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ABSTRACT

Based on data gathered from six local education agencies, this study sought to evaluate vocational education planning in terms of types of information used. More specific objectives of the study were to: (1) investigate the use of manpower requirements information in local vocational education planning, (2) assess the compatibility between local and state use of this information, and (3) investigate the availability of vocational education programs to students. Critical findings of the study include: (1) Detailed manpower and demographic information seldom figured as a basis for the local planning effort, (2) Only one of the six sites visited was preparing plans which linked educational planning to specific quantitative objectives describing job availability and students to be served, (3) Little information was available describing the social and demographic characteristic of vocational education students as a separate group, and (4) Shortcomings in local planning can be traced to the lack of a state requirement to pursue systematic annual and long-range planning at the local level and to the lack of detailed job market and population projections. A major recommendation of the study is that a minimum package of planning materials be provided local education agencies by state departments of vocational education. (JS)

AN ANALYSIS OF MANPOWER REQUIREMENTS INFORMATION AND THE AVAILABILITY OF VOCATIONAL EDUCATION IN SELECTED URBAN AND RURAL AREAS

Contract No. OEC-0-70-4926

Final Report

September 30, 1971

by

The Center for Priority Analysis
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PREFACE

The Center for Priority Analysis of the National Planning Association has been involved with studies of planning in vocational education for the U. S. Office of Education for the last five years. This continuing effort has included, in addition to the current study, two studies on the future of vocational education - one on the implications of social and economic changes for educational policy in the next two decades, and another on priorities in vocational technical education and national goals in the 1970's -- and two efforts to assist local planning -- a guide relating manpower and demographic information to local planning, and a series of regional planning workshops for state and local planners and administrators. In addition to concurrent economic and manpower studies, the Center for Priority Analysis is conducting a major evaluation study on the impact of vocational programs.

This study of the use of manpower requirements information and the availability of vocational education in selected urban and rural areas was conducted under the overall supervision of Dr. Leonard A. Lecht, Director of the Center for Priority Analysis. Principal Investigator for the project was John Teeple, and the research staff included Maria Aurora Redondo, Montgomery Beard and Jon Gabel. Marc Matland, Deputy Director of the Center, provided considerable assistance in the preparation of the final report.

The authors wish to thank all of those in state and local departments of education, employment service offices, and other agencies whose friendly cooperation enabled us to gather the information contained in this study.

September 1971

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Introduction

In the last decade, vocational education has undergone rapid growth and significant change in emphasis. Shifts in the labor market, increasing the demand for different skills in the trained labor force, have resulted in the addition of many new programs, such as office and technical occupations and health, to the traditional curricula in agriculture, trades and industry, and home economics. The increasing concern of Americans for "left-out" groups resulted in federal legislation in 1968 which emphasized services to specific populations rather than the traditional funding of institutional programs.

Along with these basic changes, vocational education has been profoundly affected by the increasing emphasis on program planning and budgeting growing out of defense procurement and other planning innovations in the early 1960's.

It became increasingly evident that people in the vocational education field, faced with making social educational decisions in a rapidly changing socio-economic environment, needed a far greater capacity to look ahead, to establish future objectives, to make decisions which affect events three to five years hence--in a word, to plan. This need was recognized in the 1968 Amendments to the Vocational Education Act of 1963, which established the planning function as an integral part of vocational educational policy and programming.

The goal of vocational-technical education to prepare the nation's youth with marketable skills requires a continuing assessment of the characteristics of potential students (demographic information) and of future job opportunities (manpower data) to help define which skills are marketable. The Amendments to the Vocational Education Act in 1968 foresaw the need for making programs more responsive to the labor market and to the educational needs of students. Central to these Amendments was the requirement that states do long-range and annual planning using demographic and manpower information. State plans also had to indicate that procedures had been developed to insure that local areas had initiated planning activity.

But instituting planning in an intergovernmental activity such as education is not the same as developing a planning activity in a federal agency. In education, planning is a federal requirement imposed on an educational community where most of the resources come from state and local areas and where the bulk of administrative control is lodged in the local education agency. Since planning in terms of the 1968 Amendments is tied to the receipt of federal funds for vocational education, the only direct requirements leveled by the federal government are imposed on the states. These planning requirements are viewed as compliance procedures, necessary paperwork to insure the receipt of federal funds.

It is at the local level, however, where decisions affecting students are generally made. If planning is to be effective in vocational education, systematic study of the incentives, expertise, and the data base available to local education agencies and recommendations for their improvement are urgently needed.

A. Purpose of the Study

The present study, initiated two years after the Amendments became law, is designed to assess the availability of appropriate manpower and demographic information to local planners and the uses made of the data in developing local plans for vocational-technical education. Specifically, the objectives of this study, conducted under contract with the U.S. Office of Education, were to investigate the use of manpower requirements information in local vocational education planning; to assess the compatibility between local and state use of this information; and to investigate the availability of vocational education programs to students.

In order to fulfill these purposes, we analyzed local planning from two points of view--first, the local planning documents required by the states; and second, the decision process involved in changing the curricula and enrollments in programs. After evaluating both processes, we attempted to determine why better manpower and demographic information was not used. Specifically, we investigated the availability of appropriate manpower and demographic information in the local areas, the state requirements regarding the use of this information in local planning, and the general capability of planning staffs for vocational education planning. In addition, we assessed the availability of vocational education to pupils in selected school districts.

Ideally, this effort should involve, as well, some consideration of how responsive vocational education has been to the labor market. However, an analysis of this subject would involve data and analytical considerations which go beyond the scope of this report.

This report is organized into seven chapters (see Figure 1). In Part I, the first two chapters discuss what data are currently being used in local planning and how they are used. Part II describes why the data are currently used as they are in terms of the three major inputs to local planning: the state requirements imposed on local planners; the information which is available; and the capabilities of the personnel in local agencies who actually do the planning --Chapters 3, 4 and 5, respectively.

These state requirements, local staff capabilities, and available information in turn affect the quality of local plans, which are assessed in Part III, Chapter 6, by looking at what programs are available to students in the local education agency (LEA).

Part IV, Chapter 7, summarizes the conclusions drawn from each part of the study and provides recommendations for improving the local planning of vocational education.

Figure 1. Organization of the Report

Part I

Current Planning Practices

Chapter 1

Chapter 2

Part II

Causes of the
Current Situation

Chapter 3

Chapter 4

Chapter 5

Part III

The Results of
Current Planning Practices

Chapter 6

Part IV

Summary of Findings and Implications
for Improved Local Planning

Chapter 7

B. Method and Procedure

The concept of planning embodied in an earlier study by the National Planning Association served as a guide to the conceptual organization of information received from the respondents of the study. 1/ Essentially, this planning philosophy views systematically organized manpower and demographic information as a critical framework for making and justifying program decisions. Although manpower and demographic information does not automatically generate quantitative educational objectives for long-range planning, it provides a basis for assessing vocational programs in quantitative terms which relate these education efforts to the needs of the community. Given a particular program decision, such information allows the planner or administrator to evaluate the program operation in terms of the proportion of the students reached and the job opportunities for those who complete the program.

A second major assumption which underlies this study is the belief that planning information and procedures must be simplified so that local vocational educators can see the relation between programs, jobs, and students. While a complex computer-based model may be useful at the state level or in research oriented toward optimizing expenditures, the local school system needs a method which relates critical aspects of its program to the community's needs for education and employment using information which can be easily understood by advisory councils and boards of education. We have, therefore, limited our discussion of manpower and demographic information to the data that can easily be made available to local planners from existing public agencies.

The current study was exploratory, investigating local planning in six local education agencies, three rural and three urban. The six sites were selected jointly by the contractor and representatives of the Office of Program Planning and Evaluation of the USOE. One practical consideration limited the selection of urban sites, that of avoiding local agencies where other federal evaluation studies were being performed. Otherwise, in the selection of the six sites an attempt was made to obtain both a geographic spread and a variety of socio-economic conditions. It was decided to pick urban areas on the East Coast, Midwest and West with a variety of ethnic populations. Baltimore, Milwaukee and Denver were chosen. For the rural counties, an attempt was made to choose a near-surburban area, an agricultural area, and a depressed rural area. Sussex County in northern New Jersey, Platte County in east central Nebraska, and Pike County in eastern Kentucky were chosen.

The data on vocational education planning in the report were gathered through interviews and a review of basic samples of information and planning documents in the six study sites. These six sites included 69 secondary and seven post-secondary schools in 11 planning units (six secondary and five post-secondary systems).

1/ "Relating Manpower and Demographic Information to Planning Vocational-Technical Education." Final Report by the National Planning Association to the U. S. Office of Education, Grant 4496(085), September 1970.

Prior to visiting each site in October 1970, meetings were held at the State Office of Vocational Education explaining the purpose of the contract and collecting the documents to be reviewed. These documents included: (1) the State Plan for vocational education; (2) state guidelines for local planning; (3) the local long-range vocational education plan; (4) local program or project requests (if there was no comprehensive plan); (5) recent employment data from the local and/or state employment service; (6) labor market descriptions and projections from other agencies; (7) population studies by state departments of health, economic development, etc.; and (8) other school statistics and studies.

After reviewing these documents, visits of up to a week in length were made by a team of two NPA analysts. During these visits, discussions were held with at least the following people: (1) school superintendent(s); (2) the assistant superintendent for vocational education; (3) other personnel involved in educational planning for the local education agency; (4) technical area coordinators (health, Trade and Industrial, etc.); (5) the Comprehensive Area Manpower Planning System--"CAMPS"--director; (6) employment service representatives; (7) representatives of other agencies or citizens' groups involved in planning. In addition, the NPA team interviewed the counterparts of these officials in regional planning offices and post-secondary public institutions offering occupational training to students.

Although most of the discussions during these interviews were informal, the conversations were sufficiently structured to obtain answers to the specific questions in the interviewer's guide (see Appendix 1).

Since the purpose of the project was not an evaluation of individual local education agencies but a general review of local planning, we have reported summarized data for the six sites, 11 planning units, and the 69 secondary and 7 post-secondary schools involved in the study. We do not mean to imply that these results would apply to all of vocational education planning. However, our experience in other contract work--which has involved contacting some 75 local and state planners from 21 states in a series of conferences on local planning--suggests that the major issues and policy recommendations which flow from these findings are generally applicable.

C. Summary Findings and Recommendations

Several critical findings in this study warrant emphasis here.

While the local education agencies we studied represented a wide variety of sophistication in developing long-range local plans for vocational education, detailed manpower and demographic information seldom figured as a basis for their planning. Only one of the six sites we visited was preparing plans with detailed demographic and manpower information which linked educational program planning to specific quantitative objectives describing job availability and students to be served. While all the sites had some information on the characteristics of the overall student body, there was very little information describing the social and demographic characteristics of vocational education students as a separate group. Typically, these schools did not know how many students from disadvantaged backgrounds they had been serving in the past year, and how this number

compared with the number served three or five years ago. The other major information gap was the absence of adequate follow-up information about the labor market experience or further education of the students in vocational programs. Generally, information concerning job placement of the students on leaving school was available only when the school personnel did the placement. In the absence of more adequate follow-up information, it is difficult to plan changes in programs which reflect the experience of students who have completed the programs.

In general, the shortcomings found in local planning for vocational education can be traced to two primary factors: first, the lack of a state requirement to pursue systematic annual and long-range planning at the local level; and second, the lack of available detailed job market and population projections in a form useful for vocational education planning.

Furthermore, although those responsible for planning generally have adequate expertise and experience, they also are assigned other administrative duties which do not allow sufficient time for systematic planning.

A further deterrent to local planning is the separation between the planning and the program decision-making process in the minds of local planners. When they are available and required by the states, manpower and demographic statistics are reported in local plans. However, program decisions are based not on the plans, which are viewed as compliance documents, but on traditional sources of community information, such as advisory councils, trade associations and employers.

Our analysis of the availability of vocational education programs to students suggests that students in secondary schools have many more occupational training options in urban than rural areas. Even within the cities, however, schools vary considerably in the number of vocational programs offered. The most frequently offered gainful occupational offerings on the secondary level were in office occupations, distributive education, and drafting. In the schools in this sample, we found that the most frequently-offered programs and the programs being developed were more relevant to labor market patterns in post-secondary institutions than they were on the secondary level.

Based on these findings, we make the following recommendations for action.

These recommendations, aimed at improving planning relevant to the labor market and populations, are based on the information currently available, skills of local planners, and the relation between state and local planning systems. These topics are dealt with in detail in the main report.

1. In order to improve the use of quantitative data in local planning, a minimum package of planning information should be provided to local education agencies by state vocational education departments in conjunction with the state office of employment security. State agencies have the expertise to develop these data in a standardized form for local agencies.

This package should contain: (a) annual job openings for current year and a projected year, five years in the future, broken down by county and SMSA for

all occupations, organized by OE program code, for which vocational education at the secondary or post-secondary level can be considered appropriate preparation; (b) current and projected population of secondary and post-secondary school age by county and SMSA, with detailed information about age, sex, race, and any handicaps or disadvantagement.

2. Each state should require its local education agencies to collect the following items of educational information and incorporate them into their plans: (a) vocational program enrollment for current year structured by age, sex, race, handicap and disadvantagement, and OE instructional program code; (b) program completions from most recent year by same categories; (c) placement follow-up from most recent year by same categories.

3. The inclusion of these data should be mandatory in all planning documents required from local areas. Specific procedures should be established for using these data to establish educational objectives.

So long as one of the primary purposes of secondary and post-secondary education is to provide students with saleable skills, the implications of this study for the Office of Education would apply equally to current vocational programs and to such new departures as revenue sharing and career education. An action program should be developed by the Office of Education in order to:

1. Encourage preparation of standardized manpower and demographic projections at the state level

In spite of the lack of quantitative planning procedures, most post-secondary schools are sensitive to short-run occupational changes and plan programs generally responsive to these changes. However, longer range data provided by projections are needed to insure long-range career preparation in secondary and post-secondary schools. Therefore, the Office of Education should require preparation and dissemination of such data by the states.

2. Broaden planning to include general education programs

The relatively small number of vocational education graduates compared with the large number of job openings for high school graduates suggests similar planning techniques should be adopted for the general education curriculum. The Office of Education should encourage the use of manpower and demographic data in planning all programs in secondary education.

3. Incorporate labor market information in guidance and world-of-work programs

Student preference plays a large role in vocational and general programs at the secondary level. In order to assure that their choices are based on knowledge rather than hearsay the Office of Education should require the use of manpower information in career education and guidance programs for eighth or ninth grade students.

4. Require local follow-up studies as an integral part of planning for federally-funded programs

To insure that vocational and career education is relevant to the potential labor market, long-range local follow-up studies should be promoted by the U.S. Office of Education for students in general education as well as in vocational programs. Such studies would not only indicate what careers are currently being pursued by students in both programs, but would also provide local school systems with needed information about the effectiveness of their programs for all their students, and the appropriate labor market area where their students find employment.

To achieve these policy objectives, the U.S. Office of Education should:

(1) Adjust State Plan requirements so that the statistical information requested is not to a level of detail beyond that which is, or could soon be made available, in states and local areas. There is little point in requiring information in the State Plans which is not usually available or is highly unreliable at the state and local levels.

(2) Develop closer relationships on the national level with the U.S. Census Bureau and the Bureau of Labor Statistics to identify and facilitate the development and distribution of critical demographic and occupational projections to state agencies of vocational education. Among the courses of action to be discussed would be BLS assistance to state agencies to develop appropriate occupational projections by OE program code, and the inclusion in annual census population surveys of demographic and follow-up information on vocational program graduates, grouped by LEA.

(3) Encourage states to require local areas to develop annual and long-range plans for vocational education using the minimum package of manpower and demographic information specified above.

(4) Help set up procedures by which this information can be supplied by state agencies to local education agencies. This would go a long way towards assuring compatibility between state and local plans.

(5) Provide funding for states and local education agencies to develop and implement systematic procedures for obtaining and reporting continuing follow-up data by program and target population.

(6) Develop and disseminate an updated and validated system for using manpower and demographic data in local planning.

(7) Provide support for training programs for local staffs to assist in the implementation of this planning system.

Part I -- Current Planning Practices

Chapter 1. The Type of Manpower and Demographic Information Used in Local Vocational Education Planning.

Current vocational education planning practices in local education agencies involve the use of manpower and demographic information to describe which skills are marketable and what kinds of students will be entering the vocational programs. These first two chapters describe this planning process, first in terms of the type and level of detail of the information in local plans, and second, in terms of how this information is related to other data in the plans and its impact on program decisions. Since the data reported and the planning procedures in local agencies are strongly influenced by state practices and policies, each chapter begins with a summary of relevant State procedures.

A. Manpower and Demographic Information Used in the States

States use the standard federally-required state plan format in developing their State Plan for Vocational Education. The data reported, therefore, generally conform to federal guidelines. At the time of this study, the states were using the 1969 version of the OE Guidelines and all the materials gathered from the states in this study reflect these federal requirements. 2/ (A new version, dated January 1, 1971, and still under review, introduces various changes in the types of manpower, demographic and educational information. Where appropriate, these changes are noted in the discussion below.)

The main type of manpower information required from the states is a summary of current and projected (annual and five-year) estimates of employment opportunities related to instructional programs by OE code. States are also required to estimate the number of trained individuals completing their vocational programs within each program area for the same time periods. Interviews with personnel in state departments of vocational education indicate that states are developing this information with considerable difficulty and much of the data are only roughly estimated or not reported in the state plans. In some states the development of statewide labor market projections was just getting underway.

The technique of comparing the training output of vocational education and the other training agencies with anticipated job opportunities involves many technical problems and although such comparisons appear in most state plans, the variation from year to year suggests that they do not provide an accurate picture of job opportunities for the state's vocational education graduates. For example, in some state plans in succeeding years, gross differences appear in the projected labor market for technical or trades and industry occupations. In other cases, the percentage increase in the five-year projection of labor market needs for the state is an order of magnitude greater than the national average. Such anomalies suggest that either the projections were developed too

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2/ See Guide for the Development of a State Plan for the Administration of Vocational Education Under the Vocational Educational Amendments of 1968, Proposed Guide for Use by State Boards for Vocational Education pending publication of Formal Regulations in the Federal Register, May, 1969.

rapidly, come from differing sources and are not comparable, or that they were misinterpreted in the preparation of the State Long Range Plan.

Federal requirements for demographic data in the state plan consist primarily of a report of current and projected estimates of general population, and age distributions related to educational levels (secondary, post-secondary and adult) as well as the number of unemployed adults, the disadvantaged, the handicapped and the number of working women. (The revised federal guidelines do not specify what current and estimated characteristics of the population should be gathered. The states are expected to use their own discretion in determining what population factors best disclose their training needs.) At the current time, estimates of these groups by age distribution are rarely available, and all the states (Kentucky, New Jersey and Maryland in particular) are making efforts to collect such data. In its Handbook for Planners, Kentucky has included special forms to be used by local school systems in compiling this information. It has also provided local planners with procedures for determining the incidence for the disadvantaged and handicapped in local areas (see Appendix 2, Sources of Information Used by Local Planners).

B. Information Used in Local Plans

In order for a state to report realistic statewide information on vocational education enrollments and completions and to project future enrollments, it must have some equivalent information from local education agencies concerning their present status and future plans. However, currently, states do not have an adequate flow of appropriate data, either because local agencies do not have enough quantitative data, or because the local plans include data under a wide variety of quantitative descriptors. These inadequacies are not surprising, since the states themselves find it difficult to obtain similar information requested by the federal government for inclusion in state plans, and state requirements for local plans differ in what data they request and in what form it should be presented. (See Chapter 3 on differences in state requirements for local plans.)

According to administrators and planners at the local level, more manpower information is used for program decisions than actually appears in formal plans. This is partly due to the fact that complete statistical manpower information covering all pertinent occupations is not available at all times. The plans generally call for a labor market description applicable to all instructional programs, while decisions concerning program changes are usually made on a single-program basis. Manpower information may be available, therefore, to influence a single program decision but not be adequate as a common yardstick for all programs. A second reason for the less frequent use of this information in the formal plan is the lack of requirements for such data in local planning formats provided by the states. For example, while six of the eleven school systems studied indicate they use current job openings information for program decisions, only three report such information in the local plan and only one uses these data in setting program objectives. The same pattern of usage follows for labor market projections.

Table 1 summarizes the general types of information used in formal planning at the eleven school systems we analyzed. The first column of figures shows the number of sites where the respondents indicated that the type of information referred to was "used in program decisions." The last two columns indicate whether and how the data were reported in the formal local long-range plan.

Table 1. Summary of Information Use in Formal Local Plans

Type of Information	Number of Systems Where Used (N = 11)		
	Used in Program Decisions	Reported in Plan	Related to Other Data in Plan
Current Labor Market			
Job openings[a]	6	3[b]	3[b]
Employment by occupation	5	5	1
Employment by industry	7	1	-
Company requests and other non-statistical data	11	-	-
Future Labor Market			
Job openings	4	1	2
Projected employment	4	3	1
Other company estimates, Advisory Council, and other non-statistical data	11	-	-
Population			
By age and sex	5	4	1
By working women	1	1	1
Total only	5	4	1
Completions by program	4	5	3
Enrollments by program	7	6	8[c]
Enrollments by sex and disadvantagement	4	1	1

a/ Frequently, the data reported as "used in program decisions" are not statistical projections but are estimates from trade associations or employers.

b/ One state uses this information in program applications but not in a local plan.

c/ Data to be available later in 1971.

Of the eleven systems surveyed, less than one-third include labor market projections of any kind in their local plan and only one-half of them provide descriptions of the current employment situation. Similarly, less than half of the school systems studied include information about the population in the area being served and population figures are not broken down by target groups. States reviewing these local plans, therefore, have no quantitative indication in the plan to determine, for example, if there are disadvantaged or handicapped students in the area who are not being served and who could benefit from expanded vocational education offerings, or on the extent to which program enrollments and completions are related to career opportunities.

While state plans report more manpower data than local plans, the opposite is true of educational data. All the local plans included enrollment data, frequently broken down into enrollments by program. Furthermore, local plans are more likely to relate educational data on enrollments to other vocational education data. Presumably, this is because educational data come entirely from school records and are therefore more easily available and familiar to school systems.

However, even the educational information found in the local plans reviewed was very general in nature. Few plans contained a breakdown of enrollments for each program by age or sex, and none of them disaggregated enrollments of the handicapped or disadvantaged by program. Since these data are available to the local agency, their absence is primarily due to the lack of a state requirement.

With regard to information which indicates the effectiveness or outcome of vocational education--such as completions, placement, and follow-up data--local plans are considerably weaker than state plans. Although states must relate vocational education completions to manpower data, only three of the local plans suggest such relationships. Similarly, while most local agencies claim to have follow-up information, they usually mean data on initial placement in employment. No placement information was found broken down by program or by target population. Therefore the local plan does not reveal relative placement rates from different programs or how placement or retention rates for disadvantaged students compare with those for regular full-time students.

For similar reasons very little follow-up information on students was reported in local plans and there appear to be few systematic attempts to gather such data on a regular basis. This does not mean that educators, individually, are unconcerned with their students' success after graduation, for many teachers do attempt to keep track of the graduates from their own programs. It does suggest, however, that local educators do not view the aggregate post-graduation experience of their students as an evaluation tool worth the cost of collecting such information. To some degree, it also reflects the educator's tendency to downplay experience after graduation as a criterion for educational program success.

In this section we have summarized the kinds of data that appear in local plans submitted by the local education agencies included in this study. The lack of quantitative data in local plans should not be interpreted as a lack of interest in adapting vocational education programs to future needs. Advisory Councils and other community agencies frequently assist the local education agency in the

modification and development of new offerings. As is noted in a later chapter, the lack of quantitative data in these plans reflects more than the lack of accurate and specific local manpower data, it is an indicator that local planning procedures are in a state of flux and that planning is still viewed as a compliance procedure rather than a decision-making tool.

C. Compatibility of State and Local Plans

State planning for vocational education has been strongly influenced by federal legislation and the accompanying regulations and state planning guides which provide a new planning format and specify the types of information required. Local planning has traditionally taken the form of individual program applications and varies from state to state.

Since states are in various stages of translating their own planning requirements into guidelines for local planners, and considering the variety of incentives and styles in local planning, it is not surprising that there is as yet little compatibility between state and local long-range plans for vocational technical education. Only Maryland has stressed compatibility and insisted that its local education agencies adopt the same planning format that was used at the state level.

Because of these variations in state requirements and the lack of statistical data in appropriate form at many sites, both the format and information content of local plans are not compatible with those prepared by the states. Both state and local plan documents were compared with regard to the required information within the standard state plan format and analyzed as to:

1) whether the state reports the information and in what form; and

2) whether the local areas are similarly requested to report these data or are provided with the information.

Three main types of information were analyzed in this manner, namely, manpower, demographic, and educational information. While all the states report both labor market data and vocational education completions by area, only two states disaggregate this data by OE program code. Three of the six local areas present some information in their local plans, but only one local area, Baltimore, directly relates its training output by individual program and instructional area to employment opportunities in their local plan. Pikeville, Kentucky merely reports the number of job opportunities within each occupational area but does not relate these to its completions estimates. One of the reasons given for this lack of objective setting using manpower trends (job openings) is the dearth of this information at the local level where local planners still have been unable to obtain specific estimates of projected job openings in each occupation related to OE programs by OE code. At the current time, Nebraska, Kentucky, New Jersey and Maryland are developing this information for their local areas (SMSA's and counties) through cooperative arrangements with their employment security agencies. Maryland has just developed a uniform manpower information system for all its local areas and is currently training its local area planners in using this package information. Wisconsin and Colorado encourage their local areas to consider employment trends and opportunities from agencies such as CAMPS in their local

planning, but their state planning agencies assume the responsibility of establishing formal objectives using statewide manpower information in the state plan.

Table 2 illustrates the categories of manpower information which are reported in all six plans prepared by the states in which the selected sites for this survey are located. The last column in this table shows how few of the six local education agencies on the secondary level report this same manpower information in their local long-range plans. Only one of the six local secondary level plans contains information on the current labor market, although two states now provide some of these data to local areas and two more are in the process of doing so. Similarly, only two of the six local plans provide information on current or anticipated annual job openings in employment categories relevant to their programs.

In the case of educational information, Table 3 shows that only one of the six sites reported information in their local secondary level plans on the percentage of secondary enrollment in vocational education, or completions and placement information for vocational education program graduates. All six of the states include this information in their state plans. None of the local areas report enrollment information on disadvantaged students in work-study or cooperative programs while five of the six states report such information. This is partly because a number of the states do not require this information and partly because of a lack of such information in local areas as well as lack of a standardized definition for disadvantagement.

The lack of compatibility between state and local education agencies has two implications. In the first place, when information is not required from local areas they are unlikely to obtain it or use it to improve their long-range decisions about program offerings. In the case of Nebraska, for example, when the information is required in a status report and provided in this context by the LEAs, it is not connected in the minds of LEA administration with planning because it has been omitted as a requirement for the local plan.

Secondly, when information is not required or received from local areas, a question must be raised about the validity of aggregate data in the state plan. In the case of vocational program completions, for example, we found one state did not require such data from LEAs in any reports. The statewide figure on program completions was derived by averaging the percentage of completions to enrollments in selected school systems, and then applying this ratio to aggregated enrollment data--instead of requesting actual completions data from all local education agencies.

Table 2. Compatibility of Six State and Six Local Plans in Terms of Manpower Information

Type of Information	Included in State Plan	Included in Local Plan
Current Labor Market	6	1
Annual Job Openings for 1971 and output by OE code	6	2
Annual Job Openings for 1975 and output by OE code	6	2

Table 3. Compatibility of Six State and Six Local Plans in Terms of Educational Information

Type of Information	Included in State Plan	Included in Local Plans (Secondary Level)
Total secondary enrollment and percentage in vocational education	6	1
Vocational education program completions by OE code	6	1
Percentage of students available for work, placed in jobs	6	1
Vocational student guidance counselor ratio	6	1
Number of disadvantaged in cooperative programs	6	1
Number of disadvantaged in work-study programs	5	0

Chapter 2. Procedures for Using Manpower and Demographic Information in Local Vocational Education Planning

Planning on the local level must be viewed in two contexts, first as a formal procedure for reporting decisions in a coordinated long-range document, which was discussed in the first chapter, and second, as the entire process of decision-making on future programs, which is discussed in this chapter. While these two aspects of planning both deal with future education programs, they are not as closely related as their common subject matter suggests.

The formal process of long-range planning results in an annual document which the local area submits to the state, a new requirement originating in the Vocational Educational Act Amendments of 1968. Prior to 1968, there were annual program justifications and budget submissions but these were usually developed and evaluated on an individual program basis. The coordinated local plan is, therefore, a new requirement usually involving a format developed outside the local education agency and relying on sources of quantitative data frequently unfamiliar to, and not in the form most useful to, local educators. Program decision-making, by contrast, has been conducted in the same manner for years--the method varies according to the person making the decisions and the sources of information are usually qualitative and informal.

The mere appearance of appropriate data in a formal planning document obviously says nothing about how the information is used. This information has utility beyond meeting a compliance requirement, only when it is related to other data in the plan in an effort to specify program objectives. The ultimate test of its contribution to better planning is whether the numbers in the plan are used by the administrator to make decisions about vocational education programs. Since only two years have passed since the Amendments of 1968, it is perhaps not surprising that the numbers and the decisions too often exist side by side, with little influence on each other.

The first part of this chapter summarizes our study findings about the use of manpower and demographic information in state and local plans in selected sites to set program objectives for the school system. The second part of the chapter analyzes the sources of information used in making decisions about changes in current and future programs.

A. The Use of Information in Setting Program Objectives

One of the most critical aspects of planning is the process of setting measurable objectives. According to the U.S. Office of Education guide for state plans of vocational-technical education, such objectives should be reached by relating vocational program enrollments and completions and teacher, equipment, and facility requirements to changes in the labor market and in the population who could benefit from vocational preparation. One way to assess the contribution of manpower and demographic information to local planning is to determine whether such information has indeed been used in setting the objectives appearing in the local plan.

Since concepts of planning differ from state to state, prior to discussing the setting of objectives in local plans, we will present a brief overview of

how the states where these six sites are located use manpower and demographic information.

1. Setting Program Objectives in State Plans

The states do not set objectives based on information about job openings per se. Rather, they make annual and long-range estimates of persons trained by vocational education and other agencies who will be available for work in each occupational area. These estimates are more likely to be completions based on current trends rather than output objectives influenced by projected job openings.

Further, estimates of completions in the annual plan may not be consistent with the long-range plan estimates for the first of five years. For example, in one state plan, the total vocational education output reported in the long-range plan was 54,050 for 1971, while the total number of completions expected from OE training programs for the same year in the annual plan was 63,033. This type of difference results because some states set annual completions based on previous enrollment trends and only adjust completions to job openings trends in their long-range plan. In other states, however, the output estimates and the expected completions for the following year are closely related and five-year objectives show a close relation between anticipated labor market growth and projected changes in occupational programs.

It should be further noted that other types of data requested in the 1969 version of the OE guidelines were not related to the setting of educational objectives. The requests for estimates on unemployed adults, the number of working women, private school enrollment, the disadvantaged, etc., have thus been eliminated in the new 1971 guidelines.

2. Setting Program Objectives in State and Local Plans

Table 4 summarizes our findings in the study sites about the use of manpower information in the setting of objectives in local and state plans. In all six states, labor market information for the current year (1970), 1971 and 1975, is related to vocational output. Only one local area, however, reports current labor market data in its plan. Two relate estimated job openings for the succeeding year to completions; the same two local areas also use five-year labor market projections in their plans. More than half the local areas studied do not use such information for setting educational objectives.

States are also asked to report what percentage of the age groups at the post-secondary and adult levels they intend to serve in the annual and long-range planning periods. For example, states are asked to indicate the "percentage of population age 15-24 enrolled in post-secondary vocational education for the current year, next year, and five years hence," and to make a similar estimate for the 16-64 age cohort.

Nebraska and Maryland used different age cohorts in setting the same objectives, the 19-24 age group for the post-secondary level and the 21-64 group for the adult level. Apparently, state officials here believed the cohorts suggested by the OE guidelines were unrealistic and included persons who may be too young.

Table 4. Distribution of States and Local Areas According to Use of Manpower Information to Set Objectives for Vocational Education Programs.

Information	Number of States	Number of Local Areas
Current Labor Market Data	6	1
1971 VE output per OE instructional area in terms of employment or job openings	6	2
1975 VE output per OE instructional area in terms of future employment or job openings	6	2

(The percentage of the population age group served by secondary school programs is not requested as an objective in the state plan.)

Further demonstrating the lack of uniformity between state and local demographic information sources, Baltimore's total population and projection estimates in the local plan differed almost as much as 60,000 from those reported in the state plan. Such variation in current and projected estimates of age groups and the lack of sufficient detail has discouraged local areas from setting these types of objectives.

Table 5 shows the extent to which state and local plans relate demographic information to their vocational programming by setting objectives according to the proportion of the population to be served. Only one of the local areas we studied set objectives based on the population categories shown in Table 5, while every state used such demographic information in preparing their plans.

It is significant that none of the local plans reports the percentage of disadvantaged, handicapped, or unemployed youth they intend to serve in future years. Nor do any of the surveyed local areas set such objectives for post-secondary or adult populations. Baltimore was requested to do so in the local plan application prepared by the state, but was unable to comply because there were no population estimates by age group. Platte County, Nebraska had current and projected overall estimates only for the one-to-21 age group. It had no finer breakdown for this age group and lacked any data about persons 22 years and above.

According to current requirements, states are setting program objectives for the already identified disadvantaged and handicapped who are being served within their school systems. States assume most of the responsibility for identifying these groups, since they are encountering enormous difficulties in getting these data gathered by local officials. How the states obtain such information when it is not reported by local education agencies is a question worthy of further study.

Of the eight types of educational information and related objectives which the federal government requires states to provide for secondary level vocational education programs, only three types are in turn generally required by states from their local areas (see Table 6). These three are: enrollment objectives (annual and long-range), yearly projected totals of vocational education enrollments, and follow-up objectives (percentage of vocational education students entering post-secondary vocational education programs). Four of the local areas are currently required to set enrollment objectives, while yearly projected totals of VE enrollments are available from their plans by summing up their enrollment objectives by programs. Four of the local areas have available information and set objectives for the portion of their graduates going to post-secondary programs. Only one local area is required to set completions objectives alongside enrollments in its local plan application. The other states merely require enrollment objectives, i.e., local areas determine their enrollment targets by using the number of completions they are aiming at.

A similar trend appears at the post-secondary and adult levels, with the same states requiring enrollments and only one requiring completions objectives.

Table 5. Distribution of States and Local Areas According to Use of Demographic Information to Set Objectives for Vocational Education Programs.

Information	Number of States	Number of Local Areas
Percentage of post-secondary age population (15-24) to be enrolled in VE programs	6	1
Percentage of adult population age 16-64 enrolled in adult VE	6	1
Number of consumer and homemaking youth/adults in depressed areas and in state	6	1

Thus, out of the five types of objectives which could be set on the post-secondary level, local areas reported setting only one type, enrollments objectives. For the adult-level objectives, an average of two out of the possible four are being set by local areas, namely, enrollments and the total of these enrollments to be projected for each year of the planning period.

The inadequacies in setting objectives for programs for the disadvantaged and handicapped reflect the difficulties involved in gathering information about these groups. States, through their local areas, are still in the process of identifying and compiling information about their disadvantaged and handicapped students. Local areas are requested to report these needs and set objectives to meet them, but cannot yet do so. Other new programs, under the cooperative and the work-study sections of the educational information requirements, also indicate that local areas are unable to set objectives on the basis of currently available information.

In sum, states have not required their local areas to set objectives similar to those required in the standard state plan format. Reasons for these range from the unavailability of information on the local level, to the fact that ongoing data-compiling efforts are not sufficiently underway for use by local areas in planning. States have responded either by exerting a real effort to develop the needed information as best they can or by establishing lax guidelines that do not require, at the moment, the setting of these objectives.

B. The Use of Information in Program Decisions

Program decision-making is a different process from planning, which incorporates statistical data on the labor market and the population into a formal planning document. Such a planning document may reflect the results of program decisions, but the information contained in the plan to justify these decisions is not necessarily the same information used by the administrator to make them in the first place.

NPA staff examined the use of manpower and demographic information by seeking out the sources and types of such information which influenced specific program decisions. During our interviews, we asked LEA and post-secondary school directors which programs they were changing (had expanded, contracted, added, or deleted in 1970 or planned to expand, contract, add, or delete in 1971). For each program mentioned, the director was asked about the source and type of information which affected his decisions.

Table 7 summarizes the 146 program changes reported and their distribution among post-secondary and secondary, and urban and rural schools. Of the five types of program changes analyzed, by far the most frequent was the addition of new programs. (See Chapter 6 for a discussion of what kinds of programs were added and their relation to the labor market.) There were twice as many new programs added in 1970 as are projected for 1971, and two programs were added for every current program that was expanded. Even more significant is that fact that this year's new program additions outnumber program terminations by 12 to 1. This suggests that changes in priorities are accomplished primarily with new money and not by reallocating current funds. The new program additions projected

Table 6. Distribution of States and Their Local Areas According to Use of Educational Information to Set Objectives.

Information	Number of States	Number of Local Areas
Percentages of secondary students enrolled in VE programs	6	2
1971 enrollment objectives per program	5	4
1971 completions objectives per program	5	1
Percentage of VE students entering post-secondary VE programs	6	3
Percentage of students available for work and/or placed in jobs following training	6	1
Percentage of disadvantaged (by level) enrolled in VE	6	3
Number enrolled in cooperative programs	6	2
Percentage of handicapped population by level enrolled in VE	6	2
Average VE student-guidance counselor ratio	6	0

Table 7. Program Changes in 76 Urban and Rural, Secondary and Post-secondary Schools

Type of Change	Total Program Decisions (76 Schools)	Urban (54 Schools)	Rural (22 Schools)	Secondary (69 Schools)	Post-secondary (7 Schools)
Total	146	114	31	54	91
New Program 1970-71	63	50	12	33	29
New Program 1971-72	29	20	9	2	27
Expanded Program 1970-71	39	33	6	16	23
Terminated Program 1970-71	5	4	1	1	4
Curriculum Change	10	7	3	2	8

for 1971 therefore anticipate increased funding. It would be instructive to see which planned programs are implemented if anticipated funding levels are not achieved.

Significantly more program changes were reported in the urban than in the rural areas we visited. The new programs in urban schools for 1970 were about evenly divided between secondary and post-secondary programs. Post-secondary schools anticipate more new programs next year and have expanded more current programs than schools at the secondary level. Post-secondary administrators also appear to be more willing to terminate courses and modify curricula. However, since a number of the post-secondary institutions are new, they could be expected to expand offerings more rapidly than the older secondary schools.

Of the 146 program changes, we were able to relate 114 of these to data on sources of information.3/ Table 8 summarizes this information in terms of the percentage of program decisions which used information from each of seven types of sources. Information influencing about one-third of these decisions was primarily statistical and came from the school system itself, the employment service, and/or from other public institutions. The remaining 60 to 70 per cent of the program decisions depended primarily on non-statistical information from company personnel directors, advisory committees, and business and labor associations.

As one school director put it, his school sees itself as a service agency to the community and therefore program changes are made in response to community initiatives and pressures, and not in the context of an optimal allocation of resources to provide an optimal number of students with marketable skills.

There were significant differences among the information sources used in urban and rural areas, and in secondary and post-secondary programs. Urban program changes were much more likely to be based on business and labor association and employment service data, while rural program changes were more likely to be influenced by school data and information from advisory committees. Only about one out of ten program decisions was influenced directly by student preferences, and one of seven by individual companies or businesses in the area. Secondary level programs were much more likely to be influenced by individuals in the school system or data from the students themselves while post-secondary program decisions were more affected by people outside the school itself--public institutions or planning agencies and business and labor associations. Secondary level programs were more heavily influenced by advisory committees than were programs at the post-secondary level. The reliance upon employment service information at the secondary level refers mainly to telephone estimates given in response to questions about individual programs rather than to statistical data on the total job market.

3/ One city reported one very general source of data for all its program changes. Since this was not comparable with other information, it was left out of this analysis.

Table 8. Sources of Information by Related Program Changes in 76 Urban, Rural, Secondary and Post-secondary Institutions.

Source of Information	Percentage of Program Changes				
	Total (76 Schools)	Urban (54 Schools)	Rural (22 Schools)	Secondary (7 Schools)	Post-Secondary (69 Schools)
Total number of sources reported	144	79	35	30	84
Student preferences	10%	10%	11%	10%	11%
Public institutions	18	18	17	7	21
Business/labor associations	18	25	3	6	23
Employment service	16	19	9	19	15
Company requests	14	13	14	10	14
Advisory committees	10	6	20	19	7
Internal school data	14	9	26	28	8

In sum, program decisions are affected by information from a wide variety of sources. Decisions often result from advisory committee action, even when they rely on sources of data outside the committee itself. Usually the decision on one program is made independent of decisions on other programs and frequently these decisions bear no relationship to the kind of information reported in the long-range plan.

Part II -- Causes of the Current Situation

Chapter 3. State Standards for Local Vocational Education Planning.

Although a standardized format for planning and reporting at the state level has been worked out, the extent to which these state plan requirements have been translated into a standard format for local planning varies from state to state.[4/] Figure 2 illustrates the general relationship between federal guidelines, state plans and requirements, and local planning. It is important to understand these differences because long-range plans are viewed at the local level largely as compliance documents. The information reported by local officials and the way it is used is considerably influenced by the type of local planning document required by the state agency. Section A, below, discusses the various state requirements for planning at the sites studied. Section B discusses other incentives for local planning, apart from state requirements.

A. State Requirements for Local Planning

The six surveyed states are in various stages of developing local and state planning information systems and of modifying the information bases which they were using in their state plan documents when the 1968 vocational educational amendments were approved. Current directions indicate a growing involvement of both state and local areas in planning and greater responsiveness to future demands. At both state and local levels, we found the desire to avoid increased reporting requirements which result in voluminous paperwork that could hinder rather than support planning and administration. At the same time, planners recognize the need for complete information bases and communication channels to better coordinate the overlap of local plans with the state's own future objectives and activities. All the states, in attempting to comply with the federal guidelines and the standard state plan format application, have established, together with their local areas, basic planning structures to gather information and set objectives at the local level. These procedures are designed to complement state information requirements and objectives which flow out of the Office of Education guidelines aimed at coordinating vocational education offerings throughout the state.

Planning systems vary from state to state, reflecting differing state-local conditions, as well as differing interpretations of how best to coordinate state and local plans within the context of the federal plan application format. Currently, all the states are in the process of refining their established procedures or modifying those proven cumbersome or unworkable by past experience or outdated by newer, more efficient planning techniques. There are two types of basic planning systems.

The first, required by one state, asks for the submission of a separate local formal application for each course from each school or LEA, showing type

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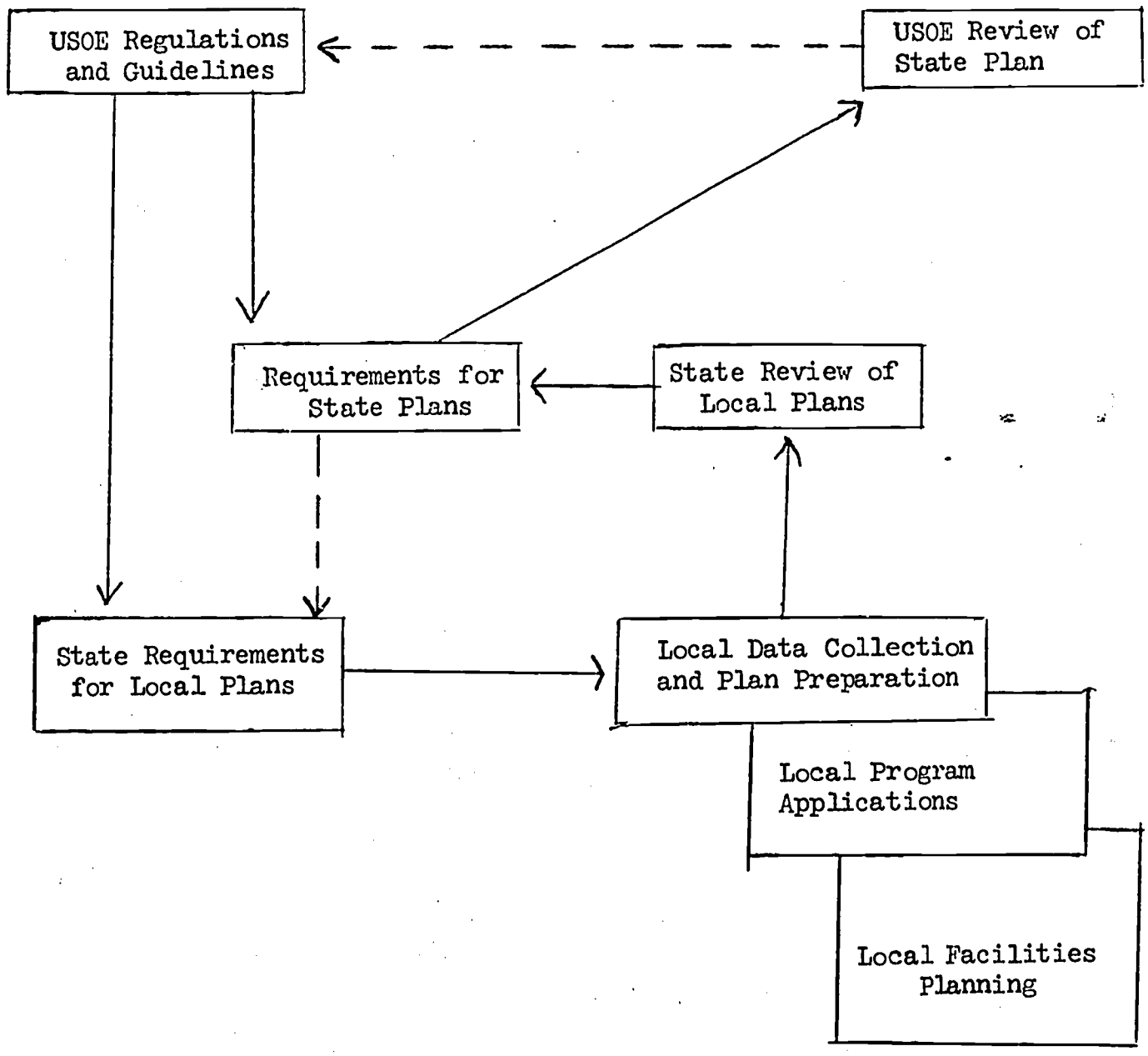
4/ Guide for the Development of a State Plan for the Administration of Vocational Education Under the Vocational Amendments of 1968, U.S. Department of Health, Education, and Welfare, Office of Education, Division of Vocational and Technical Education, Washington, D.C. (Proposed Guide for use by state boards of vocational education, pending publication of formal regulations in the Federal Register, May 1969, and revised, January 1971.)

Figure 2. Relation Between State and Local Planning



and number of enrollment, planned course changes, and the amount of funds required to establish, continue, or expand courses. These program applications are then directly funneled into the state vocational agency. The state assumes the task of classifying the instructional program area by school, county, and region. This requires extensive use of clerical manpower and computer facilities at the state level, depending upon the size and the number of LEAs, and of course does not stimulate coordinated long-range planning at the local level. A modified version of this system requires a separate local formal application for each instructional program area with each school or LEA submitting an annual and long-range plan for each instructional area. The school aggregates all their course applications by instructional area for subsequent processing at the state level. Understandably, both variations of this system arrive at the total plan by using the course as the basic unit for funding-and-need analysis. New Jersey has established this type of structure and is moving from the single-course application to total coordinated-program area application. Each LEA will be required to submit an annual and five-year program application for each instructional area, such as agriculture or business education. All course offerings eligible for funding are shown within each program application. This state is now attempting to move towards the regional phase of its planning cycle. In this phase, program applications will be reviewed and coordinated at the county level before being sent to the state. The state hopes this will reduce its coordinating task and encourage more cooperative planning at the local level.

The other surveyed states require the submission of a complete plan document from each LEA showing all vocational programs offered by the school by instructional area, broken down into levels and grades. Three states, Kentucky, Colorado, and Wisconsin, also require the submission of supplementary applications by program area which provide more specific detail than the plan document itself and then become overall summaries of activities. It is not clear why the two separate submissions could not be combined.

Under this second system of planning, two states do not require local areas to set objectives. In Maryland, the requirement for reporting annual objectives by individual programs was waived this year. On the other hand, Nebraska does not request enrollment target information from its local areas since enrollments were reported in other forms. The state planner states that such a request would call for a duplication of effort.

All the surveyed states distribute uniform plan or program applications to be used by all the local areas within their jurisdiction. However, neither the information system nor the plan that results at the local level is comparable with the state plan, since only one state (Maryland) uses the standard state plan format in structuring its local plan applications. The other states require a very different format for their local area plans than that set forth in the federal guide for state plans. They require individual program applications or consider the supplementary program applications as the main planning documents instead of a total plan.

Wisconsin, because of its different administrative structure, requires different application procedures for its secondary and post-secondary levels. Its secondary applications are coordinated by its division of public schools; post-secondary applications are coordinated by the State Board of Vocational, Technical and Adult Education, which has the responsibility for combining

secondary level plans with post-secondary and adult programs. Kentucky and New Jersey, having set regional planning as a goal, will soon require the submission of local plans to county coordinators or regional planning heads prior to evaluation at the state level.

The surveyed states showed varying attitudes towards the building of local area planning information systems (see Table 9). Some, realizing it would be difficult to depend entirely upon the local areas to gather uniformly-based and comparable information, have designed local plan and program applications which contain much of the information local areas need for planning. Local planners may be given handbooks or guides with appropriate information. Other states have assumed the total responsibility for analyzing local area needs in terms of manpower information they have acquired at the state level. However, the general trend is for states to encourage local areas to develop their own planning information.

Two states, Kentucky and Maryland, have developed a complete package for distribution to local areas. Kentucky is working with its state employment security agency to develop information on job opportunities while Maryland is developing a complete placement and follow-up local information base. New Jersey and Nebraska are still in the process of completing their preliminary efforts to develop manpower trends data at the state level in a format useful to their local planners, i.e., employment opportunities by occupations. Wisconsin and Colorado, on the other hand, depend on their local areas to collect and use the information released by the state employment service offices and comprehensive area manpower planning system; they require very little reporting of such information in their local plan format. Both states say they examine their local plan applications in terms of statewide information during the approval process.

B. Other Incentives for Local Planning

Long-range plan requirements are viewed by local planners as a compliance procedure--something that has to be done in order to qualify for state or federal funds. Filling out the formal document therefore becomes a mechanical process of finding the appropriate information and inserting it in the proper place on the planning form. There is little interest in the meaning of the numbers or their relationships, or in how the planning information can facilitate the local administrator's decisions about future programs. 5/

The local long-range plans required by states since the 1968 vocational education legislation therefore provide little actual incentive for planning--if this term is viewed as the process of allocating limited resources to better meet the vocational preparation needs of the community's youth.

Without exception, the educators interviewed in this study wanted to improve their programs, to increase enrollments in vocational education and to insure,

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5/ These findings at the six sites visited under this contract are confirmed by the experience of NPA staff in conducting planning workshops under contract to USOE for 75 planners-administrators from 21 states.

Table 9. States by Kind of Information They Include in Their Local Plan or Program Applications.

Information in Plan/Program Application	Number of States (N = 6)
Plan/program application contains manpower, demographic, and educational information derived by LEA planners from state-distributed guide or handbook	4(1)
Local plan/program application contains manpower, demographic and educational information, mostly gathered at the local level	1(2)
Local plan/program application does not contain information or requires local LEA to cite source of data used to justify need for program	2(3)

(1) Still being developed by two of these states.

(2) Only secondary level for Wisconsin.

(3) Only at post-secondary level for Wisconsin.

insofar as possible, that their students received rewarding employment upon graduation. Yet the decisions they make in this context and the information they employ in making these decisions are considered by most administrators as a process divorced from filling out the blanks in a long-range plan. These decisions are usually made on a program-by-program basis and are not undertaken as an allocation effort involving a unified view of all programs. Usually an anticipated budget increase serves as the stimulus to projected increases in enrollments in specific programs. Rarely did we find evidence of planning for the purpose of reallocating a fixed budget to increase program effectiveness.

There are times when local areas have, on their own initiative, undertaken extensive planning efforts which do take into consideration all programs, the students and the labor market. These efforts usually precede the development of a new vocational school and take the form of a justification for requesting state or local construction funds. Such justifications must demonstrate that there is and will be sufficient student demand for enrollments in specific programs and, in addition, that a projected labor market will exist when these students are trained. Long-range planning in these terms is critical not only to obtain the overall funds for land acquisition and construction but also in order to decide on the kind of facility to construct and equipment to purchase. A distributive education, medical technician, or diesel mechanic program each requires a particular facility and the size of this facility depends on projected enrollments in these courses. All of these decisions require coordination with prospective employers and an anticipation of the growth and stability of employment in related occupations.

Unfortunately, once such a plan has been produced there is little evidence of any incentive to update the information periodically or to consider the document as a long-range master plan. Rather, the practice has been to put aside the plan once the facility is built and programs are operating. Pressure for a new facility, once the old one is outgrown, will generate a new planning attempt with new staff and information and the potential for continuity in planning is lost.

What is needed is an appreciation at the local level of the need for systematic planning which relates the schools' programs in quantitative terms to students who can benefit from occupationally-oriented education and to the job market which helps define which skills are marketable. Until the local education agency perceives the value of such planning to the development of its own programs, the mere existence of state requirements and increased availability of appropriate statistical, manpower, and demographic data will not in themselves assure effective planning as a framework for local education decision-making.

Chapter 4. The Availability of Information for Planning.

Although states are moving toward the implementation of stricter state requirements for local long-range planning in vocational education, there are two other essential inputs to the planning process which must be considered. Even if all states had firm requirements that local areas use appropriate manpower and demographic information in planning, the local areas could not comply unless they had adequate information available to them, along with an adequate staff capability committed to using such information to develop complete and accurate plans.

This chapter discusses the availability of information on the local level for planning--its sources. level of detail, and format. Chapter Five summarizes information on local planning capabilities and commitment.

The manpower and demographic information required for planning in vocational education is different from that historically gathered for other purposes. Optimally, the vocational educator wants to know the job opportunities for the graduates from his programs up to five years in the future. This is best estimated by job openings projections which include new employment generated by the estimated growth in the occupation as well as that due to death or retirement of current jobholders. To be most useful, the job-opening projection should:

1) cover a five-year period;

2) relate to the geographic area where students normally find employment; and

3) refer to jobs clustered by OE program codes so they can be related directly to enrollments and completions.6/

The most useful demographic data for establishing objectives in vocational education describe the current and projected population of school age youth in the geographic area served by the local education agency. To be most useful, these data should:

1) include a five-year projection taking account of population changes due to migration and birth rates;

2) relate to the geographic area served by the LEA; and

3) be disaggregated by sex, race, family income and handicap.

While information is available on the national level in these terms, most states are just beginning to report information in these categories. Except for the largest cities, few local areas have access to such information. To obtain this kind of manpower and demographic information, local planners and administrators must either petition state agencies for better data, or make use of a

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6/ These codes relate jobs to educational programs and are published in Vocational Education and Occupations, Report OE 80061 by the U. S. Office of Education, July 1969, 292 pp.

wide variety of sources to enable them to generate the specific data they require. Meanwhile, the data they are using to define the population and labor market are not as precise as they need for effective planning.

The 1970 Census, to be available later this year, will provide more recent quantitative demographic data on state and local areas. While these data are reported by census tracts rather than school districts, they will be more appropriate than most data sources currently used by local planners.

A. Manpower Information

A number or sources of labor market data are available to local education agencies, but they vary considerably in level of detail and in their utility for the vocational educator. In general, information describing the current labor market is more readily available and complete than estimates of future manpower needs. The most typical sources of manpower information are shown in Table 10. While these do not exhaust the range of sources generally available, they illustrate the varied sources which local planners must consult in order to develop the information they require.

The most common sources of current and projected manpower information are state employment services and their associated local branches in cities and counties. Most of the state employment service headquarters are preparing reports of employment by occupation and projections to 1975. However, in several cases this information is only reported at the state level rather than for the SMSA or the city, and occupational titles are derived from census categories and not translated into OE program codes, although an index of occupations by OE codes exists. The three states with rural sites are in the midst of preparing employment projections to 1975 by OE program codes. These projections will list estimated job openings as well as level of employment for the entire state and its counties. Generally, local branches of the state employment service have neither the staff time nor expertise to prepare similar projections for the local areas.

The most appropriate labor market area for city school graduates is the SMSA and perhaps the city itself (or in the case of a rural area, the county) but no city employment projections were found and only two of the three rural areas surveyed had any county statistical data on current employment. However, all of the states containing the rural communities are in the process of preparing detailed occupational projections by county for their states, so that the data picture will be improved in 1971.

Although at one time it was assumed that local employment service offices would prepare such labor market forecasts for the use of local vocational educators, this has not come to pass, largely because of a lack of funds. These offices frequently can report unfilled job orders and sometimes information about next year's employment needs for specific jobs or industries. However, most of the statistical manpower information which does exist in the form of occupational projections comes either from the state headquarters of the employment service or from special studies by the Labor Department, universities, or trade associations.

Data defining current and projected labor markets were analyzed at all six sites studied and characterized in one of five categories according to the best data available at each site (see Table 11). Only one of the six sites had access

Table 10. Typical Sources of Current and Projected Manpower Information.

Source of Information	Type of Manpower Information
Current	
State and local employment service County or city planning units	Labor market description in terms of industry or occupational employment Job openings or job vacancies JOLTS[a]
Advisory councils or trade associations	Assessment of current shortages
Student placement	Where students get jobs
Student interest	What kinds of jobs students think they will get (occupational choice)
Projected	
State employment service County or city planning units	Projections of entire labor market in terms of: industry or occupational employment projected job openings by OE code
Special studies by universities	Employment projections for specific jobs
Industrial or trade associations	Estimates of industrial growth
Individual employers	Estimates of company growth in terms of employment
Chambers of commerce	Estimates of long-range individual growth in the community

a/ Job Openings Labor Turnover Statistics. A new program which reports job openings by Dictionary of Occupational Title (DOT) Code.

to current labor market data for the SMSA defined in terms of OE program codes. Half of the states in which the communities studied were located reported statewide current and future employment by job openings. Only one-third of the sites had this information on a current regional or SMSA basis. In four of the six sites the best SMSA labor market data available reported current employment by occupation or industry without considering jobs which would become available as a result of attrition; at the other two sites no statistical projections of any kind were available.

The desirability of having city projections in addition to SMSA data is based on the reality that many, if not most, graduates from urban vocational programs seek employment (as do many from the suburbs) within the city. And recent shifts of research and manufacturing facilities from city to suburb suggest that the occupational patterns for the SMSA may vary considerably from those within the city limits. The current lack of adequate public commuter transportation from city to suburbs, and the difficulty of finding appropriate low-income housing outside the city adds to the concern of urban vocational planners for both SMSA projections and city employment statistics.

Much of the problem lies in defective communication channels and the failure of the vocational education administrators to develop closer working relationships with their state employment offices which could provide some of the required data. Consequently, little exchange of materials, techniques of analysis, or formal assistance were found by the researchers between these two agencies.

There are, however, also considerable technical problems and in many cases, of course, the appropriate data on job opportunities are not available even from the state employment service. One of the difficulties faced by the planners or the employment service technician in matching occupational data with relevant vocational programs is that current and projected estimates of total employment or job openings are usually in census categories that are too broad to be matched to OE programs. These categories do not include the new and emerging occupations which would be useful to the vocational education planner in making decisions about his new programs. Methods are available for deriving state and local manpower projections from the National matrix reported in Tomorrow's Manpower Needs.

The task of relating OE programs to corresponding occupational data consists of:

1) relating current and planned program offerings to DOT titles;7/

2) equating census categories to the chosen DOT titles;

3) ascertaining whether data on job openings are available for the census categories.

Most often, vocational education planners rely on their judgment to determine what occupations should be related to each of their vocational programs.

7/ See Vocational Education and Occupations, a handbook prepared by the Office of Education and the Manpower Administration.

Table 11. Best Quantitative Manpower Data Available for Planning in Six Sites.

Type of Information	Statewide		Region/SMSA		City/County	
	Current	Estimated 1975	Current	Estimated 1975	Current	Estimated 1975
Job openings by OE program code			1[a]	1		
Job openings by occupation	3	3	2	2		6[d]
Employment by occupation	2	1[b]	2[c]	1[b]		
Employment by industry	1		1	0	2	
Job vacancy shortages		1	1	2	4	

Notes:

a/ Baltimore SMSA for selected occupations only.

b/ Nebraska has only a two-year projection but reports data by OE code.

c/ Colorado reports only selected occupations for Denver SMSA and state.

d/ Kentucky, New Jersey, and Nebraska are preparing 1975 county projections of job openings by occupation.

At the current time, the most preferred employment information is by DOT title since the titles are specific enough and can be conveniently related to OE programs by using the OE Handbook. According to the Manpower Administration, this type of employment information has only recently been developed in a pilot research project and is available in only eleven states.

The states also find difficulty in gathering data about training output in other sectors, e.g., other public and private educational institutions such as proprietary schools, on-the-job training in industry, union apprenticeship programs, etc. Most private institutions do not keep records on completions by training program and do not, or will not, estimate the number of graduates from their training programs one year and five years ahead. The CAMPS agencies, while theoretically acting as coordinators for funding purposes, have current enrollment data only from local federally-funded programs and have no information on proprietary programs.

It makes little sense for states to require a comparison of labor market projections in occupations relevant to vocational education when such projections are not available and the skills for making such projections do not exist in the school system. Similarly, the absence of this information, or of ready means for obtaining it, suggests that some of the manpower reporting requirements in the OE guidelines should be reconsidered.

Without quantitative employment service data, local administrators frequently use school statistics on student interests or student placement. Neither of these is particularly useful as a long-range labor market projection, although either may reflect current job opportunities.

Finally, partly due to a lack of quantitative data, and partly to traditional reliance on non-statistical information, the planners continue to rely on advisory council, trade and business associations, and employer estimates of future industry growth as a clue to future job opportunities.

B. Demographic Information

Unlike manpower data, all of the information sources dealing with current and projected population characteristics are statistical in nature. These are summarized in Table 12. The 1970 census provides a data base and contains most of the detail needed by the planner in terms of current school age population. Prior to the new census, many areas had to rely on special studies by state planning agencies based on 1960 census data

Even the census does not, however, report population projections for small geographic areas such as local school districts although these may sometimes be derived from recent state or national projections. The definition of the disadvantaged and collection of information on the disadvantaged and handicapped cannot be derived from census information and frequently requires the use of other sources such as the city or state bureaus of vital statistics or vocational rehabilitation. Although CAMPS agencies are operating and concerned with the extent and duplications in manpower training, in most areas they generally do not have the type of demographic data useful for local vocational education planning.

Particular problems were encountered in defining the target populations to be served by vocational education. States have found it difficult to obtain

Table 12. Typical Sources of Current and Projected Demographic Information.

Source	Data
Current	
Census - 1970	Area population by age/sex/income
	School age population by sex/grade
School survey (upper grades)	Population by area, sex, and income
State planning agencies	Statistics on disadvantaged, and on special groups such as the handicapped.
Other state or city bureaus	
Projected	
School survey (lower grades)	Projected school age population by sex and grade (can be projected to upper grades)
State planning agencies	Projected population - general characteristics
Bureau of vital statistics	Projected population - disadvantaged or handicapped
Health and vocational rehabilitation agencies	

Table 13. Placement and Educational Measures Regularly Collected by Surveyed School Systems
(N = 11)

Type of Information	Total Number of Systems Collecting	Urban Systems	Rural Systems
Labor market follow-up	0	0	0
School Placement in job	8	5	3
Course completions by OE program code	8	6	2
Course enrollments by OE program code	8	4	4
Course enrollments, uncoded	11	6	5

estimates of the disadvantaged and the handicapped. Interpretations of the terms "handicapped" and "disadvantaged" vary from state to state. New Jersey, for instance, does not consider low family income as a qualifying characteristic for a student to be considered as disadvantaged, while Kentucky does. The planners interviewed also described the difficulty of obtaining numbers on the intellectually disadvantaged and the culturally and the economically disadvantaged, due to the lack of standard statistical sources for these estimates.

Much of the demographic data useful for planning, however, can be derived internally from the school census in the state where such information is collected in the community. Normally, the schools conduct this census on a door-to-door basis, and aggregate the number of children in the community by sex, income level, race, and age up to 21. Within this framework, information could be collected on population by area of the city and by handicap as well as by age and sex to provide the basis for a detailed projection of high school or post-secondary school age population. School systems could make projections relating vocational education enrollments to school age population more easily than they could make projections of the labor market.

There are both secondary and post-secondary school systems at five of the six sites studied; at the sixth site, one school system offers both secondary and post-secondary programs. There were, therefore, a total of eleven school systems. Table 13 shows that eight of these eleven school systems conducted short-term follow-up of students but few, if any, aggregated such data by OE instructional program code and none did so by target population. Without such data, it is difficult to evaluate programs in terms of output, placements, and work experience of graduates in jobs for which they are trained. All the urban systems collect completions data by OE program code; one of the rural sites collects both secondary and post-secondary information in this manner. While all of the systems have data on course enrollments, only four urban and four rural systems aggregated enrollments by program to obtain a net enrollment without double counting. In 1971, state requirements for annual reports will require all the public school systems to aggregate both enrollment and completion reports by OE program codes.

Chapter 5. Capabilities and Functions of Local Planning Staffs

In Chapters Three and Four we discussed how the development of systematic local planning using quantitative data has been impeded by weaknesses in local data and the lack of state requirements for appropriate information. While it is important for states to assist local areas in obtaining the statistical data required for planning, it is also necessary for the states to insure that adequate planning time and expertise are available on the local level to implement the planning process.

Planning vocational education on the local level remains more of a committee than an individual activity. The principal character in this complex planning process is the local vocational education planner, who coordinates the planning activities. As we shall see, the local vocational education planner usually holds his position because of his administrative authority rather than any specific expertise in quantitative planning techniques.

The results of this study indicate that the level of community participation in the planning process varies significantly among local education agencies. Often it was found that persons who were elected or appointed to represent specific organizations lacked detailed knowledge and the basic quantitative orientation needed for planning. However, such persons were useful barometers for measuring group attitudes toward changes in vocational education. In addition, they were typically dedicated to improving career prospects for the graduates of the programs.

For the most part, local planning efforts involve community representatives who are members of formalized organizations and associations such as labor, management, educational institutions, citizen groups, and organizations--parent-teacher associations and student groups. The composition of the planning staff itself varies with the level of education and the organizational structure of the school, school system, or district. The staff may include the teachers, principals, area supervisors, curriculum specialists, and guidance and counseling personnel. On the secondary level, students, teachers, area chairmen, and assistant superintendents may be added. Deans of instruction and directors of technical studies and long-range development may be included at the post-secondary level.

A. Role and Function of Local Vocational Education Planners

Planning for vocational education on the local level involves a cadre of school personnel working together with representatives from various segments of the community. The ultimate responsibility for coordinating the planning process lies within the school superintendent's office on the secondary level and the community college president or district director's office on the post-secondary level. However, within each system and on both the secondary and post-secondary levels, the chief administrative official has appointed a local vocational education planner to coordinate planning for vocational education. He is the principal official in this complex planning process.

Despite differences in the duties of the LVEPs from one community to another, their roles in the planning process have many similarities. In general, they are responsible for the overall coordination of the development (and in some cases, the implementation) of vocational education programs. Their duties include: interpretation of local, state and federal guidelines relating to funding; collecting,

distributing, and analyzing data; writing and assisting other school personnel to write program and/or project proposals for state and federal funding; and conferring with local, state and federal government officials on the development and implementation of vocational education programs. Once a program idea is identified it is the LVEP who conducts a feasibility study and who is responsible for collecting and analyzing the data, and conducting other investigations to determine if the suggested program change is justified.

The local vocational education planners interviewed indicated that, on the average, they spent about one-third of their time in what might be called "formalized planning"--that is, collecting and analyzing data, meeting with various committees, and writing program proposals--while the greater portion of the remaining time is spent in general planning. Frequently, their primary responsibility is in some other role as teacher or assistant superintendent.

B. Background and Experience of Local Vocational Education Planners

The LVEP is selected on the basis of a set of criteria established by the administrative unit of the school. There appears to be no significant difference in the various selection criteria at each educational level (secondary and post-secondary). The primary differences lie between the two levels of education, with the educational attainment of the LVEP generally higher at the post-secondary level.

Commonly-listed criteria include demonstrated leadership abilities, knowledge of and experience in vocational education, the ability to write program and project proposals, and, to a great extent on the post-secondary level, previous administrative experience. A dean or a director of long-range development, for example, would be given the responsibility for coordinating the planning process on the post-secondary level.

The capabilities of the LVEP in the communities studied are analyzed below in terms of their experience, acquired skills, and academic background.

Table 14 presents the current positions held by the LVEPs in this study. Most hold major administrative positions, and often they are heads of departments, deans, or area supervisors. In one case the LVEP was a coordinator of an auxiliary program and in another, a county consultant. Another LVEP was the administrator responsible for technical studies at his institution. Our study indicates that all LVEPs were appointed to their positions on a competitive basis and were performing their administrative duties in these positions with a relatively high degree of competence and effectiveness. Their planning role was usually subordinate to their administrative function.

The educational background of the LVEPs reveals that, with one exception, all have earned credits in courses in research techniques and methodology (see Table 15). Although these courses taught statistical research techniques and other research methods, in practice the LVEP's job was primarily concerned with curriculum development, psychometric methods, techniques of teaching, and theories of learning. For the most part, any deficiencies which exist in the LVEP's abilities to make the required quantitative analysis of manpower and educational needs stem from gaps in formalized training programs. Three of the twelve LVEPs had employment experiences in occupational statistics--one in the employment service, one in

Table 14. Positions Held by Principal Local Vocational Education Planners.

(N = 12)

Position	Level of Position				
	Secondary			Post-Secondary	
	School	District	County	District	County
Secondary					
Vocational agriculture teacher	x	x			
Director of vocational education	x	x			
Director of guidance	x		x		
Superintendent of vocational education		x			
Coordinator of work-study programs		x			
Executive director, vocational, technical adult, and practical arts		x			
Post-secondary					
Superintendent				x	
Director				x	
President					x
Director of technology				x	
Dean (faculty, students)				x	
Director, CAMPS				x	

Table 15. Educational Attainment and Employment of Local Vocational Education Planners in Administrative Positions

Level/Site	Degree and Field of Study	Employment	Salary
Secondary Rural	B.A. - Education	Teacher, 10 years	$13,000
	M.A. - Guidance	Director of Guidance, 15 years	18,000
	M.A. - Education	Management-Employer Merit Service, 10 years	10,000
Secondary Urban	M.A. - Administration	Teacher, (T&I), 17 years Principal and Department Director, 10 years	25,000
	M.Ed.- Guidance	Teacher, 4 years Department Chairman, 9 years Supervisor, 6 years	19,000
	Ph.D. - Administration	Teacher, 5 years Assistant Principal, 3 years Researcher, 5 years	20,000
Post-Secondary Rural	M.S. - Education	Director, 20 years	18,000
	Ph.D. - Education	Administration and Education, 15 years	25,000
Post-secondary Urban	M.A. - Education	Teacher Division Coordinator, 10 years	14,000
	Ph.D. - Sociology	Teacher, 9 years Superintendent, 7 years Dean of Occupational Education	19,000
	M.A. - Administration	High School Principal, 25 years	25,000
	Ph.D. - Administration	Teacher and District Director, 30 years	26,000

guidance, and the other in research. Other LVEPs have had work experiences in related areas where they acquired some transferable skills, but not enough for the kinds of statistical analysis required for comprehensive planning.

There is as yet no formalized systematic curriculum and/or projects which would equip school administrators or LVEPs with the skills required to develop comprehensive long-range vocational education plans. Many of the requisite skills for effective planning are taught in related courses--such as statistics, economics, and sociology--but practical application for the required techniques and methodology utilized in synthesizing various kinds of data are either not taught in schools of education or are only incidentally discussed in relation to other aspects of supervising and administering educational programs.

Part III -- The Results of Current Planning Practices

Chapter 6. Availability of Vocational Education to Students.

This investigation of local planning and its use of manpower and demographic information has focused on the local education agency (LEA) as the planning unit. Another way of looking at the results of local planning is to examine the availability of vocational education programs to students and to examine the distribution of vocational course offerings among individual schools within a local education system. While theoretically any vocational education course offered by a school system should be available to all interested students, in practice the student's career options are often pretty well defined by the limited number of programs offered at the high school most convenient to him or the one his friends attend.[8/] In our society, all but those youths most certain of their goals will be strongly influenced in their choice of occupation by the availability of programs. A measure of the success of vocational education planning, therefore, is the extent to which all students are exposed to a variety of occupational programs in each school.

A. Secondary Programs

In our study, the urban sites offer a greater variety of secondary programs than do the rural counties. Since the population served and job opportunities differ in the selected urban and rural areas, the availability of secondary programs in each category is analyzed separately.

1. Urban Programs

Table 19 summarizes the distribution of total secondary school enrollments in urban schools with differing numbers of course offerings.

A school which offers five or six vocational education courses most typically offers a home economics and office education course for women, a program in distributive education and perhaps a machine shop, drafting or auto mechanics course for men. This not only limits the variety of occupational offerings--in our sample there were no health occupations, carpentry, electricty, or plumbing courses--but also limits the variety of skill level training offered within each occupational area.

In the three urban areas studied, one out of every seven vocational education students, or about 14 per cent, attends a school where five or less vocational courses are offered (usually two for women, three for men). This means that for a male or female student in these schools, their choice of special vocational preparation is limited to two, or at the most, three programs, including home economics. More than 50 per cent of the urban public secondary school students attend schools with fewer than ten vocational courses, a choice of five or six programs per student. Nearly 50 per cent of secondary school students in urban areas attend schools offering ten or more occupational programs, and one student in five attends schools with more than fifteen course offerings. Eighteen schools offered six to nine subjects. Nineteen schools offered ten or more choices.

8/ Or at the high school to which the student is bussed.

Another measure of program availability in urban schools is the number and percentage of urban high schools where instruction is available for each type of vocational program. Table 20 summarizes the availability of selected program offerings in these terms. The first eight programs listed in this table were offered in all three cities. Generally these courses require considerable equipment, expenditures, and special facilities and are offered in centralized vocational high schools as well as in selected comprehensive high schools. A student in one of these three cities is much more likely to be attending a high school offering courses in distributive education or drafting than in graphic arts or auto mechanics.

The last eight courses listed in Table 20 are not available in all three cities. Cosmetology is offered at the secondary level in two cities while the remainder are offered in one city each. This group includes training for two occupations in the rapidly growing health field and two pre-apprenticeship programs leading to jobs in the well-paying construction trades.

Only four types of secondary-level vocational education programs are found in more than half the schools--office education, distributive education, consumer homemaking, and drafting--while the rapidly expanding occupations in health and personal service fields are represented by courses in only one-tenth or fewer of the schools. Only one school in four offers occupational preparation in electronics, auto mechanics, or graphic arts.

While these figures do not reflect the size of the enrollments in these programs, they allow a crude measure of labor market relevance. Training in the most rapidly growing fields of technology and health occupations is less available to students at these three urban sites than are traditional programs in office education and distributive education, fields where projected employment growth is not so rapid.

It is evident that some urban areas offer a much wider variety of programs than do others, and that, within each of the three urban sites, all the students do not have the same availability of vocational education courses or program options. The number of vocational education courses and program offerings per school varies within each site according to the locations of schools. In two sites, students whose schools are located within or near the boundaries of the poverty areas have more vocational education course offerings than their counterparts in the suburbs. At the third site, students whose schools are located in the suburbs have more vocational education course offerings than their counterparts in the inner city schools.9/

An informal review of the availability of vocational education program offerings in the better paying occupations suggests a tendency for surburban schools to provide more vocational education options in programs leading to occupations with a higher earning potential than schools located in and on the boundaries of the poverty areas.

9/ However, the suburban student is more likely to be able to take post-secondary occupational programs in community colleges or proprietary schools than his urban counterpart.

Table 19. Availability of Secondary Vocational Education Programs in Schools in Three Urban Areas.

Number of Different Vocational Education Programs Offered	Percentage of Total Secondary Enrollment in These Schools	Total Secondary Population in These Schools
0 - 5	14%	11,400
6 - 9	41	32,900
10 - 15	23	18,700
16 - 23	22	18,000

Table 20. Availability of Specific Secondary-Level Vocational Programs in Urban Schools.

Instructional Program	Number of Schools Where Offered (N = 51)	Percentage of Schools
1. Office education	40	80%
2. Distributive education	37	73
3. Consumer-Homemaking	29	57
4. Drafting	27	53
5. Sheet metal	14	27
6. Graphic arts	14	27
7. Auto mechanics	11	22
8. Electronics	8	16
9. Machine tool**	7	14
10. Food service**	7	14
11. Cosmetology*	5	10
12. Electricity**	5	10
13. Practical nursing**	3	8
14. Plumbing**	1	2
15. Barbering**	1	2
16. Hospital attendant**	1	2

* Only available in schools at two of the three urban sites.
* * Only available in schools at one of the three urban sites.

In all three urban sites there was a general lack of adequate training facilities due to a recent influx of school age children into the inner city and the use of buildings either too old or without enough ground for expansion. One of the urban areas could not rebuild because of a state law prohibiting the sale of school bonds in excess of a 6 per cent interest rate--even though the citizens had approved a higher rate. As a consequence, this LEA entered into a cooperative arrangement with the area technical college to provide twenty-two vocational education courses for nearly one per cent of those students in the city regardless of the location of their nearest schools. Two of the sites indicated that the prohibitive expense of equipment and materials prevented the establishment of new or expanding vocational education programs. One site lacked an adequate supply of certified teachers.

Most sites viewed transportation as a major aid to vocational education program availability. For example, in one site, students who live in isolated areas are provided with busing, while free tokens are given to students who have access to public transportation; another site is now in favor of providing free transportation but is prohibited by state law and the lack of local funding. The third site adheres to the philosophy that "if a student has the interest to enroll in a given vocational education program, he will provide his own transportation." This same school system has attempted to meet the mandate of the federal government to improve racial balance in the school system by negotiating for a reduced student fare with the public transportation system. It is not known, however, to what extent this arrangement has affected the availability of vocational education programs for any particular group of students. There seems to be a general lack of information concerning the impact of busing on the availability of vocational education programs. It may be significant to mention that at one urban site, in order to achieve racial balance, some students were bussed to schools which had fewer vocational education courses than their home school. But the administrators cited a lack of facilities and poor scheduling as the major reason. The other two sites indicated that while a significant number of students' vocational choices are enlarged by busing (to schools with more program offerings) generally, urban school systems do not look upon busing as the best way to make vocational education programs more accessible.

2. Rural Programs

In rural areas, a lesser variety of programs is available to secondary school students. Table 21 shows that nearly half the students in rural areas attend schools where five or fewer programs are offered, whereas in urban areas half the students attend schools with ten or more offerings. However, in rural counties with a centralized secondary-level vocational school, there are as many courses available as in city vocational high schools. Thus, while only one-fifth of the urban students attend schools with more than fifteen vocational offerings, one-third of the rural students attend such schools. (There were no schools found in the three rural counties with ten to sixteen course offerings.) And while over one-third of the urban schools offered ten or more courses, only two of the eighteen rural schools were this comprehensive, and one of these was located in a town where the population was over 15,000.

Certainly, one of the major reasons for the reduced number of programs offered in rural areas is the smaller school enrollments. The schools in the three rural areas selected for this study averaged about one-third (or 554 students) the enrollment of the urban schools (nearly 1,800). The largest school in these rural areas

Table 21. Urban vs. Rural Secondary Schools and Vocational Program Availability.

Number of Programs	Urban		Rural	
	Number of Schools	Percentage of Total Secondary Education Enrollment	Number of Schools	Percentage of Total Secondary Education Enrollment
0 - 5	14	14%	12	46%
6 - 9	18	40	4	21
10 - 15	-	23	-	-
16 - 23	19	22	2	33

had an enrollment of just over 1,000, while 38 of the 51 urban schools had larger enrollments and 20, or about 40 per cent, of the urban high schools had enrollments in excess of 2,000.

Rural vocational education programs are more likely to be available in centralized schools or extension centers than in individual high schools. However, some vocational courses, especially in programs leading to well-paying mechanical or technical jobs, are more available to students in these areas than those in urban areas. Table 22 shows the different pattern of vocational program offerings in secondary schools in urban and rural areas. See Appendix 5 for details.

In our small sample, rural schools had more courses for men in construction trades than the urban schools. The three rural areas we studied, like the three urban areas, only infrequently scheduled such courses as data processing, practical nursing, food service, and cosmetology (though most of these are available in post-secondary courses). A surprising finding was the few rural schools offering programs in agriculture.

For women in these rural areas there is much less opportunity to take distributive education or consumer-homemaking courses than for their counterparts in urban areas, though one county which reported no courses in that area this year plans to institute them next year. Even in counties where these courses are offered in centralized area schools, geography and travel time may prevent students in some areas from attending these schools.

3. Implications

Since large and diverse school enrollment is required to support a sizable number and a wide variety of vocational education courses, both urban and rural districts have attempted to centralize vocational education programs in area or specialized secondary schools with admissions open to any student in the county or school district. All schools have limited capacities, however, and, while equal access is legally provided in such cases, it is more equal for the student who lives near the school than it is for the student further away. In one of the rural counties where two vocational education extension centers serve high school students from ten schools in half-time programs, one of the schools in the county has no vocational students in attendance at the centers because of distance and poor roads. In some of the urban areas, the centralized vocational high school is more than six or eight miles from many of the potential students and no bus transportation is provided.

The presence of a centralized vocational school, to which any student in the LEA may go, in some way ameliorates the unequal distribution of programs evident in these tables. However, even where these schools exist, students may prefer selected comprehensive high schools because these offer courses which are not in the curriculum of the centralized vocational school. Theoretically, students are allowed to attend other than their regular school for special vocational courses, but in practice students enrolled full-time at the high school giving the course usually have preference.

Table 22. Comparative Availability of Selected Secondary-Level Programs in Urban and Rural Areas.

Course	Percentage of Schools Where Offered	
	Urban (N = 51)	Rural (N = 18)
Distributive education	73%	17%
Consumer - homemaking	57	17
Drafting	53	56
Auto mechanics	22	56
Electricity	10	56
Carpentry	20	38
Agriculture	0	22

B. Post-Secondary Programs

Three post-secondary schools in urban areas and four schools in the three rural areas offer courses in vocational-technical education. One of the urban schools (in Milwaukee) and two of the rural schools (in Kentucky and Nebraska) are primarily technical schools. The other four institutions are community colleges offering both transfer and occupational programs. Programs in all of these institutions are available to all students in the area with a high school diploma, a requirement which can be waived in some instances. In most cases, little or no tuition is required and students may take courses in the evening while working. Except for extreme cases of economic hardship or geographic considerations, which may prevent attendance, for example, in Kentucky, these courses must be considered equally available to all residents. However, the post-secondary student who cannot afford private transportation may be penalized.

Two of the rural institutions (the rural technical schools) have resident as well as non-resident students. The others have only day students. The location of two of the rural community colleges requires the use of a car by the students. The urban community colleges and technical schools are generally located convenient to public transportation. They are designed to be available to all students in the area and the question of availability of vocational programs at the post-secondary level is therefore not pertinent in the same sense it was for secondary programs. It is instructive, however, to investigate the differing program options available to students in these five post-secondary schools in widely separated regions in the United States.

Table 23 presents a list of selected programs and indicates their availability in the post-secondary institutions in the study.

Only two programs were available at all six sites at the post-secondary level --accounting and secretarial. Three other programs--data processing, general clerical, and electrical technician--were available at all but one site. Ten programs in all were available at all the urban sites while only four programs were available at all rural schools. It is obvious, as was the case with secondary programs, that more varied post-secondary programs are available to the urban student than to his rural counterpart.

Looking at the availability of post-secondary programs in comparison to general labor market projections, we find that while only 10 per cent of secondary schools offer courses in health occupations, 50 to 60 per cent of post-secondary schools offer such programs. Two-thirds of the post-secondary schools in this sample offer a variety of trades and industry courses, while most of these courses are offered by only a fifth of the secondary schools. It appears then that the post-secondary schools are providing more opportunity for occupational training in fields where marked employment growth is anticipated.

We can summarize the availability of vocational education by simply enumerating the number of different program options for students on both educational levels at each of the six sites (see Table 24). The urban sites surveyed offer a choice of up to 100 different formal occupational training programs. This is two to three times as many offerings as are available in rural areas at the post-secondary level.

Table 23. Availability of Selected Programs at the Post-Secondary Level in Five Sites.

Program	Sites Where Offered		
	Total	Rural	Urban
Accounting	6	3	3
Secretarial	6	3	3
Data processing	5	2	3
Clerical (general)	5	3	2
Electrical	5	3	2
Drafting	4	1	3
Business management	4	1	3
Dental assisting	4	1	3
Fire science technology	4	1	3
Practical nurse	4	2	2
Auto mechanics	4	2	2
Carpentry	4	2	2
Welding	4	2	2
Inhalation therapy	3	0	3
Registered nurse	3	0	3
Legal secretary	3	0	3
Teacher aide	1	0	1
Library assistant	1	0	1
Barbering	1	0	1

Table 24. Variety of Program Offerings at Six Sites.

Site	Number of Different Programs		
	Secondary	Post-Secondary	Total Public
Urban			
Baltimore	55	34	89
Denver	26	62	88
Milwaukee	18	86	104
Rural			
Kentucky	11	19	30
Nebraska	20	25	45
New Jersey	29	--	29+

C. Responsiveness of Programs to the Labor Market.

One of the goals of improved local planning is the allocation of resources to programs which better serve the needs of students. A measure of this responsiveness of vocational programming is the relationship between planned program changes and projected shifts in the labor market. The first section below presents the results of an analysis of this relationship at the six sites.

While we cannot evaluate the relevance of all the program changes we observed (since some involve occupations where employment statistics are unavailable) we were able to use local data to relate a total of 56 urban vocational education programs to specific occupational classifications (see Appendix 4). Forty-nine of these programs were new or expanded in 1970, or were planned for 1971. Since different local manpower data sources were used for this comparison, and the present and anticipated enrollments in these programs are unknown, only very general indications of responsiveness can be shown.

Comparing program changes with local labor markets, in Table 25 we find that more than six in ten new and expanded programs provided training leading to occupations where projected local five-year occupational growth was greater than the SMSA average. We were unable to examine terminated programs as closely, for only four programs were so listed by the planners. While there were no significant differences among the three urban sites, there were some important differences between the secondary and post-secondary levels. Table 25 shows that in the occupations which could be related to the labor market, the post-secondary record considerably exceeds that of the secondary schools. More than three-quarters of all expanded programs at the post-secondary level were for occupations whose growth exceeded the average SMSA five-year occupational growth rate. For secondary schools, about half their training was for such occupations and half for occupations with slower anticipated growth rates.

Since many of the post-secondary schools in this sample were new and just developing an expanded program they were not faced with the kinds of constraints which face secondary schools with traditional programs and teacher tenure. It was beyond the scope of this study to examine in detail the reasons for the preliminary finding that post-secondary programs seemed more responsive to anticipated occupational growth than secondary programs. However, the authors believe that the facts that many high-growth occupations are requiring some post-secondary training, and that there are fewer institutional constraints to change in new post-secondary institutions, may be responsible for this finding. When secondary schools were able to combine Education and Labor Department funds and experimentation in programs was encouraged, as in the Baltimore schools, a greater relevance of programming to labor market patterns resulted.

Table 25. Expanded or New Programs in Selected Urban Areas in 1970 and Planned Program Changes in 1971 Compared to Projected Rate of Growth in Employment for Relevant SMSA.*

Five-Year Occupational Growth Rate	Milwaukee	Denver	Baltimore	All Urban	Secondary	Post Secondary
Above SMSA Average growth	13	13	6	32	13	19
Below SMSA Average growth	6	7	4	17	12	15
Percentage Above SMSA Average growth	68%	65%	60%	65%	52%	79%

* See Appendix 4 for details.

Part IV -- Summary of Findings and Implications for Improved Local Planning

Chapter 7. Findings and Implications for Improved Planning.

This chapter summarizes the major findings of the study and their implications for improving the planning process. A briefer summary of these findings together with specific recommendations for action by the U.S. Office of Education appears in Chapter One. The results of the study are discussed below under four major headings: Availability of Information, Use of Information, Relating Information to Program Change, and Planning Capabilities. The implications of these results for improving local planning are discussed in Section B.

1. Availability of Information for Local Planning

Manpower projections are not available to local planners in appropriate form and detail. Only one of the six sites had access to projected employment data organized by OE program code, and only half the sites had data reported in terms of job openings. There were no statistical occupational projections reported for cities or counties. Local data were reported only in terms of employment by industry, job vacancies, or off-the-cuff projections by employers.

None of the sites had an accurate breakdown of the total school-age population in the LEA by race, sex, handicap and disadvantagement, although about two-thirds of the schools had most of this information about their own enrollments. Generally, enrollments in vocational education programs were not categorized except by sex.

About two-thirds of the schools kept some records of completions and school placement in the vocational education program, but none collected and categorized follow-up data by instructional program or target groups. Many of the records kept by individual schools were not aggregated for the local education agency. By next year, all sites will be keeping records of program enrollments by OE code, but not by target populations.

The lack of quantitative data in local plans, even in those instances where it is required by state guidelines, is not due to a lack of sources per se, but rather to inadequate information from these sources in an appropriate form and level of detail. Manpower projections are the weakest data at the local level. Even when such data were available, there were considerable gaps in information. The specific shortcomings of the manpower data were noted when we attempted to compare programs with labor market changes at the six sites. Specific limitations of the manpower data include:

A. Non-availability of occupational projections at rural sites:

> Sussex County, New Jersey and Pike County, Kentucky, had neither local nor statewide occupational projections available. An occupational projection by employer survey was available on a statewide basis in Nebraska. However, the data were evaluated as too unreliable to be utilized in analysis, or to be used relative to the urban site projections that might be derived from such industry-occupational matrices.

B. Poor format for occupational projections.

Occupations were grouped by skill level rather than by occupational cluster. In an overwhelming number of cases, occupations were not related to OE code, and this task was undertaken by NPA staff so that appropriate comparisons could be made.

C. Limitations of enrollment data.

In some sites, enrollment data are listed by courses rather than by programs, leading to the problem of double counting. Projected completions were not available in Milwaukee, and were of a compliance nature in Baltimore and Denver.

D. Lack of depth of data at urban sites.

Local projections lack the depth which is found at the national level. Approximately 250 occupations are listed for the Baltimore SMSA area, 180 for Milwaukee, and 120 for Denver. Approximately 375 are available on the national level, appearing in "Occupational Employment Patterns for 1960 and for 1975." The Occupational Outlook Handbook lists approximately 700 occupations, providing 1968 employment levels and a qualitative assessment of future growth.

E. Limitations of the Census BLS occupational categories.

Those occupational categories appearing in "Tomorrow's Manpower Needs" were derived from occupational groups in the 1960 Census and therefore do not include post-1960 emerging paraprofessional occupations. The planner is faced with circumstances where projections are available for "loom fixers" but not for electronics technicians.

There is also much room for improvement in demographic data. Even with the availability of the 1970 census, there are data gaps in the availability of appropriate population data. Of particular concern are adequate projections of school age youth who are handicapped or disadvantaged. While the former can sometimes be obtained from non-census sources, the latter can only be estimated roughly from family income data. One reason for the inability of school systems to identify this target population is the lack of a quantitative measure of disadvantagement. Population information by age, sex, and income is generally available for the urban sites, but income data are less available (and less appropriate in rural areas as an indicator of disadvantagement).

In order to plan effectively, current and projected manpower and demographic information must be compared with educational statistics gathered by the school system itself. To some degree the treatment of this information depends on the types of educational information school systems collect which can be related to information on the population and the labor market.

2. Use of Information in Planning

Even when the information discussed above was available to the local vocational education planner, it was rarely used systematically in planning. While the

information is frequently a basis for program decisions, it is less often used in long-range planning.

An analysis of local plans indicates that educational data are more frequently used to set vocational education objectives than are manpower data. Manpower projections were used in only one local plan for actually setting future objectives. Since a number of the sites do not yet submit comprehensive program plans, this low number is not surprising. Four sites, however, reported using manpower information in making program decisions.

The following summarize the major findings of our analysis:

A. All the states surveyed have established basic planning systems, structures and guidelines for local planning. Although these are undergoing modification and improvement, the original structures remain relatively unchanged.

B. All the states except one (Nebraska) require, at a minimum, the setting of enrollment objectives in annual and long-range local plans which should reflect relevant manpower and demographic trends in the local community. Very few objectives--i.e., enrollments objective by educational level, completions by individual program, enrollments objectives related to appropriate population age groups, the number of disadvantaged and the handicapped to be enrolled in programs within each educational level, etc.--are being set at the local level.

C. Very few states (except Wisconsin on the post-secondary level) distribute identical total plan or program application formats for local area use and for all levels, to encourage uniformity of plan formats and ease of information coordination at the state level.

D. All but one of the states have digressed from the standard state plan format in structuring their local plan application guidelines. We also found that these currently-used local formats do not allow local planners to show or report most objectives paralleling state objective requirements. Reasons given for this include the unavailability of appropriate information and the realization that local planners, lacking the necessary information and expertise, cannot be expected to set objectives.

   State officials also believe that the standard state plan format is too heavy a requirement for local areas, in terms of increased clerical research and administrative workload. Local planners generally are not given extra compensation for planning, which is usually only one part of their other teaching or administrative responsibilities.

E. In recognition of the state agencies' access to better sources of information at the state level, i.e., state employment services, CAMPS and state study groups, the states are assuming most of the responsibility for developing uniformly-based manpower and demographic

information. County and regional information is being developed in firer detail than currently available state data.

F. Some states (Maryland and Kentucky) are attempting to achieve state/local compatibility by designing local plan formats which contain specific manpower and demographic information sections. Data for these sections are then made available to the local planners through a state-prepared handbook of procedures and information. Local areas are given the option of adjusting the state-provided information with whatever other data they have available.

G. Only two of the surveyed states are moving into the area of regional planning. The rest prefer to be directly involved in coordinating and evaluating all the local area plans.

3. Relating Information to Decisions About Program Changes

Since local planning documents do not specify how program decisions are made, and on what basis, we undertook our own analysis to try to determine the relationship between available data and program changes.

We found a number of program changes at the six sites. Twelve times as many new programs were reported as terminated programs. Change is most evident in urban and in post-secondary institutions. There were only 54 program changes reported and analyzed for the 69 secondary schools involved in the study, while 91 program changes were reported and analyzed for the seven post-secondary institutions (more than ten changes per school).

Our analysis indicates non-statistical data provided on an ad-hoc basis are most frequently used in making program decisions. Only about one of six program decisions used information provided by the employment service, and frequently these were estimates of occupational shortages or job vacancies rather than employment projections. Urban vocational education administrators relied more heavily on business and labor associations and the employment service; rural program decisions were more often based on information from teachers and advisory committees. A comparison of changes in secondary and post-secondary institutions showed that secondary schools depended more often on information from within the school system, while post-secondary institutions were more likely to use inputs from state planning agencies or trade and business associations.

4. Planning Capabilities

About one-half of the local vocational education planners surveyed lack the statistical skills required to develop a comprehensive long-range plan for vocational education. The task of improving staff capabilities on the local level, however, can be accomplished quickly. There are competent local vocational education planners who are capable of developing comprehensive long-range plans were it not for the lack of current and accurate data. The others could easily be trained to do so.

Individual local vocational education planners, local school jurisdictions and state boards of vocational and technical education held a number of workshops and conferences during the past year which aimed at skill development in quantitative

analytical planning. All of the local vocational education planners who attended these training and working sessions indicated that the sessions were helpful not only in terms of acquiring skills to improve their planning techniques, but also in bridging the communication gap between state and local vocational education planners, and in bringing about greater compatibility in the planning data required by local, state and federal governments. Some of the state departments of vocational education which have not conducted planning conferences or workshops indicated that they are planning to hold such sessions in the near future. Those states that have started a series of working sessions and/or planning conferences intend to continue as long as funds are available or until there no longer seems to be a need.

B. Implications for Improving Local Plans

If local planning is to be improved, several shortcomings in the planning system must be identified and corrected. To improve both state and local planning, the information system employed at state and local levels must be compatible. Appropriately detailed and consistent manpower and demographic information must be made available to local planners. Local planning staffs must realize the relation between formal planning and program decisions and appreciate the contribution which statistical data on the population and the labor market can make to both endeavors.

States are now in the process of stimulating better local planning and making it more compatible with state information and procedures. This process should be encouraged. There should be firmer requirements for manpower and demographic data in local plans and a procedure which encourages the setting of local vocational program objectives in terms of the labor market and student characteristics. In most cases states should take the lead in providing local agencies with the type of information required to set these objectives.

The process of translating a compliance procedure into a meaningful planning activity must begin by requiring local areas to consider and report the appropriate kinds of information about students and job opportunities. This is not now being done and there appears to be little incentive for local areas to seek out quantitative labor market information when all the state requires is the citation of a source.

We suggest, therefore, that states require the kind of information in their local agencies' plans discussed in the prior section. There is little purpose, however, in establishing a requirement for data which does not exist, and an attempt must therefore be made to improve the local data base.

Interviews with both state and local vocational education planners suggest that state planning agencies can counteract negative local area attitudes towards guidelines and the local plan applications--such as, "too complicated," "too time-consuming," etc.--by rewarding good planning. For instance, some planners complained that the submission of a well-documented plan application (based on actual survey and estimates of future needs) merely resulted in ridiculously low funding. States should reward local area initiative by assigning higher funding weights to LEA's that submit local plans based on reasonable objectives backed up by job opportunities, student and community interest levels, and local area identification of disadvantaged and handicapped students already enrolled, by type of handicap or disadvantage.

Local plan applications can be simplified without sacrificing the reporting of vital educational objectives. The state should encourage local areas by involving them in determining objectives to be set at the state level, the data needed to set them, and the implications for local area gathering and reporting. In this manner, the local planners will be able to see the value of their data collection and reporting efforts. States should parallel their requirements for local data and by reporting more about their own planning needs. For example, some states refrain from requesting their local areas to report their enrollment objectives in the local plan, if enrollments are reported separately. It should be stressed, however, that current or past enrollments are not the same as objectives and the local planner should use these for the setting of his objectives for the next annual and long-range plan.

Regularly scheduled state consultative visits should be made to the local areas. Personal visits and conferences were appreciated by the local area planners in states where these occurred. These represented opportunities for intensive learning and a review of planning concepts and procedures.

Drastic procedural changes in local plans may not be required and should be avoided, if possible. Several local planners indicated their primary concern was the prospect of changes in procedures which would entail revising their data collection efforts. Some states which have required more data from their local areas have found them as yet unable to comply. These states are working towards the completion of their data bank systems at the same time their local areas are gaining more experience in holistic and objective-setting formats. It would be better if the simpler plans were reinstituted.

States should encourage state and local conferences where planners can exchange their ideas and techniques. All of the local planners expressed their willingness to attend training sessions that would help them gain more experience with planning and its needed background information. Such conferences could stress that local plans are mere forms and give technical assistance to local staff to implement an effective planning procedure on the local level. These conferences and workshops should include as participants: (1) a small cadre of persons on the state level who are responsible for developing and synthesizing manpower, education, and demographic data into a comprehensive handbook; (2) principal administrators of each school jurisdiction; and (3) state and local vocational educators who are responsible for administering both federal and state vocational education funds.

APPENDIX I

Interview Forms

INTERVIEW FORM-School of Vocational Education Superintendent

1. What objectives have you set for your vocational education programs?

_____

_____

a. Is there a formal statement of these objectives? If not in writing, need more detail quantitative, etc._____

_____

b. How much freedom do you have in selecting these objectives?_____

_____

_____

c. In what way do these objectives influence your decisions concerning instructional programs?(enrollments, resource allocations, curriculum,etc.)

_____

_____

d. To what extent do you feel Voc Ed should supply the local labor market?

_____

_____

2. In planning programs to achieve these objectives do you have a planning staff of any kind or do you use advisory committee, consultation with students, parents, etc.?_____

3. Who on your staff has primary planning responsibilities (working up annual plans, providing you with information, on call?)_____

_____

a. How much of his time is spent on the planning function?_____

_____

b. What are his qualifications?_____

_____

c. May we review personnel records, or could you tell us the following:

Previous jobs held by person currently in this job:_____

_____

Academic background of person currently in this job:_____

_____

Salary level:_____

Has he received any in-service training?_____

How was he selected for the job?_____
(Open competitive exam, did this in a school, recommended by someone?)

What are the salary levels for other education jobs?_____

4. Do you use Advisory Groups?_____

What is the composition of informal or formal advisory groups?

_____

How often do they meet?_____

Do they give you formal reports?_____

How useful is the information they provide?_____

If not useful, why not?_____

5. What Vocational Education programs did you expand this year?

_____

_____

_____

6. On what information was this decision made (Manpower information, demographic data, other.)

_____

_____

_____

Was a draft of the planning document available when the decision was made?

_____

If not, what was its source?_____

Which other sources did you find helpful and why?

_____

_____

INTERVIEW FORM-Local Labor Department, CAMPS, or USES Employee (who supplies data to Local Vocational Educators)

1. What type of information do you supply vocational education personnel in this district?_____

_____Can we have copies?_____

a. Is this supplied on a regular basis?_____

b. Does this include analysis, or just data?_____

c. Who is the vocational education contact (Superintendent, Adult Ed, Department Head, etc.)?_____

_____

d. How often and how formally do you meet with this person?_____

_____

2. Do you use any State or Federal forms or guidelines in preparing employment data for vocational educators?_____

_____(Attach copy.)

3. Do local vocational educators request information in addition to what you normally provide?_____

3a. What kind of information?_____

_____

_____

3b. Are you able to meet these requests, and what sources of data do you use?

_____

_____

_____

_____

3c. If not, why not?_____

_____

4. Do you think there is a better way to provide the information they need?

_____

_____

_____

_____

a. Is there better manpower or employment data which could be supplied?

_____

b. What is the source?_____

(Obtain reference if possible)_____

c. Is there better demographic information which could be supplied?

_____

_____

d. What is the source?_____

(Obtain reference if possible)_____

5. Do you know if the information you provide is used?_____

a. How is it used?_____

_____

_____

b. If not, why not?

Format wrong?_____
Not sufficient detail?_____
Not understood?_____
Other:_____

6. What changes would make the procedure more effective?_____

_____

_____

What parts of the vocational education program were influenced by the data (specific program changes, program categories, resource allocation, leader selection, curriculum revision?)

_____

_____

_____

_____

7. What additional information would you like to have to help you arrive at such decisions?

_____

_____

_____

8. What are the difficulties in obtaining this information?

_____

_____

_____

9. What programs would you have liked to expand this year? And why were you unable to do it?

_____

_____

_____

(Repeat questions 5-8 for programs reduced.)

STRUCTURED INTERVIEW FORM: PERSON WHO DEVELOPS LOCAL PLAN

(Ask questions first which you could not obtain by reviewing most recent planning documents.)

1. What type of information do you receive from the employment service in this district?_____

_____ Can we have copies?

   a. Is this supplied on a regular basis?_____

   b. Does this include analysis, or just data?_____

   c. Who is the employment service or Labor Department contact? _____

   _____

   d. How often and how formally do you meet with this person?_____

   _____

2. Do you use any State or Federal forms or guidelines in preparing the local plan for vocational education?_____

_____ (Attach copy.)

3. Do you ever request additional information from the Employment Service?

_____

What kind of information?

_____

4. Do you use other sources of information? (List and ask for copies.)

_____

_____

   a. Is this other manpower or employment data which you use helpful?

   _____

   b. What is the source? (Obtain reference, if possible.) _____

   c. Is the demographic information which you use helpful?_____

   d. What is the source? (Obtain reference, if possible.) _____

5. Do you make use of this information?_____

Indicate how it is used._____

_____

_____

If you do not use, why not:

Format wrong?_____

Not sufficient detail?_____

Not understood?_____

Other:_____

6. What changes would make the procedure or the information more useful?

_____

_____

_____

7. Why did you choose the employment data now used in developing your plan?

State Requirement_____
Only Data Available_____
Best Data Available_____
Other_____

8. Why did you select the geographic employment area described by the occupational data?

Where my students are employed_____
Only description available_____
Other_____

9. Do you consider employment in occupations for which no current programs exist in the local area?_____

10. Do you compare employment growth or job openings with vocational education program completions in your plan?_____

11. Do you attempt to establish objectives for program changes based on anticipated labor market changes?_____

12. Why did you choose the socio-economic data now used in developing your plan?

State Requirement_____
Only Data Available_____
Best Data Available_____
Other_____

13. How were the definitions of handicapped and disadvantaged you employ derived:

Local Conference_____
Superintendent_____
State Requirement_____
Other_____

14. How do you use occupational projections or other indications of the job market in establishing program priorities?

_____

_____

_____

_____

15. How do you use population projections or other socio-economic indicators in establishing program priorities?

_____

_____

_____

16. Are programs assigned to schools so that most students in the district have the same number of vocational training (occupation) options available?

_____

_____

_____

17. How do you keep in touch with other training sources in the community? (Manpower programs, private grade schools, industrial training programs, other schools)

_____

_____

_____

(Probe if he omits an obvious source or channel of information.)

18. Have you tried to collect quantitative data from them on current and projected enrollments and completions by program?

19. How much time do you spend in data gathering and preparation of the plan?_____

20. Do you have other people to help you?_____
Specify:_____

(Questions of the interviewer)

21. Does he seem to have a good general understanding of the use of manpower and demographic information in planning?_____

22. Does he appear to appreciate the relationship between these various types of information and the setting of educational objectives?_____

23. Does he appear to have and use contacts with local data sources, employer groups and other training institutions in the area in the course of developing the plans?_____

24. In your opinion, which of the following changes would most improve the quality of local planning in this district?(Indicate more than one if appropriate.)

More staff time devoted to planning_____
More careful sketches of data sources_____
Better qualified planning staff_____
Clearer and more definite guidelines from State:_____
Local School Administration:_____
Greater appreciation of need for planning at local superintendent level:_____
Better lines of communication between planning and administrative staff :_____
Better information coordination among agencies in the community:_____

APPENDIX 2

Sources of Information used by Local Planners

Sample Reference Materials and Studies Available to and Used by Local Vocational Educators in the Six Survey Sites

Urban

Baltimore

Maryland Advisory Council on Vocational-Technical Education, Evaluation Report of Vocational-Technical Education in Maryland. Baltimore: September, 1970.

Maryland Council for Higher Education, A Projection of Maryland's Health Manpower Needs Through the 1980's. Baltimore: January, 1969.

Maryland State Department of Employment Security, Division of Research and Analysis, Manpower Needs for 1960-1975 for the Baltimore Metropolitan Area. Baltimore: April, 1970.

Maryland State Planning Department, The Economy of Maryland, Projections of Employment to 1980. Baltimore: October, 1968.

Maryland State Planning Department, The Labor Force of Maryland, Projections of Socio-economic Characteristics to 1980. Baltimore: October, 1968.

New York University, Center for Field Research and School Services, Baltimore Vocational Study, A Study of Occupational, Vocational and Technical Programs and Related Educational Problems in the Public Schools of the City of Baltimore, Maryland. New York: December, 1967.

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Denver

City and County of Denver and Denver Public Schools, A Comprehensive Program of Occupational Explorations and Vocational Education, A Conceptual Plan. Denver: Model Cities Survey, June 30, 1968.

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Zubrow, R. A., Kendall, W. P., Miller, E. S. and Bergess, P. L., Poverty and Jobs in Denver: A Study of Employment, Unemployment, and Job Vacancies in the Denver Labor Market.

Hunt, Dr. M. G., Memorandum: Data Collection Requirements for Colorado's Occupational Education Planning and Development. Denver: Colorado State Board of Community Colleges and Occupational Education, (undated).

Wisconsin

American Society for Engineering Education, The Recruitment of Minority (Disadvantaged) Students for Technical Programs. Columbus, Ohio: Annual meeting of the Society, June 22-25, 1970, Ohio State University, 1970.

Labor Market Informational Resources, a bibliographic list of information available to Wisconsin State Employment Service staff members designed to assist them in their job development, counseling, training, and other pertinent activities.

Lins, L. J., Post-Secondary Educational Preferences of High School Seniors, A Survey of Spring, 1968 Wisconsin High School Seniors. Madison, Wisconsin: Coordinating Council for Higher Education, June, 1969.

Over, Robert P. and Deutsch, Elizabeth C., Abstracts of Sociological Studies of Occupations. Curative Workshop of Milwaukee. Cleveland: Vocational Guidance and Rehabilitation Services, 1968.

Management and Economics Research, Inc., Colorado Master Plan for Community Colleges and Occupational Education. Prepared for Community Colleges and Occupational Education. Palo Alto: February, 1968.

Manpower Information Division, Milwaukee Adult Office, Past, Present, and Future Employment by Industry and Occupation. Milwaukee: Wisconsin State Employment Service (no date).

Milwaukee Area Technical College, Placement Center, 1969-1970 Adult Vocational Division Dropout Follow-up Report. Milwaukee: July, 1970.

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Wisconsin State Employment Service, Occupational Opportunities Information for Wisconsin, June, 1970, 2 (3).

Rural

Nebraska

Cromer, Chalmers A., Nebraska Research Coordinating Unit for Vocational Education, Procedure for Determining Vocational Education Needs Through Community Analysis. Lincoln: University of Nebraska, October, 1968.

Eickhoff, Ralph V., Sr., An Inventory of Occupational Opportunities in the Columbus Service Area, graduate thesis. Lincoln: University of Nebraska, January, 1970.

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APPENDIX 3

Summary of Contents of Local Plans

A Comparative Chart Showing the Six Area Local Plans by Format and Content.

Baltimore 1/

I. Analysis of manpower needs and job opportunities in the local unit. Table Ia - Employment opportunities related to vocational education programs. Labor Demand and Supply Summary. Estimated employment demand and vocational education output for each instructional program are provided.

II. Analysis of availability of vocational education. Designations of depressed, underemployed, drop-out areas upon maps.

III. Number of schools having vocational education programs.

IV. Existing and planned area vocational schools and geographic areas served by each.

V. Analysis of local educational agency's population relating to vocational needs. Current and projected estimates of demographic variables.

VI. Vocational education program needs - narrative description of target population, target areas, program emphasis.

VII. Vocational education objectives - current and projected numerical objectives for secondary, post-secondary, special, consumer homemaking, cooperative education, work-study.

Section also includes: Table 3 - projected yearly total enrollment.
Table 4 - projected number of schools offering vocational education.
Table 5 - projected number of planned area vocational schools.
Table 6 - projected number of teachers by program.
Table 7 - teacher training enrollment.
Table 8 - estimation of funds needed for vocational education.

Section II

Five year plan for vocational education and annual plan-narrative description of program components and developments within the planning cycle, i.e., curriculum development, staff recruitment facilities, guidance and pupil services, placement, research, financing, public involvement, etc.

Organizational chart of the vocational education division also attached.

1/ Local plan format, section I identical with standard state plan format

Milwaukee

condary Level
rt I - Mission Statement -
ilosophy of education, immediate and
ng-range goals of vocational education.

rt II Administration and supervision
hart of appropriate functions provided)

rt III local and community resources;
tivities of steering committees for
ch program area.

rt IV Guidance and Counseling;
scription of all available services and
anned activities

rt V population analysis
1. Number of students currently
rolled per school (table)
projected enrollment in 5 years (Table)
Long-range plan - current and pro-
cted estimates of % of graduates who
.) enter 4 year colleges, (2) complete
year programs, (3) enroll in post high
cational technical programs, (4) dropped
t during past year.
1. Current and projected enroll-
ent by type of handicap (only
alitative estimates for the projected
ar are given).
narrative description of special
ograms

rt VI - present program status by
structional area.
Status of vocational teaching per-
nnel. List showing per high school,
e name of teachers, number of courses
ught, work experience and vocational
cense.
Professional growth activities
scription
Pre-school employment of cooperative
ucation coordinating teachers
Special methods used in the vocational
ogram.
Youth groups relating to vocational
ucation programs
Procedures and policies for curric-
um materials development.
Flexibility in graduation require-
nts or class scheduling.

rt VII - Particulars of high school
d post-high school programs.

rt VIII - manpower needs; (1)
scription of sources of manpower
formation for use in planning programs,
) description of the school districts'
n personnel needs.

Part IX - Physical facilities - description of all current facilities
Part X - Evaluation activities - all current and planned.

Post-Secondary and Adult Level

Project proposal per individual program

I - Title page, completed one-page, form VE - AS - 200, application form for project approval.

II - Abstract - brief overview of project.

III - The body of proposal
A. Description of training need.
B. Objectives
C. Activities and procedures

IV. Personnel and facilities
A. Description of whole staff.
B. Description of facilities.

V. Budget - form VE - AS - 201

VI - Evaluation - description of evaluation activities.

VII - Appended items - letters of agreement with cooperating agencies.

The following accompany the program proposals: (1) VE-FS-205 target population profile, a description of the disadvantaged and handicapped, (2) Addition to project proposal - for use when the proposal is to be modified.

Denver

The local plan includes the following forms:

Form VE 115
"Current and projected vocational programs, activities and services" - a one-page, 20-column table of planned training in the area or district requesting data such as estimated enrollments and completions, school supplies and contract costs.

Form 120
1. General information - description of program by need, source of evaluation and plans for supervision, etc.
2. Course information - list of courses in programs, teaching guide, and objectives.
3. Student information - admission, guidance and counseling service, follow-up and placement.
4. Budget - cost of equipment, teacher salaries and instructional supplies.
5. Forms to be attached: VE 100 - vocational education program reimbursement, application (submitted two weeks after program begins); A-2 - instructor information form for new teachers; VE 101 - equipment, materials, application (if appropriate).

Special programs (if applicable)
VE 121 - Consumer homemaking.
VE 122 - Exemplary & Innovative.
VE 123 - Special Cooperative.

Form 120 A - Proposal for Occupational instructional - approval form signed by administrative officer of local educational agency.

Pikeville

(1969-1970)

Introduction:
Statement of assurances and certification
Instructions
Definition of terms
Population Characteristics

II. Employment information (number employed).

III. Educational Information: Location of educational institution, enrolment by schools in district, holding power of schools in district.

IV. Narrative description of proposed programs, etc.

V.

VI. Foundation units for programs conducted in high school (based on full-time teacher equivalency).

VII. Projected curriculum and enrolment report (all schools, per year of planning period).

Updated plan (1970-71)
Introduction

I. General information needed for planning vocational education programs. Most of information required in this section is provided in the "Handbook for Planning Local Vocational Education Programs."1/
A. Population information.
B. Employment information.
C. Educational information.

II. Analysis of general information.

III. Program objectives (mission statements and long-range objectives).

IV. Summary of instructional program information - estimated enrollments and completions.

V. Budget summary for other districts (by type of program per school).

Sussex County

Application for vocational-technical educational program funds.

Page 1

1. Type of program.

2. Type of student - regular, handicapped, disadvantaged.

3. Enrollment breakdown for proposed program (1 year only).

4. Program outline (objectives and content).

5. Program evaluation (plan for instructional program services and student follow-up).

6. Starting date

7. Citizen Advisory Committee.

8. Statement of need.

9. Facilities data description.

10. Persons reponsible for programs.

11. estimated expenditures - page 3
abstract - page 4
statement of assurances - page 5

Revised application

Part I - title page, abstract, table of contents.

Section A - need for program, service or activity. Table 1 - projected employment by fiscal year in area. Table 2 - estimated projected enrollment for proposed program or activity.

Section B - Objectives, priorities, and constraints.

Section C - Description of content, activities, and techniques.

Section D - Five year estimated resources required.

Section E - Financial resources needed, sources of funds other than federal (P.L. 90-576).

Section F - Evaluation procedures.

Section G - Appendix, survey of occupational experience (instructor's resume).

Application for approval of proposed changes in secondary school programs.

Advisory Council statement of assurance.

Part II - Summary Information for the coming fiscal year for the proposed program.

Section A.- General information

Section B - Student information and vocational-technical education needs.

Section C - Estimate of expense and renewals.

Certification of review and recommendations of county superintendent.

Guidelines for completing P.L. 90-576 applications

(Cond't)

Revised Application 1970

Part I, Section A: Proposal Overview
Name and code number of county applying for program, type of program, name and title of administrator responsible for program.

Section B: Course-Resource Requirements
For each course in the proposed program - course title, type, duration and date of project, school, teacher, etc.

Section C: Grade Level Enrollment
For courses listed in Section B by sex and by type (i.e., reg., disadv., handicapped, etc.)

Section D: Estimated Costs
For courses listed in Section B - teachers' salaries, teaching load, travel, equipment, etc, amount covered by local funds, total costs.

A space is also provided for the state DVTE's use in identifying type of funding needed (i.e., reg., disadv., handicapped, adult, etc.)

Part II, Long Range Plan for Local Educational Agency Voc-Tech Education
Table of projected cost & enrollment analysis for each year of the plan; and a brief narrative description of the 5-year plan

Platte County

ntroductory section

. Title page.

. Roster of state boards of vocational ducation personnel and vocational edu- ation state advisory council.

. Purpose of vocational education act f 1968.

. Description of local plan contents.

. Instructions and definitions of arious types of vocational education rograms.

. Application and reimbursement pro- edures.

. Statement of assurances.

. General Information - Section I

. Chart of local districts' population rends.

. Map and socio-economic description f county.

. Table of dropout data.

. Table showing intentions of gradu- tes and dropouts.

. Total projected enrollment per fiscal year for all levels (elementary, secondary, post-secondary, adult).

. Description of manpower needs. Job appointments relating labor demand to supply (fornext 12 months). Survey data forms included for 12 months and next two years.

. CAMPS information - personnel in each area and map of Nebraska by CAMPS areas.

. Map of all Employment Service sites.

. Check list of state, local, regional agencies who cooperate in the plan development.

Section II

District vocational education policy, goals and objectives (narrative description).

Section III

Program offerings for following year of plan.

1. Identification of special programs.

2. Supportive services - chart of vocational education administrative staff, list of advisory council, and description of guidance and counseling service.

Description of proposed evaluation efforts.

3. Graduation requirements.

4. Description of charts of schools' physical facilities.

5. Description of area-wide planning effort.

6. Excess costs applications (as needed).

7. Total expenditures report on reimbursable programs.

8. Description of how proposed programs contribute to a career (by program area).

Section IV

1. Long-range program planning, budget for vocational education (by type of program; B., C., G., adult, etc.).

2. Enrollment tables for disadvantaged and handicapped students.

3. Chart of instructional programs by OE code.

APPENDIX 4

An analysis of the relevance of program changes to Labor Market Projections.

NEW OR EXPANDED PROGRAMS: BALTIMORE CITY PUBLIC SCHOOLS

O.E. CODE	PROGRAM	RELATED OCCUPATION	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
17.1200	Diesel Mechanics	Mechanics and Repairmen	33,150	36,860	9.3%	1,475	4.4%
17.06	Business Machine Repair	Office Machine Mechanics and Repairmen	520	580	9.6%	20	3.8%
17.0399	Automobile Service Station Attendant	Auto Service Station Employees	5,900	7,100	16.9%	305	5.2%
14.0503	Packaging	Packagers and Wrappers	7,570	7,840	3.0%	275	3.6%

Source: "Manpower Needs, 1960-1975, Baltimore Metropolitan Area"
Maryland Department of Employment Security

NEW OR EXPANDED PROGRAMS: COMMUNITY COLLEGE OF BALTIMORE

O.E. CODE	PROGRAM	RELATED OCCUPATION	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
16.0503	Fire Protection Technology	Firemen, Fire Protectives	5,160	6,110	15.3%	315	6.1%
16.0301 7.0102	Dental Hygiene	Medical and Dental Technicians	3,220	3,960	19.2%	250	7.8%
7.0402 16.0309	Physical Therapy Assistant	Therapists and Healers	570	650	11.7%	30	5.3%
4.17	Real Estate	Real Estate Agents and Brokers	2,390	2,480	3.1%	135	5.6%
14.0803	Office Management	Managers, Officials and Proprietors, salaried	31,200	32,080	2.4%	1,160	3.7%
	Supermarket Management	Managers, Officials and Proprietors, salaried	31,200	32,080	2.4%	1,160	3.7%

Source: "Manpower Needs, 1960-1975, Baltimore Metropolitan Area"
Maryland Department of Employment Security

PLANNED CHANGES IN COURSE CONTENT OR TERMINATED PROGRAMS: BALTIMORE PUBLIC SCHOOLS

O.E. CODE	PROGRAM	RELATED OCCUPATION	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
17.3400	Shoe Repairing	Shoe Repairman	200	200	0%	4	2.0%
TOTAL ALL OCCUPATIONS			861,100	928,090	6.5%	42,805	5.0%

5 Year Growth

	BCPS	CCB
Above Average	3	3
Below Average	1	3

Annual Openings

	BCPS	CCB
Above Average	3	4
Below Average	1	2

Source: "Manpower Needs, 1960-1975, Baltimore Metropolitan Area" Maryland Department of Employment Security

NEW OR EXPANDED PROGRAMS: DENVER PUBLIC SCHOOLS

O.E. CODE	PROGRAM	RELATED OCCUPATIONS	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
14.99	Co-op Office	Clerical and kindred	141,000	174,800	17.1%	7,366	5.2%
4.0	Distributive Education	Sales Workers	63,600	75,500	13.4%	3,290	5.2%
17.03	Auto Mechanics	Motor Vehicle Mechanics	5,300	6,600	17.5%	255	4.8%
17.1	Building Construction	Construction Trades 9/	22,000	26,200	13.6%	1,018	4.6%
17.13	Drafting	Draftsmen	2,900	3,700	19.7%	137	4.7%
17.15	Electrical/Electronics	Electricians	2,100	2,600	17.0%	105	5.0%
17.19	Graphic Arts	Compositors and Type Setters Pressmen and Plate Printers	1,700	1,800	4.2%	45	2.6%
17.2302	Machine Shop	Machining Occupations	5,800	6,000	2.5%	145	2.5%
17.2304	Metal Trades	Metal Molders Structural Metal Workers Pattern Makers	1,300	1,500	11.0%	168	12.9%
	ALL OCCUPATIONS		476,200	572,400	14.4%	27,551	5.8%

9/ Poverty and Jobs in Denver, Economic Development Administration

Source: Colorado Manpower Review, September 1969
Colorado Department of Labor and Employment

EXPANDED AND NEW PROGRAMS: COMMUNITY COLLEGE OF DENVER

O.E. CODE	PROGRAM	RELATED OCCUPATION	ENROLLMENT 1971	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
7.0303	Nurses Aid	Attendants, Hospital and other Institutions	85	3,600	5,300	33.7%	422	11.7%
17.2306	Welding	Welders and Flame Cutters	71	2,000	2,500	17.9%	95	4.8%
17.1007	Plumbing	Plumbers and Pipe Fitters	20	2,500	3,000	14.3%	116	4.6%
17.100302	Heavy Equipment	Driver, Truck, Bus and Tractor	14	13,000	16,100	17.0%	599	4.6%
17.0302	Auto Mechanics	Motor Vehicle Mechanics	73	5,300	6,600	17.5%	255	4.8%
17.13	Drafting, Electrical	Draftsmen	62	2,900	3,700	19.7%	137	4.7%
4.17	Real Estate	Real Estate Brokers	15	2,600	3,200	16.5%	193	7.4%
4.07	Food Serving Programs	Waiters and Waitresses	20	9,000	11,600	20.6%	650	7.2%
17.2302	Machine Shop	Skilled Machine Workers	40	2,500	2,700	5.7%	79	3.2%
7.0204	Nursing A.D.	Nurses, Professional	135	6,700	9,100	25.6%	651	9.7%
7.0211	Radiological Technology	Medical and Dental Technicians	8	2,600	3,200	16.5%	182	7.0%

Source: Colorado Manpower Review,
Colorado Department of Labor and Employment

PLANNED CHANGES IN COURSE CONTENT: COMMUNITY COLLEGE OF DENVER

O.E. CODE	PROGRAM	RELATED OCCUPATIONS	ENROLLMENT 1971	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
16.0503	Fire Science Technology	Firemen, Fire Protection	198	1,000	1,300	21.4%	63	6.3%
14.0702	Secretarial Science	Stenographers, Typists and Secretaries	135	25,800	33,400	21.0%	2,400	9.3%
14.0101	Accounting A.D.	Accountants and Auditors	280	5,900	7,400	18.2%	332	5.6%

Source: Colorado Manpower Review,
Colorado Department of Labor and Employment

NEW OR EXPANDED PROGRAMS: M A T C

O.E. CODE	PROGRAM	RELATED OCCUPATION	ENROLLMENT 1970	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
07.0302	L. P. Nursing	Nurses, Practical	184	1,712	2,291	24.0%	223	13.0%
07.0101	Dental Assistant	Technicians, Medical and Dental	51	2,118	3,046	31.3%		
17.07	Commercial Art	Commercial Artists	164	482	581	14.7%	19	3.9%
07.0301	Nursing A.D.	Nurses, Professional	297	5,940	7,258	15.8%	580	9.8%
07.0903	Inhalation Therapy	Chiropractors and Therapists	45	614	780	19.3%		
07.0305	Operating Room Assistant	Medical and Dental Technicians	24	2,118	3,046	31.3%		
07.0102	Dental Hygiene	Medical and Dental Technicians	39	2,118	3,046	31.3%		

Source: "Past, Present and Future Employment by Industry and Occupation"
Wisconsin State Employment Service

PLANNED CHANGES IN COURSE CONTENT OR TERMINATED PROGRAMS: M A T C

O.E. CODE	PROGRAM	RELATED OCCUPATION	ENROLLMENTS 1970	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
17.1902	Printing and Publishing	Printing Trades Craftsmen	40	3,757	4,131	10.6%	75	
17.2302	Machine Shop	Skilled Machine Workers	36	7,401	7,205	-2.0%	266	3.6%
	ALL OCCUPATIONS		76	599,372	692,045	11.0%		

	MPS	MATC
Above Average	6	7
Below Average	6	0

Source: "Past, Present and Future Employment by Industry and Occupation"
Wisconsin State Employment Service

NEW OR EXPANDED PROGRAMS: MILWAUKEE PUBLIC SCHOOLS

O.E. CODE	PROGRAM	RELATED OCCUPATION	LABOR DEMAND 1969	LABOR DEMAND 1975	LOCAL FIVE-YEAR RATE OF GROWTH IN PERCENT	ANNUAL OPENINGS	ANNUAL OPENINGS AS PER CENT OF 1969 EMPLOYMENT
17.2901	Baking (Commercial)	Bakers	1,333	1,420	4.7%		
17.2902	Industrial Foods (Short Order)	Cooks and Chefs	4,193	4,963	13.1%	285	6.8%
17.13	Architectural Drafting	Draftsmen	3,163	4,428	28.6%	220	
17.1001	Cabinetmaking and Millwork	Cabinetmakers	711	785	7.4%		
17.1004	Bricklaying and Masonry	Brickmasons, Stone Tile Setters	2,040	2,329	10.1%		
17.2305	Sheet Metal	Sheet Metal Workers	1,735	1,914	7.4%	66	3.8%
17.2302	Machine Shop (Production)	Machine Tool Operators	11,822	11,000	-5.0%	240	2.0%
17.2303	Machine Shop (No. controls)	Skilled Machine Workers	7,401	7,250	-1.5%	266	3.6%
	Ground School for Private Pilots	Pilots and Co-Pilots	78	100	20.1%	4	5.1%
17.0302	Auto Engine Servicing	Motor Vehicle Mechanics	5,427	6,313	11.7%	215	4.0%
17.2306	Welding	Welders and Cutters	8,208	9,576	11.9%	410	5.0%
9.0205	Home Management Aid	Private Household Makers	8,710	10,771	16.9%		

Source: "Past, Present and Future Employment by Industry and Occupation"
Wisconsin State Employment Service

APPENDIX 5

Availability of Vocational Education Programs in Selective Urban and Rural School Districts

Vocational Education Program Offerings in Three Rural Counties
(Platte, Pike and Sussex Counties)

Vocational Education Program Titles	Number of Schools where Vocational Education Programs are Offered				Percent of Schools where the Programs are Offered N=18)
	Pike (N=9)	Platte (N=2)	Sussex (N=7)	Total	
Agriculture	1	2	1	4	22.2
Air Conditioning and Refrigeration	-	-	1	1	5.5
Auto Mechanics	8	1	1	10	55.5
Barber Operator	-	-	1	1	5.5
Bookkeeping	1	1	-	2	11.1
Business Related Courses (law, math, and english)	-	1	-	1	5.5
Carpentry	6	-	1	7	38.8
Commercial Art	-	-	1	1	5.5
Commercial Baking	-	-	1	1	5.5
Commercial Foods	-	-	1	1	5.5
Consumer Economics	-	1	-	1	5.5
Consumer Homemaking Education	-	1	-	1	5.5
Cosmetology	-	-	1	1	5.5
Data Processing	-	-	1	1	5.5
Diesel Mechanics	-	-	1	1	5.5
[illegible] Education	-	1	2	3	16.6

Vocational Education Program Title	Number of Schools where Vocational Education Programs are Offered				Percent of Schools where the Programs are Offered
	Pike	Platte	Sussex	Total	
Drafting	8	1	1	10	55.5
Electricity	8	1	1	10	55.5
Electronics	-	-	1	1	5.5
Graphic Arts	-	-	1	1	5.5
Home Economics Related Occupations	-	1	1	2	11.1
Horticulture	-	1	1	2	11.1
Industrial Education (Coop)	-	-	3	3	16.6
Industrial Electricity	-	-	1	1	5.5
Junior Management	2	-	-	2	11.1
Keypunch Operator	-	-	1	1	5.5
Machine Shop	2	-	1	3	16.6
Marketing	-	1	-	1	5.5
Metal Shop	-	1	-	1	5.5
Occupational Relations and Internship	-	1	-	1	5.5
Office Machines	-	1	-	1	5.5
Office Occupations	-	-	2	2	11.1
Office Practice	-	1	-	1	5.5
Oil Burner and Repair Services	-	-	1	1	5.5
Practical Nursing	-	-	1	1	5.5

Vocational Education Program Title	Number of Schools where Vocational Education Programs are Offered				Percent of Schools where the Programs are Offered
	Pike	Platte	Sussex	Total	
Record Keeping	-	1	-	1	5.5
Seamstress (Sewing)	-	-	1	1	5.5
Secretarial	1	1	-	2	11.1
Small Engine Repair	-	-	1	1	5.5
Typing	1	1	1	2	11.1
Welding	2	-	1	3	38.8
Wood Shop	-	1	-	1	5.5

Vocational Education Programs for Secondary Schools in Three Cities
(Baltimore, Milwaukee and Denver)

Vocational Education Program Title	Name of Secondary Schools where offered				
	Baltimore (N=27)	Denver (N=9)	Milwaukee (N=15)	Total	Percent of Secondary Schools where offered (N=51)
Aircraft Maintenance	1	-	-	1	1.9
Appliance Repair (Electrical)	2	-	-	2	3.9
Automatic Heat	1	-	-	1	1.9
Auto Tune-up	-	-	2	2	3.9
Automobile Body and Fender	1	-	1	2	3.9
Automotive Mechanics	7	3	1	11	21.5
Automotive Trade and Technology	-	-	1	1	1.9
Baker	1	-	-	1	1.9
Barbering	1	-	-	1	1.9
Bookkeeping	-	4	-	4	7.8
Building Construction	-	4	-	4	7.8
Building Maintenance	2	-	-	2	3.9
Business Arithmetic	-	8	-	8	15.6
Business Communication	-	2	-	2	3.9
Business Machine	-	4	-	4	7.8

Program	Baltimore	Denver	Milwaukee	Total	Percent Schools where offered
Business Machine Maintenance	1	-	-	1	1.9
Career Clerical	-	2	-	2	3.9
Carpentry	1	-	-	1	1.9
Clerk, General	18	-	-	18	35.2
Clerk, Stengraphic	12	-	-	12	23.5
Commerical Art Occupations	4	-	-	4	7.8
Consumer Homemaking Education	20	9	-	29	56.8
Cosmetology	4	1	-	5	9.8
Custodian Services	3	-	-	3	5.8
Data Processing	-	-	2	2	3.9
Dental Laboratory Technican	1	-	-	1	1.9
Diesel Mechanic	1	-	-	1	1.9
Distributive Education	14	9	14	37	72.5
Drafting	13	6	8	27	52.9
Dressmaking	3	-	-	3	5.8
Dry Cleaning	1	-	-	1	1.9
Duplicating Service	1	-	-	1	1.9
Electricity	5	-	-	5	9.8
Electronic Operations	4	-	-	4	7.8

Program	Baltimore	Denver	Milwaukee	Total	Percent Schools where offered
Electronics	-	4	-	4	7.8
Food Preparation and Service	7	-	-	7	13.7
Graphic Arts Occupations	9	3	2	14	27.4
Home Economics Occupations	2	8	-	10	19.6
Home Economics Related Occupations	-	7	-	7	13.7
Horticulture	1	-	-	1	1.9
Hospital Aides and Attendants	1	-	-	1	1.9
Industrial Education (Coop)	-	9	2	11	21.5
Industrial Electronics	2	-	-	2	3.9
Industrial Services	1	-	-	1	1.9
Industrial Sewing	4	-	-	4	7.8
Linoleum Laying	1	-	-	1	1.9
Machine Shop	4	1	5	10	19.6
Machine Tool Operator	7	-	-	7	13.7
Manicuring	1	-	-	1	1.9
Masonry	3	-	-	3	5.8
Messenger and Office, Boy and Girl	1	-	-	1	1.9
Metal Work	4	4	6	4	27.4
Millwork and Cabinet Making	1	-	-	1	1.9

Programs	Baltimore	Denver	Milwaukee	Total	Percent Schools where offered
Nursing Home Aides	1	-	-	1	1.9
Office Education	-	8	14	22	43.1
Office Practice	-	6	13	19	35.2
Office Procedure	-	4	-	4	7.8
Organization and Management	-	1	-	1	1.9
Painting and Decorating	4	-	-	4	7.8
Plumbing and Pipe Fitting	1	-	-	1	1.9
Power and Transportation	-	-	2	2	3.9
Practical Nursing	3	-	-	3	5.8
Printing	-	-	1	1	1.9
Print Shop Finishing	1	-	-	1	1.9
Quality Food Operation	2	-	-	2	3.9
Radio and Television	1	-	-	1	1.9
Record Keeping	-	4	-	4	7.8
Sheet Metal	1	-	-	1	1.9
Shoe Repairing	4	-	-	4	7.8
Small Appliance	1	-	-	1	1.9
Stenography	-	8	11	19	35.2
Tailoring	2	-	-	2	3.9

Programs	Baltimore	Denver	Milwaukee	Total	Percent Schools where offered
Transcription	-	6	-	6	11.7
Typing	-	9	15	24	47.0
Upholstering	2	-	-	2	3.9
Valet Services	2	-	-	2	3.9
Welding Combinations	2	-	1	3	5.8
Woodworking	9	-	-	9	17.6