose of this Study is to present criteria or guide lines which school authorities at both county and state levels may use in determining the location of area schools.

Basic to the consideration of the location of an

area vocational education school, whether designated in an existing school or established as a new and separate unit, are the factors of the size and distribution of the population to be served. Simply stated, this means that there must be within the area a sufficient number of students to justify vocational-technical curricula in "no less than five different occupational fields."

However, in the case of new and separate institutions there must be a potential enrollment large enough to justify a sufficient number of vocational units to provide for a principal, a guidance director and a librarian in addition to the teachers necessary for each vocational area offered.

Our American concept of public education within the reach of all individuals has been interpreted, since the development of school transportation, to mean the provision of school facilities within the county of residence. As a result of our adherence to this concept, some school units are maintained with enrollments so small that the schools are both ineffective and uneconomical. This condition is reflected in the lack of adequate opportunities for vocational-technical education in a considerable number of Florida counties.

In Florida there are fifteen populous counties that currently provide programs of instruction in at least four of the following five major areas of high school vocational-technical education:

1. Trade and Industrial Education
2. Distributive Education
3. Cooperative Education
   (a) Diversified Cooperative Training
   (b) Cooperative Business Education
4. Business Education
5. Technical Education

It should be noted that Home Economics is not included in the above list. This is due to the fact that elsewhere in the Study it is pointed out that Home Economics appears in all of the counties.

In these counties the designation of any unit as an area vocational school does not pose a special problem so far as population is concerned.

In 26 less populous counties of the state there are offerings in two or three of the vocational areas indicated above. In many of these counties there are numerous separate high schools, many of them too small to justify any program of vocational education. In such counties, if the people are to be served, some existing institution, a high school or junior college, must be provided with funds and facilities so that it can offer vocational education in at least five occupational fields along with an adequate academic program. In such case the institution could be designated as an area vocational school.

In 26 of the least populous counties the offering consists of not more than one occupational field, and in some there is no program in any field for vocational-technical education. These counties pose a peculiar problem. In practically all cases each is geographically adjacent to other counties with small population. In some of these areas existing community junior colleges should be able, with proper support, to provide the occupational education needs and, thus, may be properly designated as area vocational-technical schools. In one such area special arrangement may be required because of the sparsity of population in a rather large geographic area. It is thoroughly unrealistic to assume that the answer to the problem of vocational education in such counties is the establishment of a separate area vocational school.

It seems clear, therefore, that if full opportunities for vocational-technical education (at least five curricula) are to be available to all of Florida's young people, a considerable number of multi-county areas must cooperate to that end.

Fortunately, this type of cooperative effort is not without successful precedent. The pattern is being used in a number of other states. In Florida the development of such multi-county units for the support of community junior colleges is noteworthy.

In the light of the provisions of the Vocational Education Act and of the conditions regarding population already referred to, three possible patterns for the location of area vocational-technical schools seem to be feasible:

1. Where a comprehensive high school program is in operation in which the requisite number of vocational programs (five minimum) can be justified and sustained, such school may be designated as an area vocational school. Justification would be in terms of conditions indicated in the criteria stated later in this Study. If more than one county were necessary in order to provide the requisite minimum number of students, agreements among the cooperating counties would be required.
2. Where a community junior college is providing or is prepared to provide a full-scale

program of vocational-technical education, it may be designated as an area vocational school, in which case its vocational-technical facilities would be available to all individuals in the service area of the college.

3. Where neither of the above patterns would be feasible, a special institution could be constructed and organized to offer all vocational-technical education in a county or group of cooperating counties. Such an institution would serve the needs of school youth (Sixteen years and up—eleventh and twelfth grades), as well as out-of-school youth and adults. (This need not preclude a junior college in the area from offering high level technician programs along with their other curricula.)

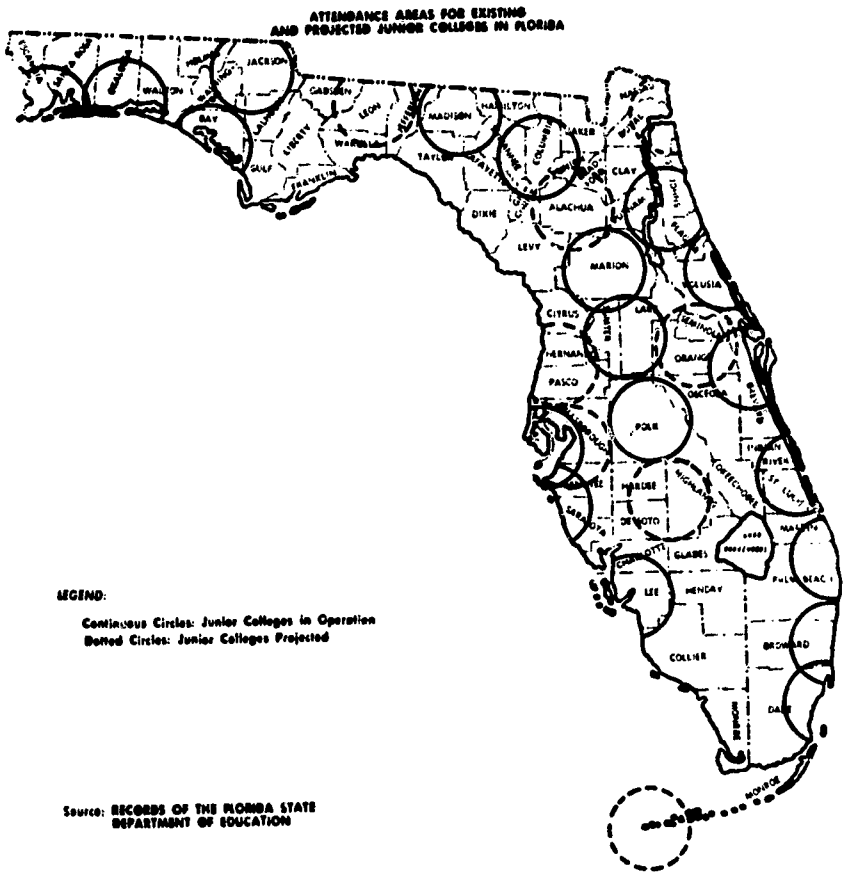
In the more populous counties there is considerable flexibility as to the type of area school that can be used. However, where two or more counties must cooperate in order to provide the requisite number of students for at least five occupational areas, the designation of an existing center as an area school is more complicated and would require detailed study and analysis.

As has been stated, the pattern of multi-county cooperation has been well established so far as community junior colleges are concerned. Wherever such area cooperation exists, the designation of the community junior college or a comprehensive high school as an area vocational education school would seem to offer the best arrangement. Administrative arrangements for cooperative action, including finances and transportation, are already established. Whichever institution might be designated as the area school at such a center, both the high school and the community junior college should have free access to all facilities for vocational technical education, and students from either institution should be served by the other where program requirements make this desirable.

Where areas other than those presently included in multi-county cooperating units desire to form new and different county alignments for purposes of establishing area schools, there is the necessity of proving that the proposed alignment is better for area vocational school purposes than any existing alignment. Since the major portion of the state is now covered by cooperating county groups, any factors that would seem to call for different grouping should be well supported by other than political considerations.

One or two areas in the state may call for special consideration. This is due primarily to sparse population in geographic areas that are so large that considerable numbers of students would be beyond reasonable commuting distance from an area vocational center that could provide a minimum program as set forth in the Vocational Education Act of 1963. These areas lie outside the circles (Map No. 1) which define attendance areas for existing and projected junior colleges. If pupils in such areas are to be provided with the opportunity to secure occupational education, it seems that financial provision must be made for them to be in residence in some center that maintains a program suitable to their needs.

MAP 1
ATTENDANCE AREAS FOR EXISTING AND PROJECTED JUNIOR COLLEGES IN FLORIDA



LEGEND:
Continuous Circles: Junior Colleges in Operation
Dotted Circles: Junior Colleges Projected

Source: RECORDS OF THE FLORIDA STATE DEPARTMENT OF EDUCATION

Legal Questions

The laws, both state and federal, that govern various aspects of vocational, technical and general adult education have been enacted at different times and in relation to a variety of conditions. It is to be expected, therefore, that some apparent conflicts in the application of these laws are to be encountered. Considered in the light of the many social and economic changes that have affected vocational education since 1917, and the numerous state and federal laws that have been enacted during the intervening years, such conflicts do not appear in large numbers.

Within the broad powers of the State Board of

Education, the State Superintendent of Public Instruction and the State Department of Education, many necessary adjustments, administrative and otherwise can be adequately accomplished without further specific legislation.

Attention of the Study Staff has been called to a number of conditions which call for review of existing laws and regulations in which apparent conflicts may exist. Among the areas of interest to which specific attention is given are:

1. The basis for determining the allocation of units
2. Certification requirements for vocational and technical teachers
3. Patterns for staffing
4. Cooperating contiguous counties
5. Transportation
6. Relationship between junior colleges and county vocational-technical programs
7. Methods of financing both current operations and facilities
8. Joint regulations for overlapping areas of responsibility and policies for their administration.

1. *Basis for Determining the Allocation of Units.*—An item of primary concern which is the source of some confusion and apparent inequity arises from the difference in the legal bases for determining and allocating Minimum Foundation Program Units for vocational and technical education on the one hand, and junior college units for non-credit or occupational courses on the other. The first of these provisions is set forth by law, (Florida Statutes, 236.04(5), and in the State Board of Education Regulations, (Chapter 130-6.57). The latter is based only on State Board Regulations (Ch. 130-8.28).

Special attention is given to this problem in Chapter V, which deals with finance. It appears that corrective legislation that would place the allocation of units for vocational and technical education at all levels on a uniform basis would be desirable.

2. *Certification Requirements.*—At the present time the requirements for the certification of teachers of technical education are different for the two levels on which teaching is done in this field. Specifically, the requirements set forth in Chapter 130-4.42 of the Regulations of the State Board of Education control certification for the state program of distributive and technical education, whereas, different requirements for teachers in the same fields in junior colleges are set forth in Chapter 130-8.62(2), (c) and (3).

These regulations should be re-studied and revised so as to provide reasonable uniformity as well as such flexibility as may be needed in order to make it possible to secure and maintain teachers in these and other occupational fields with the desired qualifications.

3. *Patterns for Staffing.*—Provision is made in the State Plan for leadership in county programs of vocational and technical education by professional personnel. The State Plan also spells out the relationships between county and junior college programs, (5.1, p. 6-7). This arrangement appears to meet requirements for the effective coordination of the work at both the county and the junior college levels. As has been stated previously, successful coordination is contingent upon the full acceptance of the concept of a unified program involving both the high school and the junior college. It is suggested, therefore, that special study of this provision should be made in the light of its operation during the year. Such study should provide a basis for any needed refinements of the process.

4. *Cooperating Contiguous Counties.*—Where two or more contiguous counties are cooperating in the support and operation of a community junior college, there is the possibility of conflict regarding the location and support of an area vocational-technical center. For example, a county or counties engaged in such cooperation may desire to establish an area vocational center at some location other than that in which the community junior college is situated. The county may wish to establish the area center within its own boundaries or to establish cooperative relationships with a county or counties not included in the cooperative area of which the county in question is a part. Such action is prohibited by Chapter 230.63(2), which reads as follows:

> "The county boards of any two or more contiguous counties, may, upon first obtaining the approval of the state board, enter into an agreement to organize, establish and operate, or acquire and operate, an area vocational-technical center, under this section; provided, that no county board may enter into such an agreement if it is performing its part of any agreement with another county or counties for the acquisition or operation of a junior college."

There is indication that in some quarters it is believed that the last clause of the above section should be repealed in order that counties might

be free to make cooperative agreements with other counties for the establishment and operation of area vocational and technical centers. This question should be examined carefully in relation to the major factors that relate to the development of area centers.

In the first place, population is an important and critical item. It is not possible for an existing school to qualify for designation as an area vocational education school or for a new area vocational education school to be established in any area in which the potential student body falls below a stated defensible minimum number. This means that any area center must be located with reference to centers of population. The area schools must be within commuting distance of the supporting constituency.

This factor played a major part in the Florida Junior College Survey, which determined the locations of some twenty-seven population areas in which community junior colleges were to be located. Twenty-nine community junior colleges are presently operating in these defined areas, three have been authorized, but not established, three are presently being studied, and two are considered for future action.

The areas that have been designated for this purpose are shown on the accompanying map of Florida. In order to show the extent to which the state is covered by this allocation, a circle is described by a thirty-five mile radius and centered at the location of an existing or planned community junior college. Except for a very few sparsely settled areas, this arrangement covers the entire state.

It is true that a few counties that lie within commuting distance of an existing or proposed junior college area are not cooperating in the support of any junior college. The choice not to cooperate in such support, of course, is within the option of such counties. However, such failure to cooperate with an established center does not constitute sufficient reasons for setting up a different multi-county unit.

Any other alignment of counties for the purpose of establishing area centers would have to include such population totals as to insure the requisite number of students to support an Area Vocational Technical Center in accordance with the terms of the laws and regulations affecting such schools.

It is also true that under the provisions of the law any county that is participating in the operation of a community junior college may proceed to establish an area vocational school within its borders provided that it can meet the criteria for establishing an Area Vocational Education School.

It must be pointed out here that one of the conditions that makes it impossible to provide equal opportunities to all of the people is the large number of high schools that are so small that they cannot maintain a complete program of studies either in academic or occupational fields. The insistence upon maintenance of highly localized schools may tend to satisfy local and community interest, but it clearly cannot maintain an educational program adequate for the needs of the people.

Any variation from the use of the areas already defined would lay a burden upon the proponents of such variation to prove that a valid consideration has been given to size and density of population, relative ability to supply financial support, and accessibility to the majority of population to be served. Such factors would be considered over against any consideration of community self-interest. It is the opinion of the Study Staff that the limitation here discussed is sound and that its repeal or substantial modification would not be in the best interest of the State.

5. *Transportation.*—Under the present statutes, transportation is not provided for students attending area vocational education schools. Chapter 236.05(3), Florida Statutes, should be amended so that transportation units may be provided for such students on the same basis as those for junior colleges.

6. *Relationship between Junior College and County Vocational Programs.*—A close relationship between community junior colleges and county programs of Vocational, Technical and General Adult Education is clearly implied in the Vocational Education Act of 1963. The Purpose of the Act is stated as follows:

> "To authorize Federal Grants to states to assist them to maintain, extend, and improve existing programs of vocational education, to develop new programs of vocational education and to provide part-time employment for youth who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the state . . . will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests and ability to benefit from such training."

Easy movement from one school level to another, and also any combination of occupational and academic studies necessary for a given course of study or training should be provided in the interest of an individual or a group of students. Such an arrangement can be accomplished provided the institutions involved are willing to operate within the spirit of the law. Students in the junior college should be permitted to take whatever courses of high school grade may be appropriate to their needs. Conversely, high school students should be permitted to take courses and to use vocational facilities in the junior college as may be appropriate. No specific modification of the law seems to be necessary in order to accomplish this purpose.

7. *Financing Current Operations and Facilities.*—The financing of vocational-technical education programs and facilities is a problem of major importance. Since programs of vocational and technical education may be provided in regular high schools, adult centers, technical institutes and junior colleges, a comprehensive equitable plan of financial support is necessary.

This problem is treated fully in Chapter V of this Study Report.

8. *Joint Regulations for Overlapping Areas of Responsibility.*—Because the various elements involved in the state's program of Vocational, Technical and General Adult Education have been developed at different times and in relation to different conditions, it is not surprising that the program as a whole lacks essential unity in certain respects.

Whether responsibility for the various programs for vocational, technical and general adult education is lodged in a high school, a community junior college, a separate institution, or any combination of such institutions, the administration and operation of a program must be such that the needs of the individual student are the paramount consideration. Apparently, the assignment of programs at the county or local level should be reviewed and policies and procedures clarified so as to avoid possible conflict.

It does not appear that any special legislation is required in order that this end be achieved. The authority presently resides in the State Superintendent of Public Instruction and the State Board of Education for effecting such organizational structure and such governing policies as w[illegible]ffect the necessary coordination.

Criteria

The designation of any center as an area vocational education school in accordance with the terms set forth in the Vocational Education Act of 1963 can best be accomplished by the means of the application of certain defensible objective criteria. Such criteria should reflect the conditions that must obtain in relation to the economical operation of an effective program of vocational-technical education. The criteria should apply in the case of the designation of an existing facility or the establishment of a new and separate vocational institution. The following criteria should be applied in Florida.

1. Population

Criteria are indicated for two types of schools: A, where an existing high school or junior college is designated as an area vocational education school, and B, where a separate area vocational education school is to be established.

In either case, no new area vocational education school should be approved which would tend to reduce the enrollments in existing institutions, especially in those already marginal in terms of student population and other factors which affect the quality of the program.

In any area where the population is sufficiently large to support more than one area vocational education school it is essential that clear differentiation be made as to function, level of programs and types of students to be served in each institution.

A. Criterion: *The geographic area to be served by an existing institution which is designated as an area vocational education school must have a population sufficiently large to assure a minimum ADA of 150 full-time equivalent day-time students enrolled in the vocational and technical program.*

An existing institution, either a comprehensive high school or junior college, can support an addition to its operation at lower cost than can be accomplished by establishing a new institution to serve the same number of vocational and technical students. An existing institution has the administrative and operating staff and it provides library and other supporting educational services. Furthermore, the additional students supported by adding a vocational program tends to diffuse the operating expenses over a larger number of students who, consequently, derive the benefits of a larger institution.

For these reasons the designation of an existing institution as an area vocational education school would require a less stringent population criterion than would the establishment of a new and separate area school.

B. Criterion: *The geographic area to be served by a separate institution which is designated as an area vocational education school must have a population sufficiently large to assure a minimum ADA of 300 full-time equivalent day-time students enrolled in the vocational and technical program.*

The Study Staff recognizes that there will be local conditions which may possibly require the establishment of separate area vocational education schools. In some school systems existing high schools may serve the role of "parent school" while sending students to an area vocational education school for vocational and technical education courses. In some of the larger counties, there are existing vocational and technical education schools which are currently performing a reasonably satisfactory service and which may be designated as area vocational education schools. However, before new and separate institutions are established, conclusive evidence should be presented which clearly indicates that existing institutions cannot assume the responsibility for the vocational and technical education program. Furthermore, every effort should be made to make all existing specialized institutions more comprehensive.

This criterion is projected in view of the fact that a separate institution must have a minimum administrative staff in addition to the required teaching staff in order to service the vocational-technical programs. Such staff would necessarily include at least a principal or director, a quidance counselor and a librarian. Furthermore, if a broad program of adult and related educational services is to be provided, provision for additional personnel will be required.

2. Employment Opportunities

Criterion: *The educational program of an area vocational education school must bear a justifiable relationship to employment opportunities for graduates in the area to be served as well as in the larger labor market area.*

In the application of this criterion a thorough occupational survey must be conducted in order to determine employment opportunities and the potential number of students to be served.

While in more populous areas this criterion is fairly easy to apply, in the counties with relatively sparse population there are usually also extremely limited opportunities for employment, both as to number and variety. In such cases the vocational program of area vocational centers must be justified in relation to employment opportunities in the nearest metropolitan centers or even in the state as a whole.

3. Relation to Present and Possible County and Multi-County Organizational Patterns

Criterion: *An area vocational education school should be so located that it will be within commuting distance of the students to be served.*

This criterion should apply whether the area vocational education school serves a single county or a multi-county unit. Except in cases which involve extenuating circumstances, multi-county areas for this purpose should coincide with planned or existing multi-county areas for junior colleges.

The geographic areas that were planned for junior colleges were developed so as to provide educational services within an area described by a thirty-five mile radius for 99 per cent of the total population of the state. Accordingly, the need for development of a more effective multi-county organization to provide any type of educational services for the greatest number of the state's population should be clearly demonstrated before modifying the existing pattern.

4. Relation to Present and Needed Legal Provisions

Criterion: *An area vocational education school must comply with the provisions of the Vocational Education Act of 1963, as well as with state laws that apply.*

The Vocational Education Act of 1963 defines the term "area vocational education school" in terms of four types of institutions that may be so designated. (See p. 187). It also requires that the school be "available to all residents of the State or an area of the State designated and approved by the State Board."

The Act further requires that, in the case of a separate technical or vocational school or the department or division of a junior college which provides vocational education in no less than five different occupational fields, the school admit as regular students both persons who have completed high school and persons who have left high school.

Numerous Florida laws bear directly or in-

directly upon the question of the placement, development, regulation and support of area vocational education schools. Discussions concerning them appear earlier in this chapter.

Florida law makes it possible for two or more contiguous counties to establish or acquire "area vocational-technical centers." However, the law specifically restricts such action where a county board is party to an agreement with another county or counties for the acquisition or operation of a junior college. (Florida Laws, 1963, Ch. 220.63).

5. Present and Needed Financial Structure

Criterion: *Substantial evidence must be presented showing the ability and the willingness of citizens and school officials within the area to be served to provide adequate financial support to fulfill the minimum requirements of the Minimum Foundation Program for Education, as well as the State Plan for the Improvement of Vocational, Technical and Related Educational Services as adopted by the State Board for Vocational Education.*

Cooperating counties in multi-county organizational arrangements should contribute to the support of the vocational and technical program in a manner determined to be equitable. Due consideration should be given to local financial ability and the extent of student participation in the program of the area vocational education school.

6. Interest and Attitude of Local Administration and Supporting Public

Criterion: *Substantial evidence must be presented indicating that the school administration, as well as the people to be served, are in accord with the purposes to be served by the area vocational education school; that they consider this institution to be an essential, integral part of the total program of public education and not as a separate and less important part of that program.*

Care must be taken to see that other considerations, however meritorious in themselves, are not accorded undue weight in relation to this criterion. Community pride and availability of physical facilities whose chief attractiveness lies in the fact that they have been declared surplus, provide examples of influences that are frequently encountered.

7. Facilities

Criterion: *Modern educational facilities adequately equipped should be planned and located so as to serve the greatest number of people with as little duplication as possible.*

Facilities should be provided that comply with acceptable standards for a modern vocational and technical program. Obsolete, inadequate buildings and equipment should not be tolerated.

Facilities planned should provide for a high rate of space utilization. In areas of high concentration of population a maximum of space utilization should be required before any duplication of facilities is permitted.

In sparsely populated areas where the enrollment potential is low, travel distance, potential space utilization, curriculum needs and facility costs should be taken into account before facilities are duplicated. Exception should be granted only under rare, extenuating circumstances.

Summary and Conclusions

The administration of vocational, technical and general adult education in Florida is the responsibility of the State Board for Vocational Education. The personnel comprising this Board is the same as that of the State Board of Education which is a constitutional board charged with responsibility for all aspects of public education in Florida.

In recent years the rapid increase in the number and size of community junior colleges has required the creation of another board, the State Junior College Board. Because occupational education is one of the functions of the community junior college, this Board also has responsibility with respect to this area of education.

It is essential that the work of these boards be organized in such a manner that the State's total program of public education may be so coordinated that its various components may operate effectively as significant parts of the whole. The tendency for occupational education to be treated separately and apart from the academic components has developed through the years. This condition calls for sincere efforts to achieve greater coordination at all administrative levels.

Professional supervision of the various areas of vocational, technical and general adult education is provided by the staff of the Division of Vocational, Technical and General Adult Education. This is one of eight divisions of the State Department of Education. In order to avoid duplication, similar supervisory staff services are not provided by the Division of Community Junior Colleges.

It is highly essential that the supervisory serv-

ices be so coordinated that the professional staff members can provide service at both the high school and junior college levels. It is also necessary that each of the divisions of the State Department of Education participate in the coordination of the work of occupational education with the total program of education. Such coordination is difficult to achieve, due largely to lack of time on the part of the staffs of the several divisions. The achievement of this desired goal should be a matter of first priority.

Recent federal and state legislation places special emphasis upon the expansion of the services of vocational and technical education by means of the development of area vocational education schools. It is important that such schools be so situated that they can serve a sufficient number of students to make the operation of a minimum program (at least five fields) economically feasible.

As a guide to those concerned with area schools, whether as additions to existing institutions or the development of new institutions, seven criteria have been developed and stated. It is recommended that these criteria be used to serve as guide lines by those who are charged with the location and development of the State's system of area vocational education schools.

Appendix A

Instructions for Completing Data Forms

1. Please read instructions carefully before completing the attached form.
2. Complete the Data Form on each school center which offers industrial arts and vocational and technical courses. This should include any school with senior high school grades, special vocational and adult centers and junior colleges. Data used should be for the 1963-64 school year.
3. *Heading.* Enter county and center name. Enter grade or other level designation of center; for example, Adult, Junior College, 10-12 or other appropriate designation. An extra supply of blank forms is supplied in the event that unlisted shops or labs need to be added to the form.
4. *Column 1.* A large number of different type labs and shops are listed on the *Data Form.* The list may not be complete. If there are labs and shops at centers in your county that are not listed on the *Data Form,* add these to the *Form.* Please note that Industrial Arts labs are listed as a single group without a breakdown as to type.
5. *Column 2.* Include data in this column for all shops and labs by type that are considered to be in permanent facilities.
   (a) *Column 2(a).* Enter the number of permanent labs and shops of the type listed.
   (b) *Column 2(b).* Enter the total number of student stations contained in the labs or shops entered under Column 2(a). For example, if 2 shops were indicated, the total number of student stations contained in the 2 shops should be entered. A student station is considered a work station or a place in the shop or lab that accommodates a single student. The total number of student stations should reflect the number of students that can be accommodated at one time in the shops or labs listed.
   (c) *Column 2(c).* Enter the average number of students served daily in the labs and shops reported under Column 2(a).
   (d) *Column 2(d).* Enter the total number of square feet in the shops or labs reported in Column 2 (a) by type listed.
   (e) *Column 2(e).* Enter the number of periods (hours) that the labs or shops reported are used during the day while school is in session. If the number varies each day during the week, show average number of periods used daily for the weekly period.
   (f) *Column 2(f).* Enter the number of periods (hours) that the labs or shops reported are used during the evenings. If the number varies each evening during the week, show average evening use for the weekly period.
6. *Evaluation.* Circle the number under each heading that corresponds most nearly to the condition of the lab or shop listed. The following explains the meaning of the numerical ratings.
   (a) *Column 2(g), Capacity:*
      (1) The number of students enrolled exceed the number of students that can be accommodated in the lab or shop so that instruction suffers.
      (2) The number of students enrolled can be accommodated, but poorly.
      (3) The number of students enrolled can be accommodated satisfactorily.
      (4) The lab or shop can accommodate additional students satisfactorily should conditions require it.
   (b) *Column 2(h), Space:*
      (1) The amount of space provided for the lab or shop is totally inadequate for the purpose used and number of students served and inhibits instruction.
      (2) The amount of space provided is too little for the purpose used and number served and functions poorly.
      (3) The amount of space provided is satisfactory for the purpose used and number served.
      (4) The amount of space provided is more than adequate for the purpose used and the number served and could accommodate additional students satisfactorily.
   (c) *Column 2(i), Equipment:*
      (1) The equipment provided is either obsolete or inappropriate for the purpose and number served.
      (2) The equipment provided is not adequate in amount to accommodate the number served, but is otherwise satisfactory.
      (3) The equipment is satisfactory in terms of appropriateness and amount for the purpose and number served.
      (4) The equipment is more than adequate for the purpose and number served and could accommodate additional students if conditions require it.
   (d) *Column 2(j), Combined Evaluation:*
      (1) Lab or shop was not designed for the specific purpose being used.
      (2) Lab or shop functions poorly for the purpose for which it was designed.
      (3) Lab or shop functions satisfactorily for the purpose for which it was designed.
      (4) Lab or shop functions exceptionally well for the purpose for which it was designed.
7. *Column (3), Temporary Shops and Labs:* Include data in this column for all shops and labs by type that are in temporary facilities. Temporary facilities will include space not designed for the specific

purpose used and/or in woodframe, portable buildings scheduled for abandonment or other buildings intended for short term use.

(a) *Column 3(a), Number of labs and shops:* Enter in this column the number of temporary labs and shops intended to serve the purpose of the type listed.

(b) *Column 3(b), Number of student stations:* Enter in this column the total number of student stations in the temporary labs and shops of the type reported in Col. 3(a).

(c) *Column 3(c), Number of Square Feet:* Enter the total number of square feet in the temporary labs and shops reported in Column 3(a) by type listed.

(d) *Column 3(d), Number of students served daily:* Enter the average number of students served daily in the labs and shops reported under Column 3(a).

(e) *Column 3(e), Number of periods used during the Day:* Enter the number of periods (hours) that the temporary labs or shops reported are used during the day while school is in session. If the number varies each day during the week, show average number of periods used daily for the weekly period.

(f) *Column 3(f), Number of periods used during the Evening:* Enter the number of periods (hours) that the temporary labs or shops reported are used during the evenings. If the number varies each evening during the week, show average evening use for the weekly period.

8. Please have the person who completes the form to sign and date it.

FLORIDA STUDY OF VOCATIONAL-TECHNICAL EDUCATION

Data Form

County:_____

Center:_____

Grade Level:_____

VOCATIONAL AND TECHNICAL LABS AT SCHOOL CENTERS AND JUNIOR COLLEGES

(1)	(2) PERMANENT SHOPS AND LABS										(3) TEMPORARY SHOPS AND LABS, NUMBER OF					
	Number of						Evaluation				(a)	(b)	(c)	(d)	Periods Used Daily	
TYPE OF LAB OR SHOP (Include those funded or under Construction)	(a)	(b)	(c)	(d)	Periods Used		(g)	(h)	(i)	(j)					(e)	(f)
CODE	Labs Shops	Stu. Stas.	Stu. Served Daily	Square Feet	(e) Day	(f) Even.	Capacity (Circle One)	Space (Circle One)	Equipment (Circle (One)	Combined (Circle One)	Labs Shops	Stu. Stas.	Square Feet	Stu. Served Daily	Day	Evening
A.C. Refrigeration and Heating Mechanisms							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Automobile Body Repair and Refinishing							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Automotive Mechanics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Aviation Mechanics (Power and Frame)							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Brick- and Blocklaying							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Barbering							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Boatbuilding							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Building Construction							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Business Machines							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Business Machine Mechanics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Cabinet Making, Millwork and Furniture Making							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Carpentry							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Commercial and Advertising Art							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Commercial Cooking and Baking							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Commercial Garment Making							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Cooperative Distribution Education							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Cosmetology							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
DCT							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Drafting							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Dental Assisting							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Dental Mechanics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Diesel Mechanics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Dry Cleaning and Laundering							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Electric Motor and Generator Mechanic							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Electric Wiring							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Electronics Mechanics and Assembly							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						

VOCATIONAL AND TECHNICAL LABS AT SCHOOL CENTERS AND JUNIOR COLLEGES

Continued

(1) TYPE OF LAB OR SHOP (Include those funded or under Construction) CODE	(2) PERMANENT SHOPS AND LABS										(3) TEMPORARY SHOPS AND LABS, NUMBER OF					
	Number of						Evaluation								Periods Used Daily	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(a)	(b)	(c)	(d)	(e)	(f)
	Labs Shops	Stu. Stas.	Stu. Served Daily	Square Feet	Day	Even.	Capacity (Circle One)	Space (Circle One)	Equipment (Circle (One)	Combined (Circle One)	Labs Shops	Stu. Stas.	Square Feet	Stu. Served Daily	Day	Evening
Farm Shop							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Firefighting and Rescue Training							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Gasoline Engine Mechanics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Home Economics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Industrial Electricity							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Industrial Electronics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Landscaping and Industrial Nursery Work							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Law Enforcement							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Machine Shop							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Massage							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Nurses' Aide (MDTA)							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Office Practice							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Optical Mechanics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Optometric Assisting							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Painting and Decorating							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Photography (and Photo Finishing)							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Power Machine Operation							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Practical Nursing							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Printing							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Radio Communications							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Radio and Television Service							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Railroad Telegraph and Station Agent Work							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Sheet Metal Work							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Shoe Repairing							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Surgical Technical Assisting							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						

Continued

(1) TYPE OF LAB OR SHOP (Include those funded or under Construction) CODE	(2) PERMANENT SHOPS AND LABS										(3) TEMPORARY SHOPS AND LABS, NUMBER OF					
	Number of						Evaluation				(a)	(b)	(c)	(d)	Periods Used Daily	
	(a)	(b)	(c)	(d)	Periods Used		(g)	(h)	(i)	(j)					(e)	(f)
	Labs Shops	Stu. Stas.	Stu. Served Daily	Square Feet	(e) Day	(f) Even.	Capacity (Circle One)	Space (Circle One)	Equipment (Circle (One)	Combined (Circle One)	Labs Shops	Stu. Stas.	Square Feet	Stu. Served Daily	Day	Evening
Tailoring							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Television Studio Production							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Television Studio Technician							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Typing							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Upholstery							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Watchmaking							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Welding							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Aeronautical							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Chemical							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Civil and Construction							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Data Processing							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Drafting and Design							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Electrical							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Electronics							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Graphic Arts							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Mechanical							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Metallurgical							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Microminiaturization							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						
Tool and Die Design							1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4						

Continued

(1) CODE	TYPE OF LAB OR SHOP (Include those funded or under Construction)	(2) PERMANENT SHOPS AND LABS										(3) TEMPORARY SHOPS AND LABS, NUMBER OF					
		Number of						Evaluation									
		(a)	(b)	(c)	(d)	Periods Used		(g)	(h)	(i)	(j)	(a)	(b)	(c)	(d)	Periods Used Daily	
						(e)	(f)									(e)	(f)
		Labs Shops	Stu. Stas.	Stu. Served Daily	Square Feet	Day	Even.	Capacity (Circle One)	Space (Circle One)	Equipment (Circle (One)	Combined (Circle One)	Labs Shops	Stu. Stas.	Square Feet	Stu. Served Daily	Day	Evening

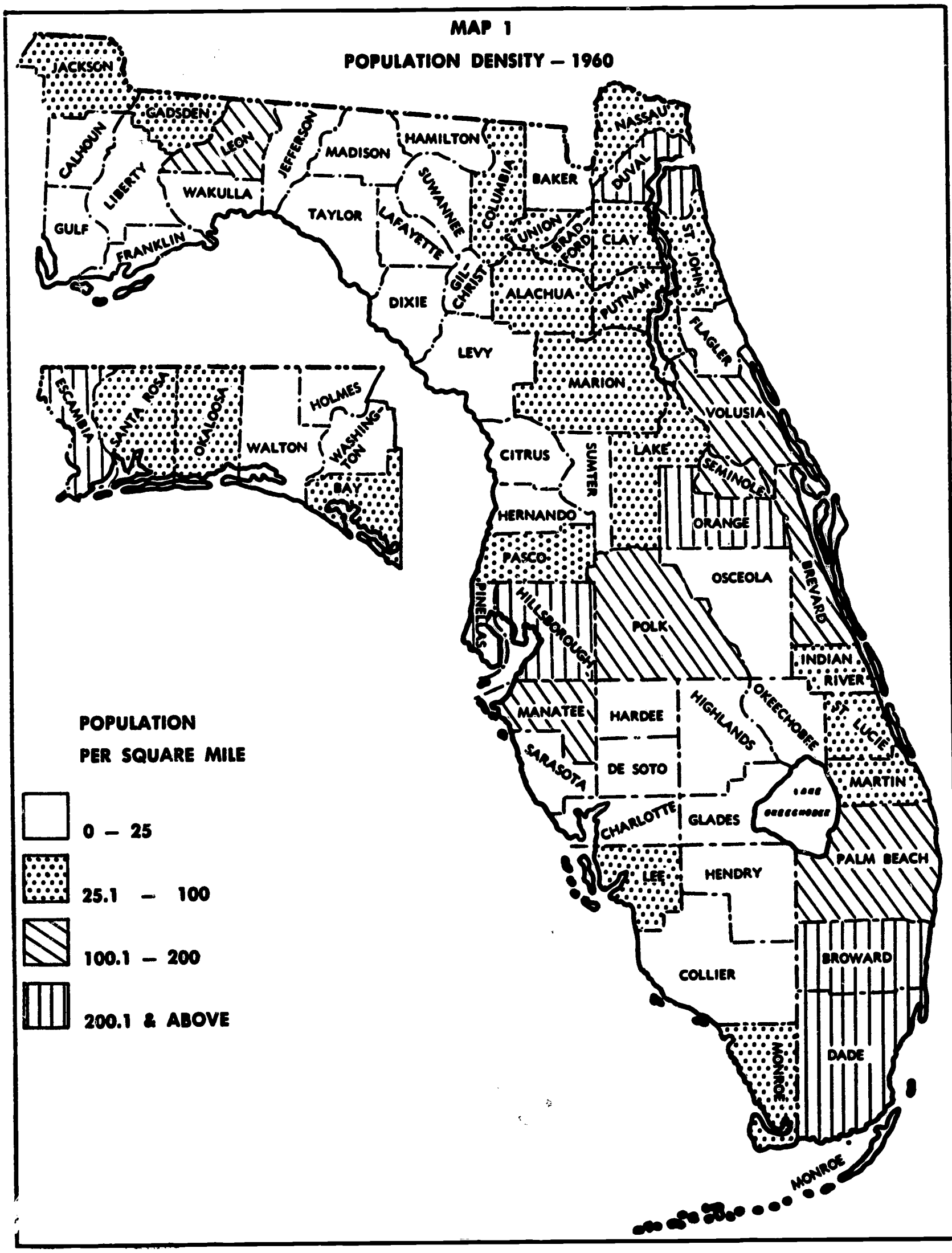

MAP 1
POPULATION DENSITY – 1960
JACKSON
CALHOUN
GADSDEN
LIBERTY
LEON
JEFFERSON
MADISON
HAMILTON
SUWANNEE
COLUMBIA
BAKER
NASSAU
DUVAL
WAKULLA
TAYLOR
LAFAYETTE
GULF
FRANKLIN
UNION
BRADFORD
CLAY
ST JOHNS
GILCHRIST
ALACHUA
PUTNAM
DIXIE
FLAGLER
LEVY
MARION
VOLUSIA
ESCAMBIA
SANTA ROSA
OKALOOSA
WALTON
HOLMES
WASHINGTON
BAY
CITRUS
SUMTER
LAKE
SEMINOLE
HERNANDO
ORANGE
PASCO
OSCEOLA
BREVARD
PINELLAS
HILLSBOROUGH
POLK
INDIAN RIVER
MANATEE
HARDEE
HIGHLANDS
OKEECHOBEE
ST LUCIE
SARASOTA
DE SOTO
MARTIN
CHARLOTTE
GLADES
PALM BEACH
LEE
HENDRY
BROWARD
COLLIER
DADE
MONROE
MONROE
POPULATION
PER SQUARE MILE
0 – 25
25.1 – 100
100.1 – 200
200.1 & ABOVE

TABLE 3

SELECTED POPULATION CHARACTERISTICS FOR FLORIDA COUNTIES, GROUP A

County	% 18 Yrs. and Under (1960)	% 19-44 (1960)	Col. 2 minus Col. 1	% 45-64 (1960)	% 65 and over (1960)	% Increase 1950-60 65 and Over	Median Age (1960)	Median School Years Completed (1960)	% Change 1950-60 Total Population	% Change 1960-63[1] Total Population	% Urban Population (1960)	Population per Square Mile (1960)
Baker	43.2	32.1	—11.1	17.9	6.8	33.5	24.6	8.3	16.6	4.1	36.3	13.2
Calhoun	43.5	26.6	—16.9	20.9	9.0	21.7	25.5	8.2	— 6.3	5.4	....	14.0
Dixie	41.4	31.0	—10.4	19.6	8.0	29.7	25.0	8.3	14.0	4.4	....	6.8
Flagler	40.0	30.8	— 9.2	19.5	9.7	47.0	28.2	8.9	35.6	15.2	....	11.0
Franklin	37.8	27.2	—10.6	21.6	13.4	77.4	31.3	8.6	13.6	10.6	47.1	13.4
Gilchrist	39.8	29.0	—10.8	21.0	10.1	18.8	28.7	8.6	—18.0	....	....	8.6
Glades	36.9	38.6	+ 1.7	18.4	6.1	36.4	27.2	7.8	34.2	6.7	....	4.3
Gulf	43.7	34.1	— 9.6	17.1	5.1	47.5	23.7	9.6	33.2	—3.0	42.4	17.2
Hamilton	44.3	25.4	—18.9	20.1	10.2	12.1	24.7	7.7	—14.2	1.3	....	15.2
Lafayette	39.2	26.9	—12.3	22.2	11.7	31.5	29.8	8.4	—16.0	6.9	....	5.7
Liberty	41.8	28.8	—13.0	20.4	9.0	15.1	26.5	8.5	— 1.4	—3.2	....	3.6
Okeechobee	44.6	31.8	—12.8	17.2	6.4	59.7	23.2	9.2	86.0	28.1	45.9	10.5
Union	31.5	42.0	+ 9.5	19.6	6.9	6.1	29.8	8.3	—32.1	6.7	....	26.7
Wakulla	43.0	27.7	—15.3	20.2	9.1	18.6	25.5	8.2	....	....	....	8.6
STATE	35.2	33.0	— 2.2	20.6	11.2	133.0	31.2	10.9	78.7	13.9	73.9	104.0

[1] Bureau of Economic and Business Research, University of Florida
Other Figures—County and City Data Book, 1962, U.S. Bureau of the Census

TABLE 4

FIVE YEAR SUMMARY OF NEW INDUSTRIAL PLANTS AND EXPECTED EMPLOYMENT FOR FLORIDA COUNTIES, GROUP A, 1958-1962

Group A Counties	New Plants	Expected Employment	Group A Counties	New Plants	Expected Employment
Baker	7	59	Gulf	9	486
Calhoun	6	59	Hamilton	9	88
Dixie	5	132	Lafayette	5	81
Flagler	...	...	Liberty	2	17
Franklin	11	344	Okeechobee	6	71
Gilchrist	2	10	Union	6	151
Glades	2	256	Wakulla	6	173
			STATE TOTAL	3,784	114,928

SOURCE: *Florida's New Industrial Plants*, 1962.

TABLE 5

CHANGES IN NUMBER AND SIZE OF FARMS IN FLORIDA COUNTIES, GROUP A

	Number of Farms		Average Size in Acres		Number of Farms 10 Acres and Under		Number of Farms 1000 Acres and Over	
Group A	1954	1959	1954	1959	1954	1959	1954	1959
Baker	390	257	263	170	58	21	12	8
Calhoun	523	333	205	221	39	15	19	12
Dixie	214	142	789	1190	52	24	8	6
Flagler	100	117	1680	1475	14	22	18	17
Franklin	36	27	652	640	18	12	4	1
Gilchrist	369	334	293	274	6	8	15	10
Glades	103	127	2863	2617	13	19	15	19
Gulf	98	68	448	445	28	19	8	5
Hamilton	747	479	237	264	99	33	18	18
Lafayette	483	359	219	300	27	14	11	9
Liberty	285	187	170	257	64	30	8	6
Okeechobee	242	183	1937	2010	36	19	55	54
Union	385	289	260	487	49	23	16	10
Wakulla	242	142	151	217	46	36	6	4
STATE	57543	45100	316	338	10453	8648	2072	1764

SOURCE: United States Census of Agriculture, 1954 and 1959.

TABLE 6

NUMBER OF FARMS BY CENSUS CLASSIFICATION[1] FOR FLORIDA COUNTIES, GROUP A

Group A	Commercial by Classes[1]						Non-Commercial by Classes		
	I	II	III	IV	V	VI	Part-Time	Retirement	Abnormal
Baker	6	..	7	2	22	15	140	40	..
Calhoun	7	11	44	39	47	26	110	45	..
Dixie	1	..	3	20	21	10	61	25	..
Flagler	18	22	9	3	2	..	45	10	..
Franklin	..	..	1	1	5	..	25	..	..
Gilchrist	3	6	40	51	55	50	90	30	..
Glades	28	4	6	9	15	5	40	20	..
Gulf	..	..	7	2	11	5	50	5	..
Hamilton	7	..	97	71	86	55	76	30	..
Lafayette	5	29	42	61	96	25	80	16	..
Liberty	..	7	..	8	12	15	105	25	..
Okeechobee	23	14	18	10	22	1	42	15	..
Union	6	2	22	24	35	5	131	55	1
Wakulla	..	1	5	7	45	..	56	30	..

SOURCE: United States Census of Agriculture, 1959

[1] Commercial Classes—In Value of Farm Products Sold

I	$40,000 and Over	IV	$5,000—$9,999
II	$20,000—$39,999	V	$2,500—$4,999
III	$10,000—$19,999	VI	$50—$2,499

TABLE 7

AGRICULTURAL, NON-AGRICULTURAL, AND TOTAL EMPLOYMENT[1] FOR FLORIDA COUNTIES, GROUP A, 1960–1963

Group A	March, 1960			March, 1961			March, 1962			March, 1963		
	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.
Baker	2050	1750	300	2250	2000	250	1800	1550	250	1050	1600	250
Calhoun	1300	850	450	1400	950	450	1500	1050	450	1400	1000	400
Dixie	950	850	100	1250	1150	100	1200	1100	100	1150	1100	50
Flagler	1700	1350	350	1600	1250	350	1550	1150	400	1400	1000	400
Franklin	1800	1800	0	1900	1900	0	1750	1750	0	2050	2050	0
Gilchrist	850	450	400	850	450	400	800	400	400	750	400	350
Glades	1050	700	350	1200	800	400	850	400	450	1100	600	500
Gulf	3450	3350	100	3300	3200	100	3400	3300	100	3450	3350	100
Hamilton	1900	1500	400	1700	1350	350	1800	1450	350	1600	1300	300
Lafayette	750	300	450	800	350	450	800	400	400	750	400	350
Liberty	900	600	300	850	600	250	800	550	250	800	550	250
Okeechobee	1550	1200	350	1650	1250	400	1750	1400	350	1650	1300	350
Union	1250	950	300	1600	1300	300	1650	1350	300	1650	1350	300
Wakulla	1450	1250	200	2050	1850	200	1300	1050	250	1250	1050	200

[1] Research and Statistics Department, Florida Industrial Commission

TABLE 8

NON-AGRICULTURAL EMPLOYMENT BY MAJOR INDUSTRIAL GROUPS FOR FLORIDA COUNTIES, GROUP A, 1960–1963

Group A	Manufacturing				Construction				Transportation and Public Utilities				Wholesale and Retail Trade			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Baker	250	200	200	200	50	100	50	50	....	50	50	50	200	250	150	150
Calhoun	200	250	250	200	....	....	....	....	....	....	....	....	200	200	200	200
Dixie	250	300	300	300	50	50	50	50	....	....	....	....	150	200	200	200
Flagler	400	300	350	200	50	50	....	....	50	50	50	50	200	200	150	200
Franklin	100	100	100	200	50	....	....	....	....	50	150	150	400	500	400	550
Gilchrist	50	50	....	....	....	....	....	....	....	....	....	....	100	100	100	100
Glades	....	....	....	150	100	150	100	100	50	50	....	....	100	100	50	50
Gulf	1200	1050	1150	1150	50	50	100	100	200	200	250	250	300	300	300	350
Hamilton	400	200	200	200	....	50	200	50	50	50	50	50	200	200	200	250
Lafayette	50	50	100	100	....	50	...	...	...	...	...	...	50	50	50	50
Liberty	300	300	250	250	....	...	...	...	...	...	...	...	50	50	50	50
Okeechobee	150	200	200	100	50	...	50	50	50	50	50	50	200	250	250	300
Union	100	150	200	200	50	...	...	...	...	50	...	...	50	50	100	50
Wakulla	150	250	150	250	50	50	...	50	50	50	...	50	200	400	250	200

Group A	Finance, Insurance, and Real Estate				Service				Government				All Other Non-Agricultural[1]			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Baker	...	...	...	...	50	50	...	50	600	600	800	800	500	600	300	300
Calhoun	...	...	...	...	50	50	50	50	250	250	250	250	150	200	250	250
Dixie	...	...	...	...	50	100	100	100	100	150	150	150	250	350	300	300
Flagler	...	...	...	...	150	150	200	150	150	150	150	200	350	350	250	200
Franklin	50	50	50	50	150	150	150	150	450	400	450	450	600	650	450	500
Gilchrist	...	...	...	...	50	50	50	50	150	150	150	150	100	100	100	100
Glades	...	...	...	...	50	50	50	50	150	100	100	100	250	350	100	150
Gulf	50	50	50	50	350	350	300	250	550	550	500	550	650	650	650	650
Hamilton	...	...	...	...	200	150	150	150	300	350	300	300	350	350	350	300
Lafayette	...	...	...	...	50	50	50	50	100	100	150	150	50	50	50	50
Liberty	...	...	...	...	...	...	...	...	150	150	150	150	100	100	100	100
Okeechobee	...	...	...	...	200	100	100	100	200	250	250	250	300	350	450	400
Union	...	...	...	...	50	50	50	50	500	700	700	750	200	300	300	300
Wakulla	...	...	...	...	50	50	100	50	250	300	300	200	500	750	250	250

SOURCE: Basic Labor Market Information, Research and Statistics Department, Florida Industrial Commission

[1] Includes self-employed, unpaid family workers, and domestic service workers in private households.

TABLE 9

SELECTED POPULATION CHARACTERISTICS FOR FLORIDA COUNTIES, GROUP B

County	% 18 Yrs. and Under (1960)	% 19-44 (1960)	Col. 2 minus Col. 1	% 45-64 (1960)	% 65 and over (1960)	% Increase 1950-60 65 and Over	Median Age (1960)	Median School Years Completed (1960)	% Change 1950-60 Total Population	% Change 1960-63[1] Total Population	% Urban Population (1960)	Population per Square Mile (1960)
Bradford	41.8	31.8	—10.0	18.0	8.4	29.4	25.9	8.8	8.6	4.8	38.6	44.4
Charlotte	26.4	23.9	— 2.5	28.9	20.8	316.5	44.8	10.8	193.8	49.2	58.7	26.7
Citrus	33.6	24.1	— 9.5	25.3	17.0	123.9	37.5	9.3	51.7	17.2	....	19.1
Clay	41.6	34.4	— 7.2	14.7	9.3	43.5	24.9	10.2	36.1	1.0	35.1	32.9
De Soto	32.2	28.6	— 3.6	24.4	14.8	81.3	36.5	9.2	50.4	12.0	50.4	18.2
Hardee	38.7	30.7	— 8.0	20.3	10.3	31.7	29.1	8.8	22.8	8.1	27.6	21.3
Hendry	40.8	34.4	— 6.4	19.4	5.8	68.6	25.7	8.9	34.2	30.9	38.4	8.9
Hernando	37.1	27.8	— 9.3	21.0	14.1	148.6	31.5	8.9	67.4	9.8	29.5	25.2
Holmes	38.9	25.9	—13.0	23.2	12.0	26.8	31.4	8.0	—22.5	2.8	....	23.0
Jefferson	45.4	25.9	—19.5	17.9	10.8	—9.3	23.5	8.1	—8.4	8.4	....	17.2
Levy	39.6	26.6	—13.0	21.5	12.3	26.5	30.3	8.5	—2.6	8.7	.. .	10.2
Madison	44.9	26.9	—18.0	18.7	9.5	16.1	23.7	8.0	—0.3	4.9	22.9	21.2
Nassau	44.6	32.5	—12.1	16.9	6.0	27.2	23.6	9.0	34.2	10.5	42.3	29.2
Sumter	39.5	27.5	—12.0	21.5	11.5	49.8	30.0	9.0	4.8	12.6	....	23.9
Suwannee	40.7	27.7	—13.0	20.9	10.7	20.8	27.2	8.3	—16.9	14.0	43.7	25.3
Taylor	43.4	30.7	—12.7	17.9	8.0	26.0	24.2	8.4	26.4	6.8	61.0	13.7
Walton	39.8	28.1	—11.7	21.4	10.7	30.3	29.2	8.6	5.8	3.2	33.9	15.4
Washington	41.2	26.0	—15.2	21.8	11.0	21.8	28.2	8.4	—5.4	6.3	28.1	19.9
STATE	35.2	33.0	— 2.2	20.6	11.2	133.0	31.2	10.9	78.7	13.9	73.9	104.4

[1] Bureau of Economic and Business Research, University of Florida
Other Figures—County and City Data Book, 1962, U.S. Bureau of the Census

TABLE 10

FIVE YEAR SUMMARY OF NEW INDUSTRIAL PLANTS AND EXPECTED EMPLOYMENT FOR FLORIDA COUNTIES, GROUP B, 1958–1962

Group B Counties	New Plants	Expected Employment	Group B Counties	New Plants	Expected Employment
Bradford	9	406	Jefferson	3	100
Charlotte	10	262	Levy	7	176
Citrus	7	111	Madison	10	280
Clay	7	204	Nassau	7	108
De Soto	6	200	Sumter	7	132
Hardee	5	110	Suwannee	8	310
Hendry	1	110	Taylor	14	262
Hernando	7	176	Walton	4	192
Holmes	2	9	Washington	7	355
			STATE TOTAL	3,784	114,928

SOURCE: *Florida's New Industrial Plants*, 1962.

TABLE 11
CHANGES IN NUMBER AND SIZE OF FARMS IN FLORIDA COUNTIES, GROUP B

Group B	Number of Farms		Average Size in Acres		Number of Farms 10 Acres and Under		Number of Farms 1000 Acres and Over	
	1954	1959	1954	1959	1954	1959	1954	1959
Bradford	617	772	125	343	78	295	9	23
Charlotte	148	74	2570	3176	18	14	18	13
Citrus	278	259	715	457	40	51	21	19
Clay	188	165	856	846	24	24	30	21
De Soto	505	385	914	764	45	52	56	36
Hardee	1114	1100	361	296	88	147	64	53
Hendry	188	189	3441	3394	27	35	39	35
Hernando	387	299	308	356	51	34	22	15
Holmes	1481	962	124	172	71	21	8	9
Jefferson	924	557	245	342	97	44	35	30
Levy	498	448	642	631	13	31	38	39
Madison	1104	753	215	336	90	186	30	45
Nassau	205	225	342	342	14	14	15	15
Sumter	761	571	287	346	80	28	41	38
Suwannee	1705	1247	185	238	68	38	19	23
Taylor	323	274	1346	1429	34	35	14	12
Walton	1214	755	137	166	68	32	22	12
Washington	1003	687	178	161	58	15	19	13
STATE	57543	45100	316	338	10453	8648	2072	1764

SOURCE: United States Census of Agriculture, 1954 and 1959

TABLE 12
NUMBER OF FARMS BY CENSUS CLASSIFICATION FOR FLORIDA COUNTIES, GROUP B

Group B	Commercial by Classes						Non-Commercial by Classes		
	I	II	III	IV	V	VI	Part-Time	Retirement	Abnormal
Bradford	5	11	12	10	44	35	326	45	..
Charlotte	11	7	2	6	12	5	....	20	..
Citrus	2	14	17	25	42	6	115	45	..
Clay	11	7	21	13	13	10	61	20	..
De Soto	28	34	69	17	49	35	95	40	..
Hardee	51	78	123	170	117	55	355	110	..
Hendry	19	18	8	29	18	5	70	20	..
Hernando	8	29	54	26	27	10	110	50	..
Holmes	2	17	43	52	146	165	330	160	..
Jefferson	16	9	16	38	43	95	240	85	..
Levy	2	11	23	72	114	51	102	110	..
Madison	22	9	101	152	179	65	190	111	..
Nassau	26	16	11	42	25	10	75	55	5
Sumter	12	12	48	54	80	80	197	81	..
Suwannee	13	58	118	267	275	145	246	156	..
Taylor	2	3	3	6	43	25	150	66	..
Walton	3	13	26	26	66	125	415	96	..
Washington	1	..	25	17	87	91	383	95	..

SOURCE: United States Census of Agriculture, 1959

TABLE 13
AGRICULTURAL, NON-AGRICULTURAL, AND TOTAL EMPLOYMENT[1] FOR FLORIDA COUNTIES, GROUP B, 1960–1963

Group B	March, 1960[2]			March, 1961[2]			March, 1962[2]			March, 1963[2]		
	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.
Bradford	2750	2200	550	3000	2500	500	2900	2450	450	2750	2350	400
Charlotte	3600	3350	250	4300	4050	250	4350	4050	300	4150	3800	350
Citrus	2500	2200	300	2650	2350	300	2650	2350	300	2650	2350	300
Clay	3850	3550	300	3450	3150	300	3150	2900	250	3100	2850	250
De Soto	3050	2550	500	3100	2600	500	3450	3000	450	3250	2850	400
Hardee	3750	2500	1250	3750	2500	1250	3400	2150	1250	3400	2150	1250
Hendry	4000	1950	2050	5300	2850	2450	5000	2150	2850	6200	2800	3400
Hernando	3500	2950	550	3900	3300	600	3550	3000	550	3400	2800	600
Holmes	2250	1200	1050	2050	1100	950	1950	1050	900	1800	1000	800
Jefferson	2300	1650	650	2100	1500	600	2050	1450	600	2200	1650	550
Levy	3150	2700	550	3050	2550	700	2900	2400	500	2900	2450	450
Madison	4150	3000	1150	3650	2550	1100	3800	2750	1050	3800	2800	1000
Nassau	5250	4750	500	5600	5050	550	6200	5600	600	6250	5600	650
Sumter	2650	1900	750	2650	1950	700	2700	2000	700	2850	2150	700
Suwannee	4500	3050	1450	4250	2900	1350	4350	3000	1250	4550	3400	1150
Taylor	4300	3950	350	4500	4200	300	4800	4500	300	4950	4650	300
Walton	3500	2700	800	3300	2550	750	3300	2600	700	3250	2600	650
Washington	3300	2500	800	2800	2000	800	2450	1700	750	2550	1850	700

[1] Research and Statistics Department, Florida Industrial Commission

[2] These figures in increments of 50.

TABLE 14

NON-AGRICULTURAL EMPLOYMENT BY MAJOR INDUSTRIAL GROUPS FOR FLORIDA COUNTIES, GROUP B, 1960–1963

Group B	Manufacturing				Construction				Transportation and Public Utilities				Wholesale and Retail Trade			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Bradford	350	300	300	300	50	50	100	100	50	50	50	50	450	400	400	400
Charlotte	150	150	150	150	350	450	350	200	100	100	150	150	650	750	700	700
Citrus	50	50	50	50	100	100	100	100	50	50	...	...	350	300	350	300
Clay	500	500	300	300	150	150	150	100	150	200	200	200	400	350	350	350
De Soto	400	350	350	300	...	...	50	...	50	50	50	50	450	450	500	400
Hardee	350	250	150	200	50	50	50	50	100	100	100	100	550	550	500	500
Hendry	650	1350	650	900	100	50	50	100	50	50	50	50	350	400	400	450
Hernando	150	200	150	150	100	50	100	50	150	100	100	100	450	550	550	450
Holmes	200	100	100	100	...	50	...	...	...	...	...	...	250	200	200	200
Jefferson	150	150	250	200	100	50	50	50	50	50	50	100	250	250	250	250
Levy	350	300	250	250	300	300	300	350	100	50	50	50	500	450	450	450
Madison	900	700	750	750	50	50	50	...	100	100	100	100	400	450	500	500
Nassau	1950	1900	1950	2000	100	50	50	50	100	150	150	100	800	700	700	750
Sumter	100	100	100	100	50	...	...	...	650	550	600	550	200	200	200	250
Suwannee	300	300	300	300	50	50	50	50	250	250	250	250	650	600	600	650
Taylor	1350	1400	1400	1400	50	50	100	50	100	100	50	50	600	650	650	600
Walton	150	300	300	300	150	100	150	150	150	150	150	150	650	500	500	500
Washington	500	450	250	250	400	250	250	350	100	100	100	100	300	250	250	250

Group B	Finance, Insurance, and Real Estate				Service				Government				All Other Non-Agricultural[1]			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Bradford	50	50	50	50	250	250	250	200	350	450	500	500	550	650	500	450
Charlotte	400	500	800	550	200	250	250	400	350	400	450	500	1100	1400	1150	1050
Citrus	100	100	100	100	250	250	250	350	250	250	250	250	900	1000	1050	1000
Clay	100	100	100	100	300	300	450	450	1000	850	650	650	700	650	650	600
De Soto	50	50	50	50	150	100	250	250	950	1000	1100	1200	500	550	600	550
Hardee	50	50	100	100	200	250	200	200	400	400	400	400	750	800	600	550
Hendry	50	50	50	50	100	100	200	200	350	400	250	400	300	450	500	650
Hernando	100	100	100	100	150	200	200	200	350	400	350	450	800	900	750	700
Holmes	...	...	...	...	50	50	100	100	350	350	400	400	350	350	250	200
Jefferson	50	50	...	...	100	100	100	100	350	300	350	400	600	550	400	450
Levy	50	50	50	50	150	150	150	150	400	400	350	350	750	750	700	700
Madison	50	50	50	50	100	200	150	150	600	300	350	450	800	700	800	800
Nassau	50	50	50	50	150	150	300	300	600	900	1000	1000	900	1000	1250	1200
Sumter	50	50	...	...	50	100	100	100	250	350	400	450	500	500	500	500
Suwannee	50	100	100	150	300	300	350	300	550	450	500	550	800	800	800	700
Taylor	50	50	100	100	250	250	450	450	650	800	800	800	850	900	950	950
Walton	50	50	50	50	200	250	200	200	750	550	650	650	660	600	700	550
Washington	...	...	...	...	100	50	100	100	400	300	400	450	700	600	350	350

SOURCE: Basic Labor Market Information, Research and Statistics Department, Florida Industrial Commission

[1] Includes self-employed, unpaid family workers, and domestic service workers in private households.

TABLE 15

SELECTED POPULATION CHARACTERISTICS FOR FLORIDA COUNTIES, GROUP C

County	% 18 Yrs. and Under (1960)	% 19-44 (1960)	Col. 2 minus Col. 1	% 45-64 (1960)	% 65 and over (1960)	% Increase 1950-60 65 and Over	Median Age (1960)	Median School Years Completed (1960)	% Change 1950-60 Total Population	% Change 1960-63[1] Total Population	% Urban Population (1960)	Population per Square Mile (1960)
Collier	37.3	31.8	—5.5	22.7	8.2	299.0	30.2	10.7	142.8	34.8	50.0	10.5
Columbia	41.7	29.9	—11.8	19.7	8.7	26.2	26.7	8.8	10.2	9.5	47.1	28.0
Gadsden	40.5	29.8	—10.7	20.3	9.4	31.5	27.3	7.5	15.2	9.5	44.2	90.6
Highlands	35.8	27.9	—7.9	21.9	21.2	131.9	32.5	9.5	56.5	13.6	61.0	23.2
Indian River	35.7	28.3	—7.4	22.1	13.9	237.4	32.8	10.9	113.2	22.9	48.8	60.7
Jackson	42.9	30.1	—12.8	18.4	8.6	15.7	24.2	8.5	4.5	2.8	19.8	39.9
Martin	32.9	27.7	—5.2	23.7	15.7	219.1	35.8	10.6	116.9	29.0	28.3	39.0
Osceola	30.9	25.3	—5.6	21.0	22.8	76.5	38.8	9.6	66.8	10.5	58.8	15.8
Pasco	30.9	26.1	—4.8	26.1	23.0	194.0	38.5	8.9	79.2	7.1	30.4	52.5
Putnam	41.4	30.2	—11.1	18.9	9.5	37.8	26.9	9.4	36.4	3.1	34.2	41.3
St. Johns	37.5	29.2	—8.3	22.0	11.3	47.3	30.9	10.5	20.1	7.3	39.1	52.9
St. Lucie	37.5	31.1	—6.4	21.0	10.4	201.6	30.3	10.0	94.7	11.5	64.3	74.5
Santa Rosa	41.4	39.6	—1.8	13.5	5.5	31.0	22.6	10.2	59.2	11.9	13.9	32.2
STATE	35.2	33.0	—2.2	20.6	11.2	133.0	31.2	10.9	78.7	13.9	73.9	104.4

[1] Bureau of Economic and Business Research, University of Florida
Other Figures—County and City Data Book, 1962, U.S. Bureau of the Census

TABLE 16

FIVE YEAR SUMMARY OF NEW INDUSTRIAL PLANTS AND EXPECTED EMPLOYMENT FOR FLORIDA COUNTIES, GROUP C, 1958–1962

Group C	New Plants	Expected Employment	Group C	New Plants	Expected Employment
Collier	16	258	Pasco	9	186
Columbia	16	678	Putnam	17	257
Gadsden	11	596	St. Johns	15	1,027
Highlands	14	353	St. Lucie	13	442
Indian River	12	733	Santa Rosa	9	229
Jackson	18	659			
Martin	23	530			
Osceola	19	343	STATE TOTAL	3,784	114,928

SOURCE: *Florida's New Industrial Plants*, 1962

TABLE 17

CHANGES IN NUMBER AND SIZE OF FARMS IN FLORIDA COUNTIES, GROUP C

Group C	Number of Farms		Average Size in Acres		Number of Farms 10 Acres and Under		Number of Farms 1000 Acres and Over	
	1954	1959	1954	1959	1954	1959	1954	1959
Collier	116	104	3634	3043	11	12	31	26
Columbia	987	700	266	224	62	31	24	19
Gadsden	1024	669	193	236	152	67	37	28
Highlands	582	481	918	865	167	124	54	53
Indian River	683	493	334	401	91	100	23	15
Jackson	2997	2145	144	182	207	78	48	39
Martin	186	130	1080	974	52	31	29	23
Osceola	527	460	1584	1772	125	82	44	41
Pasco	1036	1012	388	306	157	203	60	48
Putnam	622	539	469	413	158	143	27	32
St. Johns	350	227	522	402	79	29	23	15
St. Lucie	735	611	506	501	138	159	39	32
Santa Rosa	1202	846	101	131	131	46	7	8
STATE TOTAL	57543	45100	316	338	10,453	8648	2072	1764

SOURCE: United States Census of Agriculture, 1954 and 1959

TABLE 18

NUMBER OF FARMS BY CENSUS CLASSIFICATION FOR FLORIDA COUNTIES, GROUP C

Group C	Commercial by Classes*—Six Economic Classes						Non-Commercial by Classes		
	I	II	III	IV	V	VI	Part-time	Retirement	Abnormal
Collier	28	4	13	5	17	21	1	5	...
Columbia	11	29	45	121	181	45	240	51	...
Gadsden	54	54	77	20	91	50	226	81	1
Highlands	50	28	75	94	41	27	108	40	5
Indian River	67	52	52	52	53	35	140	25	5
Jackson	29	50	99	259	286	450	695	301	7
Martin	42	3	7	9	5	25	20	5	...
Osceola	43	39	65	48	42	41	145	40	5
Pasco	107	80	151	130	126	30	257	106	...
Putnam	26	21	34	38	30	12	260	151	...
St. Johns	58	34	31	11	21	10	61	10	...
St. Lucie	59	43	55	103	87	25	170	70	...
Santa Rosa	1	31	46	92	132	75	410	96	10

*Explanation of Commercial Classes in Value of Farm Products Sold

I	$40,000 and over	III	$10,000–$19,999	V	$2,500– $4,999
II	$20,000–$39,999	IV	$5,000– $9,999	VI	$50– $2,499

SOURCE: United States Census of Agriculture, 1959.

TABLE 19

AGRICULTURAL, NON-AGRICULTURAL, AND TOTAL EMPLOYMENT[1] FOR FLORIDA COUNTIES, GROUP C, 1960–1963

Group C	March, 1960[2]			March, 1961[2]			March, 1962[2]			March, 1963[2]		
	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.
Collier	5150	5000	150	5800	5640	150	5950	5800	150	6050	5900	150
Columbia	6650	5600	1050	6600	5550	1050	7000	5950	1050	7200	6150	1050
Gadsden	10700	8450	2250	10250	8150	2100	10500	8650	1900	10200	8450	1750
Highlands	5500	4350	1150	5450	4150	1300	7000	5500	1500	6800	5100	1700
Indian River	7900	7200	700	8750	8100	650	9000	8400	600	8950	8400	550
Jackson	10150	7200	2950	9250	6500	2750	8900	6350	2550	9350	6900	2450
Martin	5900	4950	950	6150	4950	1200	6100	4450	1650	6900	4750	2150
Osceola	3450	2750	700	3500	2750	750	4350	3500	850	4300	3350	950
Pasco	6600	5550	1050	7550	6500	1050	7900	6900	1000	7800	6850	950
Putnam	10350	9350	1000	10450	9250	1200	10550	9200	1350	10450	8850	1600
St. Johns	9800	9300	500	9700	9200	500	9850	9400	450	9800	9350	450
St. Lucie	11550	10500	1050	12050	11050	1000	12400	11450	950	12400	11450	950
Santa Rosa	7150	5050	2100	7100	5100	2000	7000	5200	1800	7100	5300	1800

[1] Research and Statistics Department, Florida Industrial Commission
[2] These figures in increments of fifty

TABLE 20

NON-AGRICULTURAL EMPLOYMENT BY MAJOR INDUSTRIAL GROUPS FOR FLORIDA COUNTIES, GROUP C, 1960–1963

Group C	Manufacturing				Construction				Transportation and Public Utilities				Wholesale and Retail Trade			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Collier	300	300	250	250	450	500	500	400	100	150	150	150	1000	1050	1150	1200
Columbia	850	800	950	950	100	100	150	150	200	200	200	150	1000	1000	1050	1050
Gadsden	1600	1150	1250	1200	350	300	350	250	200	200	150	150	1500	1650	1450	1300
Highlands	250	250	300	250	250	250	300	300	100	150	300	300	1250	1150	1400	1200
Indian River	500	1000	1000	900	800	700	550	600	150	100	150	150	1750	1950	2100	2250
Jackson	950	900	1000	1050	200	200	150	200	250	300	250	300	1450	1550	1450	1550
Martin	150	200	200	250	400	450	450	500	150	100	100	100	1150	950	700	800
Osceola	350	300	350	350	100	100	100	100	50	50	50	50	750	750	800	750
Pasco	850	1450	1400	1550	300	250	300	250	300	350	450	450	1350	1300	1450	1400
Putnam	3100	2950	3000	2850	300	250	250	300	350	350	300	400	1350	1350	1400	1300
St. Johns	900	900	1350	1450	500	550	550	500	900	650	550	350	1450	1500	1500	1550
St. Lucie	850	800	900	900	700	750	800	750	800	800	850	900	2950	3050	3100	3150
Santa Rosa	750	1000	1050	1100	750	400	350	300	50	100	100	100	650	800	750	800

Group C	Finance, Insurance, and Real Estate				Service				Government				All Other Non-Agricultural[1]			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Collier	350	350	400	450	650	850	950	1000	500	500	600	700	1500	1750	1600	1550
Columbia	150	150	200	200	550	500	600	600	1400	1400	1300	1600	1300	1350	1400	1350
Gadsden	150	150	150	150	300	250	300	300	3000	3050	3100	3300	1300	1300	1750	1650
Highlands	150	150	150	200	700	650	700	750	700	600	750	750	950	950	1500	1300
Indian River	350	300	350	300	900	950	1000	1000	800	850	950	1000	1900	2200	2200	2100
Jackson	200	200	200	200	1050	400	300	300	1250	1250	1400	1650	1800	1650	1500	1550
Martin	350	300	400	400	300	400	400	400	450	500	450	500	1950	2000	1650	1700
Osceola	100	100	150	150	350	350	350	400	600	650	700	650	400	400	950	850
Pasco	250	250	200	150	400	450	500	550	600	650	700	750	1450	1750	1800	1700
Putnam	200	200	200	150	500	500	550	550	950	950	1050	1100	2250	2600	2350	2150
St. Johns	200	200	200	200	1850	1900	1800	1900	1200	1200	1250	1300	2150	2200	2100	2000
St. Lucie	400	500	650	550	800	850	950	1050	1350	1500	1550	1600	2550	2750	2250	2450
Santa Rosa	150	100	150	200	200	200	200	300	1350	1500	1550	1500	1150	1090	1050	1000

SOURCE: Basic Labor Market Information, Research and Statistics Department, Florida Industrial Commission.
[1] Includes self-employed, unpaid family workers, and domestic service workers in private households.

TABLE 21

SELECTED POPULATION CHARACTERISTICS FOR FLORIDA COUNTIES, GROUP D

County	% 18 Yrs. and Under (1960)	% 19-44 (1960)	Col. 2 minus Col. 1	% 45-64 (1960)	% 65 and over (1960)	% Increase 1950-60 65 and Over	Median Age (1960)	Median School Years Completed (1960)	% Change 1950-60 Total Population	% Change 1960-63[1] Total Population	% Urban Population (1960)	Population per Square Mile (1960)
Alachua	38.6	39.7	+1.1	15.4	6.3	34.8	23.3	11.5	29.9	29.9	49.6	97.0
Bay	41.6	37.1	—4.5	16.2	5.1	78.2	23.8	11.1	57.3	2.4	65.0	91.2
Lake	33.6	28.4	—5.2	22.0	16.0	125.7	34.3	10.3	57.9	8.7	47.3	62.7
Lee	33.8	29.8	—4.0	23.7	12.7	198.6	34.1	10.8	133.0	26.4	49.3	87.7
Leon	39.0	40.3	+1.3	15.5	5.2	39.5	23.5	11.9	43.9	11.3	64.9	120.6
Manatee	29.5	24.4	—5.1	24.1	22.0	221.3	41.1	10.3	99.3	10.8	62.1	111.5
Marion	39.1	29.3	—9.8	21.0	10.6	60.4	29.5	9.5	35.2	15.3	32.4	36.8
Monroe	34.6	43.7	+9.1	16.1	5.6	82.6	25.6	10.9	60.0	16.5	70.9	56.1
Okaloosa	43.1	43.5	+0.4	10.2	3.2	70.6	22.7	12.1	122.2	7.5	49.2	69.7
Sarasota	28.6	26.7	—1.9	26.3	18.4	311.6	40.5	11.6	166.7	17.2	68.4	170.3
Seminole	40.1	34.0	—6.1	17.3	8.6	98.0	26.7	11.0	104.4	22.4	49.1	209.3
STATE	35.2	33.0	—2.2	20.6	11.2	133.0	31.2	10.9	78.7	13.9	73.9	104.0

[1] Bureau of Economic and Business Research, University of Florida
Other Figures—County and City Data Book, 1962; U.S. Bureau of the Census

TABLE 22

FIVE YEAR SUMMARY OF NEW INDUSTRIAL PLANTS AND EXPECTED EMPLOYMENT FOR FLORIDA COUNTIES, GROUP D, 1958-1962

Group D	New Plants	Expected Employment
Alachua	26	1,055
Bay	25	940
Lake	53	2,119
Lee	34	501
Leon	20	189
Manatee	58	1,823
Marion	36	752
Monroe	8	101
Okaloosa	24	3,400
Sarasota	45	872
Seminole	40	2,307
STATE TOTAL	3,784	114,928

SOURCE: *Florida's New Industrial Plants*, 1962.

TABLE 23

CHANGES IN NUMBER AND SIZE OF FARMS IN FLORIDA COUNTIES, GROUP D

Group D	Number of Farms		Average Size in Acres		Number of Farms 10 Acres and Under		Number of Farms 1000 Acres and Over	
	1954	1959	1954	1959	1954	1959	1954	1959
Alachua	1610	1073	246	348	188	70	76	67
Bay	264	180	167	170	90	56	7	7
Lake	2920	2827	109	116	737	763	53	55
Lee	458	279	480	511	117	67	36	25
Leon	910	589	201	299	164	67	27	25
Manatee	804	753	385	336	171	186	56	45
Marion	1853	1736	369	310	252	250	80	65
Monroe	11	17	44	53	6	11	....	....
Okaloosa	863	598	120	132	89	35	9	8
Sarastoa	349	325	564	510	87	96	25	22
Seminole	789	680	231	310	247	247	21	18
STATE TOTAL	57543	45100	316	338	10453	8648	2072	1764

SOURCE: United States Census of Agriculture, 1954 and 1959.

TABLE 24

NUMBER OF FARMS BY CENSUS CLASSIFICATION FOR FLORIDA COUNTIES, GROUP D

Group D	Commercial by Classes*—Six Economic Classes						Non-Commercial by Classes		
	I	II	III	IV	V	VI	Part-time	Retirement	Abnormal
Alachua	60	61	100	122	135	72	361	151	2
Bay	1	2	6	16	38	5	111	6	...
Lake	188	214	319	483	348	95	771	316	5
Lee	50	33	2	26	29	10	66	35	...
Leon	15	6	13	19	21	90	292	125	15
Manatee	65	20	81	89	93	40	250	70	...
Marion	90	66	123	164	191	96	726	285	...
Monroe	...	...	...	5	5	...	5	...	...
Okaloosa	1	2	6	25	63	60	316	85	...
Sarasota	20	26	14	52	79	16	120	45	...
Seminole	67	25	82	62	70	15	252	85	...

*Explanation of Commercial Classes in Value of Farm Products Sold

I	$40,000 and over	III	$10,000–$19,999	V	$2,500– $4,999
II	$20,000–$39,999	IV	$5,000– $9,999	VI	$50– $2,499

SOURCE: United States Census of Agriculture, 1959.

TABLE 25

AGRICULTURAL, NON-AGRICULTURAL, AND TOTAL EMPLOYMENT[1] FOR FLORIDA COUNTIES, GROUP D, 1960–1963

Group D	March, 1960			March, 1961			March, 1962			March, 1963			[2]Population	
	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total 1963	% Changes 1960–63
Alachua	27550	26050	1500	28500	27100	1400	29700	28300	1400	31700	30400	1300	86500	16.7
Bay	18600	18300	300	17950	17600	350	18300	18000	300	18050	17750	300	68700	2.4
Lake	16900	13650	3250	17850	14400	3450	18550	14900	3650	18000	14050	3950	62400	8.7
Lee	19300	18100	1200	20800	19550	1250	22450	21100	1350	22600	21150	1450	65300	26.4
Leon	29500	28750	750	30700	30000	700	31950	31300	650	33050	32500	550	82600	11.3
Manatee	18350	17000	1350	19600	18250	1350	19550	18250	1300	19150	17900	1250	76700	10.8
Marion	16950	14550	2400	17350	14900	2450	18300	15750	2550	18150	15500	2650	59500	15.3
Monroe	10600	10600	0	11500	11450	50	12200	12200	0	11850	11850	0	55800	16.5
Okaloosa	17250	16700	550	18250	17750	500	15800	15350	450	15400	15000	400	65800	7.5
Sarasota	28150	27450	700	29300	28550	750	30800	30000	800	30250	28400	850	90000	17.2
Seminole	11500	10000	1500	12150	10600	1550	13700	11400	2300	13500	11800	1700	67200	22.4

[1] Research and Statistics Department, Florida Industrial Commission.
[2] Estimates from Bureau of Economic and Business Research

TABLE 26

NON-AGRICULTURAL EMPLOYMENT BY MAJOR INDUSTRIAL GROUPS FOR FLORIDA COUNTIES, GROUP D, 1960–1963

Group D	Manufacturing				Construction				Transportation and Public Utilities				Wholesale and Retail Trade			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Alachua	2650	2600	2800	2900	1050	1200	1250	2450	600	600	600	750	3750	3950	3950	4100
Bay	2500	2150	2250	2000	1200	900	1000	900	900	650	800	800	3750	3900	3900	3900
Lake	1400	1600	1700	1650	1250	1050	1100	1150	450	400	450	450	3550	3700	4100	3400
Lee	850	950	1000	1000	1700	1750	2050	1900	1000	1050	1000	1200	3950	4200	4250	4100
Leon	1850	1850	1700	1650	1550	1300	1600	1650	1550	950	900	950	4600	4750	5000	5100
Manatee	2100	2150	2250	2250	1100	1100	1150	1000	450	500	550	500	3900	4000	4300	4200
Marion	1650	1750	1900	1850	1050	950	850	850	450	800	650	600	3500	3600	3700	3600
Monroe	500	450	500	450	450	650	750	650	500	400	450	500	2350	2500	2350	2350
Okaloosa	1850	2450	1400	950	900	700	650	800	450	450	500	500	1950	2050	2100	2400
Sarasota	2000	2150	2350	2900	2400	2250	2350	2150	900	950	1100	1050	6100	6100	6800	6600
Seminole	1100	1100	1200	1700	750	750	600	700	700	850	900	1000	2000	1900	2400	2100

Group D	Finance, Insurance, and Real Estate				Service				Government				All Other Non-Agricultural[1]			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Alachua	600	650	800	850	1450	1500	1800	1800	10850	11100	11750	13050	4900	5100	5250	5200
Bay	600	550	650	700	1600	1700	1850	1850	3750	3750	4100	4350	3950	3350	3950	3150
Lake	400	400	500	500	1300	1450	1600	1550	1350	1500	1650	1900	3850	4150	3600	3250
Lee	1100	950	1150	1400	2050	2150	2300	2400	1550	1950	2400	2450	5500	6200	6550	6300
Leon	900	1000	1000	950	2100	2100	2300	2650	11450	12550	12750	13650	5050	5450	5900	5800
Manatee	600	600	650	650	1400	1450	1550	1650	2050	2450	2500	2700	5300	5900	5100	4750
Marion	450	500	550	600	1950	1400	1700	1700	2000	2150	2000	2150	3250	3450	4050	3800
Monroe	450	400	400	350	1550	1650	1700	1900	2500	2800	2750	2600	2150	2400	3000	2750
Okaloosa	200	300	350	350	1750	3150	2200	1900	5050	5100	5400	5550	3200	3500	2600	2400
Sarasota	1400	1500	1650	1650	3700	3700	4150	3800	2600	2900	3000	3200	8300	8900	8450	7900
Seminole	300	300	400	400	1300	1400	1600	1500	1350	1500	1500	1600	2500	2800	2800	2800

SOURCE: Basic Labor Market Information, Research and Statistics Department, Florida Industrial Commission

[1] Includes self-employed, unpaid family workers, and domestic service workers in private households.

TABLE 27

SELECTED POPULATION CHARACTERISTICS FOR FLORIDA COUNTIES, GROUP E

County	% 18 Yrs. and Under (1960)	% 19-44 (1960)	Col. 2 minus Col. 1	% 45-64 (1960)	% 65 and over (1960)	% Increase 1950-60 65 and Over	Median Age (1960)	Median School Years Completed (1960)	% Change 1950-60 Total Population	% Change 1960-63[1] Total Population	% Urban Population (1960)	Population per Square Mile (1960)
Brevard	39.6	34.9	—4.7	15.3	5.7	138.4	26.5	12.1	371.1	35.4	54.1	146.3
Broward	33.4	31.9	—1.5	23.3	11.4	503.1	33.9	11.9	279.9	19.4	96.6	327.3
Dade	32.4	35.0	+2.6	22.6	10.0	148.9	33.4	11.5	95.6	17.7	95.6	536.0
Duval	39.5	36.5	—3.0	17.8	6.2	57.0	26.6	10.8	49.8	10.6	85.2	648.3
Escambia	42.2	37.5	—4.7	15.1	5.2	56.1	23.9	10.7	54.2	10.1	73.7	291.3
Hillsborough	36.2	36.0	—0.2	18.0	9.8	94.4	30.4	10.1	59.2	8.0	79.8	413.3
Orange	37.1	35.9	—1.2	17.6	9.4	108.3	28.6	11.8	129.3	12.7	77.8	324.2
Palm Beach	32.8	31.7	—1.1	22.8	12.7	179.8	34.0	11.3	98.9	19.0	82.8	137.2
Pinellas	25.5	24.6	—0.9	25.0	24.9	211.2	44.9	11.1	135.3	11.6	91.1	1584.2
Polk	37.8	32.5	—5.3	19.5	10.2	97.4	29.1	9.7	57.4	8.8	61.8	114.1
Volusia	29.4	26.7	—2.7	24.2	19.7	168.9	39.5	11.5	68.8	13.2	61.4	127.3
STATE	35.2	33.0	—2.2	20.6	11.2	137.0	31.2	10.9	78.7	13.9	73.9	104.0

[1] Bureau of Economic and Business Research, University of Florida
Other Figures—County and City Data Book, 1962; U.S. Bureau of the Census

TABLE 28

FIVE YEAR SUMMARY OF NEW INDUSTRIAL PLANTS AND EXPECTED EMPLOYMENT FOR FLORIDA COUNTIES, GROUP E, 1958-62

Group E	New Plants	Expected Employment
Brevard	91	4,559
Broward	323	7,339
Dade	1,272	25,168
Duval	195	6,634
Escambia	39	909
Hillsborough	209	5,221
Orange	221	14,475
Palm Beach	216	6,414
Pinellas	238	8,215
Polk	128	6,200
Volusia	98	3,974
STATE TOTAL	3,784	114,928

SOURCE: *Florida's New Industrial Plants*, 1962.

TABLE 29

CHANGES IN NUMBER AND SIZE OF FARMS IN FLORIDA COUNTIES, GROUP E

Group E	Number of Farms		Average Size in Acres		Number of Farms 10 Acres and Under		Number of Farms 1000 Acres and Over	
	1954	1959	1954	1959	1954	1959	1954	1959
Brevard	1017	772	420	343	327	295	36	23
Broward	408	381	318	212	124	168	24	19
Dade	1527	1151	126	112	700	542	29	17
Duval	475	317	170	247	157	102	12	15
Escambia	1334	782	118	174	316	93	11	9
Hillsborough	4492	3439	192	225	1177	941	81	72
Orange	2726	2600	159	134	838	1082	54	47
Palm Beach	874	527	511	707	231	136	78	61
Pinellas	758	546	75	105	248	209	10	10
Polk	4020	3128	310	339	775	641	152	143
Volusia	1173	1371	212	192	369	497	40	37
STATE TOTAL	57543	45100	316	338	10453	9648	2072	1764

SOURCE: United States Census of Agriculture, 1954 and 1959

TABLE 30

NUMBER OF FARMS BY CENSUS CLASSIFICATION FOR FLORIDA COUNTIES, GROUP E

Group E	Commercial by Classes*—Six Economic Classes						Non-Commercial by Classes		
	I	II	III	IV	V	VI	Part-time	Retirement	Abnormal
Brevard	50	49	63	79	92	10	310	100	5
Broward	70	48	25	37	56	21	126	6	5
Dade	169	161	86	125	120	45	340	120	2
Duval	55	21	12	26	48	41	80	25	...
Escambia	17	20	36	52	90	50	415	85	...
Hillsborough	224	191	338	360	420	225	1252	460	10
Orange	267	249	258	231	250	67	850	520	5
Palm Beach	163	78	57	72	52	32	46	20	1
Pinellas	60	62	51	102	56	15	130	65	...
Polk	381	317	334	339	336	60	260	151	10
Volusia	38	24	105	161	87	118	562	315	...

* Explanation of Commercial Classes in Value of Farm Products Sold

I $40,000 and over
II $20,000–$39,999
III $10,000–$19,999
IV $5,000– $9,999
V $2,500– $4,999
VI $50– $2,499

SOURCE: United States Census of Agriculture, 1959.

TABLE 31

AGRICULTURAL, NON-AGRICULTURAL, AND TOTAL EMPLOYMENT[1] FOR FLORIDA COUNTIES, GROUP E, 1960–1963

Group E	March, 1960			March, 1961			March, 1962			March, 1963		
	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.	Total	Non-Agri.	Agri.
Brevard	54150	53350	800	54250	53500	750	58700	58000	700	67900	67200	700
Broward	121400	115900	5500	123600	118800	4800	128200	123200	5000	124900	120400	4500
Dade	398900	393200	5700	396700	386200	10500	412800	400100	12700	419900	409900	10000
Duval	172100	171400	700	180000	179300	700	177000	177000	700	174000	173300	700
Escambia	59900	58100	1800	60700	59100	1600	59900	58300	1600	60200	58500	1700
Hillsborough	146200	138700	7500	147900	140800	7100	148400	141300	7100	148500	141900	6600
Orange	108400	103600	4800	113900	108800	5100	113900	109000	4900	114300	110000	4300
Palm Beach	97000	79700	17300	102600	84100	18500	109700	88100	21600	113200	86600	24600
Pinellas	123900	121900	2000	124300	122500	1800	129100	127400	1700	121900	120700	1200
Polk	74700	68700	6000	77900	71600	6300	76700	70900	5800	75000	69300	5700
Volusia	40900	38700	2200	42900	40700	2200	43200	40800	2400	46200	43800	2400

[1] Research and Statistics Department, Florida Industrial Commission

TABLE 32

NON-AGRICULTURAL EMPLOYMENT BY MAJOR INDUSTRIAL GROUPS FOR FLORIDA COUNTIES, GROUP E, 1960–1963

Group E	Manufacturing				Construction				Transportation and Public Utilities				Wholesale and Retail Trade			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Brevard	7300	7300	8050	8200	3200	2300	2600	4900	1150	1100	1100	1300	6350	5900	6250	7900
Broward	8200	8500	9500	9900	12200	8700	9000	9700	4800	4700	4900	5100	25200	25400	26900	28100
Dade	43100	43700	47500	47900	22500	19800	19600	19700	36400	34700	34100	33600	90700	89500	91400	95300
Duval	20600	20200	20200	20400	11100	11900	10300	9400	14500	15400	15500	15400	40500	40600	41300	41500
Escambia	12900	12900	13200	13200	3800	3900	3100	3700	3000	3100	3100	3000	10100	10000	9600	9800
Hillsborough	28300	23700	23100	22800	10800	9300	10000	9600	10500	10000	10800	11700	34500	33600	33700	34200
Orange	16300	17200	18600	18400	9200	7500	6900	7300	3800	3900	4000	4300	23700	24000	25100	24500
Palm Beach	7900	9600	11400	12100	6700	5500	6200	6700	3500	3300	3100	3400	17400	17500	18500	19000
Pinellas	12900	11900	13600	14700	10600	8200	9000	8600	4000	4100	4100	4200	27100	26300	27700	27700
Polk	11700	12600	12700	12300	4600	3890	3400	3500	2600	2600	2600	2600	15200	15100	16400	15100
Volusia	3100	3100	3400	4300	2400	1800	1900	2400	1900	1800	1800	1600	9300	9000	9200	9500

Group E	Finance, Insurance, and Real Estate				Service				Government				All Other Non-Agricultural[1]			
	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963	1960	1961	1962	1963
Brevard	850	950	1100	1600	10450	11200	11450	11450	5700	5850	7050	8500	18250	18800	20250	20300
Broward	6400	6700	6400	6800	16000	16500	18100	19300	11000	12300	13300	13800	32100	36000	.....	27700
Dade	20800	21500	22600	22700	68300	68600	71700	74500	35400	37400	40000	42600	76000	72000	73200	73600
Duval	14000	14100	14100	13900	19000	19700	20400	21100	22900	24000	24700	25300	28800	22400	30500	26300
Escambia	1900	1900	1900	1900	4700	4800	4900	5000	11500	11500	12200	12000	10200	11000	10300	9900
Hillsborough	5400	6000	6000	6400	14600	14900	15900	16700	13900	14900	15500	16600	25200	28400	26300	23900
Orange	4900	5300	5300	5400	12300	12500	12200	13200	8700	9800	10400	11100	24700	28600	26500	25800
Palm Beach	4400	4300	4500	4600	12300	12700	13300	13900	7200	7600	8100	9100	20300	23600	23000	19800
Pinellas	6000	6100	6400	6400	16400	16800	18000	18900	12400	12900	13700	14000	32500	36200	34900	26200
Polk	2000	2200	2200	2600	7600	7800	7500	8000	7100	7100	7300	7700	13400	15500	14200	13200
Volusia	1800	1900	1900	2100	6000	6300	6500	7000	4000	5000	5100	5400	10200	11800	11000	11500

SOURCE: Basic Labor Market Information, Research and Staistics Department, Florida Industrial Commission

[1] Includes self-employed, unpaid family workers and domestic service workers in private households.

TABLE 33

INDEX NUMBERS OF VOLUME OF AGRICULTURAL PRODUCTION IN FLORIDA
(1947–49 — 100)

Year	Oranges	Grapefruit	All Citrus(1)	Tomatoes	Vegetable Crops(2)	Grains(3)	Tobacco(4)
1938	42	51	45	111	88	108	79
1939	53	81	61	122	89	83	86
1940	45	56	48	71	81	117	73
1941	51	86	59	64	72	101	60
1942	48	67	53	74	81	109	66
1943	66	95	75	48	70	121	65
1944	82	108	88	74	82	112	77
1945	76	78	78	84	93	105	76
1946	88	112	94	93	97	98	82
1947	93	92	94	68	80	110	98
1948	103	102	102	84	95	90	92
1949	103	105	104	148	125	99	110
1950	104	85	101	162	141	120	106
1951	119	116	119	164	146	149	131
1952	139	115	132	195	164	149	118
1953	128	114	125	172	162	161	96
1954	162	142	155	187	171	142	131
1955	156	122	148	269	203	172	138
1956	161	134	153	253	204	175	121
1957	165	131	155	229	184	191	109
1958	146	109	133	138	141	215	101
1959	152	123	143	199	161	232	122
1960	162	107	145	179	165	215	145
1961	153	110	143	260	198	221	149

SOURCE: Agricultural Economics Mimeo Report No. 62-2, July 1961, Agricultnral Experiment Station, Gainesville, Florida
Commodities included in index: (1) All Citrus—oranges, grapefruit, tangerines, limes. (2) Vegetable Crops—lima beans, snap beans, fresh and processed, cabbage, cantaloups, cauliflower, celery, sweet corn, cucumbers, eggplant, escarole and chicory, lettuce, English peas, green peppers, Irish potatoes, squash, strawberries, tomatoes, fresh and processed, watermelons. (3) Grains—corn, oats. (4) Tobacco—Type 14, 56, 62.

Year	All Crops	Cattle and Calves	Hogs	Dairy(5)	Poultry(6)	All Livestock Products	Total Products Total All
1938	74	44	105	62	57	64	70
1939	80	45	109	63	59	66	76
1940	73	47	97	61	65	66	70
1941	72	51	105	72	67	72	72
1942	73	56	116	74	78	78	73
1943	79	65	133	81	91	89	80
1944	88	88	126	85	83	92	88
1945	87	95	122	90	86	96	88
1946	93	106	125	93	84	100	94
1947	90	98	100	96	92	96	91
1948	99	104	108	98	98	101	99
1949	111	98	92	106	110	104	110
1950	118	133	94	115	116	117	118
1951	130	137	114	121	120	124	130
1952	142	191	121	131	128	142	141
1953	139	210	104	147	141	153	155
1954	153	205	93	154	155	155	155
1955	165	216	101	167	144	160	165
1956	163	210	110	191	170	176	169
1957	157	222	93	211	171	184	165
1958	133	232	98	216	191	193	147
1959	148	219	109	238	239	211	162
1960	149	196	94	251	240	210	164
1961	165	202	92	249	273	218	177

SOURCE: Agricultural Economics Mimeo Report No. 62-2, July 1961, Agricultural Experiment Station, Gainesville, Florida.
Commodities included in index: (5) Dairy Products—whole milk. (6) Poultry—chickens, eggs, broilers, turkeys. All crops and all Livestock and products include additional products not shown in groups above.

TABLE 34

NUMBER OF FIRMS AND EMPLOYEES IN FLORIDA COUNTIES FOR SIX STANDARD INDUSTRIAL CLASSIFICATIONS*

County	Major Group 37		Major Group 33		Major Group 35		Major Group 26		Major Group 36		Major Group 38	
	Firms	Employ	Firms	Employ	Firms	Employ	Firms	Employ	Firms	Employ	Firms	Employ
Alachua	..	....	1	+	3	130	..	....	9	930	..	....
Baker	..	....	..	....	..	....	..	....	..	....	..	....
Bay	6	85	1	100	3	42	1	1598	..	....	1	10
Bradford	..	....	..	....	..	....	..	....	..	....	..	....
Brevard	8	2235	..	....	5	358	1	12	7	1640	1	20
Broward	29	1285+	1	10	42	1038	1	8	29	1767	5	460
Calhoun	..	....	..	....	..	....	..	....	..	....	..	....
Charlotte	..	....	..	....	..	....	..	....	..	....	..	....
Citrus	..	....	..	....	..	....	..	....	..	....	..	....
Clay	..	....	..	....	..	....	..	....	..	....	..	....
Collier	..	....	..	....	2	34	..	....	..	....	..	....
Columbia	3	1235	..	....	1	15	..	....	..	....	..	....
Dade	59	6068	22	1035	75	2096	25	831	40	1486	13	550
De Soto	..	....	..	....	2	20	..	....	1	50	..	....
Dixie	..	....	..	....	..	....	..	....	..	....	..	....
Duval	17	2255	10	655	23	816	17	7285	5	82	6	70
Escambia	3	75	1	25	4	47	3	4124	..	....	3	25
Flagler	..	....	..	....	..	....	..	....	..	....	..	....
Franklin	..	....	..	....	..	....	..	....	..	....	..	....
Gadsden	..	....	..	....	..	....	..	....	..	....	..	....
Gilchrist	..	....	..	....	..	....	..	....	..	....	..	....
Glades	..	....	..	....	..	....	..	....	..	....	..	....
Gulf	..	....	..	....	..	....	1	750	..	....	..	....
Hamilton	..	....	..	....	..	....	..	....	..	....	..	....
Hardee	..	....	..	....	..	....	..	....	..	....	..	....
Hendry	..	....	..	....	..	....	..	....	..	....	..	....
Hernando	..	....	..	....	..	....	..	....	1	35	..	....
Highlands	..	....	..	....	1	4	..	....	..	....	..	....
Hillsborough	17	876	8	119	21	454	8	470	9	267	3	30
Holmes	..	....	..	....	..	....	..	....	..	....	..	....
Indian River	1	500	1	15	1	10	..	....	..	....	3	115
Jackson	..	....	..	....	1	5	..	....	..	....	..	....
Jefferson	..	....	..	....	..	....	..	....	..	....	..	....
Lafayette	..	....	..	....	..	....	..	....	..	....	..	....
Lake	..	....	1	25	2	46	..	....	3	65	1	90
Lee	4	61	..	....	2	40	..	....	1	20	..	....
Leon	..	....	2	28	..	....	..	....	..	....	1	10
Levy	..	....	..	....	..	....	..	....	..	....	..	....
Liberty	..	....	..	....	..	....	..	....	..	....	..	....
Madison	..	....	..	....	..	....	..	....	..	....	..	....
Manatee	5	345	1	5	5	38	..	....	2	55	..	....
Marion	6	208	..	....	4	53	..	....	2	135	..	....
Martin	3	22	..	....	..	....	..	....	1	50	1	5
Monroe	1	10	..	....	..	....	..	....	..	....	..	....
Nassau	1	+	..	....	..	....	3	1525	..	....	..	....
Okaloosa	4	381	..	....	..	....	..	....	2	155	..	....
Okeechobee	..	....	..	....	..	....	..	....	..	....	..	....
Orange	8	215	3	20+	18	432	3	225	18	805	3	25
Osceola	..	....	1	170	1	10	..	....	..	....	..	....
Palm Beach	12	6012	3	75	18	278	1	60	5	80	2	30
Pasco	1	15	..	....	1	25	..	....	..	....	..	....
Pinellas	17	418	3	60	38	837	2	21	15	4189	11	455
Polk	5	130	..	....	12	138	1	54	1	30	1	5
Putnam	1	15	..	....	..	....	2	2000	..	....	..	....
St. Johns	3	1100	..	....	1	10	..	....	..	....	..	....
St. Lucie	2	14	..	....	3	43	..	....	1	25	..	....
Santa Rosa	..	....	..	....	..	....	..	....	..	....	..	....
Sarasota	8	170	1	10	4	155	..	....	3	1185	3	75
Seminole	2	20	..	....	3	96	..	....	..	....	..	....
Sumter	..	....	..	....	..	....	..	....	..	....	..	....
Suwannee	..	....	..	....	..	....	..	....	..	....	..	....
Taylor	1	35	..	....	..	....	1	500	..	....	..	....
Union	..	....	..	....	..	....	..	....	..	....	..	....
Volusia	5	45	1	40	8	142	1	11	4	330	4	630
Wakulla	..	....	..	....	..	....	..	....	..	....	..	....
Walton	..	....	..	....	..	....	..	....	..	....	..	....
Washington	..	....	..	....	..	....	..	....	..	....	..	....

SOURCE: Data supplied by the Florida Development Commission.

* Major Group 26 includes paper and allied products. Major Group 33 includes primary metals industries. Major Group 35 includes machinery (except electrical). Major Group 36 includes electrical machinery, equipment, and supplies. Major Group 37 includes transportation equipment, its construction, maintenance, and overhaul. Major Group 38 includes professional scientific and controlling instruments, photographic goods, optical goods and watches.

TABLE 35

FLORIDA'S COMMUTING WORKERS IN 1960 SHOWN BY COUNTIES

County	Total Workers 1960	Number Working Outside County of Residence	Per Cent Working Outside County of Residence 1960
Alachua	25,790	716	2.78
Baker	2,163	414	18.68
Bay	23,572	528	2.24
Bradford	4,001	1,171	29.27
Brevard	41,321	685	1.66
Broward	114,111	13,849	12.14
Calhoun	1,972	341	17.29
Charlotte	3,511	251	7.15
Citrus	2,968	276	9.30
Clay	6,566	1,741	26.52
Collier	5,857	146	2.49
Columbia	7,056	372	5.27
Dade	356,364	9,228	2.59
De Soto	3,676	330	8.98
Dixie	1,457	166	11.39
Duval	171,867	4,116	2.39
Escambia	60,090	2,569	4.28
Flagler	1,646	200	12.15
Franklin	2,065	128	6.20
Gadsden	13,212	930	7.04
Gilchrist	987	167	17.12
Glades	1,228	99	8.06
Gulf	3,130	149	4.76
Hamilton	2,616	278	10.63
Hardee	4,370	508	11.62
Hendry	3,120	393	12.60
Hernando	3,374	309	9.16
Highlands	6,937	349	5.03
Hillsborough	142,500	7,141	5.01
Holmes	2,795	666	23.83
Indian River	8,359	528	6.29
Jackson	11,295	528	6.29
Jefferson	2,984	248	8.31
Lafayette	1,070	145	13.55
Lake	18,442	1,258	6.82
Lee	18,735	824	4.40
Leon	27,927	706	2.53
Levy	3,585	367	10.24
Liberty	930	235	25.27
Madison	4,791	433	9.04
Manatee	21,214	2,303	10.86
Marion	17,630	969	5.50
Martin	5,648	551	9.76
Monroe	20,335	224	1.10
Nassau	5,415	675	12.47
Okaloosa	21,754	627	2.88
Okeechobee	2,153	209	9.71
Orange	96,761	3,591	3.71
Osceola	5,649	987	17.47
Palm Beach	85,243	2,117	2.48
Pasco	10,939	1,535	14.04
Pinellas	112,790	4,021	3.57
Polk	68,018	2,120	3.12
Putnam	10,474	587	5.60
St. Johns	10,198	995	9.76
St. Lucie	14,306	1,335	9.33
Santa Rosa	10,401	2,432	23.38
Sarasota	25,383	1,328	5.23
Seminole	18,828	5,349	28.41
Sumter	3,487	537	15.00
Suwannee	4,947	341	6.89
Taylor	4,087	102	2.50
Union	1,383	419	30.30
Volusia	40,549	1,997	4.92
Wakulla	1,498	453	30.24
Walton	4,584	1,329	28.99
Washington	2,890	562	19.45

SOURCE: 1960 Census of Population, Volume I. Part II, Florida; U.S. Bureau of the Census

TABLE 36

THE NUMBER OF WOMEN EMPLOYED IN SELECTED OCCUPATIONS IN FLORIDA 1950, 1960, AND PROJECTED TO 1970

Number Employed		Occupation	Projection 1970	
1950	1960		Projection A	Projection B
2,738	6,873	Baby Sitters (Private Household)	12,000	17,252
555	2,588	Bank Tellers	4,421	12,667
10,197	23,185	Bookkeepers	40,422	52,715
1,412	1,327	Building Managers and Superintendents	2,210	1,247
379	1,375	Bus Drivers	2,210	4,988
5,734	14,152	Cashiers	24,632	34,927
4,237	12,481	Chambermaid and Maids (non-private)	21,790	36,765
706	2,175	Charwomen and Cleaners (non-private)	3,789	6,700
5,197	9,585	Cooks (not private households)	16,737	17,677
1,170	3,016	Counter and Fountain Workers	5,052	7,774
3,395	4,038	Dressmakers and Seamstresses (excluding factory)	6,947	4,802
1,161	1,861	File Clerks	3,158	2,982
4,979	9,343	Hairdressers and Cosmetologists	16,105	17,531
1,482	6,824	Hospital and Institutional Attendants	11,864	31,421
2,843	4,379	Housekeepers (private household)	7,579	6,744
2,008	3,772	Housekeepers and Stewards (excluding private household)	6,316	7,085
543	1,620	Insurance Agents, Brokers, and Underwriters	2,526	3,213
4,403	5,732	Kitchen Workers (N.E.C.)	9,789	7,461
886	2,172	Medical and Dental Technicians	3,789	5,324
844	3,459	Office Machine Operators	6,000	13,534
994	2,035	Personal Services Managers (Salaried)	3,473	4,166
892	2,005	Physician's and Dentist's Office Attendants	3,473	4,506
3,007	4,859	Practical Nurses	8,210	7,851
956	3,074	Real Estate Agents and Brokers	5,368	9,884
728	3,519	Receptionists	6,000	17,009
23,884	38,530	Sales—Retail Trade	67,265	62,156
11,649	40,959	Secretaries	71,370	144,011
903	1,368	Social Welfare Workers	2,210	4,937
6,214	4,607	Stenographers	7,895	3,415
309	1,296	Stock Clerks and Storekeepers	2,210	5,435
616	1,503	Store Buyers and Department Heads	2,526	2,164
4,835	9,161	Telephone Operators	15,790	17,357
5,068	9,067	Typists	15,790	16,220
15,415	27,095	Waitresses	47,054	47,624

SOURCE: For 1950 and 1960 employment data—*1960 Census of Population*

TABLE 37

THE NUMBER OF MEN EMPLOYED IN SELECTED OCCUPATIONS IN FLORIDA 1950, 1960, AND PROJECTED TO 1970

Number Employed		Occupation	Projection 1970	
1950	1960		Projection A	Projection B
13,516	19,550	Auto Mechanics and Repairmen	34,106	28,277
5,368	10,616	Attendants—Auto Service and Parking	18,316	20,994
5,157	8,901	Airplane Mechanics and Repairmen	15,474	15,363
1,660	5,362	Banking and Other Financial Managers (Salaried)	9,158	11,957
3,857	5,136	Barbers	8,842	6,839
3,038	3,315	Bartenders	5,684	3,616
3,647	4,410	Bookkeepers	7,579	5,332
4,308	7,325	Brickmasons, Stonemasons, Tilesetters	12,632	12,754
3,073	3,061	Bus Drivers	5,052	3,049
24,261	30,138	Carpenters	42,422	59,848
5,627	7,841	Commercial Cooks	13,579	10,925
2,865	4,206	Communications, Utilities, and Sanitary Services Workers	7,263	6,174
2,118	3,030	Compositors and Typesetters	5,052	4,334
16,698	24,571	Construction Laborers	42,633	36,153
4,934	11,186	Delivery and Routemen	19,263	25,359
937	3,489	Draftsmen	6,000	12,991
5,696	9,643	Electricians	16,737	16,324
2,695	8,352	Excavating, Grading, and Road Machinery Operators	14,526	25,882
1,938	3,762	Firemen	6,316	7,302
2,764	8,597	Foremen (Manufacturing)	14,842	20,351
5,505	10,828	Gardener (excluding Farm, Groundkeepers)	18,632	21,297
3,176	5,956	Guards, Watchmen, Doorkeepers	10,105	11,169
5,590	11,590	Insurance Agents, Brokers, and Underwriters	20,211	24,029
5,509	11,082	Janitors and Sextons	19,263	22,292
6,309	12,691	Laborers (Wholesale and Retail Trade)	22,106	25,527
4,088	8,497	Linemen (Telephone, Telegraph, and Power)	14,842	17,661
3,358	5,070	Machinists	8,842	6,664
2,212	6,999	Managers (Construction—Salaried)	12,000	22,145
4,230	11,280	Managers (Manufacturing—Salaried)	20,211	30,079
2,658	4,820	Mail Carriers	8,210	7,020
3,141	4,389	Meat Cutters	7,579	6,132
4,305	6,360	Operatives (Food and Kindred Products)	11,053	9,395
3,726	4,784	Operatives (Wholesale and Retail)	8,210	6,142
15,182	9,751	Painters, Construction and Maintenance	26,241	23,636
5,975	4,423	Personal Service	10,421	8,071
2,733	3,993	Plasterers	6,947	5,833
4,475	7,518	Plumbers and Pipefitters	12,947	10,882
3,056	6,617	Policemen	11,368	14,327
4,835	6,189	Porters	10,737	7,921
2,539	4,065	Postal Clerks	6,947	6,479
1,489	4,023	Radio and TV Repairmen	6,947	10,869
4,770	9,394	Real Estate Agents and Brokers	16,105	18,499
3,857	10,697	Sales—Manufacturing	18,632	29,665
25,263	35,346	Sales—Retail Trade	61,581	49,452
8,095	12,785	Sales—Wholesale	22,106	20,191
2,471	4,050	Shipping and Receiving Clerks	6,947	6,637
2,617	6,953	Stockclerks and Storekeepers	12,000	11,519
2,116	5,196	Store Buyers and Department Heads	8,842	12,758
4,523	4,207	Taxicab Drivers and Chauffeurs	7,263	3,913
26,497	45,923	Truck and Tractor Drivers	80,213	79,589
3,198	4,622	Waiters	7,895	6,679
2,112	5,392	Welders and Flame Cutters	9,158	13,765
3,254	5,555	Wholesale Trade Managers (Salaried)	9,474	9,482

SOURCE: For 1950 and 1960 employment data—*1960 Census of Population*