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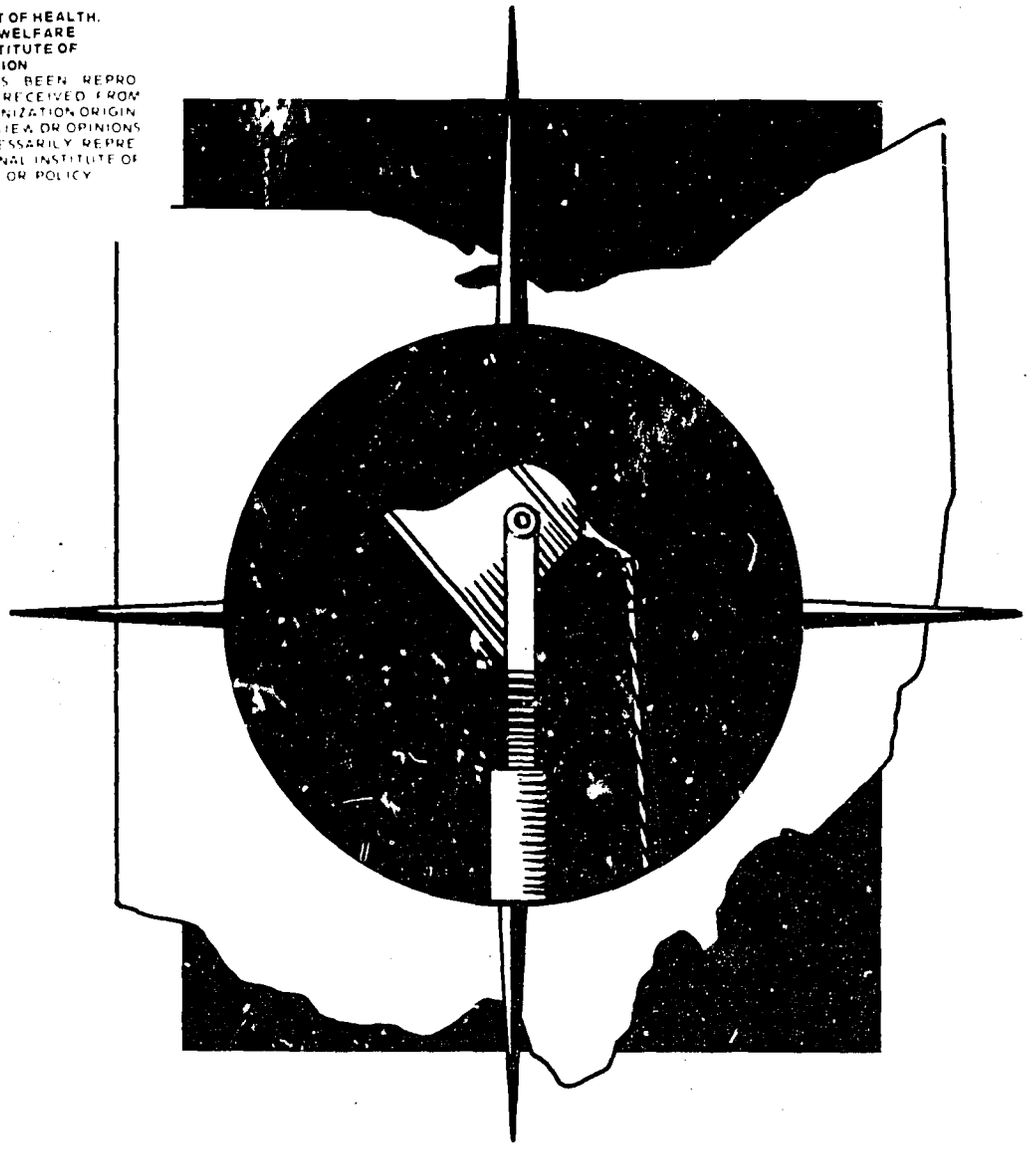
ABSTRACT

The purposes of the research reported were (1) to determine future needs in Ohio for vocational education and (2) to develop useful planning information related to vocational education. The first section, Paradoxes in the Educational System, provides the reader with an understanding of the complexity involved in developing useful planning information. The second section is a description of vocational education and related legislation in Ohio. The third presents the options open to a high school graduate, emphasizing the importance of early decision making. The fourth section outlines some of the principal concerns related to the improvement of vocational education curricula. Section five addresses the need for keeping vocational programs in line with realistic employment expectations. The final section presents conclusions and recommendations for curriculum development and evaluation, guidance and counseling, staff education and training, job placement, communication with the public, institutional organization, and system considerations. (MS)

VOCATIONAL EDUCATION



PREPARED FOR THE

OHIO DEPARTMENT OF EDUCATION

BY

BATTELLE MEMORIAL INSTITUTE
COLUMBUS LABORATORIES

CONDENSED FINAL TASK REPORT

on

VOCATIONAL EDUCATION

to

OHIO DEPARTMENT OF EDUCATION

May, 1970

BATTELLE MEMORIAL INSTITUTE
Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201

FOREWORD

This report is a condensed version of one of a series of reports prepared by the staff of Battelle Memorial Institute, Columbus Laboratories, for the Ohio Department of Education under a contract research project entitled PLANNING TO MEET EDUCATIONAL NEEDS IN OHIO SCHOOLS. Funds for the project were made available by the Ohio Department of Education under provisions of Title III, ESEA.

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VOCATIONAL EDUCATION

INTRODUCTION

This report describes one of several tasks conducted by Battelle for the Ohio Department of Education. The subject of this research task is Vocational Education in Ohio.

Vocational Education is an educational program, the primary purpose of which is to equip persons for useful employment. Most of the program offerings are provided at the secondary level and are designed to serve youth and adults who are preparing to enter occupations in agriculture, business, homemaking, distribution, trade, technical, and industrial fields. The program also serves adults who have entered one of those trades by providing them with opportunities to support and improve their skills.*

The research task began in April, 1968, and continued through October, 1969.

All of the Battelle research tasks for the Ohio Department of Education were carried out under the provisions of Title III of the Elementary and Secondary Education Act of 1965, as amended by PL-90-247. This Act required that particular attention be paid to **need assessment**, and to **innovative and exemplary programs.**

Another major requirement of the Title III legislation was that research results carried out under Title III should be widely disseminated. It is clear from this requirement that the intent is to give wide publicity to research findings in order that the entire education community, as well as the public, may become informed of the results. This report must, therefore, be regarded as more than a document intended to communicate with the sponsoring agency, the Ohio Department of Education. It is intended for, and for the most part is addressed to, any reader who is active in improving education for young people in Ohio.

The central purposes of the research effort were twofold:

- Determine future needs in Ohio for vocational education
- Develop useful planning information related to vocational education.

The major emphasis of the research task, however, concerns the latter purpose.

*Shoemaker, Byrl R., "A Position Paper on Vocational Education in the Public Schools", Ohio State Department of Education.

Approaches and Methodologies

A variety of approaches and methodologies were used in conducting the research; included were:

- A literature survey encompassing more than 200 documents
- Discussions with consultants
- Attendance at conferences on vocational education
- Visits to Ohio joint vocational schools*
- Visits to Ohio vocational schools*
- Visits to Ohio comprehensive schools*
- Visits to vocational education schools outside Ohio
- Discussions with groups of vocational educators
- Discussions with staff of the Ohio Department of Education.

Battelle was able to draw upon certain methodologies that have been developed for the study of large systems. These included certain systems analysis methods, modern management theory encompassing "management by objectives", and the educational theory of curriculum development based upon behavioral objectives. These methodologies have had widespread application in many fields, though it is only recently that they have begun to be applied to education.

Also, Battelle was able to draw upon concurrent research tasks (carried out by Battelle and sponsored by the U.S. Office of Education and the Ohio Department of Education) in related important areas of need. These concurrent research efforts developed valuable information relevant to vocational education.

*The visits to the schools were not designed to give statistically significant data on vocational education in Ohio – rather, they were intended to help collect, in the field, ideas on major problems and approaches to solutions. For statistically significant data, it would have been necessary to visit many more schools. However, the visits served to make the study less theoretical and to give the research staff a better picture of variation in practices from school to school.

Special Characteristics of Need Assessment

An assessment of needs presents special difficulties. Important characteristics of most research are that it is highly objective and that subjective considerations or value judgments tend to be played down or to be absent from reports. On the other hand, a major component of *need assessment is the application of subjective judgment* to the results of research studies. What then can be Battelle's special contribution to assessment of needs? The answer has to do with the sequence of events that takes place in arriving at subjective judgments.

Though value judgments are necessarily subjective, they can nevertheless be either snap judgments or judgments arrived at after careful and lengthy appraisal, study, and observation. In making a need assessment in vocational education, Battelle believes that it has brought to this task a broad and systematic view of education and that it has invested in this task a conscientious effort to arrive at reasonable conclusions. Nonetheless, the fact remains that many of the conclusions reported here represent value judgments that will be subject to differences of opinion.

In most aspects of a need study, cost is not given explicit attention. While cost is considered implicitly in much of the work, the need assessments made in this report do not emphasize cost. Many of the recommendations made in this report might already have been implemented if funds had been available. On the other hand, viewed from a statewide perspective, some of the recommendations should produce greater efficiency and lowered cost. The implication of the foregoing comments is that cost studies would be needed to determine the practicability of implementing recommendations.

Special Characteristics of Planning

Though to a lesser degree than that for need assessment, planning also carries with it a certain level of value judgment. A plan is like a road map in that it shows one or more ways to get from where one is to where one wants to be. In developing an educational plan, one needs to know the present state of the system, and one also needs to develop the desired future state. These two states may have some things in common, but fundamentally their determinations are quite different. The determination of the present state of the system can be fairly objective. Data can be collected to describe it. On the other hand, the determination of what the future ought to be like is much more difficult and is subjective. The role of the researcher in developing a desired future state must be one of a disinterested, but not uninterested, person. He must try to discover a logical basis in society for posing possible futures that appear to be most consistent with the problems and aspirations of society. This is a challenging task indeed, and it is fraught with difficulties in a field as basic to society as education.

Because of the difficulties, it seems essential to present arguments that tend to substantiate whatever plans are evolved, in order that the basis for the plans will be clear. These arguments may then impinge upon those who are interested and concerned. Their final evaluation will be found in subsequent actions aimed at educational change. In view of this consideration, it is also important to recognize that the study of vocational education cannot be entirely divorced from the education system as a whole. Because of the close interactions between vocational education and the total system, recommendations for some kinds of changes in vocational education amount to recommendations for changes in other aspects of the total educational system.

Organization of the Report

Section I, Paradoxes in the Educational System, attempts to acquaint the reader with certain paradoxes that relate to educational planning and implementation. The purpose of this section is to provide the reader with an understanding of the complexity involved in developing planning information related to vocational education that will be acceptable to the large audience involved in education.

Section II, Description of Vocational Education in Ohio, includes a brief history of important legislation affecting vocational education and a presentation of the needs as they relate to curriculum planning. The purpose of this section is to underscore the need for the development of a detailed guide of action for planning effective curriculum programs in vocational education.

Section III, Student Options, presents the options available to a high school graduate. The purpose of this section is to emphasize the importance of early decision making by the student as related to establishing a basis for his school studies, and the relation to student programs and counseling.

Section IV, Concerns on Curriculum, outlines briefly some of the principal concerns related to the improvement of vocational education curricula.

Section V, Concerns on Job Futures, addresses the challenging task of keeping vocational programs in good harmony with realistic employment expectations for graduates.

Section VI presents the conclusions and recommendations.

I. PARADOXES IN THE EDUCATIONAL SYSTEM

A number of paradoxes in the educational system puzzle researchers and the general public alike. A discussion of the needs and planning methodology defined for this research task on vocational education would hardly be complete unless seen in light of some of these paradoxes.

Education is creating a nation that depends, more than anything else, upon knowledge for its survival and growth, yet education has not been structured to apply new knowledge rapidly to its own problems. Systematic, in-depth studies are lacking on many aspects of education. While most going institutions in society invest from 2 to 15 percent of their gross revenue in research in order to maintain a basis for progress, traditionally less than 0.5 percent of the gross revenue for education has gone into research aimed at improvement of the educational system. The current expansion of research in education has not yet produced an adequate data base in many areas, including vocational education. Having proved its merits in the private sector of the economy, as well as in certain kinds of government-supported activities, one can hope that research will come to be understood better and applied by publicly supported institutions.

Numerous prior studies have emphasized the need for having high schools that are large enough to offer a variety of options to the student. In spite of this, Ohio still has over 600 school districts, and, in many of these, the high schools cannot offer a large variety of options because they are too small. However, large size by no means guarantees that numerous options will be available. What is important is that the school be able to match each student's capabilities and interest with a school program appropriate to the student. For vocational education, the tax base required to support an effective high school demands that the support district be large. In Ohio, this may require districts of county size or larger.

The Federal government has furnished funds to help institute vocational schools, but it clearly desires that such schools be locally supported. However, many of the population have had no contact with vocational programs and have no personal experience upon which to base support of vocational schools. Present Ohio conditions are not such as to cause a rapid increase in the number of the public who have had any significant vocational experience in the high schools. It could be to the advantage of vocational education to encourage programs for all students that would give an increased understanding of the world of work to tomorrow's voting public. An increase in adult vocational offerings could also help to develop a broader base of public knowledge about vocational education.

In Ohio, essential and comprehensive planning data that are available are primarily on a county basis. Yet, the school districts are not structured along county lines. Thus, a major [illegible]e of data that could be useful in improving schools is, in effect, tossed out because of the patchwork arrangement of Ohio school districts. Unless planning is to be only at the local level, it seems advisable to divide the state into regions, along county lines, in order to permit more effective planning to be done at the state and regional level.

In many fields of endeavor, experiments are conducted on a small scale to determine whether an innovation will be beneficial or impractical, or of reasonable cost or overly expensive, yet the legislation and regulations that are written to govern education work against such experimentation and tend to support uniformity rather than innovation. If the State of Ohio can support more planned and controlled experiments in the school system, much useful data might result that could be applied to educational planning.

Money spent on education in the United States is comparable to that spent on national defense. Although the total expenditures for education amount to nearly 50 billion dollars annually, the educational system is continually in a severe financial crisis. The schools have not yet found a way to account to the public for what they are doing. Failure to win public support of schools, through public understanding, may be considerably more damaging to students than the lack of a particular course. Yet, the financing of education provides little support for the system to educate the public concerning what goes on in the educational system. Too much of what passes for education of the public amounts to the furnishing of scattered and undirected data. Transmittal of an understandable annual report to the public at large, addressed to public concern for effectiveness in education, could overcome some of the difficulties. An annual report is now mailed to alumni by some educational institutions, e.g., the University of Missouri.

While job openings have been going unfilled in our society for some time, it is estimated that over half of those entering school in Ohio in the first grade leave school unprepared for getting a job. Nearly one-fifth of those who enter the ninth grade do not graduate from high school, many dropping out at ninth and tenth-grade levels. Yet, vocational education in Ohio has largely been for eleventh and twelfth graders. No evidence has been found in this research study to suggest that ninth and tenth graders could not benefit from vocational programs. In fact, the vocational programs offered in Ohio are not limited to eleventh and twelfth graders. Three specific developments may be cited. First, sixteen-year olds are encouraged to enroll in job training whether they have attained grade eleven or not. Second, occupational-work-adjustment programs have been started for students in ages 14-15. Third, career-orientation programs are being tried for students in ages 12-13. Though the last two programs are young, initial reports on them are termed "highly favorable" by Dr. Byrl Shoemaker of the Ohio Division of Vocational Education.

The best measure of attainment of public schools would appear to lie in what happens to students who leave the institution. Yet, most schools do not conduct comprehensive follow-up studies of graduates, and often their only success measure is the percent of their graduates that go on to college.

In the universities, it is fairly common for course materials and knowledge to flow down out of the graduate curricula into the undergraduate curricula as knowledge develops. There is no such easy channel for knowledge to flow down out of the freshman and sophomore years of college or out of the technical institutes into the public schools. It would be reasonable to expect that many graduates of vocational curricula would go on to post-high school technical institutes. In Ohio, vocational programs and technical institutes are under different governing boards.* There does not seem to be any available literature showing a ninth grader or his parents how he might plan a high school program that would lead into a career area in a technical institute.

In many fields where training is conducted, e.g., the space program or the training of jet pilots, simulators have proved their worth. Yet, vocational education does not use simulators to any extent, and industry has not yet seen the development of such simulators for vocational education as a meaningful business opportunity.

A widely recognized philosophy of management, gradually diffusing through American industry, is called "management by objectives". In this philosophy, measurable objectives are formulated to provide direction and purpose to an enterprise and to facilitate communication. Educational leaders, typically, have not mastered this methodology or applied it to school or to curriculum development. There are few written statements of measurable objectives for vocational education that are being used as a basis for evaluation.

While the educational system has been successful in providing education to almost the entire population, the system is under rather severe attack from many quarters for failure to make this education "relevant". Relevance in education implies a clearly understood pattern of matching students' interests and abilities to specific academic programs. In spite of this, many student programs are determined by the "system" rather than by explicit consideration of each student as an individual human being.

The vast majority of parents is reputed to desire that their children receive a college education, yet less than 20 percent of the population graduate from college in Ohio. If 100 percent of parents expect their children to graduate from college and 20 percent do so, does this not mean that the remaining 80 percent have been, in some sense, stamped as failures by their parents? To what extent can schools correct this situation? The function of vocational counseling in schools is underemphasized, and there is reason to believe that the guidance function as a whole is not prepared to help students understand the varied choices facing them during their school career in relation to the still more varied choices awaiting them in their post-school careers.

The idea that one works for a living seems to be largely ignored in education from kindergarten through the tenth grade, yet vocation is basic to personality, important to self-esteem, and so important to the individual that it should not be left to a hasty, spur-of-the-moment decision on the part of the student. He should be taught how to plan and make choices for his own career.

Taken individually, any one of the paradoxes discussed in the foregoing could be systematically attacked, and solutions might well be found. With all of these paradoxes in effect at the same time, there is a challenging problem of considerable magnitude that is not solely the property of the schools.

Cast against the background just given, where are the most fruitful avenues of approach to planning for improvements in the Ohio educational system, especially with respect to vocational education? That is one of the key questions to which the remainder of this report is addressed.

*Recently enacted legislation (Ohio Bill 531) provides for a coordinating commission that may maintain an overview of vocational education and technical training.

II. DESCRIPTION OF VOCATIONAL EDUCATION IN OHIO

Introduction

Vocational education in Ohio and, in particular, the content areas that define the curriculum can be traced to the landmark legislation enacted by the Federal Government.

The first big boost to vocational education in the United States was provided by the provisions of the 1917 Smith-Hughes Act which necessitated a scheme of cooperation between the Federal Government and the individual states. Provisions were included for the appointment of a Federal Board for Vocational Education to administer the Act. The Smith-Hughes Act provided approximately $7 million as an annual permanent appropriation for vocational education in agriculture, home economics, industry, and trades, and for teacher training.

Twelve years later, in 1929, President Coolidge approved the George-Reed Act which authorized an appropriation of $1 million annually (expiring in 1934) to expand vocational education in agriculture and home economics. The 1934 George-Elzey Act replaced the George-Reed Act and added appropriated funds for trades and industries.

The domain of vocational education was again expanded in 1936 when the George-Dean Act, which would provide funds for instructors in distributive education, was passed. This Act also increased appropriations for all designated vocational education courses to $14 million annually. Guidance and research were then added to the vocational education picture by the provisions of the George-Barden Act. Title II of the George-Barden Act established programs for practical-nurse training, and Title III of the Act established programs for technical education under Title V of the National Defense Education Act.

In the fifties, Ohio had a few vocational high schools, but vocational education was not available to Ohio students on a large scale. Ohio legislators attempted to remedy this situation and reach more students by planning for the creation of joint vocational school (JVS) districts. The JVS became a possibility for Ohio school districts with the adoption of the 1963 Vocational Act, which provided federal funds for the maintenance, extension, and improvement of vocational education. The 1963 Act also allowed many comprehensive high schools to expand their vocational departments.

The more recent 1968 Amendments to the 1963 Vocational Education Act may give new direction and momentum to vocational education if the provisions are diligently carried through. Some of the Act's provisions include:

- Funds specifically allocated for disadvantaged persons
- Funds specifically allocated for vocational guidance and counseling
- Authorizations for contracts with private vocational-training institutions
- Appointment of a National Advisory Council and individual State Advisory Councils
- Requirements for each state to submit long-range program plans as well as 1-year plans
- Funds for consumer education and exemplary programs
- Funds for research and training.

Availability of Programs

Because of federal involvement and significant supplementary participation by the state, vocational education has become a vital and progressively moving force in the education of men and women for the world of work. For example, a wide variety of vocational education programs are available to the high school student in three different types of schools: joint vocational schools, vocational high schools, and comprehensive high schools.

Joint Vocational Schools

In some Ohio joint vocational school districts, students of age 16 or more may request permission to attend a joint vocational school. Those who enter the JVS usually attend their home high school until they reach the eleventh grade, attend the JVS for their last 2 years of high school, and graduate from their home high school. These schools usually offer approximately 25 programs. The students spend one half of the day in State-required general-education courses and classroom courses related to their shop area. The remainder of their day is spent co-oping or in vocational shop. The JVS's usually serve an area of county size or larger, though they are not structured along county lines. Ohio has 15 operational jointures, as of September 1969, with 19 still in the planning or building stage.

Vocational High Schools

Secondary school students in Ohio may attend a vocational high school if they happen to live near enough to such

a school. As contrasted with the joint vocational schools, the vocational high schools tend to serve more-limited geographical areas and, typically, are located only in the large cities of Ohio. Most of them have been in existence longer than have the joint vocational schools and they are more specialized with regard to vocational offerings. Students enter these vocational high schools after completing junior high schools. Ohio's nine vocational high schools are identified in Table 1. The number of vocational units offered is also presented in the table.

TABLE 1. VOCATIONAL HIGH SCHOOLS IN OHIO*

School	District	Units
Hower Vocational	Akron City	19.00
Timken Vocational	Canton City	27.50
Courter Technical	Cincinnati City	23.37
Jane Addams	Cleveland City	14.26
Max S. Hayes	Cleveland City	25.76
Patterson	Dayton City	14.50
Macomber Vocational Technical	Toledo City	22.15
Whitney Vocational Technical	Toledo City	16.80
Choffin Vocational Center	Youngstown City	10.00

*Prepared by: Evaluation and Planning Section, Divison of Research, Planning and Development, Ohio State Department of Education, 65 South Front Street, Columbus, Ohio 43215.

Comprehensive High Schools

Secondary school students in many areas of Ohio may elect a vocational course of study or may take some vocational offerings as part of their academic program. Nonvocational schools in Ohio that offer vocational courses are usually referred to as comprehensive high schools. Comprehensive high schools sometimes have separate vocational facilities. Some comprehensives have separate required classes for vocational students and academic students. That is, all vocational students may take English and American History in classes by themselves, while in other comprehensives, academic and vocational students are mixed in the required courses.

Table 2 is arranged to give a view of the approved vocational education units offered in Ohio school districts that are not offered in JVS or vocational high schools. Each row in Table 2 represents about 10 percent of the enrollment in Ohio high schools.

As an illustration of what Table 2 shows, there are 38 districts having ADM of 1399 or less in which there are no approved vocational units offered in nonvocational schools. Considering the first row, approximately 10 percent of high school students in Ohio, encompassing 208 relatively small districts, lie in a group that offers less than eight approved vocational units in nonvocational schools. Considering the

TABLE 2. APPROVED VOCATIONAL EDUCATION UNITS[a] IN OHIO SCHOOL DISTRICTS BY ADM[b]*

ADM	Units Offered by Indicated Number of Districts																
	0	0 - 1.99	2.00 - 3.99	4.00 - 5.99	6.00 - 7.99	8.00 - 9.99	10.00 - 11.99	12.00 - 13.99	14.00 - 15.99	16.00 - 17.99	18.00 - 19.99	20.00 - 21.99	22.00 - 23.99	24.00 - 25.99	26.00 - 27.99	28.00 - 29.99	30.00 or more
1,399 or less	38	49	109	11	1												
1,400 - 2,049	19	23	64	30	4			1									
2,050 - 2,799	14	12	32	19	9	1	2		1								
2,800 - 3,549	6	8	18	14	12	4	2			1							
3,550 - 4,999	3	8	7	6	17	3	6	1	1								
5,000 - 7,199	2		14	5	8	9	2		2		1			1			
7,200 - 11,699	2	2	3	5	1		1	2	2	2	2	1	1				
11,700 - 23,999	1		1	1	1			1	2	2	1				1	1	1
24,000 - 95,999					2			1								1	3
96,000 or higher																	2

(a) Does not include the vocational education units offered by JVS or vocational schools.

(b) Kindergarten membership has been halved in computing district ADM since students attend only a portion of the school day.

*See Table 1.

first three columns, there are 435 of the 646 districts for which there are less than four vocational units offered in nonvocational schools.

Members of the research staff of this project visited schools of each of the three types in Ohio. Needs that have been identified for these schools are discussed below. (More detailed information concerning needs identification, along with some alternative solutions, is given in Appendix A of the original report.)*

Identification of Needs

Federal legislation in the sixties generally emphasized the importance of evaluation and planning. The 1968 amendments, for example, included a provision for long-range planning in addition to the year-ahead planning previously required. This section of the report describes briefly some of the needs that specialists in curriculum planning and development should consider in future planning. It also serves as a point of departure for an in-depth consideration of the components required for effective decision making in the development of vocational education programs.

The data base for this discussion consists of information collected while visiting Ohio schools, a review of the literature, meetings with consultants, and experiences of Battelle staff members.

The most dominant finding in the needs study concerned the wide variation among schools in the planning and implementation of objectives of instruction, evaluation activities, teaching methodology, staff development, and guidance practices.

Determining Objectives

For example, in the area of objectives, there was no consistent and systematic process for forming a data base to support determination of objectives for instruction. Variation was found in the extent to which school personnel relied upon such sources of information as advisory councils, instructors, manpower forecasting, task analysis with employers, and follow-up studies with former graduates. Many of the programs reviewed were doing commendable jobs in seeking effective use of one or more of the sources. None of those reviewed, however, incorporated all sources in a way that provided a check-and-balance system on the efficacy of what the students were being taught.

Stating Objectives

Another consistent finding was the wide variation in the way in which the objectives were specified. Some schools excelled in stating objectives which explicitly defined the desired achievement in terms of actual student behavior, conditions under which it occurs, and acceptable levels of performance. Others, however, were less explicit. It should be pointed out that this type of variation in stating objectives is not uncommon. Only in recent years, educational-management methods aimed at developing instructional programs via specified objectives have become available for schools to assimilate.

Evaluating Activities

There also is variation among schools in the way in which tests are developed and employed in measuring the progress in the student. There is little consistency, for example, in measuring the student's "real" performance in the sense of developing testing conditions that allow the student to demonstrate his skills on actual equipment (i.e., direct performance measures). Variation also is found in the way in which test scores of any type or variety are used as a means for upgrading and improving the instructional strategies and methods.

What appears to be needed is a guide that presents a thorough and systematic procedure for determining objectives, selecting appropriate measures of the objectives, and using the data generated from the administration of measures in the classroom to upgrade and improve continuously the methods of instruction. If the procedures for identifying the objectives are thorough, the writing of objectives, selection of measures, and use of test data for improving instruction will be greatly facilitated. (Appendix B of the original report presents more detailed information.)

Teaching Methodology

Most schools offering vocational education have at least one co-op program in which a student goes to school half a day and works half a day in a trade for which he is being trained. There is wide variation among the schools in the frequency and use of this kind of a program, however. Those schools that have adopted the co-op plan vary in the way in which they oversee and control its implementation. Usually no specified levels of achievement are identified by the school for the student during his on-the-job training. However, all cooperative education programs, except those which provide for very early placement from an in-school training program, are required to have an outline prepared by the employer of the on-the-job training experience and to maintain a progress report on the achievement of the matters in the outline. Also, there is a written agreement between school and industry regarding the nature of the program and services to be provided by each. Interviews suggest that the co-op programs could be made more effective if the school

*Final Report on Vocational Education to Ohio Department of Education from Battelle Memorial Institute, Columbus Laboratories, October, 1969.

played a larger leadership role in helping the employer develop objectives for each student and helped the employer learn how to report meaningfully on a student's progress. The intensity of instructor follow-up of student progress has been found to vary widely among the schools.

A successful program does not rest on the school's shoulders alone. Employer and union participation also is required to provide the maximum number of employment opportunities in a given community.

Co-op programs offer advantages if they are effectively implemented. They allow the student to work with equipment and become exposed to the reality of the working world which, of course, cannot always be made available to him in the school. They also could benefit the instructor by allowing him to keep abreast of the changing technology of the trade via communication with the student. The curriculum specialist also could benefit, since they could easily provide him with a source of data from which to judge the relevance of the curriculum to the world of work.

Staff Development

The approach to staff development in vocational education varies widely among the schools. The instructor may be a journeyman craftsman (or its equivalent) who is not necessarily familiar with the educational technology required to manage the conditions of learning in the classroom. Upon entering the educational system, he is normally unfamiliar with the way in which the school operates. The intensity and the frequency of orientation and in-service training programs vary considerably among the schools. Visits from teacher educators from universities and attendance at seminars sponsored by the State Department of Education provide consistent activities which go a long way toward improving the instructor's teaching skills. Consistent programming, however, is needed at the local level.

Another problem facing the instructors is keeping abreast of the trade. The instructors have a good knowledge of their trade when they enter vocational teaching, but many of their skills can become obsolete rapidly if they do not keep in contact with many of the technological changes that occur. The State Department of Education provides in-service seminars aimed at filling the purpose. Additional programming at the local level is believed to be desirable.

Guidance Practices

Providing the student with information concerning his career development options and providing him with the skills for making appropriate decisions in the selection of a career are major functions of guidance. There is a wide variation among schools concerning the implementation of these functions. Most schools suffer a shortage of counselors, and vocational education may suffer even more because of the complex nature of the trades involved.

The Division of Vocational Education of the Ohio Department of Education has provided the school districts with many types of in-service training programs for vocational counselors, but much effort is still required at the local level in orienting the counselor to potential employment opportunities available for graduates with appropriate skills.

Most of the school districts are not structured in a way that enables the student to be informed systematically about the world of work prior to his entry into schools offering vocational programs. For example, in most comprehensive high schools the student does not receive his first exposure to vocational education until he is in the eighth grade. This exposure often consists of the high school counselor going into the junior high for an hour or two to talk and answer questions. The students sign up for their courses sometime during the following week.

The jointures have a similar need. They often do not have the personnel for contacting potential vocational students until they are in the tenth grade. Much of the responsibility for career or work orientation rests in the elementary and junior high schools, which may be without guidance counselors. It is assumed that, if a student is exposed to vocational thought at an early age, his later career decisions probably will be based upon improved judgment. But whether or not the student has received vocational orientation, he is usually channeled into one of three tracks – general, college preparatory, or vocational.

The Special Case of Job Placement

There is much disagreement in the field as to whether or not the school should be responsible for job placement. Some schools feel that their responsibility ends with graduation, while others feel that it is the school's responsibility to attempt to place all students.

The methods for conducting placement activities vary among the schools that have decided to take an active part in placement. The procedure is very unsystematic in most such schools. In many of the schools, teachers are responsible for placement that occurs, because it is generally felt that the teachers are closer to industry than are other school personnel. Great variance in degree of effort applied to placement is evident among the vocational teachers. Many make an effort to get leaders of business and industry into the school to talk to the students and possibly recruit students, while other teachers merely act as referral agents and advise students of possible openings in the field.

Conclusions

It should be noted that the wide variations between schools in areas of vocational education that are discussed in

this section are not unique to Ohio. Similar findings can be obtained elsewhere in the United States. Ohio, however, does have a State Department of Education that has been actively involved in reducing the inconsistencies. Progress has been made and the leadership role provided by the state vocational education personnel is responsible for much of the progress. There is needed, however, a guide that would outline components for further planning in the area of curriculum -- a guide that reflects a systematic methodology for curriculum development and one that educational personnel could employ as criteria to judge effective planning in the development and implementation of curricular programs at the local level. Recommendations concerning the use of the guide are given in Section VI "Concerns on Curriculum"; Appendix B of the original report addresses itself to the development of such a guide.

III. STUDENT OPTIONS

Four Options in Ohio

Statistics on Ohio students indicate that

- Almost a fourth of those who enter the first grade do not graduate from high school
- Over half of those who enter the first grade do not go on to college.

In discussing the students that do not go on to college, the concept of "next-state" appears useful. As used in this report "next-state" means what a student becomes after he has ceased to be a student. The next-state is arbitrarily chosen to be that in evidence 3 months after the student has left school.

Historically, in Ohio, there have been three common next-states. These are portrayed in Figure 1. Upon leaving school, the student has three possible transitions, which are described as

A, the transition to being a college student

B, the transition to being employed (including employment by the military)

C, the transition to being unemployed.

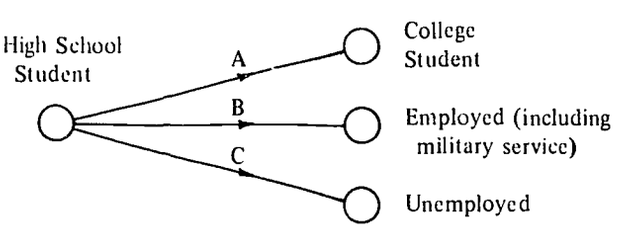


FIGURE 1. HISTORICAL "NEXT-STATES" FOR HIGH SCHOOL STUDENTS

Though not commonly discussed as such, in effect, these have been the three major options that students have before them when they enter high school. In recent years, a fourth option has been added to this list. The newer situation shown in Figure 2 adds D, the transition to being a student in a technical institute (a 2-year post-high-school program), to the options.

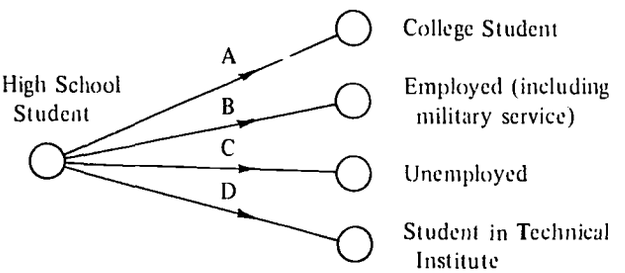


FIGURE 2. NEXT-STATES OF HIGH SCHOOL STUDENTS AS MODIFIED BY ADDITION OF TECHNICAL INSTITUTES

Presumably, the technical institutes will derive their students from either of two categories:

- Students entering the first grade who eventually enter college but do not graduate.
- Students who enter the first grade and graduate from high school, but do not go on to college.

One suspects that the majority will come from the second group, those who are not college bound. This latter group encompasses about two-fifths of the entering students.

If the options open to the student entering high school are correctly portrayed in Figure 2, what, then, is the process whereby the student makes his way toward the next state? To what extent does he participate knowingly in the choice of one of these options, and to what extent does the educational "system" assist him toward one of them?

The Process of Option Selection

There, presently, does not appear to be a sound process of option selection whereby the student makes his way toward next-state decisions. For example, there are insufficient guidance or counseling services available prior to entry into the ninth grade. In addition, there is only incidental curriculum content available in the elementary schools for helping the student acquire the following:

- Knowledge about career planning and areas of employment
- Skills with which to make decisions about future options.

There is reason to doubt that the educational system has systematically alerted the entering high school student to the available options. There is no reason to conclude that

the system provides the entering high school student, other than through incidental means, with the skills for making career decisions responsibly.

At the secondary level, however, next-state options are being made. Students do drop out. Students do go on to college. Students do become employed. Since the educational system does not formally provide the students with opportunities to acquire information and skills to participate in a next-state decision, upon entering high school, a student must presume that the decisions are made for him in one of two ways: (1) that there are, in the educational system, persons who become so familiar with each student, are sufficiently wise and dedicated, and, most importantly, **have the time** to make these important choices for the student, or (2) that there is a "system" that makes the decisions. If it is the system that "makes" or "forces" a decision, and if the system is oriented toward a particular option, it is inevitable that, in that system, a majority of students cannot possibly involve themselves in making good choices about next-state options. If, in a given high school, time and funds do not make it possible for staff persons to make wise decisions for the student (and since the student may not be equipped to do so), the process whereby the student makes his way toward the next-state is initiated and propagated by a "system". This does not appear to be a sound process because it denies the student, with the assistance of his family and educators, the opportunity to participate fully in the choices available. **No choice during the high school years is, for many, equivalent to the choice of unemployment.**

A system of guidance and curricular programs needs to be introduced at the elementary level to equip the student for accepting this responsibility no later than the ninth grade.

As an example of the kind of school functions that might take place prior to the student's entry into the ninth grade, a student might receive an explanation of the difference between technical institutes and colleges. He also might be advised concerning the many kinds of employment opportunities available in society and of the relevance of secondary education toward acquiring skills for employment opportunities. Employment also might receive some attention in terms of the significance of labor to the maintenance of the highly industrialized society in which we live. If, as may be anticipated, this is not adequate to help students begin to formulate next-state objectives, further supplements should be added to the curriculum to help put the student in a position to begin to make choices – not irrevocable choices – but choices made partly by him rather than totally by the system.

Student Participation in Option Selection

The question of a student's knowing participation in one of the options was partially answered in the previous discussion. In addition to the reasons given earlier, many educators simply do not believe that the entering high school student is "ready" to make decisions concerning his future and, therefore, there are no provisions in the process of education which allow the student to participate "knowingly". To support this position, educators quite often point to the findings of developmental psychologists for data to substantiate the contention that students' interests and experiences at the point of early adolescence are not mature and broad enough to permit a rational selection of career. Yet one might reasonably ask what the findings would be if the experiential background of the student included the types of curriculum and guidance programs to which the previous discussion addressed itself. It is quite possible that, with the introduction of these concepts during the elementary years, developmental psychologists may one day obtain findings which could conceivably suggest quite the opposite – i.e., that students are, in fact, "ready" to participate in decisions that affect their career choices. Horrocks*, for example, states that:

> It is also important to realize the place of opportunity in interest formation. People with specific interests have them because they have had an opportunity to develop them. One cannot be expected to be interested in something one has neither seen nor heard about.
>
> The intermediary task of the youth worker is to provide his charges with opportunities to develop desirable interests by helping to make available the necessary raw materials and skill. This he must do in a way that will make the boy or girl want to participate and to enjoy it.

Generally, this is not practiced with reference to career development in today's educational system.

In concluding, it should be noted that, aside from interest in inventory research, most developmental psychologists would agree that, as early as the seventh and eighth grade years, most students have the "cognitive" or "intellectual" capabilities to participate in the process of selecting career options and programs with which to develop the skills for exercising the options upon graduation. Missing is the formal presentation of relevant information and opportunities for the kinds of experiences that allow for the development of an interest in exercising one's responsibility for making choices and planning toward certain career options. As it now stands, the "system" does not generally encourage or provide the student with the opportunity to participate "knowingly" in these matters.

Assisting the Student Toward an Option

In assisting the student toward an option, the extent to which the educational system explicitly acknowledges to the student that every human being has a fundamental task of

*Horrocks, John E., The Psychology of Adolescence, Houghton Mifflin, Boston (1969), pp 507-591.

managing his own life is of concern. This management activity consists largely of a two-step process. The first step is to recognize what options are open to the individual; in a word, to understand what **freedom** he has. The second step is to make a wise choice from the available options; in a word, to exercise *responsibility*.

The schools are a kind of learning laboratory in which students may or may not learn their options and may or may not learn responsibility that goes along with selecting them. If they do not learn to recognize options and are not privileged to exercise responsibility, in effect, they are being conditioned to accept the dictates of an impersonal system, and they may not learn to behave responsibly.

As noted earlier, it appears that relatively little attention is given in the educational system to teaching students about the kinds of personal decisions that they will have to make in life and to help them understand how one goes about making decisions. Such a chore is often assigned to the counseling function – a function so understaffed as to be effectively denied to many students. Yet, what more golden opportunity is there in the school system than this – to teach the concept that a student needs to make decisions which affect his future and to provide for the development of skills to assume that responsibility. Presently, however, schools do not generally provide formally for the development of such skills and, therefore, do not necessarily assist the student toward one of the next-state objectives.

Graduation Requirements in Relation to Options and Student Needs

The four options open to the high school student are discussed without regard to whether the student graduates or not. As he enters the ninth grade, he does have, in effect, the four next-states shown in Figure 2 open to him. The time seems at hand when students need to exercise much more responsibility in making decisions about the options available and in the selection of the high school program that they will pursue. Planning a total high school program as early as the ninth grade seems advisable. Schools should encourage students, beginning at this grade level, to participate in and formulate alternative objectives with the next-state in mind. Parents and school representatives must collectively assist, but not dictate to, the student in choosing his program. It is recommended that this type of consultation be arranged during the summer session prior to entry into the ninth year of school. It also must be noted that decisions made at this time are not irrevocable. The student should have the freedom to change the program if it does not meet with his interests and capabilities. Figure 3 illustrates the envisioned mobility within high school. To provide for such a change, review committees should be established to examine, during the summer following each school year, the student's interest in his program and the progress he is making toward his next-state option. It is also recommended that the student-selected objectives become a

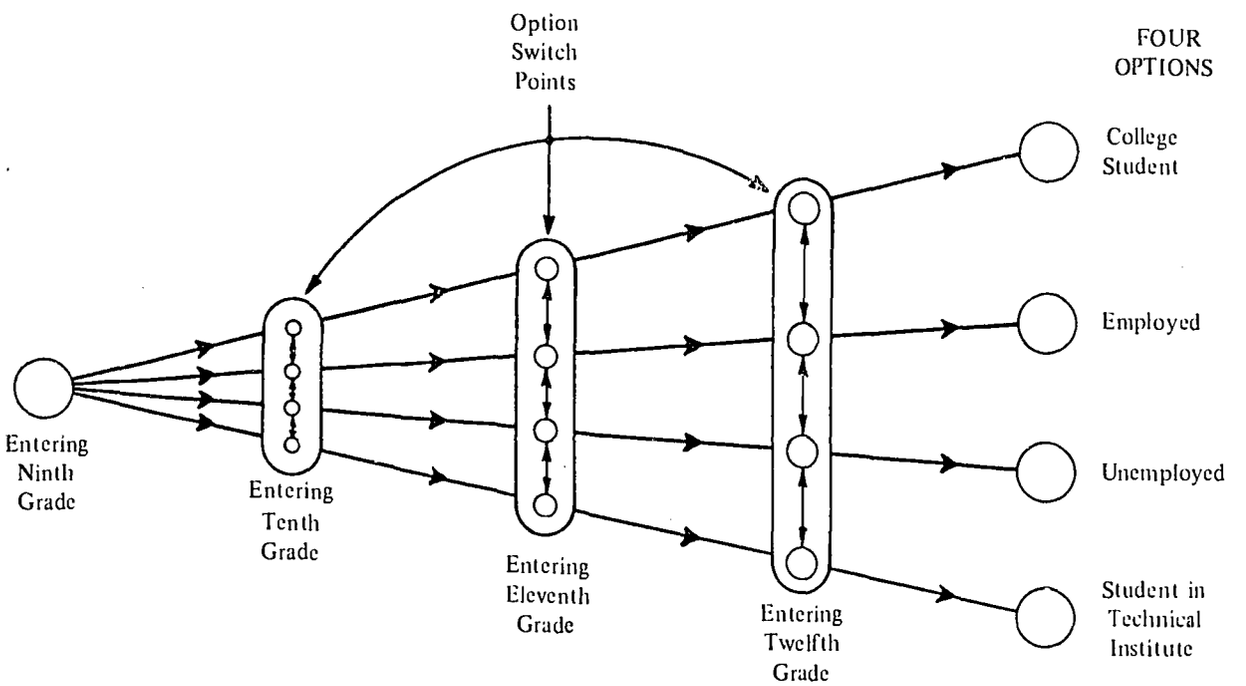


FIGURE 3. PROVIDING FOR ANNUAL CHANGE OF NEXT-STATE OPTION

formal part of his educational record each year. Then the student's program should be keyed to the educational objectives of the student, with the next-state in mind. This ought to establish a powerful motivation for success, if done well. Hopefully, students would thereby be prone to avoid the option of joining the unemployed and would key both their aims and their programs to one of three next-states: going to college, going to a technical institute, or becoming employed. In this way a student may gain a vested interest in his high school program.

Vocational educators, for example, report that students often will change their attitude toward (i.e., become more involved in learning) an academic subject if they acquire some vested interest in learning it. The central point here is:

- If a student has established an objective (i.e., has made a choice) that makes sense to him and appeals to him and if there is a connection that the student sees between this objective and an academic subject, he will apply himself to learn that subject.

Such decision making and interest in the pursuit of a program also affects the student's concept of himself. When a student "knows" what objectives are important to him, when he has a voice in their selection, when the program he selects in pursuit of the objective provides him with success experiences, and when the program permits him to develop fully his capabilities, the self-concept or self-esteem of the student will grow and become stabilized. Some programs partially achieve this objective. For example, recent research by Professor Pugh of Ohio University* dealt with the self-concept. His experimental results indicate that joint vocational schools are effective in improving the self-concept of children. Further research on this subject, planned by Professor Pugh, may establish, definitely, that this is true. If so, one may suppose that the availability of an educational option that more closely relates to student objectives is a key factor. The research does not indicate whether the improvement in self-concept occurs only in selected vocational programs or across the board. If it is a general occurrence, one might conclude that the specific program offered is not as important as the fact that the options are there, and that the programs relate to student interests and capabilities.

Options in Relation to Curricula

The argument has been advanced that a "system" should not force, or even allow, a student to select any one option; rather, the system should be designed to permit the high school student to enjoy the advantages of being educated in a way that would allow him to select any of the options available upon graduation. The basis for this argument is two-fold. First, the student is said not to be "ready" for selecting options, and the high schools should not prematurely force him into a decision-making role. Second, the assumption is often made that a student's decision is irrevocable. That is, once made he cannot change it. The first argument has already been disputed, but the second does have some merit. The system of education, as presently structured in the secondary schools in Ohio, makes it difficult for the student to switch options.

Definite research data relating the next-state options to types of curricula are not available, due to the lack of follow-up studies. Therefore, in order to clarify the question concerning the relations between options and availability of curricula, a hypothesized general relation between options and availability of curricula has been composed. This relation is exhibited in Table 3. The reader may wish to apply his own "reasonableness" test to these hypothesized relations. What the table suggests very strongly is that the "relevance" of a curriculum to a student is strongly conditioned upon the kind of future that a student visualizes for himself.

The table is comparative, rather than absolute. Thus, although the college preparatory curriculum is ranked 1 in relation to satisfying the option of going to college, it is not implied that the present college preparatory curricula are the best that can be devised. Rather, it is indicated that of the three, the college preparatory curriculum seems best.* For a student whose next-state will be "employed", the vocational curricula are ranked 1, and the general curriculum is ranked 3, or lowest.

This kind of table also strongly suggests that the kind of curriculum pursued should be made to depend upon the next-state option applicable to each particular student. On the other hand, it is desirable to permit students to change options as they progress through school. The dislocation in program occasioned by such a change is, presumably, less severe than the dislocation in the life of a student whose program becomes, and remains, inconsistent with his projected future.

This argument leads to the conclusion that, when the student changes his next-state option, he should be permitted to adjust his curriculum accordingly – e.g., permitting transfer to or from vocational education, with as little red tape as possible. The present state scheme of reimbursement to schools for students in vocational education works against this kind of flexibility. So does the present scheme of advising students which does not provide informed and timely counseling on vocational education to those students who may be misplaced in their school programs.

*Pugh, Dwight Allen, A Comparison of Changes Over a Period of Time in the Self Concepts of Students Enrolled in Vocational and Non-Vocational Curricula, Doctoral Dissertation, Ohio University, Athens, Ohio, June, 1969.

*It is important here to recognize that pursuing the "college-preparatory curriculum" is not the only way to prepare for college. All students that complete a vocational program and graduate from high school in Ohio are eligible to enter the state universities of Ohio. Entering a high-school vocational program, therefore, does not close the option of college entry to a student; it may, for some, represent the most desirable approach to attaining that option.

The highly-structured programs in vocational education and the physical separation of the jointures from other schools make change within the system difficult. Although, in principle, the freedom to change is open to the student, in practice, the system makes it hard. What appears to be needed is a system that provides for an easy academic and/or vocational transfer from the pursuit of one option to another if the student desires such a transfer.

It is our understanding that the "organic" curriculum represents an attempt to provide for a "triple option". Students would not need to estimate their next-state in order to form a program. While the choice of a triple option perhaps can be made available, it appears that, if instead of being one of several options, the "organic" becomes the only option open to the student, the system again would be dictating curricula, and the powerful motivational forces associated with permitting a student to choose the kind of curriculum that best meets his next-state plans would still be absent.

TABLE 3. RELATIONS BETWEEN CURRICULUM TYPES AND STUDENT NEXT-STATE OPTIONS

Student Next-State Options	Curricula Rank(a)		
	General	Vocational	College Prep
Simple Options			
College	2	2	1
Technical Institute	2	1	3
Employed	2	1	2
Unemployed	1	3	2
Double Options			
College or Technical Institute	3	2	1
College or Employed	3	1	2
College or Unemployed	1	3	2
Technical Institute or Employed	2	1	2
Triple Option			
College or Technical Institute or Employed	3	2	2

(a) 1 – Ranked highest for orientation toward specified next state
2 – Ranked intermediate for orientation toward specified next state
3 – Ranked lowest for orientation toward specified next state.

*Bushnell, David S., "The Problems of Process in Curriculum Change", paper presented at the 18th Annual Fall Conference of the Pennsylvania Department of Supervision and Curriculum Development, Harrisburg, Pennsylvania, November 25, 1968.

Options in Relation to Self-Concept

The development of self-esteem is a need which schools should recognize as being vital for all students. As Pugh's research suggests, it is a need that can be satisfied in the vocational schools. The self-concept held by a student may be the principal factor shaping his view of life and may affect his behavior in and out of school. It is even more dominant when a student is faced with a choice point that affects his future. When he has to make an occupational or curricular choice and when he has to decide whether he is good enough to do what must be done to succeed in a given occupation, the decision he must make rests upon his evaluation of himself and of his assumed identify. As Rosenberg* notes:

> When an individual is faced with a serious and urgent decision, and when a major basis for this decision is his view of what he is like, then the self-image is likely to move to the forefront of his attention.

The school must consider the importance of the student's developing self-concept and in planning the program and opportunities for success experiences, should provide the conditions of choice. These conditions are contingent upon the availability of a flexible program consistent with the student's selection of next-state options. The acquisition of a favorable and accurate self-concept is thus dependent upon curriculum flexibility, or the capacity to choose curriculum make-up consistent with abilities and future activity.

Joint-Vocational Schools and Curriculum Flexibility

Because they are large, the joint vocational schools have been able to provide considerable flexibility in curricula and, thus, have been able to offer unique opportunities to a variety of students. However, their restriction to students aged 16 or above means that this flexibility is open only at a rather late time in the student's high school career.

It seems appropriate to extend this flexibility down to the ninth grade level in the joint vocational schools and to expand it a bit to accommodate further those students who desire to attend college or who are "on the fence" in choosing between college and a technical institute. Accordingly, one recommendation is that at least one jointure be converted on an experimental basis to a full four-year high school with diploma-granting authority. Such a school would operate in the manner implied earlier in this chapter with regard to the adjustment of each student program to meet the anticipated next-state of the students. If the experiment is successful, it would seem advisable to expand the other jointures into full high schools. The joint vocational schools

*Horrocks, John E., The Psychology of Adoleseence, 3rd Edition, Houghton Mifflin, Boston, 1969, pp. 124-145.

already have the vocational base from which to branch into a more comprehensive educational program in a reasonably short time.

Curriculum Options in Relation to Program Planning and School Finance

One experience reported in the literature attests to the benefits accruing to a school district from a program designed to develop student programs on an individual basis in consultation with parents.

> A community can support public schools to the degree that its citizens who make decisions can understand the role of the schools. The role of the schools is understood in terms of the citizen's experiences with the schools and a citizen's firsthand experience is probably considered most trustworthy by him. As an example, consider the experience of the citizens of Wood County Schools, West Virginia. Wood County represents one of the wealthier counties in West Virginia, yet in 1960, 75 percent of its citizens who were over 25 years of age had not completed high school. If these citizens look upon school as the place where they failed or where they received little help or support, and if they succeeded in life without a high school education, it is easy to see how such citizens might not support public school programs with conviction.
>
> However, a public school project which served Wood County citizens brought them into a new relationship with their schools and developed new understandings of the role of the public school system. During the summer of 1964, each senior high school student and his parents were offered an opportunity to participate in counseling sessions about each student's future, his hopes and plans. Out of a potential of 3,600, 3,200 counseling sessions were held. A new relationship was established between our schools and our citizens, many of whom had never before talked with a high school teacher or counselor. During the following September, the largest bond issue ever voted in Wood County passed by an 87 percent majority.
>
> — Dr. Grant Venn from "A Report on the Administrator's Conference on Vocational Education", conducted by the Educational Research Council or Greater Cleveland, May 23, 24, 2965. Prepared by Ross E. Hamilton.

The connection of this experience with vocational education in Ohio is found in the need for better public understanding of vocational education, in order that they are better prepared to vote the support needed to carry out vocational programs.

Student Options in Relation to Achievement of Objectives

For some students, it may well occur that the objectives can be met without continuing through grade twelve. As mentioned earlier, the importance of having all students graduate at the end of the twelfth grade may be overestimated. The wide diversity among individual students may suggest that operational changes should be made that would not be so damaging to self-esteem. Thus, it might be appropriate to consider presenting a student leaving school with a diploma that indicates not that he has completed twelve years of school, but, rather, that he has met a certain set of objectives established jointly by him and the school, and showing how those objectives were met. For example, one might leave school at the eleventh grade with qualifications in auto mechanics and with certification to that effect appearing on the diploma. Or one might leave at the twelfth grade with certification that he has accumulated the array of Carnegie units required for admission to college in Ohio. The sacred concept of "graduation" may be obsolete. Perhaps it is time to take a more individualized approach to the separation of a student from high school, aimed at attaining a desired next-state.*

The diploma granted to the student would include the grade level completed, the student's educational objectives as originally prepared in the ninth grade and as later modified, and the courses taken in high school. Any special achievements should also appear. Graduation ceremonies still might be held annually, but they would include all students leaving school who had satisfied their stated objectives, whether they had completed twelve grades or not. Diplomas could be awarded at that time. The diploma would then serve the student as useful documentation in his efforts to make the transition to the next-state. If a student who had graduated changed his objectives and desired to return to school with new objectives, provisions might be made for this to occur.

*The hallowed concept of "individualized instruction" does not mean that each student will have a teacher working with him all the time. What it ought to come to mean is that every student understands, and is in harmony with, the educational program that he is pursuing. This latter goal will not be approached until the student plays a more positive role in the selection of a program than he has done before. The planning has to be related to post-school living, thus, it cannot be done on a piecemeal basis looking only one semester ahead. Rather, it should be an integrated program planned as far into the future as the student can look (with help) and keyed to his objectives.

Beyond the Transition

Most of this Section has been addressed to the transition from high school to a next-state, the latter being arbitrarily tied to a point in time 3 months after the student has left school. This discussion has rested upon the belief that, if a good transition is made, the basis has been laid for a good start in post-school living. Also, in evaluating school performance by follow-up studies, the short-term follow-up clearly provides the most timely information.

Preparation for the transition is more definite than "preparation for life", is easier to deal with operationally in constructing curricula, and would appear to be of more relevance to the student. Moreover, it has an air of lesser permanence than planning for a lifetime career and thus leaves more flexibility in thought concerning more distant futures.

Nonetheless, for most students a long life follows the transition. For most students, this life will involve employment. For females, it may involve homemaking. How can this longer term aspect be incorporated in the thinking expressed earlier in this Section? The four options shown in Figure 2 will become, in later life, more diffuse, less distinct. Thus, persons may find themselves employed but attending college part time for refresher courses. Or, they may find themselves unemployed but may be attending adult vocational courses in order to return to the employed state. More generally, one may desire or find it necessary to be able to move about from one state to another. Thus, in later life, the analogy to Figure 2 may appear as shown in Figure 4.

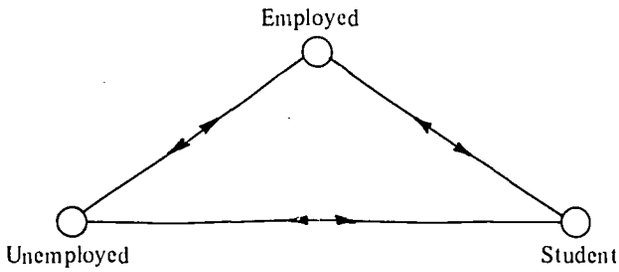


FIGURE 4. STATE CHANGING IN ADULT LIFE

It is certainly in the best interests of the individual that he be capable of state changing in adult life. This capability should be accompanied by the same kind of freedom to select options that has been discussed for the high school student. The Student state in Figure 4 encompasses offerings in college, technical institutes, and in the high schools. Private educational facilities also become involved.

It seems important that the schools anticipate the needs suggested by Figure 4 by teaching high school students some of the facts of life concerning how society provides for this state changing, and how they as future voters will play a role in determining the extent to which provision is made for re-treading the individual in order that the inevitable change in society shall not be overwhelming to the individual.

The difficulty faced by individuals who in later life require some form of renewal is often one of learning, without tremendous personal effort, what options are then open to them. Leadership in this area can be provided through adult vocational programs where much of the same kind of data gathered in planning high school vocational programs, e.g., job availability, can be injected into planning adult vocational programs.

The development of decision-making capacity and responsibility in high school students should serve these students well in later life where no benevolent system will exist to make decisions for them as long as a free society is maintained.

IV. CONCERNS ON CURRICULUM

There is a need for local schools to systematize the procedures of curriculum development around a set of guidelines made available at the State level. Such guidelines might well employ the framework shown in Figure 5, which represents a synthesis of the key elements of modern curriculum development.

There is concern that vocational curricula should be:

(1) *Responsive to the requirements of the job market.* Responsiveness to the job market involves manpower forecasts, treated in Section V (and in Appendix D of the original report).

(2) *Responsive to the needs and interests of students.* Responsiveness to student need implies keying a program to the student rather than shoe-horning a student into a pre-established curriculum.

(3) *Efficiently integrated with other educational programs.* Efficient integration with other educational programs requires an ever-continuing struggle to restructure and revise both curriculum and schedule and to achieve a breadth and depth of each to meet the needs of the student.

(4) *Designed to provide more vocational flexibility.* Vocational flexibility implies the development in the student of the capacity to be mobile, both horizontally and vertically, within the job market.

These four concerns are of long standing in education, having been with educators for many years. They do not yield to instant change or edict. Rather, they give ground grudgingly as many individuals throughout the educational system persist in working toward the relief of these concerns.

The concerns do, however, have some commonality. All four require the cooperative efforts of many kinds of people, and all four require some measure of systematic leadership. This commonality makes it imperative that a sound philosophy and methodology should be available as a base from which such leadership can operate. It is not to be expected that the philosophy and methodology that evolves at the broad level can work magical solutions at the operational level. Philosophy and methodology can provide only a framework or setting that is in harmony with the aims and aspirations of school administrators and teachers.

The easing of concern, then, rests upon the broad understanding of philosophy and methodology from which the detailed application can spring. Further, the philosophy and methodology, once seen in educational perspective, can help show where and how efforts can be most effectively brought to bear upon the concerns to cause the necessary sequences of events to occur.

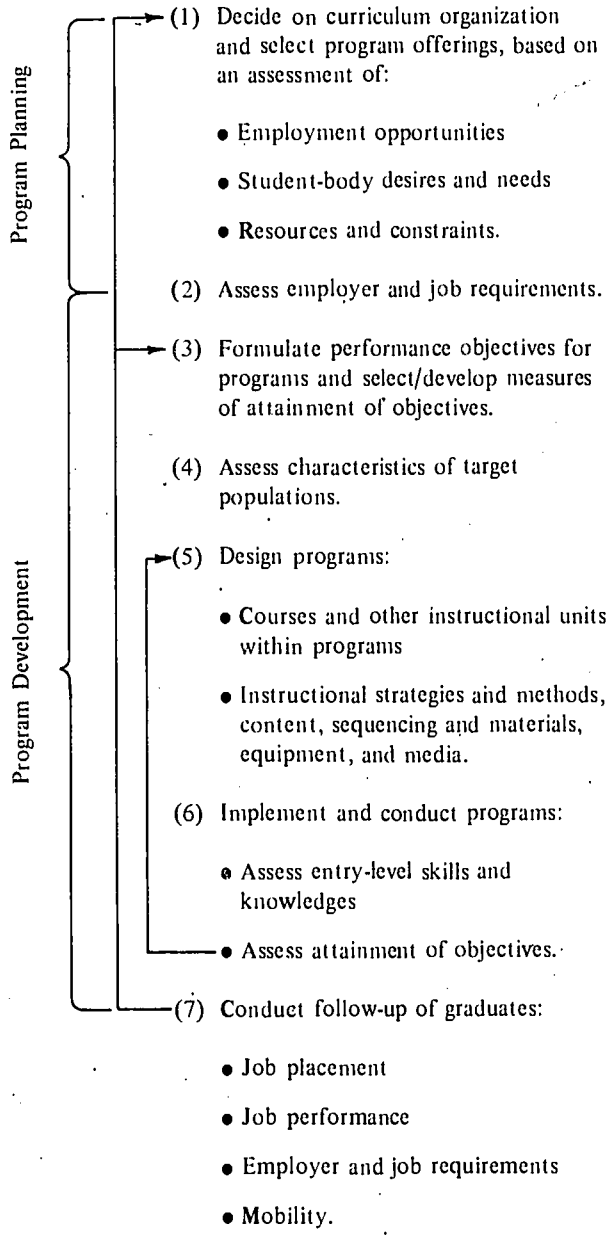


FIGURE 5. STEPS IN CURRICULUM DEVELOPMENT, REVISION, AND UPDATING

It seems reasonably clear that, for vocational education, it is highly inefficient to place the burden of curriculum-materials development upon each and every vocational school.* Rather, this responsibility should be placed at the highest level in the educational hierarchy that is practical to achieve, in order to promote specialization and efficiency. Likewise, the setting of objectives and the development of methods of measuring their attainment are tasks for specialists and are too time consuming and difficult to warrant the carrying out of this activity at each and every school.

*The curriculum development methodology is presented in Appendix B.

If it is desirable to develop curriculum materials and evaluation materials at a high level in the educational hierarchy, it is equally desirable that local units exercise great selectivity in choosing which of those materials and evaluation methods shall be perhaps modified and applied in the local schools. These schools have a primary responsibility of maintaining programs that are relevant to their students and to local needs.

Thus, the attacks on the four concerns expressed earlier, while continuing to require participation at all levels in the educational community, can be made more efficient and expedited by structuring the attacks in a manner consistent with what is possible and what is desirable. Specialists should do those tasks that yield only to specialization, and the local school units should be in a position of choice and utilization, rather than one of conception and development, at least in common areas of curriculum development.

V. CONCERNS ON JOB FUTURES

The investment of substantial public funds to prepare people now for jobs that will not exist in the future is clearly neither advisable from the standpoint of public policy nor acceptable to the individuals involved. Thus, a question of great concern to the public, educators, and students is one of how to anticipate or forecast the future availability of occupations. This review gives an up-to-date picture of present methodologies. A general review of Manpower Forecasts for Educational Planning is given in Appendix D.

Forecasting methodology, in general, is well-viewed as a confrontation between perfection and imperfection, since forecasting methodology is always in a state of being improved. At any given point in time, the imperfections tend to be apparent. Perfection is held up as a goal toward which continued efforts will be dedicated indefinitely, in an effort to keep diminishing the imperfections.

The central question, at any given point in time, is one of whether as much use is being made of forecasting methodology as is warranted by its state at that time. Since the state of forecasting methodology keeps changing, this question must continually be raised and answered. Under present conditions in Ohio, The State Department of Education should have this responsibility and should serve local districts as a source of up-to-date information as well as a counselor concerning its application. If regional centers are established, national and state forecasts may be taken into account in regional forecasting. Such forecasts should be put in a format consistent with the needs of school districts.

Forecasting is not the responsibility of the schools, but the utilization of forecasting is. As long as this situation persists (and it appears that there is no reason to change it), it will be necessary for the curriculum planners to be in contact with manpower forecasters. Since these people normally operate in different environments, positive conditions for ensuring effective interchange of information are required. The Ohio Department of Education has a stake in maintaining surveillance of such efforts. Some of the steps being taken are discussed in Appendix D of the original report.

Changes in the labor market call for a responsive system of vocational education. If, as some critics contend, vocational educators have been slow to react to labor-market changes, employment specialists may be partly responsible. The labor-market data provided may not be adequate in quantity or quality or in the form needed for vocational planning. A clearer understanding of the specific data needs of the schools should be conveyed to the employment specialist, and the schools must be prepared to utilize trained labor-market experts to interpret the data so that the implications therefrom can be acted upon. Translating occupational requirements into vocational education planning (with estimates of needs for facilities, instructional staff, and course content) is not a simple task. Vocational educators should expand the participation of employers, union members, and the public, knowledgeable in the requirements for the occupation, in the choice and development of curriculum offerings.

VI. CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations are presented under seven major headings. These are:

- Curriculum Development and Evaluation
- Guidance and Counseling
- Staff Education and Training
- Job Placement
- Communication With the Public
- Institutional Organization
- System Considerations.

Though these seven headings are not independent, this separation serves as a means of helping to unify related conclusions and recommendations.

Curriculum Development and Evaluation

Conclusions

There is a wide variation among the schools in the planning and implementation of objectives for vocational education, evaluation activities, teaching methodology, staff development, and guidance practices. There is no consistent and systematic process for forming a data base from which to determine system objectives; for example, there is wide variation in obtaining and updating employer and job requirements for skills. There is wide variation in the form in which instructional objectives are stated. There appears to be neither formal procedures whereby educators specify behavioral objectives of on-the-job training in a cooperative program nor procedures for measuring student progress in on-the-job training. Rather, these matters are relegated to industry, which may not be qualified to deal with them. There are large variations among schools in the methods by which they accomplish the functions shown in Figure 5. A major reason for this is lack of time, funds, and trained personnel at the local level to accomplish these functions effectively.

Little evidence has been found of written student performance objectives. Lack of performance objectives, in job-training and related areas and in curricular areas outside of job training that pertain to vocational education, precludes effective program evaluation.

There are few comprehensive and systematic guidelines to help districts design, evaluate, and update their curricula. Several theoretical, conceptual, and methodological problems need solutions before vocational curricula can be developed upon a core-program basis. However, occupational clusters can be formulated on bases other than common skills,* still providing many of the positive features of a common-core type of cluster program.

In a few older schools, curricula for vocational education are built around readily obtainable equipment. Clearly, curricula and equipment needs should be generated from educational objectives that grow out of student needs and local conditions. Similar remarks apply with regard to current and available interests and capabilities of teaching staff.

There is a clear trend away from the concept that "vocational education equals only specific technical skills and knowledge". In the job-training areas, general and basic skills and knowledge, e.g., communication skills, will assume increasing importance. Thus, curriculum developers in vocational education must deal with broadened content in developing programs. There is also increasing attention to other than job-training areas within vocational education, e.g., citizenship education, avocational education, and education on career choices. Because of this, curriculum developers in vocational education will have expanded responsibilities, and there will be an even greater need to formulate objectives in clear terms.

Vocational education offerings often have not responded rapidly to changes in the labor market. The result has been heavy vocational education emphasis on some fields (e.g., vocational agriculture) where there is little demand and less emphasis upon some fields (e.g., computer-related fields) where there are many unfilled jobs. It is not clear whether the fault lies in planning or in inability to implement plans. Probably it is a mixture of both.

Recommendations

Development of Guidelines for Curriculum Development and Evaluation. A written guide for Curriculum Development and Evaluation should be developed that is more detailed and comprehensive than any documents now existing. This guide could serve as a set of standards and criteria for State Department of Education personnel to judge effective planning in the development, evaluation, and implementation of curricular programs at the local level.**

*For those interested in further discussion, Appendix B in the full report (dated October, 1969) may be consulted.

**This guide should be developed around the methods and approaches for developing such a guide presented in Appendix B of the original report.

Training. The Ohio Department of Education should encourage the development of a continuing program of in-service workshops for vocational educators in techniques of curriculum development and evaluation. These should take advantage of the approaches presented in Appendix B of the original report. Plans should also be formulated for the creating of intern programs at the local level in curriculum development.

Regional Education Service Centers. Curriculum development and evaluation services should be provided to local districts through regional education service centers at such time as these become a reality. Consulting services should be provided by specialized personnel in these centers. Also, necessary surveys for local districts might be conducted by center staff, e.g., job-opportunity and skill-requirement surveys for a local district. Consideration should be given to the establishment of a behavioral objectives exchange as a part of regional education service center activities to provide a means of implementing performance objectives in local districts. This exchange could be coordinated with efforts similar to those at the University of California* and other U.S. Office of Education efforts along these lines. Such an exchange would provide for vocational educators to select objectives for their programs, based upon local selection criteria, thus not requiring extensive objective-writing efforts at the local level. A central aim should be to relate such activities to student needs.

Additional Research. Additional research should be conducted to develop further core training and cluster program concepts and methodologies, so as to bring these to a wider level of application.

Demonstration Programs. Demonstration and exemplary programs in curriculum development and evaluation should be encouraged and implemented at the local level. Regional education service centers could serve as a coordinating agency and also should coordinate with each other for mutual benefit.

Labor-Market Analyses. A major stride forward in orienting vocational education curriculum to labor-market needs can be made through greater use of existing labor market analysis techniques by those responsible for planning and administering vocational education. In addition, labor-market forecasting techniques for small areas must be (and are being) improved. Educators should continue to communicate their data needs to employment specialists and to involve those knowledgeable about local labor markets in the vocational education planning process. Basically, what is required is a functioning information system. The Department of Education should develop the system to serve the needs of education, in cooperation with employment specialists.

*Professor W. J. Popham, UCLA Graduate School of Education, Los Angeles, California, is active in this work.

Guidance and Counseling

Conclusions

Counseling of students in the design of their high school programs is inadequate. There does not appear to be a sound process of education whereby a student makes his way toward the three desirable next-state options – college student, technical institute student, employed person. The process whereby a student progresses toward a next-state option is largely determined by the system rather than by decisions related to each individual. Guidance now made available to ninth-grade students is not adequate to explain to them the options open to them in their post-high-school career that will help them to visualize the relation between their high school programs and their future careers. Upon entering high school, many students have neither knowledge about careers nor the skills with which to make decisions affecting their future. Some educators support the contention that students are not ready at early adolescence to make a rational selection of a career or a program that permits pursuit of career objectives. Developmental research indicates, however, that, as early as the seventh and eighth grades, most students have the cognitive and intellectual capabilities to make such decisions; therefore, they could choose a reasonable next-state option. Although subject-matter germane to decision-making skills exists in considerable quantity, students are not provided systematically with information needed to develop them.

The development of guidance materials for counselors of entering ninth graders would help. In the absence of a very large complement of counselors, the parent might serve a greater counseling function, if such materials could be developed and find their way into homes.

The educational system does not explicitly acknowledge that the student has some responsibility for choosing a next-state option and a program compatible with that choice. Accordingly, there is not enough attention paid in the system to teaching students the kinds of decisions they will have to make. Responsibility for this function in the schools is largely relegated to the counseling function, a function so under-staffed as to be effectively denied to many students.

Recommendations

In-service training courses should be developed to teach teachers and counselors how to work together with students and parents in planning student programs during the summer for each student.

When an adequate supply of trained school personnel becomes available, a program should be instituted wherein school representatives, the parents, and the student meet to talk over the student's future and to plan a high school program for each student on the basis of his interests. The

student should understand his options and should appreciate that the responsibility for listening to school and parental advice and for choice of his program is not one to be taken lightly. It may be necessary to teach students how to go about making decisions and plans for their future in order that they can participate effectively and substantively in such choices.

Student programs should be revised, when desirable, to accommodate increasing maturity and changes of views. This may be done annually and should always involve the school, the parents, and the student. Summer seems the logical time for such program review.

Student programs should be used as an ingredient in planning for curriculum and staff changes.

The Ohio Department of Education should foster and coordinate the development of materials suitable for counseling and make these available to children and parents at the time the child completes the eighth grade. Included in such materials would be, for example, an indication as to the kinds of high school programs that would lead into technical institute programs and college programs, as well as into employment, following the completion of the high school program. Such widely used terms as "distributive education" are likely to be novel to parent and student alike; hence, definitions in simple language should be used to help convey the meaning and essential aims of vocational programs.

The emphasis on materials rests on the belief that there will never be enough counselors to do the kind of counseling that entering ninth graders need. An alternative is to provide timely written information to children and parents. The availability of this information would also be beneficial for adult vocational education, at least in areas of overlap with high school programs. Another alternative that would be effective over the long run would be to include vocational guidance that is distributed throughout the curriculum, i.e., starting with elementary concepts in the early exposure to formal education and building toward more substantive concepts as time goes on.

Staff Education and Training

Conclusions

There is a wide variation among the schools in the way in which they provide in-service training programs for craftsmen, etc., who enter the educational profession. There appears to be no broadly implemented approach that permits instructors to keep abreast of technological changes in the crafts. Nor is there one that permits instructors to keep abreast of changes in educational technology. The programs provided by the State Department of Education are helpful, but the resources applied are not adequate.

Aside from efforts of the Division of Vocational Education, there is little evidence of any systematic effort to provide in-service training for vocational counselors specifically aimed at developing current knowledge of potential employment opportunities for vocational graduates.

Recommendations

The State Department of Education should develop standards and guidelines for in-service training which would include an extension of already existing teacher education services from universities and seminars, and development of self-instructional material. In addition, the State Department of Education should use Federal funds to carry out activities defined by the guidelines, once they are established.

Job Placement

Conclusion

There is some disagreement among vocational educators, as well as variation in practice, concerning the responsibility of schools to place a student in a job for which he is trained. Much of the placement activity conducted by schools is undertaken as a self-assumed responsibility by specific instructors, and the frequency and intensity of these efforts varies considerably among schools and within schools. This is true notwithstanding the fact that an annual report of placement activity is required by the State.

Recommendations

The State Department of Education should establish an *ad hoc* commission consisting of recent graduates from vocational education programs, union representatives, employers, representatives of the State Employment Agency, local school officials, and others to make recommendations concerning the schools' responsibilities for job placement. The nature of the responsibility should be explicit with regard to how, when, and under what conditions the school can and should assist the student in the active pursuit of employment prior to and after graduation.

Communication With the Public

Conclusions

Communities do not appear to be sufficiently aware of vocational programs, their purposes, and their impact upon students. Since most of the public have not attended a vocational school, it is understandable that they are not well informed about curriculum. The public also may be puzzled

by the division of effort among Federal, state, and local government in supporting and administering vocational education. Further confusion may ensue in Ohio by virtue of the way in which joint vocational districts have evolved. While school data evolves along county lines, districting has not followed county lines. Most of the voting public, lacking personal experience with vocational education, are ill-equipped to exercise their franchise wisely in regard to the support of vocational education. Vocational educators may have been so close to vocational education, and so familiar with it, that they may not have had occasion to recognize the implications of these matters.

Recommendations

As Ohio develops long-range plans for vocational education, as required by recent federal legislation, considerable attention should be given to developing highly credible and lucid materials that can be used to involve the public at large in discussing and formulating the nature and role of vocational education in meeting both the needs of individual students and the needs of society for a cadre of people capable of sustaining the massive technological complex upon which the continued existence of society depends. Then, these materials should be brought to the public through all appropriate means.

Reporting to the public should also be addressed to those who want to know how effectively the educational dollar is being used. Credibility is as important as enthusiasm.

Assuming the implementation of the recommendation concerning the involvement of parents in the detailed planning of their children's vocational education programs, this involvement should bring new attention to the objectives and scope of the program in any given community, thereby fostering improved understanding of vocational education.

Institutional Organization

Conclusions

Joint vocational schools in Ohio have made a positive educational contribution by opening up new kinds of programs that meet needs of students not previously met by the Ohio school system.

Continuation of the present rate of school district consolidation in Ohio will not permit the rapid development of high schools of sufficient size to allow adequate flexibility in the design of student programs or to provide services that are vital in the development of children. Because of their size, the existing joint vocational schools are able to offer more vocational program alternatives to students than most schools. It appears desirable to expand these schools by converting them into full 4-year high school status (including authority to grant diplomas) and by adding sufficient course offerings to make them more suitable for students who desire to attend college or a technical institute after high school.

Recommendations

Regional education service centers should be instituted to provide vital services that individual schools cannot provide for themselves, and to decrease the costs of some equipment and services that involve substantial duplication of effort among the school districts (e.g., transportation, scheduling, the purchase and maintenance of school buses, training of school bus drivers, and data-processing services). These centers will impact on vocational education in many ways. One principal impact should lie in the expansion of vocational offerings in a planned way through assistance provided by the center in the introduction of curriculum elements, new teaching materials, and other assistance required to expand vocational offerings. Greater provision of services on a regional level can make it possible to provide improved educational opportunities, especially for those school districts that cannot provide these on their own. However, the recommended regional centers are not an adequate substitute for implementation of school district consolidation. Many problems in vocational education, as well as in other areas, would be solved, or at least eased, if the State of Ohio were to accomplish consolidation of many of the State's smaller school districts.

At least one joint vocational school should be converted into a regular 4-year, diploma-granting high school on an experimental basis to determine whether it can become comprehensive in the sense that it can provide a program to any student who may wish to attend, whatever his post-high school plans may be. If this experiment is successful, conversion of the other jointures should be considered.

Such an experiment would not preclude other kinds of experiments that might be considered, such as the conversion of one jointure into a 2-year, diploma-granting educational center that would provide comprehensive programs of vocational and pre-professional education.

System Considerations

Conclusion

While steadily improving, the administration of vocational education has not yet evolved into a rational thodology.

Recommendation

As rapidly as feasible, administrators of joint vocational schools and vocational schools should help develop and adopt a logical plan that incorporates the development of measurable objectives, curriculum development keyed to these objectives, measurement of satisfaction of the objectives, and the use of follow-up studies to help modify curriculum offerings.

Conclusion

The schools at large seem not to be aware of how to implement the development of self-concept in all students. The development of a good self-conept may be as important in vocational education as the development of job-related skills. Vocational education seems to be effective in helping students acquire confidence and the belief that they can go on to live a productive life.

Recommendation

The development of good self-concept through vocational education deserves increased study. Perhaps it should be given comparable emphasis with one's capacity to get a job in a field related to his training and should be a primary factor in evaluating the effectiveness of vocational education programs.

Vocational educators may also wish to make a special effort to develop a favorable image of vocational education with the public, since the self-concept of students in vocational education is affected by the public view of worthiness of vocational education, as expressed to the students by persons not associated with vocational education.

Conclusion

There is a distinct and urgent need to amend curricula to provide more emphasis upon, and preparation for, work. The predominant option propagated by the school system is college-oriented, thus leaving the student with little opportunity to exercise other next-state options. Moreover, the general curriculum places too little emphasis upon student next-state and does not seem to promote the exercise of freedom and responsibility in the school as a means of learning the significance of these terms.

For elementary and junior high school children, there is a need to develop a greater appreciation of the world of work and an understanding of how the student ultimately will play a role in that world.

For high school students, there is a need to increase vocational offerings, and a need to involve students much more in the design of their educational programs to commodate to their capabilities and interests.

Recommendations

Since the schools are much more heavily involved in teaching through the use of prepared instructional materials than in generating such materials, the Ohio Department of Education should press the State and Federal Government to give renewed emphasis to curriculum-materials development centers that will help fill the need for vocational teaching materials, as recommended in the Barlow report*.

Plans should be drawn that will permit vocational education in Ohio to offer broadly based exploratory opportunities for many ninth and tenth graders, since many of these do not have adequate options in these grades. For example, a course dealing with the professions might appeal to students who plan to attend college. The rate of expansion should be limited to coincide with the development of suitable curriculum materials. As such materials are developed for ninth- and tenth-grade levels, it will become feasible to modify offerings in the eleventh and twelfth grades to allow for somewhat more emphasis on traditional academic subjects as well as music, athletics, and other activities that would provide a wider range of opportunities to the students.

Conclusion

A high proportion of high school students in Ohio enter the labor market without marketable skills for employment. Technical institutes may provide, for many of these students, a route to employment.

Recommendations

As noted in Section III, technical education is one option that the student can exercise following graduation from high school. More information concerning the nature of technical education should be made available to high school students. Some dialogue should evolve between the State Department of Education and the Ohio Board of Regents to help assure that connections between vocational education programs and technical institute programs are clarified for parents and students who need such information as early as the ninth grade in order to visualize future patterns. Alternatively, this concern might be appropriately resolved by the Commission on Vocational and Technical Education under the terms of the Ohio House Bill No. 531, recently enacted by the Ohio legislature.

Conclusion

Vocational education, over the long run, should come to be viewed not as a separate aspect of education, but as an

*"A Guide for the Development of Curriculum in Vocational and Technical Education", Division of Vocational Education, University of California, Los Angeles, California, June, 1969.

integral part of the total educational array open to the student. This means that in need-assessment studies and in planning, vocational education preferably should be studied as a part of the larger study of how education is conducted.

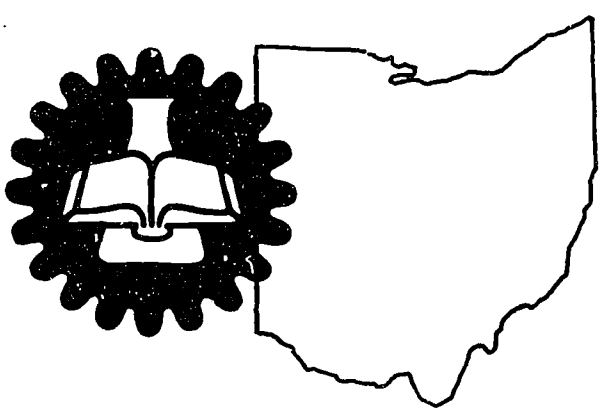
Recommendation

Study should be given to the long-range possibility of replacing the 4-year high school concept with a concept whereby each student develops, in consultation with parents and the school, a set of personal objectives that get translated into a high school program. The satisfaction of these objectives as measured by satisfactory program completion could represent the requirement for graduation from high school. By this means, the student would not be obligated to spend any set period of time in high school and would be graduated with a diploma showing his objectives and how these have been satisfied in school.

Such a system, seemingly, could be broad enough to accommodate all the present educational programs of schools but could eliminate the administrative rigidity that traditionally has characterized the high school. It might eliminate many of the problems now besetting the schools. It does not appear, however, that it could be carried out only for vocational education; it would require, in the interests of equity and effectiveness, that the total pattern of high school education be modified to correspond more closely with the needs of students as individuals. It also would require a new value orientation on the part of colleges, technical institutes, and employers as to what constitutes suitable preparation for entry. Such a scheme would probably have been impractical before the invention of electronic data-processing equipment, as the keeping of appropriate records probably would have been financially impractical.

With this arrangement, objectives should be modified, as necessary, as the student matures and his capacities become more fully developed and clarified.

PHASE I
AUXILIARY PERSONNEL
DATA PROCESSING
EDUCATIONAL TECHNOLOGY
SCHOOL FACILITIES
LIBRARY MANPOWER
PUPIL TRANSPORTATION
VOCATIONAL AND TECHNICAL EDUCATION
SUMMARY REPORT



PHASE II
LIBRARY SERVICES
REGIONAL SERVICE CENTERS
PRESCHOOL EDUCATION
• VOCATIONAL EDUCATION
EDUCATION FOR THE BLIND AND DEAF
SUMMARY REPORT

BATTELLE MEMORIAL INSTITUTE
COLUMBUS LABORATORIES
505 KING AVENUE
COLUMBUS, OHIO
43201

OHIO DEPARTMENT OF EDUCATION
65 SOUTH FRONT STREET
COLUMBUS, OHIO
43215