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RESEARCH VISIBILITY, 1967-68, REPORTS ON SELECTED RESEARCH STUDIES IN VOCATIONAL, TECHNICAL, AND PRACTICAL ARTS EDUCATION.

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THE COMPLETE TEXTS OF "RESEARCH VISIBILITY" SECTIONS PUBLISHED IN THE NINE ISSUES OF "AMERICAN VOCATIONAL JOURNAL," SEPTEMBER 1967 THROUGH MAY 1968 ARE PRESENTED. THE INITIAL SOURCE OF DIRECTION IN DETERMINING APPROPRIATE THEMES AND SUBTOPICS FOR EACH ISSUE WAS THE PANEL OF CONSULTANTS' REPORT, "VOCATIONAL EDUCATION FOR A CHANGING WORLD OF WORK." THE REVIEWS INCLUDE RESEARCH IN THE AREAS (1) HIGH SCHOOL AGE YOUTH, SEPTEMBER 1967, (2) PEOPLE WITH EDUCATIONAL NEEDS BEYOND HIGH SCHOOL, OCTOBER 1967, (3) YOUTH WITH SPECIAL NEEDS, NOVEMBER 1967, (4) YOUTH AND ADULTS UNEMPLOYED OR AT WORK, DECEMBER 1967, (5) TOWARD TEACHING EXCELLENCE, JANUARY 1968, (6) CURRICULUM DEVELOPMENT AND INSTRUCTIONAL MATERIALS, FEBRUARY 1968, (7) VOCATIONAL GUIDANCE, MARCH 1968, (8) LEADERSHIP AND ADMINISTRATION, APRIL 1968, AND (9) RESEARCH AND EVALUATION, MAY 1968. EACH SECTION CONTAINS GENERAL DISCUSSION OF THE MONTH'S THEME, THE SYNTHESIS OF RESEARCH, THE COLUMN "PLAIN TALK" AND A BIBLIOGRAPHY OF RESEARCH, DEMONSTRATIONS, AND INSTITUTES IN PROCESS. THIS DOCUMENT IS AVAILABLE FOR $1.25 FROM AMERICAN VOCATIONAL ASSOCIATION, 1510 H STREET, N.W., WASHINGTON, D.C. 20005. (MM)

RESEARCH VISIBILITY

1967-68. Reports on selected research studies in vocational, technical and practical arts education. Reprinted from the AMERICAN VOCATIONAL JOURNAL.

INTRODUCTION

Research Visibility is a project of the American Vocational Association. Cooperatively financed by the U.S. Office of Education and AVA, its purpose is to give national visibility to significant research in vocational education.

This volume contains the complete texts of Research Visibility sections which were published in the nine issues of American Vocational Journal, September 1967 through May 1968. In each issue, the studies reported were selected for their relevance to a major theme—"High School Age Youth" in September, "Persons With Special Needs" in October—and so on throughout the year. As studies reported do not represent all research relating to vocational education, readers should be familiar with other sources of information, particularly the series of ERIC publications, such as "Research in Education," "Abstracts of Research and Related Materials in Vocational and Technical Education," and "Abstracts of Instructional Materials in Vocational and Technical Education."

An initial source of direction in the determination of appropriate themes and sub-topics for each issue has been the Panel of Consultants Report, "Education for a Changing World of Work." The 1968 Report of the Advisory Council on Vocational Education, "The Bridge Between Man and His Work," was also used for topical organization as soon as it became available.

During the second year of publication—September 1968 through May 1969—the major themes and topics will reflect the issues and conditions of the times. Topics will include "The Crisis of the Cities and the Rural Disadvantaged," "The Vocational Needs of Women," and "The Preparation of Professional Personnel."

Our principal aim in inaugurating the Research Visibility section has been to provide a meaningful source of research related information. It is my sincere wish, therefore, that this first annual consolidation will prove to be a valuable additional service.

Lowell A. Burkett

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Executive Director
American Vocational Association

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RESEARCH VISIBILITY

SYNTHESIS / APPLICATION / DISSEMINATION

•"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633; "Synthesis and Application of Research Findings in Vocational Education").

VOCATIONAL EDUCATION IS PEOPLE

HIGH SCHOOL AGE YOUTH

IN THE BEGINNING . . .

• A Panel Reports

" . . . The basic purpose of our vocational education effort is sound and sufficiently broad to provide a basis for meeting future needs. However, the technological changes which have occurred in all occupations call for a review and reevaluation of these (National Vocational Education) acts with a view toward modernization . . . " With this thought, President John F. Kennedy in his February 20, 1961 Message on American Education to Congress, requested the Secretary of Health, Education and Welfare to convene a representative advisory body of concerned and knowledgeable persons, representing all vocational fields and cross-sections of the American people, to make recommendations for improving and extending vocational education programs and services.

Thus, a "Panel of Consultants" on Vocational Education was formed to carry out the President's mandate for bold, progressive action programs to serve adequately the needs of more and more people in a constantly changing technological society.

Convinced that vocational and technical education are sound investments in the people who constitute this Nation's most priceless resource, and that the goal of equality of educational opportunity for all the children of all the people is attainable, the Panel analyzed the people to be served.

Further, to serve people they identified the kinds of services directly bearing on the preparatory, retraining and upgrading functions of vocational education that needed strengthening.

Research and Development Projects Area One: High School Age Youth

Vocational and Practical Arts Fields, Related Services and Persons Served by R&D

- Agriculture
- Business and Office
- Distribution and Marketing
- Home Economics
- Health
- Industrial Arts
- Trades and Industrial
- Technical
- Vocational Guidance

* Teachers

* Counselors

* Teacher Coordinators

* Supervisors

* Administrators

* Teacher Educators

* Curriculum Coordinators

* Human Resource Counselors

* Manpower Personnel

* Labor Market Analysis

* Kindred and Related Services Personnel

RESEARCH VISIBILITY reflects the continuing leadership to vocational and practical arts education of Dr. C. Thomas Olivo, Director, Division of Industrial Education, State Education Department, University of the State of New York.

The organization for the monthly series of this publication, the pattern for reporting and, importantly, the complete writing of this issue represent his work.

PEOPLE ARE TO BE SERVED. . .

After the Panel's recommendations were reported to Congress, the legislature and the President captured the significant expressions of need and ways in which these needs could be met. The Vocational Education Act of 1963 was thus drafted and passed by an almost unanimous vote.

In essence, the Panel and the Act reported that the people to be served fall roughly into four major groups:

- young people of high school age who are preparing to enter the labor market or to become homemakers;
- youth and adults who have completed or left high school and are full-time students preparing to enter the labor force;
- high school age youth with academic, socioeconomic, or other handicaps that prevent them from succeeding in the usual high school program of vocational education; and
- youth and adults who are unemployed, or need retraining, or upgrading, to extend their work skills and technical knowledge to achieve employment stability or to move into higher level jobs.

INSTRUCTIONAL EXCELLENCE IS NEEDED. . .

Through quality of instructional programs, certain services had to be strengthened. The Panel said that instructional excellence is directly attributable to:

- teacher excellence;
- excellence in curriculum planning and instructional materials development;
- the quality of total human resource services, including continuous vocational guidance and counseling by qualified and knowledgeable persons (utilizing the total supportive resources of a community, state, and region);
- the nature of leadership development plans and the degree to which qualified potential leaders are identified; and
- the excellence of a planned and correlated progressive program of research, evaluation, demonstration and pilot programs, and innovations directly related and applicable to vocational education. Finally, excellence depends on the vigor with which all of these services are encouraged and supported.

THE AUTHORITY TO ACT . . .

"To strengthen and improve the quality of vocational education and to expand the vocational education opportunities in the Nation. . ." the Senate and House of Representatives of the United States in Congress assembled, passed, and the President signed into law on December 18, 1963, what became known as the Vocational Education Act of 1963.

The work of the Panel had materially aided the drafters of the new legislation. Right at the beginning, the Act's statement of purpose captured the intent of the soul-searching convictions about people to be served and services in vocational education essential to meet their needs. The purpose is cited here in full because it is within this context that major research effort should be directed if the intent of the people, represented through their legislators, is to be fulfilled.

> . . . SECTION 1. It is the purpose of this part to authorize Federal grants to States to assist them to maintain, extend, and improve existing programs of vocational education, and to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the State—those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, and those with special educational handicaps—will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training . . .

Now under the use of Federal Funds in what is known as "Section 4 (c)" of the Act, provision is made for the United States Commissioner of Education to use up to ten percent of the sums appropriated ". . . to make grants to colleges and universities, and other public or nonprofit private agencies and institutions, to State Boards, and with the approval of the appropriate State Board, to local educational agencies, to pay part of the cost of research and training programs and of experimental, development, or pilot programs developed by such institutions, boards, or agencies, and designed to meet the special vocational education needs of youth, particularly youth in economically depressed communities who have academic, socioeconomic, or other handicaps that prevent them from succeeding in regular vocational programs."

IMPLEMENTING THE LAW

The Act, which is also identified commonly as Public Law 88-210, charged the United States Office of Education with the responsibility of carrying out its provisions. Thus, the administration of Section 4 (c) has been delegated to the Bureau of Research and through it to the Division of Comprehensive and Vocational Education Research (DCVER). It should be noted that the Bureau and the Division carry out similar research and development functions for the Office of Education utilizing other sources of Federal funds.

Particular facets or major activities of the total research effort are handled in the Division by what are known as "branches." The newly restructured DCVER has four such branches. These are identified as: (1) the Basic Studies Branch, (2) the Instructional Materials and Practices Branch, (3) the Organization and Administration Studies Branch, and (4) the Career Opportunities Branch.

The functions of the Division may be classified roughly as starting with the "mission" stage, then proceeding through program definition, development, implementation, dissemination, and evaluation to the final one of determining future actions following the completion of a project.

SUPPORT OF INSTITUTIONAL PROJECTS WITHIN STATES AND REGIONS

The Division of Comprehensive and Vocational Education Research provides funds to support institutional activities, referred to as "institutional support." A second classification of research investment deals with the support of projects by individuals: "individual project support."

The institutional support group includes: (1) Research Coordinating Units, (2) Vocational Research Centers, and (3) Teacher-Supervisor-Administrator Inservice Institutes.

Research Coordinating Units

Cooperatively between the DCVER and State Education Departments, Research Coordinating Units (RCU) have been established in 44 states. Their common purpose, stated briefly, is to stimulate, encourage, and coordinate research activities among all agencies and groups who have an interest and responsibility for vocational and technical education within a state.

The functions of RCU's may include • the formation of truly representative and knowledgeable State Research Advisory Committees for Vocational Education • the marshalling of total resources for major research and demonstration effort • the identification of significant researchable issues • the formulation of vocational education research philosophy • the development of research proposals • The forwarding of research and related materials generated within the state to the ERIC Clearinghouse for Vocational and Technical Education dissemination of information; and the like.

National Research Centers

Institutional support includes also the two Vocational and Technical Education Research Centers which have been established: one at North Carolina State University, Raleigh; the other, Ohio State University, Columbus. These Centers concentrate on research which may cut across all vocational education fields and services or may deal with specific issues within a particular field.

One objective is to stimulate and strengthen applied research and development on State, regional and National bases. The Centers also lend encouragement to higher education institutions to become involved in the research effort. And, as may be implied, they conduct research studies to gain and apply new knowledge and to upgrade potential leadership through advanced study and inservice institutes, and assist in the dissemination of research/demonstration information.

The emphasis of the North Carolina Center for Research, Development and Training in Occupational Education is on vocational problems of the South. However, it engages in research activities in other areas throughout the country and translates findings of national significance.

The Center for Research and Leadership Development in Vocational and Technical Education at Ohio State University engages in research, development and training projects which focus on problems of national significance. In addition, it promotes a wide range of leadership development activities in vocational and technical education; and is responsible for a national information retrieval and dissemination system linked with Central ERIC of the U. S. Office of Education.

SUPPORT PROJECTS BY INDIVIDUALS

Individual research project sponsorship has been encouraged by the Division of Comprehensive and Vocational Education Research. Together with its Advisory Council, DCVER has defined five priority areas which, if used as a guide, they believe will insure that individual project approvals are relevant to significant needs in: (1) Program Evaluation, (2) Vocational Education Curriculums, (3) Vocational Education Resources Development, (4) Vocational Guidance and Career Choice Processes, and (5) Adult and Continuing Education.

A paper titled: "Vocational, Technical and Adult Education Research Programs, 1967-1968," issued by the Division of Comprehensive and Vocational Research Education, Bureau of Research, U. S. Office of Education, 400 Maryland Avenue, S. W., Washington, D. C. 20202, further defines these areas for the fiscal year 1968 (July 1, 1967 to June 30, 1968).

Those interested in the form and nature in which project proposals should be prepared and submitted may ask for a copy of the "Office of Education Support for Research and Related Activities" from the Division. A list of research, development and training activity brochures is also available upon request to the Division.

• THE AVA RESEARCH, DEVELOPMENT, SYNTHESIS AND DISSEMINATION PROJECT

Soon after funds were appropriated for research and development activities under the new Act, vocational educators expressed concern. They were not informed fully about procedures and directions of major need and participated in a very limited way in policy decisions. Yet, the vocational educators represent the people on operating levels with responsibility to provide leadership and substance to vocational education programs. The combination of feeling removed from research efforts and the lack of visibility to research, which by Law is intended to relate to the everyday operation of vocational education programs, to say it succinctly, caused the professional concern of vocational educators to turn to action.

. . . A Professional Association Acts. . .

The American Vocational Association thus continued to press its early recommendations related to decision-making activities and the early dissemination of research findings. It submitted a project, which is identified as "Synthesis and Application of Research Findings in Vocational Education," for partial funding under Section 4 (c). Its purpose

relates to reviewing, selecting, analyzing, synthesizing, translating and the early reporting of research and demonstration projects and activities. The audience to be reached are teachers, coordinators, supervisors, administrators, teacher trainers, guidance personnel, and researchers within each vocational field, and others concerned with manpower development, including the whole gamut of human resource services.

The *American Vocational Journal* will serve as the disseminating medium to reach monthly over 40,000 professionals who are in the best positions to utilize this information through direct application. "Research Visibility" will be included as a unique feature in a separate section of the "Journal" starting in this issue and continuing monthly under its present contract through May 1968, and to May 1969 under a subsequent contract.

. . .Vocational Education is People. . .

In determining what reporting pattern to follow, it became crystal clear that the Panel's nine major areas of recommendation provided a natural structure. After all, these were the building blocks in the Act! Because of this, present plans call for focusing attention in each one of the nine issues between September 1967 and May 1968 on significant research and demonstrations related to one of the major areas.

The theme of the first four issues of "Research Visibility" for September, October, November, and December is "Vocational Education is People . . . ." As might be expected the September report centers around "High School Age Youth"; October, ". . . People With Educational Needs Beyond the High School"; November ". . . Youth With Special Needs," and December, ". . . Youth Unemployed or At Work."

Toward Program/Service Excellence

The second series is intended to direct attention to those projects related to strengthening the "services" identified by the Panel. Therefore, the theme of the 1968 series will be: "Vocational Education Requires Services . . . ." The first report in January will identify significant studies, research demonstrations, teacher institutes and leadership conferences, which contribute " . . . Toward Teacher Excellence"; February, " . . . Toward Excellence in Establishing Curriculum Laboratories and Developing Instructional Materials"; March, " . . . Toward Excellence in Human Resource Services" in which vocational guidance, and counseling and ancillary services are considered in an enlarged context; and April, " . . . Toward Excellence in Leadership Development." Finally, in May the issue will zero in " . . . Toward Excellence in Research, Demonstration and Evaluation."

Reports on RCU and Research Centers

Institute support activities of the DCVER, like the Research and Coordinating Units of the States and the two National Research Centers for Vocational and Technical Education, will be reported in the April and May issues.

Primarily, what is reported will center on those projects and activities which were accepted, processed, funded, and coordinated by the United States Office of Education, Bureau of Research, Division of Comprehensive and Vocational Education Research. These will be supplemented in later issues of "Research Visibility" by important listings to related studies, research, institutes, etc., conducted under such other auspices as higher education institutions, industrial organizations, private agencies, foundations, other governmental departments, and by individuals involved in advanced study.

To keep current on research and demonstration activities that are completed each month, each issue of "Research Visibility" will include those that relate to major areas and topics reported in earlier issues.

How far back to begin? Because of time, space, and other limitations, the September through May issues will include projects funded by the United States Office of Education (DCVER) from July 1, 1965 to the publication date of each issue of "Research Visibility." Beyond that, and whenever possible, earlier significant studies may be included.

• SUPPORTIVE SERVICES TO RESEARCH AND DEVELOPMENT

The leaders within the American Vocational Association long ago recognized the master role that pure and applied research, experimentation, demonstration, pilot programs, and leadership institutes play in a constantly evolving program. Hence, for many years prior to the Vocational Education Act of 1963, annual and special meetings were planned to encourage, support and provide the catalyst for dealing with needs, organization, techniques, resources, and the like.

The Strength Within Each Vocational Education Field

Out of these actions grew an organizational structure of Divisions to represent such vocational and practical arts fields and services as: agriculture, business, distribution, home economics, trade and industrial, industrial arts education, and guidance. Added to these are National associations of administrators, technical educators, and researchers. Others may be added as changing times demand. Each Division now includes within its structure a Research Committee which in most instances reports to a Policy and Planning Committee, and ultimately, to the total membership within that special field of service and the supportive association members.

Representative Vocational Education Research Committees

The Division Research Committees include broad representation. The membership may include a State director of vocational education, state supervisor and teacher trainer, a specialist from the American Technical Education Association; teachers, supervisors and local administrators; a regional representative, and supportive personnel. Such agencies as the Division of Manpower and Employment Statistics of the Department of Labor, the Chamber of Commerce, and others are represented. Importantly, the instructional specialist within the Division of Adult, Vocational, and Library Services and another from DCVER, U. S. Office of Education, may be members.

All in all, these committees represent knowledgeable, operational people with genuine concern for research and demonstrations that may be applied to strengthen services in each vocational and practical arts field.

A group composed principally of full-time research personnel has recently been formed as the American Vocational Education Research Association, affiliated with the AVA.

• TIE-IN WITH NATIONAL DISSEMINATION SYSTEMS

Two problems have plagued professional people about research. The one relates to the early release of information to those who need to know the nature and findings of scholarly effort in order to resolve or gain new knowledge about a specific problem or issue; the other, availability. In reaching professional persons who are served by the *AV Journal.* "Research Visibility" will disseminate this information quickly.

Also, now that a national comprehensive information system (ERIC) to serve American education has been established by the U. S. Office of Education, otherwise unavailable materials now are readily obtainable at reasonable cost. It will be possible to obtain a miniatured duplication on film called "microfiche" of most completed educational research, or a facsimile report which is an almost full-sized hard copy.

"Research Visibility" and "ERIC"

The U. S. O. E. National Educational Resources Information Center System, known as "ERIC" serves the functions of gathering, storing, retrieving, disseminating, and synthesizing information on research reports and other related documents in the educational field.

Completed projects that may not have been processed through ERIC or were not available at publication time, and those that are in process will be identified by title, principal investigator, and address. Projects will be reported with an acquisition number when completed and they become available through ERIC.

Of particular concern to those in vocational, technical and practical arts education and supporting services is the ERIC Clearinghouse at Ohio State University. This is a valuable integral function of the Center for Vocational and Technical Education. As an approved component of the National ERIC System, the Clearinghouse is one of eighteen that are spread throughout the country.

Each Clearinghouse concentrates on and is responsible for reporting research and related documents for a particular field or aspect of education. This is provided through the monthly Government Printing Office Publication, "Research in Education." Abstracts of materials acquired by the eighteen Clearinghouses, abstracts of completed projects, and projects initiated by the Bureau of Research are to be found in this publication.

The Vocational and Technical Education Clearinghouse is working with State Research Coordinating Units to develop more effective disseminating procedures. Thus, RCU personnel will be able to assist more directly those who are engaged in vocational and technical education in the area served by the Unit.

VOCATIONAL EDUCATION IS PEOPLE . . .

SYNTHESIS OF RESEARCH • RECOMMENDED APPLICATIONS

HIGH SCHOOL AGE YOUTH

It is always dangerous to classify research and demonstration projects narrowly. Their boundaries oft-times defy dimensioning. Because of this, it should be kept in mind that the original investigator's classification of a project may differ from the grouping in which it is included in "Research Visibility." More important is the accurate reporting out of the results of all research effort so that others may share and apply new experiences and knowledge.

The research and development projects that are completed or are still in process, which were approved by the DCVER, Bureau of Research for fiscal years 1965, 1966, and 1967, were reviewed. From all of these, research projects, which may affect programs and services for high school age youth, were selected and are reported in this issue under one of six major topics.

To repeat, these six major topics represent recommendations upon which the Panel elaborated as it focused attention on special issues relating to the strengthening of vocational education programs and services for this particular age group.

The reports that are included under each topic synthesize salient findings from completed and available research projects and teacher institutes. Other approved and completed research and demonstration projects that were not available for review and reporting, as well as those still in process, are given in the Bibliography with sources from which more information may be obtained.

Topic One: ACCESSIBILITY to enriched and expanded vocational education program offerings which meet the demands of specially talented youth as well as those with special needs. (Studies 1, 2, 3 and 4. See also, studies 12 through 15, in process).

• 1. "THE SUMMER STUDY ON OCCUPATIONAL, VOCATIONAL AND TECHNICAL EDUCATION (PLANNING CONFERENCE, FINAL AND SUMMARY REPORTS) BY FRANK.

Rapid and explosive changes are taking place in educational concepts, methodology, content, and even in the arrangement of the bricks, mortar and steel of the whole educational enterprise. As educational systems more intelligently and adequately serve the needs of greater numbers of people over more years and for longer periods of time in their lengthening life spans, there is an ever-expanding circle of responsibility and service.

In a growing functional relationship between general education with its basic aims of developing civic and social competence, and that of vocational education as related to preparing for, retraining in, or upgrading for a constantly changing labor market, is there need for educational reform? Must there be changes in the organization and management of elementary, junior and senior high schools, and the total educational system? Are the physical plants and instructional facilities and materials adequate now and for the future?

Also, what about the preparation of teachers, coordinators, administrators? Do they have the broad vision of what really constitutes cross sections of people and the kinds of education and training to suit their needs? Would changed patterns of professional preparation improve the effectiveness of the teaching/learning process and provide more efficient organization and administration? These are some of the basic issues with which Frank and his committees worked. The answers suggest educational reforms which cut right across the whole educational system.

Updated Educational Philosophy

Since education is built upon philosophy, the "Summer Study" participants either accepted or evolved at least six philosophical foundations—their keystones for change. Briefly stated, they agreed on: (1) accessibility to quality vocational education programs; (2) programs to meet the full spectrum of capabilities of youth and adults; (3) coupling vocational and general education as integral parts of a common core within a total educational program. This core then forms a base for continuing education on-the-job or in another institution; (4) open-ended continuous vocational education and training opportunities; (5) early orientation to vocational education through exploratory occupational experiences in a setting where the traditional division of education into separate educational subject disciplines is replaced by an educational "mix," starting in the elementary school; and (6) instructional flexibility to prepare students for adaptation to constantly changing employment patterns.

Some Innovations to Consider

Many possible innovations (which, naturally, could not have been tried or validated) are reported in the study. Out of these, four major ideas are cited. The first one relates to the forgotten youth within the "80 to 85% 'gray' area" of the student population who drop out of school before completing secondary school or graduating from college.

Such an indictment in this advanced technological age against all segments of society says that educational and training programs are not adequately serving the greatest numbers of people. It is also an exciting challenge.

Secondly, the elements of freedom to experiment and to gain new knowledge and experiences were reflected in the recommendation for establishing Area Research and Development Cen-

ters. Here it should be reported editorially that the idea supports the Rutgers' Study to Establish Technical Teacher Technology and Resource Centers, and the establishment of the two National Research Centers for Vocational and Technical Education, and the State Research Coordinating Units (RCU), funded under Public Law 88-210.

A third area of recommendations relates to "learning centers," and adaptations of team teaching. Organizational-wise the "House Plan" was suggested for dividing the student body (within large schools with capability to provide many vocational curriculums) into smaller, more manageable "houses" of students, but with increased and adequate staffing for all instructional and supportive services.

Finally, to give substance to educational reform, the focal point had to center on curriculum planning and instructional materials development. At this important juncture some sample teaching units were developed around a "materials, systems and processes" interdisciplinary teaching/learning approach. This is the crucial key to the proposed reforms.

Who is to Follow Through?

With the study completed, who should now be concerned about the recommendations and their possible application, rejection or modification after further study? Well, it is evident that the study may serve as a resource guide on local and state levels. The findings are equally valuable to general and vocational education administrators, curriculum specialists, guidance and human resource personnel.

Qualified principals of Area Vocational Centers of Technology and Education (an accurate descriptive title for the range of vocational education services to be provided) certainly will want to look at the report, alone, or with their overall and specialized advisory committees who may be suggesting an assessment of a total educational system.

While many parts are controversial, vocational teachers and others involved in advanced studies will find the guide rich in challenging innovative ideas. These need further experimentation, demonstration and research by operational level qualified vocational educators. Vocational teacher educators, supervisory and administrative personnel within State departments of education, labor market analysts, and manpower coordinators will find organizational, administrative and human resource issues that require further definition, analyzing and try-out under actual conditions.

• 2. "AN EIGHT WEEK SUMMER INSTITUTE PROGRAM TO RETRAIN OFFICE EDUCATION TEACHERS FOR TEACHING BUSINESS ELECTRONIC DATA PROCESSING" BY KOSCHELER OF FLORIDA (2A); WATSON OF CALIFORNIA (2B); BREESE OF WISCONSIN (2C); CARTER OF COLORADO (2D); and VALENTINE OF NORTH CAROLINA (2E):

One pattern that has proven successful for developing skill and technical know-how to keep instruction updated is to provide the opportunity for qualified teachers to participate in institutes and workshops. Usually conditions, equipment and materials simulate those found in the occupational field. Equally important is that once these capabilities are developed in leaders, they need to be applied as quickly as possible in a local program.

In the last few years, teachers in the field of business and office education and related services have been able to participate in increasing numbers in summer institutes. Fortunately, reports were prepared for at least five regional institutes that were funded in 1965 under Section 4 (c). Since recruiting and enrolling practices were similar and the purposes and outcomes (except for special emphasis particular for each geographic area) were comparable, this one report relates to all institutes.

New Experiences, Updated Courses

Built on experiences with earlier teacher institutes, those of 1965 were designed to upgrade certified, experienced business and office education teachers and some from mathematics. The institutes provided experiences to develop new skills in content, new teaching methodology and new instructional materials related to evolving electronic data processing occupations. These basic skills were developed for application in business and office education programs, extending them to include introduction to business data processing, electronic accounting machines, data processing applications, and beginning computer programming courses.

Teachers who had already dedeveloped competencies to this level were able to gain additional skills and technical knowledge to apply in teaching "second year" advanced courses in computer programming, programming systems, business systems design and development, and advanced programming systems.

A "hands on" approach made it possible for the teachers to execute problems and programs which they had prepared on actual electronic data processing equipment. Field-directed trips to businesses and offices provided added experiences with practical applications under wage-earning conditions. Considerable instructional and other resource materials were developed and obtained for use in home school programs.

The teachers in each institute reported three major successes. • Direct and almost immediate application of the new skills and technology was made by the majority of teachers when they returned to their schools. Thus, business and office education programs were extended and updated to include electronic data processing courses. • The institute technique of updating teachers of business and office education subjects to develop necessary skill and content competencies proved to be desirable and functional. However, because of time limitations, teachers will need to add to the foundational summer institute experiences under actual business/office conditions. • The nature, quality and quantity of teacher-prepared or commercially available instructional and other resource materials have reduced the implementation time lag so that training programs may be started quickly.

What is Available

As pointed out in this issue, it is apparent that instruction in electronic data processing will be provided within secondary schools and post-secondary institutions. Teachers with practical experiences in this field, teacher educators, vocational curriculum development specialists, supervisors, administrators, and guidance personnel on local and state levels will find the organizational plans for the institutes, job survey information, course outlines and teacher guide materials with schedules, teacher papers on various aspects of EDP instruction, bibliographies, etc., as contained in each report of value. The reports may provide a base for planning extensions of business and other office training

programs to include electronic data processing.

• 3. "THE IDENTIFICATION OF COMMON COURSES IN PARAMEDICAL EDUCATION" BY FULLERTON.

Plain facts about shortages of trained persons in the paramedical fields are before the public. Some groups close to the problem feel that the fragmented system of education and training with its tremendous drop-out rates, high instructional costs, limited qualified staff and instructional facilities, are contributing factors.

Therefore, 20 paramedical fields were considered in this study. The researchers wanted to learn whether common elements are contained in curricula for paramedical careers. If identified, would it be feasible to consolidate the content within similar courses for two or more curriculums? And, if common elements were to be combined and still meet the challenge of continuously changing requirements for medical care, would greater efficiency result?

What Paramedical Persons Learned

Paramedical educators were involved who had responsibilities for programs ranging from universities to high schools. They were charged with the gathering of curriculum materials from throughout the United States in the paramedical field in which each specialized. Further, each member was to analyze, classify, and interpret the materials. Paramedical curricula for such groups as registered and licensed practical nurse, technician, therapist, laboratory assistant and aide were included in the study.

The mass of information gathered required the use of a computer. Printouts of selected data are to be found in the report. As had been expected, the proliferation of course titles and the extreme variations of course content and clock hours of instructional time, even within the same field, indicated a general absence of standards. These extremes continued across different paramedical fields and in lecture, laboratory and in clinical practice experiences!

A surprising statement is found on what should be done next. A recommendation is made that a job specification/analysis approach be taken to determine teaching/learning experiences (courses, curricula, instructional facilities) needed to develop occupational competency. It should be noted editorially that the time-proven job and occupational analysis technique has been a cornerstone for developing programs in most vocational fields.

Some Applications of the Study

At this point some applications may be suggested. Curriculum coordinators, teachers, supervisors, vocational guidance counselors, and others who are responsible for program development, facilities planning, staffing and student selection in health and medical occupations will find the results useful for preliminary local and state planning efforts.

Teacher trainers may want to study changed requirements based on the consolidation of courses and parts of curricula. Area directors of vocational education may consider extended programs with more effective utilization of instructional plant, facilities and staff.

• 4. "A FUNCTIONAL ANALYSIS OF PARAMEDICAL OCCUPATIONS AS FOUNDATION FOR CURRICULUM DEVELOPMENT" BY DECKER.

Those persons who are responsible for curriculum changes for paramedical careers will be interested in this brief report of a second research project. Since this was not scheduled for completion until July 30, 1967, a report was not available for detailed analysis. However, the principal investigator gave four prime purposes for this study. (1) An attempt was to be made to develop procedures whereby the tasks to be performed in two paramedical occupations could be analyzed into sets of clearly defined problems, using strictly operational terms. (2) Then, field investigators were to be trained in these procedures for gathering, analyzing and translating data. (3) As the tasks were functionally defined, these were to be related to course content and sequences in an instructional program. (4) Finally, in the light of new findings, suggested revisions of curricula were to be proposed.

With this added information, concerned operating-level persons, like those referred to in the preceding research study by Fullerton, may want to cross-reference both pieces of research for possible organization, management and curriculum changes.

Topic Two: THE DEVELOPMENT OF SPECIALIZED VOCATIONAL SCHOOLS for metropolitan and enlarged areas with broad diversity of program offerings. **Note:** while the Panel of Consultants had emphasized the need and value of such schools, only two research projects were identified as applying specifically to this topic. However, since neither study was available for reporting, the project titles appear in Bibliography as being in process. (See studies 16 and 17).

Topic Three: MAINTAINING QUALITY STANDARDS •Student selection based on capabilities to profit by instruction •Awarding a meaningful certificate of completion that reflects occupational accomplishment with capability to hold a job •Follow-up studies to match educational programs against job-placement and job-holding ability •Continuous revision of course content based on valid occupational analyses •Developing working relationships with labor, management, industry and manpower to keep current on labor market developments and manpower specifications. (Studies 5 through 8. See also, studies 18 through 50, in process).

• 5. "EMPLOYMENT STATUS AND CHARACTERISTICS OF HIGH SCHOOL DROPOUTS OF HIGH ABILITY" BY FRENCH.

The economic survival of any nation lies in its wise development and utilization of its human resources. While stated over and over again, it is paradoxical that many people in general, persons of high or low estate, those with tremendous ability or serious disadvantages . . . all seem to shy away from the fact that students of high ability should prepare for and enter into the semi- or skilled trades, industries, home-related, agricultural, business, distributive, or technical occupations. And yet, without youth and

adults ranging the full spectrum of abilities, interests and aptitudes in the labor force, this Nation's economic and social well-being would be in jeopardy. Particularly is this true for jobs on the skilled and semi-professional levels and in foremanship, management and supervisory development.

That there is a significant number of "high ability" youth included among those early school leavers who have rejected the schools, is no longer debatable. The continuing annual reports to the President and Congress are very revealing of facts about manpower and education that once were hidden under carpets of administrative convenience. But, as chief school administrators, including leading vocational educators, seek more direct information and experiences upon which to build meaningful educational and training programs, the techniques, materials, and findings provide that much more of the answer to a complex human problem.

Building on the Work of Others

Prior to the work on this particular study, the efforts of earlier educators, manpower experts and research scholars on local, state, and national levels, were researched, reviewed and synthesized up to 1966. While there is no single way of accurately identifying "high ability" students, a beginning benchmark had to be established. One of the criteria for selection included a cut-off score of 110 as an intelligence quotient on tests that had been previously administered. To go back a bit, it should have been said that this in-depth study of a representative sample of dropouts was preceded by a statewide survey of the problem in Pennsylvania.

Who made the study? How many did it include? What did it prove? These and others are valid questions. In this instance, the field testing part of the study was done by long-time experienced guidance counselors, assisted by a handful of school psychologists and another of school principals. The study measured personality traits and goals of high ability dropouts; selected information such as school activities, home conditions, health, and made attitude inventories.

There were a few different approaches used like semi-structured personal interviews and those conducted via telephone calls to friends. Naturally, there was a vocational interest inventory taken which had its limitations by the popular vocational scales that were used, and the occupational knowledge of youth.

The researchers were trying to:

- factor out conditions and issues in general, and college preparatory and vocational education contributing to dropping out;
- determine the employment status of a representative group of intellectually able students who had dropped out in grades 9 through 12, and the employment levels of their parents;
- establish patterns of interest and personality;
- identify vocational fields and curriculums or courses for which training should be developed; and, finally,
- construct a measuring instrument to identify students who might benefit by a proposed training program.

Some Simple Findings

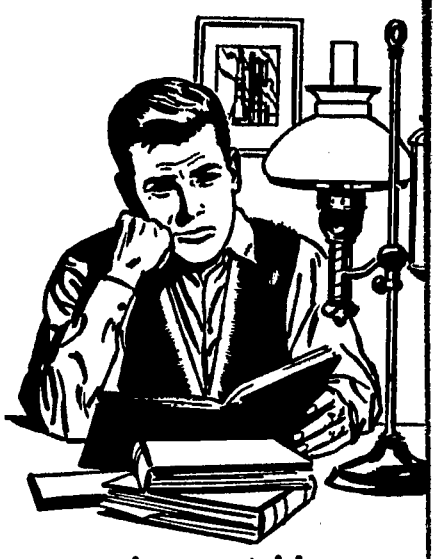
These are just a few of the findings of what high school dropouts of high ability are saying to guide the educators and the public!:

- A comprehensive functional system of vocational guidance is needed;
- Practical courses and experiences should be included early in a youth's experiences so that upon completion of a program a student may "live in a real world";
- Extended program offerings in skilled level occupations commensurate with the capabilities of these youth must be provided;
- A change in public apathy and attitude must evolve so that true values are placed on blue collar workers whose skills require the same degree of intellectual ability as white collar workers or those continuing into higher education; and
- Provide a more realistic balance between general education and complementary courses within a vocational education curriculum that ultimately leads to employment in jobs at skilled and semi-professional levels.

Foundation for Further Study

School administrators on local and state levels; human resource persons concerned with guidance, counseling and manpower issues and implications; and vocational and general education curriculum specialists will find the study helpful in broadly defining the nature and extent of curriculum change.

Researchers, potential employers, vocational advisory committees, and other groups concerned with the maximum development of youth with ability will also find the study foundational. Working with such a complex problem, a national or regionally coordinated plan for research and demonstration activities may be needed to validate the findings and assess other facets of the total problem.



Is there need, too, for a tremendous public information program aimed particularly at emphasizing work skills of this important group? Too many disregard the dignity of work . . . and that a Nation's greatness and survival depend on its skilled manpower. . . all of its manpower . . . the full spectrum!

- 6. "THE PREPARATION OF YOUTH FOR EFFECTIVE OCCUPATIONAL UTILIZATION: THE ROLE OF THE SECONDARY SCHOOL IN THE PREPARATION OF YOUTH FOR EMPLOYMENT" BY KAUFMAN AND SCHAEFER.

To what degree do secondary school vocational programs in agriculture, distribution, home economics, office occupations, technical, trade and industrial education meet the needs of students and the community? If the graduates of vocational and technical education programs were measured in terms of acceptance into and advancement in employment, would there be any difference with graduates of general programs and college preparatory programs "that feed into the employment stream?" Lastly, what kind of an image of vocational education do teachers, employers and union officials have? Stated simply, these were the three major problems.

The study reached into 25 high schools in nine large, medium and small-sized cities in New Jersey, Pennsylvania, Ohio and Maryland. The businessmen and labor people who were part of the visiting teams to the schools were looking for an on-site assessment of programs, organizational patterns, physical plant and instructional facilities, how students were selected, and the like.

They went into schools using evaluation materials which had been devel-

oped from such landmarks as the evaluative criteria found in the National Study of Secondary Education Materials and those of the Ohio Vocational Education Evaluation Series.

Program Insights of Graduates

What the graduates said through interviews and questionnaires provided insights into such issues as: job satisfaction, level of employment, school ratings, preparation for employment, etc. Further evaluation was made after conferences with employers, union officials, supervisors and school personnel. All told, there were over 5,000 usable interviews from graduates and over half again as many from supervisors. The returns represented a random sample in which 2,111 were received from graduates of vocational curriculums; 2,023 graduates of general education programs, and 1,047 college preparatory graduates.

To get at the problem of the image of vocational education a somewhat different pattern was followed. Here the returns from an attitude questionnaire were coupled with interviews with employers and union officials and the impressions as gathered by labor/management persons on visiting teams.

The three major issues were surrounded with satellite problems. For instance, when assessing vocational education programs such factors as adaptability and flexibility must be considered. And to apply any kind of valid judgment based on facts, it follows that studies of Census data must be made. These reveal what the community manpower trends are, the mobility and stability of the labor force, occupational distribution patterns, and a whole host of significant occupational information which bears on adaptability and flexibility.

People . . . Needs . . . Programs . . . Services

The research study recommendations which were grouped under major categories are reported at this time.

- In the first category are the recommendations that realistic vocational education and training programs, adequate to the needs of students and the community, must be provided for the full spectrum of abilities and aspirations of youth who must enter employment upon graduation.

Particular attention was called to: the needs of minority group students of average and above average ability; expanded program offerings to female students; and evolving occupations which require the development of skills and related technical knowledge that cut across two or more vocational fields. A call was made for the assessment of guidance, conventional teaching methods and materials and administrative decisions to develop functional programs and schedules.

- Another category contained suggestions relating to the administration of vocational education and to administrative leaders who are respected by labor and management for being occupationally competent and professionally prepared vocational educators. These administrative and supervisory positions should be at levels at least comparable to top-management administrators from education, business, industry and agriculture and with sufficient supportive staff to provide adequately for all essential vocational education and kindred services.

- Another group of recommendations dealt with the development of vocational teachers and administrators with an even higher level of sensitivity in conceiving, providing, and administering practical programs which meet the total educational needs of youth.

- Suggestions were made on the structure and use of vocational education overall advisory committees and special sub-committees to include representative, knowledgeable and concerned persons. These committees need to view the total educational enterprise, to advise and to counsel so that vocational education programs are constantly attuned to changing needs.

- At this point, recommendations were made for qualified vocational guidance personnel and services, realistic student-counselor ratios, counselors sensitive to the needs of students, and qualified to serve them.

Special attention was drawn to the needs of women, to new employment opportunities for minority groups in occupations where they may not have been employed previously; and even to early vocational orientation, beginning in grade schools.

- Another category related to placement in which the school assumes a more functional responsibility for initial placement and continuous counseling.

- Finally, the follow-up of graduates may provide essential feed-back to assess and modify programs.

Further Study of the Report

It is obvious that the study techniques, materials used and the results have implications for further review at local, state and national levels. They are of value to general and vocational education administrators as well as to teachers in business, agriculture and industry.

Human resource and manpower personnel, curriculum coordinators, guidance personnel and counselors, teacher trainers and curriculum specialists will certainly want to study the inferences drawn by the investigators in the perspective of their own experiences to determine what, when and how program changes should be made.

- 7. "THE CLASSIFICATION OF EDUCATIONAL OBJECTIVES, PSYCHOMOTOR DOMAIN" BY SIMPSON.

For many years, psychologists, researchers, curriculum specialists, and others, have studied "domains" in teaching and learning. Out of this effort, three major domains have been established. These are referred to in such professional terms as "cognitive," "affective," and "psychomotor."

The single word, "cognitive" relates to the processes and activities that take place in the development of intellectual skills and abilities which depend on recall or the recognition of knowledge. The "affective domain" relates to interests, desires, appreciations and attitudes.

Vocational educators, who teach according to the maxim: "learning to do by doing," are concerned mostly with the least explored of the three domains. The "psychomotor domain" centers around the manipulation of materials, equipment, apparatus, implements, and the like, and the development of muscular or motor skills. This study attempted to define general motor ability and to identify manipulative and body movements involved in executing identifiable tasks. In the teaching/learning process, the development of manual or manipulative skills proceeds on a continuum from crude, fumbling experiences requiring correction to a peak where a student perfects and develops the speed, skill and accuracy required for occupational proficiency.

The principal researcher believed that if a system of classification of educational objectives could be established in what is called a "taxonomy," teach-

ers, administrators, curriculum specialists, researchers, etc., would be able to plan learning experiences within courses and curriculums with greater precision.

The ultimate objective, of course, is to relate in a practical way how the educational forces on a student result in changed "behavior." In other words, how efficient and effective are the sum-total of educational experiences for an individual in developing capabilities needed for personal, civic and occupational competence?

Because of the exploratory and experimental nature of this scholarly research effort (which built upon earlier studies that were carefully reviewed) those involved were primarily teacher educators and other college personnel. Involvement of vocational educators at operational levels and from each vocational field was limited. A tentative, untried system for classifying educational objectives in the psychomotor domain was developed as basic to further study that can be conducted either for general and/or vocational education.

• 8. "A PROPOSAL TO PREPARE TEACHERS AND TO DEVELOP INSTRUCTIONAL MATERIALS FOR FOOD SERVICE OCCUPATIONS" BY HOLLANDSWORTH AND BARBOUR.

This "pilot endeavor" tried in an all-too-short three week "experimental workshop" to develop curriculum materials and to upgrade teachers for food service occupations. This impossible task started with a theoretical behavioral science approach.

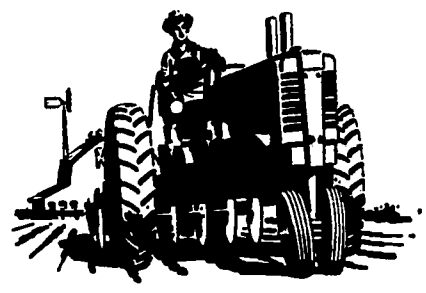
Then, clusters of jobs that might be grouped under production, sales or service occupations were to be analyzed from an interdisciplinary angle. This task was to be accomplished by teachers, employer representatives, curriculum specialists, and other knowledgeable groups from such fields as: home economics, business, distribution, trades and industries, and other specialties.

Specifications of workers, course content, teaching outlines, curriculum patterns and instructional materials were to be prepared. Even the development of teachers for new areas of instruction was to be accomplished. To make the problem more difficult, there was limited participation by "grass roots" knowledgeable and experienced operational level persons, particularly from the secondary schools.

Building on Proven Experiences

The report itself was critical of the extremely limited accomplishments. It may be noted editorially that vocational industrial teacher educators through years of experience with this kind of problem have developed a sophistication for forming and working with representative vocational advisory committees.

Further, they have had extensive experience making occupational studies, developing valid vocational courses based on trade and job analyses, organizing shops and laboratories to simulate actual occupational conditions, preparing current instructional materials and providing occupational upgrading inservice institutes for teachers. These are cited so that others undertaking similar studies and workshops may conserve human and material resources by building upon such experiences and understandings rather than to "rediscover America."



Topic Four: CURRICULUM PLANNING AND CORRELATION • The development of vocational education curriculums for a cluster of job titles • opportunities to advance to higher level jobs through advanced study • apprenticeship and other on-the-job programs. (Study 9. See also, studies 51 through 66, in process).

• 9. "A STUDY OF THE AVIATION MECHANICS OCCUPATION" BY ALLEN.

The vigilance needed to safeguard human life and comfort, important cargoes, capital investment, and National security, is provided by skilled persons in the aviation mechanics occupation. The capabilities of these skilled craftsmen and technicians to perform manipulative skills and to exercise mature judgment based on a solid foundation of related technical knowledge, once developed, must be kept current with an ever-evolving technology.

Since the inception of this industry, the public and private schools have trained students for employment as certified aviation mechanics. However, these efforts must be multiplied for preparing greater numbers of individuals to enter into the labor force, to retrain those whose skills must be updated, and to extend the work skills

and related technical knowledge of other skilled persons for advanced positions. Trite as it may sound, this calls for an acceleration and redirection of efforts, greater effectiveness in the teaching/learning processes, improved efficiency, and early inclusion in the curriculum of new techniques, materials, and industrial changes.

Different Teaching Levels/Methods

This National research project involved airlines and aviation companies employing certified air frame and/or power plant mechanics. Among other things, it defined the technical knowledge and skills that should be developed at different teaching levels, using different methods. The study also tried to answer the questions: "Are there sufficient similar teaching/learning elements that may be clustered into a common curriculum 'core'?" and, "What is the scope and range of training in industry?"

Concerned Professional Persons

Technically and mechanically oriented research analysts were the national field survey technicians. The report of the cooperative work by this group, the study team, and a representative National Industry Committee should be valuable to teachers, supervisors, curriculum specialists, industrial teacher trainers, and area vocational administrators concerned with curriculum development and program implications. Industrial training directors and other manpower development personnel in industry and employment services, and vocational guidance persons will gain new insights into educational and training specifications for the aviation mechanics occupation.

Overview of Work

The report gives an overview of work performed under each major category and sub-topic that relates to what the mechanic does with components, systems, materials, etc. These are given in terms of the percent of mechanics who perform a particular task, its frequency, the technical knowledge and manipulative skills required, and the extent of industrial training.

Changed Concepts of Testing

The approach and the suggestions for written and comprehensive examinations on teaching and testing levels are especially important. Such examinations are structured around knowledge, comprehension, application, analysis and synthesis (the ability to put knowledge and skills together to carry out a specific job).

While concerned principally with curriculum change, the study has other implications. The projections include • the conduct of national teacher institutes and workshops for updating teachers in content and methodology • changed instructional plants attuned to a continuously changing curriculum and new approaches; and • curriculum follow-through in which new materials, skills, knowledge, etc. are immediately included as current instruction.

Possibly the most significant projection is that the data and report now be translated and applied in a practical way through the establishment of pilot programs to be followed later by evaluation.

Topic Five: CHANGING CURRENT PROGRAMS TO MEET EVOLVING NEEDS • Extending inschool secondary school offerings in distributive education • modifying home economics courses to develop homemaking programs that provide unique effective service, especially to girls in disadvantaged families • properly defining vocational business education courses to ensure employability • the enrichment and extension of agricultural courses • determining curriculums, and instructional time requirements in trade and industrial education. (Study 10. See also, studies 67 through 84, in process).

• 10. "DETERMINING KINDS OF GAINFUL EMPLOYMENT IN WHICH FORMER STUDENTS FROM ARKANSAS SECONDARY SCHOOLS ENGAGE, AND WHAT KNOWLEDGE AND SKILLS HOMEMAKING CURRICULUMS MAY CONTRIBUTE TO THESE GAINFUL OCCUPATIONS" BY ROBERTS.

One of the concerns of the Panel of Consultants centered around the extension of services in homemaking programs to include preparation for wage-earning jobs that depend on "homemaking" skills and knowledge.

This particular research effort is accurately described by its title. Although related to one state, such findings as those dealing with curriculum modifications and program enrichment have relevance to general and vocational education administrators, teacher trainers, researchers and teachers in the field, curriculum coordinators and guidance personnel anywhere in the United States.

Interestingly, the final report indicated that for a ten-year period, most former homemaking students who responded found employment upon graduation from high school in clerical, sales and service occupations. However, within the 70 occupations which were studied, primarily by home economics teachers, the job descriptions included personality factors and technical knowledge and basic skills found to be included in homemaking courses.

Answers In The Report

While this is not an in-depth curriculum study originating in occupational analyses with job skills identified from complete job analyses, the report contains valuable information in answer to three fundamental questions:

• What kinds of jobs do graduates of homemaking courses get when they do accept gainful employment?

• To what degree are the skills and technical knowledge required in wage-earning employment related to those contained in vocational homemaking courses? If they do relate but are not included, is it possible without reducing the homemaking function to enrich and extend courses to include the development of basic competencies needed by young women for employment?

• Finally, do the experiences and other qualifications of the teacher, and the size, location and organization of the high school influence the employment of graduates?

Persons reviewing the report may want to consider another dimension to add to the significant contribution home economics education may make through its exploratory practical arts function. For it is at this important juncture in students' lives that many seek to transfer to other vocational fields for more specialized preparation for employment in business, distribution and marketing, agriculture and kindred occupations, or the trades, industries and technical pursuits.

Topic Six: PROGRAM GROWTH AND DEVELOPMENT • through the extension of programs, especially for health occupations, service occupations and technical occupations. (Study 11. See also, studies 85 through 89, in process).

• 11. "A DETERMINATION OF NEEDED ADJUSTMENTS AND EXTENSIONS IN THE CURRICULAR PATTERNS OF VOCATIONAL EDUCATION IN AGRICULTURE" BY TAYLOR.

"Involvement," "valid occupational analyses" and "knowledgeable and concerned specialists" from education, business and industry represent the key ingredients which assured the early use of the results of this off-farm agricultural education study.

The steps taken to carry out the specific purposes may be identified by grouping the major activities into such functions as: planning, organizing, developing, promoting, disseminating, trying-out, revising, establishing pilot programs, evaluating, refining and, finally, adopting new curriculums.

Organization, Development and Evaluation

Although this National study was specifically directed to off-farm agricultural programs, the planning, procedures, and implementation techniques may be adapted to all other vocational fields. The report itself is only one item in a "package." It indicates very clearly the historical sequence of major activities; serves as an excellent example of organizational patterns for conducting a research project of this type; traces the continuous evaluation processes, and shows how concerned people assisted at each stage, including the most significant one of implementation.

Information is included on the Task Force and its planning and materials development functions; the structure of advisory committees and committees on the evaluation of materials prepared by the Task Force and others, and the research findings.

A National seminar provided a forum. Here educators, business and industrial leaders came to review, discuss, evaluate and promote a program that should meet more adequately the needs in agricultural supply (sales and service occupations), agricultural machinery (service occupations), ornamental horticulture (service occupations) and agricultural chemicals.

Feed Back and Early Application

Under the leadership of Taylor, the study was planned to provide for continuous feed back resulting from constant review and evaluation . . . always by persons with particular and specialized knowledge! A major contribution lies in the practical program changes which are suggested at the "grass roots" level in preparing students for entry into off-farm agricultural occupations.

In addition, state level program planning materials were developed. Suggested administrative actions and decisions to establish pilot and demonstration programs are contained in separate brochures. These cover the four subject areas of: agricultural chemical technology, agricultural mechanization, ornamental horticulture and nursery, and agricultural supply.

Other course materials for local programs were based on findings in agricultural occupations studies and revised program materials were developed by subject matter specialists from business, industry, teaching, and university/college staffs. Fortunately, copies of all curriculum and program development materials were sent to head state teacher educators and head state supervisors in agricultural education for use within each state.

Mention should be made of the five important area meetings throughout the United States in which over 300 teachers, supervisors, teacher trainers, administrators, and employing organizations participated. From the sum-total of key participants involved, the development of vocational education programs for off-farm agricultural occupations is moving rapidly.

The study itself and the complementary administrative development, curriculum and other materials which comprise the "package" serve as excellent examples of: a well-organized plan, well-executed procedures which resulted in the preparation of necessary materials to effect change; and a pattern for continuous evaluation and program refinement.

The materials should be valuable, too, to manpower personnel, human resources coordinators, and others involved in curriculum change and the guidance of youth and adults.

"PLAIN TALK"

Deliberate use was made of the Panel's recommendations and the definition of purpose of the Vocational Education Act. For, it is in terms of the defined needs and responsibilities as expressed through some form of legislative intent that the end results of conceiving, planning, developing, reporting, disseminating, applying, and evaluating may be more directly assessed.

"Plain Talk" provides a vantage point to look back on . . . . the sum-total of research effort and its impact to on-the-job-needs . . . in other words, the how, who, why, when and where, and then quickly ahead to discover ways in which the total research effort may be strengthened.

Obviously, time and space will be limiting factors on the observations that are reported out in "Plain Talk." These recorded observations and suggestions for a plan of action are intended to be honest, constructive attempts to strengthen the total vocational and practical arts education programs through a strengthened and expanded research effort.

It is Obvious That . . .

• The three main groups concerned with vocational education should pool their resources and talents to establish the framework, dimensions, and specifications for a realistic, valuable, "grass roots" research and demonstration program. Here, reference is made for the present to the Division of Adult Vocational and Library Services, the Division of Comprehensive and Vocational Education Research and the American Vocational Association.

• There is limited correlation of national, regional and state effort. Thus, there is need to develop a functional, overall correlated plan for research and development which fulfills the mandates of the Act.

• Research efforts, particularly as directed at high school age youth, have barely scratched the surface of need, indicating the complexity to planning, conducting and implementing such activities. This calls for greater involvement of qualified operational level persons and an acceleration of research effort.

• Clearer delineation should be made of the level of local and state vigor and support in order to limit duplication of effort and to require state financing where a project should be carried on as a state function. This action will free limited research/development funds for major program development activities affecting greater numbers of high school age youth.

• Research must be influenced directly by those who are to use it. Was this not one of the underlying concerns which resulted in increased attention and funds for vocational education? Here, again, leading vocational educators with first-hand experience need to be involved earlier to guide and make decisions on major research effort and its impact on vocational education.

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(reported in this issue)*

NOTE: The inclusion of a report in this issue relating to programs for/and services to ". . . High School Age Youth" is not to infer that the principal investigator classified the project this same way or that the findings or results are not applicable to other levels of instruction.

Subsquent issues of "Research Visibility" will report changes continuously that may result as (a) new projects are approved, (b) other completed manuscripts are reviewed, (c) additional abstracts are made available, and (d) further information is received about the exact status of a project.

Topic One: PROGRAM ACCESSIBILITY

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• 2 "An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing" by:

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• 3 "The Identification of Common Courses in Paramedical Education" by Fullerton, Bill J. (Project # 5-8398) 1966, 172 pages. ERIC #ED 010 190; EDRS MF-$0.27, HC-$6.88

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Topic Two: SPECIALIZED SCHOOLS

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Topic Four: CURRICULUM PLANNING

• 9 "A Study of the Aviation Mechanics Occupation" by Allen, David. Division of Vocational Education, University of California, Los Angeles, Calif. (Project # 5-0189) 1966, 235 pages. ERIC#ED 010 279, EDRS MF-$0.36, HC-$9.40

Topic Five: CURRICULUMS TO MEET NEEDS

• 10 "Determining Kinds of Gainful Employment in which Former Students from Arkansas Secondary Schools Engage, and What Knowledge and Skills Homemaking Curriculums May Contribute to These Gainful Occupations" by Roberts, Roy W. University of Arkansas, Fayetteville, Ark. (Project # 5-0002) 1966, 83 pages. ERIC#ED 010 013 EDRS MF-$0.18 HC-$3.32

Topic Six: PROGRAM GROWTH

• 11 " A Determination of Needed Adjustments and Extensions in the Curricular Patterns of Vocational Education in Agriculture" by Taylor, Robert E. The Ohio State University, Columbus, Ohio. (Project # 5-0031) 1966, 103 pages. ERIC # ED 010 497; EDRS MF-$0.18 HC-$4.12

RESEARCH, DEMONSTRATIONS; INSTITUTES

(in process)*

Topic One: ACCESSIBILITY

• 12 "Approaches to Use in Assessing Needs for, Content of, and Certain Factors to be Considered in Preparing for Gainful Employment" by Cozine, June. (Project # 5-0026) ERIC #ED 010 004, EDRS MF-$0.18, HC-$3.24

• 13 "An Experimental Vocational Education Institute for the Preparation of Teacher Coordinators of Newly Emerging High School Vocational Programs" by Samson, Harland E. University of Wisconsin, Madison, Wis. (Project # 5-0092) 1966, 144 pages. ERIC # ED 010 500; EDRS MF-$0.27 HC-$5.76

• 14 "Curriculum Development and Training Program for Food Service Employees" by McKinley, Margaret and Chadderdon, Hester. Iowa State University, Ames, Iowa. (Project # 5-0129)

• 15 "Development of Marketable Typing Skill: Sensory Processes Underlying Acquisition" by West, Leonard J. City University of New York, N. Y. (Project # 5-8434) 1966, 27 pages. ERIC # ED 010 012; EDRS MF-$0.09 HC-$1.08

Topic Two: SPECIALIZED SCHOOLS

• 16 "Experimental and Developmental Study of a Four Year Comprehensive Vocational Educational Program" by Benham, Lloyd G. Hudson Public Schools, Hudson, Ohio. (Project # 5-0115)

• 17 "Occupational Training Centers for 16-18 Year-Old Youth" by Handler, Harry. Los Angeles Unified School, Los Angeles, Calif. (Project # 6-2958)

Topic Three: QUALITY STANDARDS

• 18 "Using the Printing Trade as a Pilot Area for the Development of a National Vocational-Technical School Achievement Testing Program" by Stover, William F., Ohio Trade and Industrial Education Service, Columbus, Ohio. (Project # 5-0037)

• 19 "Identifying Characteristics of Practical Nursing Students for Use in Guidance and Selection" by Tate, Barbara. National League for Nursing, New York, N. Y. (Project # 5-0039)

• 20 "Curriculum Development and Training Program for Food Service Employees" by McKinley, Margaret, and Chadderdon, Hester. Iowa State University, Ames, Iowa. (Project # 5-0129)

• 21 "Conference on Labor and Vocational Education" by Allen, Russell. Michigan State University, East Lansing, Mich. (Project # 5-0130)

• 22 "Characteristics of Non-College Vocationally-Oriented School Leavers and Graduates" by Mallinson, George. Western Michigan University, Kalamazoo, Mich. (Project # 5-0142)

• 23 "State and Local Governments as Employers of Youth Trained in Vocational-Technical Schools" by Schten, Edward V. University of Wisconsin, Madison, Wis. (Project # 5-0174)

• 24 "Entry and Job Changing in Large Metropolitan Labor Market Area" by Ulman, Lloyd. University of Calif. (Project # 5-0176)

• 25 "Effectiveness of Selected Psychological Tests in Predicting Vocational Success" by North, Willard E. Central Missouri State College, Warrensburg, Mo. (Project # 5-0181)

• 26 "Application of the Judgmental Procedure to the Development of Programs of Vocational and Practical Arts Education" by Lockette, Rutherford E. Trenton State College, State Department of Education, Trenton, N. J. (Project # 5-0190)

• 27 "An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes" by Darcy, Robert L. Ohio University, Athens, Ohio. (Project # 5-1203)

• 28 "The Development of Aptitude and Achievement Measure for Trade and Technical Education" by Baldwin, Thomas S. North Carolina State University, Raleigh, N. C. (Project # 5-1319)

• 29 "Educational Activities Within Business and Industry in Richmond, California" by Swanson, Chester J. University of California, Berkeley, Calif. (Project # 5-1364)

• 30 "Information Sheet Organization in Industrial Education" by Pucel, David J. University of Minnesota, Minneapolis, Minn. (Project # 5-8458)

• 31 "Summer Program for Up-Dating the Technical Competency of Teachers of Industrial Subjects" by Bohn, Ralph C. San Jose State College, San Jose, Calif. (Project # 6-1423)

• 32 "Determine the Feasibility of Developing a Model to Examine Feedback Signal Paths into the Secondary/Vocational-Technical School" by Silvern, Leonard C. Education & Training Consultant Co., Los Angeles, Calif. (Project # 6-1544)

• 33 "A Comparative Study of the Employee Skills/Training Acceptable to Employers Under Varying Degrees by Labor Market Stringencies" by Fisher, W. Halder. Battelle Memorial Institute, Columbus, Ohio. (Project # 6-1577)

• 34 "The Design and Evaluation of Vocational-Technical Education Curricula Through Functional Job Analysis" by Crawford, Meredith. George Washington University, Washington, D. C. (Project # 6-1659)

• 35 "Mental Health Association Staff Training Conference" by Linzer, Edward. National Association for Mental Health, New York, N. Y. (Project # 6-1685)

• 36 "A Study of Intellectual Growth and Vocational Development" by Hilton, Thomas J. Educational Testing Service, Princeton, N. J. (Project # 6-1830)

• 37 "An Eight Week Summer Training Program to Upgrade Subject Matter Competency of High School Vocational Electronics Teachers in Computer Electronics and Computer Systems" by Sheldon, E. M. Control Data Institute, Minneapolis, Minn. (Project 6-1895)

• 38 "A Pilot Program for Guidance of Entry Workers in Three Selected Industries" by Gorman, Robert. Montana State Department of Public Instruction, Helena, Mont. (Project # 6-2147)

• 39 "Factors Associated with Successful Adaptation to the Secretarial/Stenographic Role" by Cook, Fred S. Wayne State University, Detroit, Mich. (Project # 6-2181)

• 40 "Military Transferability Study" by Weinstein, Paul. (Project # 6-2198). ERIC # ED 010 434; EDRS MF-$0.09, HC-$2.00

• 41 "Operation of Summer Institutes on Fluid Power Education for Teachers of Vocational and Technical Education" by Pearce, Theodore. Fluid Power Society, Thiensville, Wis. (Project # 6-2203)

• 42 "Coordination, Administration, and Evaluation of Summer Institutes on Fluid Power Education for Teachers of Vocational and Technical Education" by Pearce, Theodore. Fluid Power Society, Thiensville, Wis. (Project # 6-2278)

• 43 "Directive-Non-Directive Teacher Effectiveness" by Tuckman, Bruce. Rutgers-The State University, New Brunswick, N. J. (Project # 6-2300)

• 44 "The Development and Testing of Instruments and Procedures for a Study of Student Selection Procedures in Technical Education Programs" by Whitney, George S. American Technical Association, Inc., Delmar, N. Y. (Project # 6-8255)

• 45 "Methods of Increasing Student Achievement in Technical Preparatory Programs," 1966 Conference. Van Hall, Milo E. (Project # 6-8303). ERIC # ED 010 675; EDRS MF-$0.09 HC-$0.56

• 46 "Mathematics Competencies of High School Students in Relation to Screening Practices of Major Employers" by Landis, William H. Contra Costa County Department of Education, Pleasant Hill, Calif. (Project # 6-8323)

• 47 "A Junior High School Industrial Technology Curriculum Project" by Towers, Edward R. The Ohio State University, Columbus, Ohio. (Project # 7-0003)

• 48 "Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education" by Harris, J. N. Tuskegee Institute, Tuskegee, Ala. (Project # 7-0444)

• 49 "Workshop to Plan for Education and Manpower Coordination in Selected Model Cities" by Healy, Patrick. National League of Cities, Washington, D. C. (Project # 7-1199)

• 50 "A Symposium on Educational Manpower" by Davies, Donald. National Education Association, Washington, D. C. (Project # 7-8207)

Topic Four: CURRICULUM PLANNING

• 51 "Development and Evaluation of an Experimental Curriculum for the New Quincy (Massachusetts) Vocational-Technical School" by Gagne, Robert M. American Institute for Research, Pittsburgh, Pa. (Project # 5-0009)

• 52 "Evaluation of the Effectiveness of Using Specialized Instructors in Providing Occupational Training for High School Vocational Agriculture Students" by Teeter, Glen. Magnet Cove High School, Malvern, Ark. (Project # 5-0013)

• 53 "Workshop for the Preparation of Home Economics Teachers to Teach Wage-Earning Programs in Food Service" by Fults, Anna Carol. Southern Illinois University, Carbondale, Ill. (Project # 5-0015)

• 54 "An Integrated Vocational Education Services Pilot Program in a Secondary School" by Agan, Ray. Kansas State University, Kans. (Project # 50027)

• 55 "Establishment of a Course of Study in American Industry as a Transitional Subject Between General and Vocational Education" by Face, Wesley L.; Flug, Eugene R. Stout State University, Menomonie, Wis. (Project # 5-0058)

• 56 "Development of a Curriculum and Materials for Teaching Basic Vocational Talents" by Daily, John. George Washington University, Washington, D. C. (Project # 5-0061)

• 57 "Curricula Implications of Automatic Data Processing for Educational Institutions" by Bangs, Kendrick F. University of Colorado, Boulder, Colo. (Project # 5-0144)

• 58 "Identification of Common Behavioral Factors as Bases for Pre-Entry Preparation of Workers for Gainful Employment" by Sjogren, Douglas D. Colorado State University, Boulder, Colo. (Project # 5-0149)

• 59 "Development of Curriculum Guide in Electro-Mechanical Technology" by Roney, Maurice W. Oklahoma State University, Stillwater, Okla. (Project # 5-0158)

• 60 "Program for Recovering and Extending Potential for High School Underachievers Seeking Entrance at a Regional Community College" by Shea, John (Project # 5-0569) 1966, 51 pages, ERIC # ED 010 120; EDRS MF-$0.09, HC-$2.04.

• 61 "Experimental Curriculum for Electro-Mechanical Technicians in Computer and Business Machines Technology" by Fellows, Douglas. Ward Technical Institute, University of Hartford, Hartford, Conn. (Project # 6-1489)

• 62 "Development of an Experimental Nongraded Area Vocational High School Associated With a Community College" by Donnell, Nelson. Bevard County Board of Public Instruction, Titusville, Fla. (Project # 6-2164)

• 63 "A Research and Development Program for Training in Micro-Precision Skills" by Wales, Hugh C. University of Illinois, Urbana, Ill. (Project # 6-2336)

• 64 "A National Survey: High School and Student Characteristics, and Their Relationships to the Occupational and Post-High School Educational Experiences of Trade and Industrial Vocational Course Graduates" by Eninger, Max W. American Institute for Research, Pittsburgh, Pa. (Project # 6-2414)

• 65 "Feasibility of a Systematic Study of Manpower and Educational Training Programs of Selected Health Occupations" by Polliard, Forbes W. Indianapolis Hospital Development Association, Indianapolis, Ind. (Project # 6-2444)

• 66 "Computer-Aided Drafting and Design Summer Institute" by Morphonios, Alex. Miami-Dade Junior College, Miami, Fla. (Project 7-0435)

Topic Five: CURRICULUMS TO MEET NEEDS

• 67 "Development of Training Programs for Youth Preparing to Enter Non-Farm Jobs" by Mondart, C. L. The Louisiana State University, Baton Rouge, La. (Project # 5-0016)

• 68 "Development and Evaluation of Instructional Programs in Ornamental Nursery, Floriculture, and Turf Occupations for the Northwestern United States" by Love, Gene M. Pennsylvania State University. (Project # 5-0022)

• 69 "Training Institute to Upgrade Teachers of Vocational Agriculture in Distributive Education and Supervised Training in Off-Farm Agricultural Occupations" by Hull, William Lee. Oklahoma State University, Stillwater, Okla. (Project # 5-0025)

• 70 "An Integrated Vocational Education Service Pilot Program in a Secondary School" by Agan, Ray. Kansas State University. (Project # 5-0027)

• 71 "Training Program for Teachers and Leaders of Gainful Employment Training Programs in Home Economics" by Cozine, June. Oklahoma State University, Stillwater, Okla. (Project # 5-0053)

• 72 "An Experimental Evaluation of Approaches to Preparing High School Students for Agricultural Occupations Other Than Farming" by Coster, John K. University of Nebraska, Lincoln, Nebr. (Project # 5-0069)

• 73 "Developmental Programs in Animal Science" by Stone, Walter. State University of New York, Nelhi, N.Y. (Project # 5-0071)

• 74 "An Eight Week Summer Training Program to Upgrade Subject Matter Competency of High School Drafting Teachers in Advanced Graphics, Statics and Applied Mathematics" by Dobrovolny, Jerry S. University of Illinois. (Project # 5-0073)

• 75 "Educational Restrictions to Agricultural Success—Farmer Income and Education" Persons, Edgar A. ERIC ED 010 038 1966 MF $.27 HC $6.12 Pages 153. (Project # 5-0082)

• 76 "Conference on Home Economics Program Development for Disadvantaged Youth and Their Families" by Henderson, Grace M. Pennsylvania State University, University Park, Pa. (Project # 5-0091)

• 77 "Demonstration Center at Reidland High School For Training Youth in Nonfarm Agricultural Occupations" by Binkley, Harold. University of Kentucky, Lexington, Ky. (Project # 5-0131)

• 78 "A Process for Determining Vocational Competencies in the Performance of Nine Essential Activities for Sales Personnel." Albracht, James J. ERIC ED 010 070 1966 Pages 149 MF $0.27 HC $5.96 (Project # 5-0156)

• 79 "An Experience with the Life and Work of the Disadvantaged for the Preservice Education of Home Economics Teachers" by East, Marhorie. Pennsylvania State University, University Park, Pa. (Project # 5-0167)

• 80 "Determining Vocational Competencies for the Performance of Essential Activities for Sales Personnel in the Feed Industry" by Albracht, James J. Michigan State University, East Lansing, Mich. (Project # 5-0182)

• 81 "Scientific Secretary Training Program Development" by Swenson, J. H. University of Colorado, Boulder, Colo. (Project # 5-0188)

• 82 "Development of a Film for Interpretation and Training for Homemaker Service" by Jacoby, Alberta. Mental Health Film Board, Inc., New York City, N.Y. (Project # 5-1318)

• 83 "Survey to Determine Appropriate Occupational Training Programs in the Field of Distribution and Marketing at Various Levels of Education" by Peck, Charles E. University of Washington, Seattle, Wash. (Project # 5-1327)

• 84 "A Study of the Effectiveness of a Military-Type Computer-Based Instructional System When Used in Civilian High School Courses in Electronics and Automechanics" by Rozran, Gilbert B. Systems Operations Support, Inc., King of Prussia, Pa. (Project # 5-1332)

Topic Six: PROGRAM GROWTH

• 85 "Regional Conferences on Education, Training and Employment" by Bertolaet, Frederick. The Research Council of the Great Cities Program for School Improvement—Chicago, Ill. (Project # 5-0010)

• 86 "Summer Institutes in Fluid Power Education for Teachers of Vocational and Industrial Education" by Lamb, Frederick W. Fluid Power Society, Thiensville, Wis. (Project # 5-0019)

• 87 "A Long-Range Study of Practical Nursing" by Tomlinson, Robert M. University of Illinois, Urbana, Ill. (Project # 5-0126)

• 88 "The Development and Improvement of Directed Work-Experience Programs in Expanded Vocational Education Offerings in Agriculture at the Secondary School Level" by Cushman, Harold R. Cornell University, Ithaca, N.Y. (Project # 5-0161)

• 89 "A Pilot Project in Curriculum Development for Work, Experience and 'Occupations'" by Groole, Marvin C. Oakland Unified School District, Oakland, Calif. (Project # 5-0163)

AVAILABILITY OF REPORTS FOR FURTHER STUDY*

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RESEARCH VISIBILITY

SYNTHESIS / APPLICATION / DISSEMINATION

•"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633; "Synthesis and Application of Research Findings in Vocational Education").

VOCATIONAL EDUCATION IS PEOPLE . . . With Educational Needs Beyond the High School

THE PRICELESS INGREDIENT . . .

The greatness of a nation and the well being of its people depend on the degree to which its human potential is prepared to lead continuously useful and productive lives. This concern for the development of the full spectrum of people to their maximum capacity is the base upon which four successive issues of "Research Visibility" were planned.

Special Needs . . . Special Programs

The Panel of Consultants on Vocational Education in its study and deliberations had evidence that over many years vocational educators and public school systems had developed conventional programs of vocational education for youth and adults of varying interests, abilities, and ages. These were limited, primarily, by educational, legal regulations and financial conditions prevailing at the time.

Emergency Training Cycles

Still other special programs and services were developed to meet a whole host of National emergencies. Records show that in periods of economic recession, with their concomitant economic and social upheavals, great numbers in the ranks of unemployed adults and disadvantaged youth were helped through vocational education and training.

Research and Development Projects
Area Two: People with Educational Needs Beyond the High School

Vocational and Practical Arts Fields, Related Services and Persons Served by R&D

- Agriculture
- Business and Office
- Distribution and Marketing
- Home Economics
- Health
- Industrial Arts
- Trades and Industries
- Vocational Guidance
- Technical

* Teachers
* Counselors
* Teacher Coordinators
* Supervisors
* Administrators

* Teacher Educators
* Curriculum Coordinators
* Human Resource Counselors
* Manpower Personnel
* Labor Market Analysis
* Kindred and Related Services Personnel

RESEARCH VISIBILITY reflects the continuing leadership to vocational and practical arts education of Dr. C. Thomas Olivo, Director, Division of Industrial Education, State Education Department, University of the State of New York.

The organization for the monthly series of this publication, the pattern for reporting and, importantly, the complete writing of this issue represent his work.

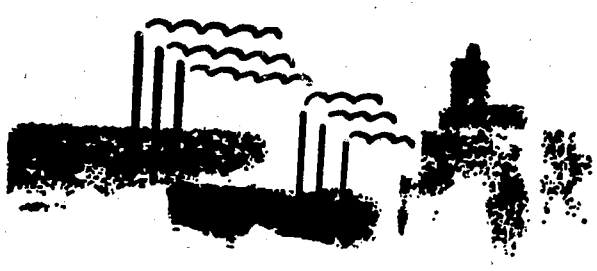
Under war emergency conditions, still more programs, which were to serve millions of people, were literally set in motion overnight . . . and were changed daily to reflect shifting demands and meet crucial labor market shortages. Today, in all areas of vocational education the capability to adjust to evolving and critical societal issues and human resource demands is again reflected.

The Return to Old Clichés

But, unfortunately, whenever Federal and/or State funds are curtailed, or the public fervor to meet an emergency slowly fades, apathy sets in. Needed programs conceived are dropped, and the public and the whole educational enterprise cycles around and reverts to old, unrealistic concepts of education for an "elite society." Until recently, what seemed like "education for education's" sake overrode the facts and needs as revealed by the Panel of Consultants on Vocational Education, and the "Manpower Report of the President to the Congress."

Critical Assessment

This is a point of time in history where more and more critical assessments are being made of what truly is happening to this Nation's priceless human resource. Questions are being asked about adequacy, accessibility, flexibility, administration, the nature and quality of instruction, the instructional process, and how the needs of more and more youth and adults are being provided for in vocational education and training programs. And, once employed, what possibilities will there be for workers to remain updated?



• KEYSTONES FOR MEASUREMENT

This issue concentrates on those projects funded by the Division of Comprehensive Vocational Education Research, Bureau of Research, and bears on any aspect of the program: planning, organization, development, demonstration, innovation, and evaluation, for youth and adults "... with educational needs beyond the high school."

Program Accessibility

Three major topics are treated. The first relates to "accessibility," the keystone for measuring the broad range of curriculum offerings in the context of an enlarged labor market area to better serve youth and adults.

A Second Major Topic . . . Curriculums

Analyses of groups of job titles in an occupational field (those requiring a common body of skills and related technology) reveal that clusters of jobs fall into employment classification levels. These may range from the single-skill operative, to the semi-skilled worker, to the craftsman and technician, to the semi-professional, and to other levels. Thus, Topic Two explores "Evolving Curriculums and Levels."

Forces Affecting Standards

Topic Three treats "Forces Influencing Quality Standards." Research and development projects are included which: • evaluate training programs with employment demands; • provide feedback from occupational analyses of labor market and vocational advisory committees; and • assess the adequacy of vocational guidance services with feeder schools, in placement and in follow up.

• PROJECT SELECTION

The projects selected for reporting center around:

• youth who have been graduated directly from high school and who want to enter a vocation;

• youth who may be early school leavers and have occupational experience of some type, but who want to move into other employment or to a higher level, and

• adults who may be displaced occupationally and need training for a new occupation or to move into other employment.

This issue focuses on those youth and adults whose needs may be served uniquely by programs of

• vocational education in public and private institutions, organizations and schools on a post-secondary level.

• ADDED REPORTS: ERIC SERVICES

R & D Projects for "High School Age Youth"

Because of space limitations, some completed studies were not previously treated and other projects "in process" which were omitted from the Bibliography are now included.

"Research in Education"

Some additional statements about ERIC: The national system furnishes information about research and related documents through "Research in Education." This publication of the Office of Education is issued twelve times a year. It is available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. The current domestic rate is $11.00 per year; foreign, $13.75.

Persons concerned with manpower training and ancillary services as an integral part of a total vocational and practical arts program may want to note that "Research in Education" includes (a) abstracts of materials acquired by all of the Clearinghouses; (b) abstracts and lists of new and completed projects initiated by the Bureau of Research; and (c) full information on how to obtain specific materials from the ERIC Document and Reproduction Service (EDRS).

Vocational Education Is People . . . With Educational Needs Beyond The High School

SYNTHESIS OF RESEARCH • RECOMMENDED APPLICATIONS

Topic One: ACCESSIBILITY TO AREA PROGRAMS • Extending full time curriculum offerings in vocational and technical education in area vocational schools for enlarged combinations of school districts • Developing effective post-secondary programs which meet more adequately the needs of youth and adults who are high school graduates or early school leavers and adults. (Studies 2:1 through 2.6. See also, studies 2:12 through 2:19, in process).

• 2:1 "Vocational Training for Library Technicians: A Survey of Experience to Date" by Martinson.

Is it possible to take the task areas of the professional librarian and train subprofessional personnel to perform some of them? By such action would medical library services be increased and at the same time would the flow of information to bio-medical researchers, health professionals, and the general public be accelerated?

This "survey of experience" covered programs (a) established for library technicians on a post-secondary training level, requiring less than a baccalaureate degree and with (b) formal classroom instruction (as contrasted with in-service or continuing on-the-job programs for library employees).

Problems and Inadequacies

Since the training of library technicians represents a new level, such problems were identified as: (a) the articulation of the technician with the professional supervisor; (b) the question of employer acceptance of subprofessionals to perform the simpler tasks, and (c) reorganization within an employment structure to accommodate library technicians.

This experience survey also points out other inadequacies like the need for valid analyses of occupations from which a common term and job specifications might be developed and a broad occupational study to define an "information technology program." Here the training of librarian technicians may represent one curriculum and other job titles in a cluster may require training at the high school level.

The five groups who were surveyed for comparable and relevant data included: administrators, teachers, students, graduates and employers. Case studies are included of the schools which were surveyed.

Some of the Survey Findings

The major survey findings relate to: • The numbers of institutions actually offering library courses at the sub-professional level; • the effectiveness of preparatory programs as measured by program growth, placement, etc.; • the limited extent of current employment in public and school libraries and in government installations; • the scarcity of instructional materials; and the dependence for teaching staff on professionals who may not have had experience in this evolving field.

The survey is a ground-breaking one. More in-depth labor market and training program information, occupational data, etc., need to be gathered and studied by researchers, curriculum specialists, administrators, instructional supervisors, and other manpower personnel before job specifications and needs are clearly defined; before curriculums are established based on analyses.

• 2:2 "A Pilot Study in Advanced Instrumentation for Technical Instructors" by Larson.

Industrial instrumentation affects the well-being and lives of all people. Without instrumentation such innovations as outer space communications and exploration, oceanographic developments, the computerization of industries, and the automation of plants would not be an accomplished fact.

As a comparatively new vocational industrial-technical education program, a need exists to update teachers who (a) are teaching in such an instructional program in secondary or post-secondary schools, (b) may be providing ancillary instructional services, and (c) who are encouraging occupationally qualified craftsmen to enter into teaching.

This institute followed good principles of organization in (a) involving knowledgeable persons from industry and vocational education to serve as advisors in identifying emerging technological developments; (b) defining on-the-job experiences and recommending qualified specialists within industry; and (c) developing up-to-the minute instructional materials simultaneously with the acquiring of new technical skills and the associated related technology.

Value of the Report

The report of this industry/university two-week institute should be valuable to teacher trainers who are developing similar in-plant/college coordinated programs, vocational curriculum specialists, administrators and supervisors who are planning to include an instrumentation curriculum or extension courses, and craft advisory committees.

Technical laboratory teachers in instrumentation, those who teach related technical subjects, and others in associated disciplines will find the teacher-made materials helpful to the further development of course outlines, teaching plans, information and job sheets, and testing materials.

Note: Concerned persons may want to refer, too, to the Curriculum Guide titled: "Instrumentation Technology." This Guide was prepared under direction of the Division of Vocational and Technical Education, and bears the identifying number of OE 80033. It is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

• 2:3 "Eight Week Summer Institute Training Program To Teach Instructors of Instrumentation Technology" by Ziol.

Updating institutes for instructors in industrial instrumentation technology have been carried on ever since the late fifties in certain of the North Atlantic States. The Rutgers University institute project previously reported, and the forerunner of such institutes in the Nation, the State University of New York, Division of Vocational Technical Education at Oswego, were keyed to teachers in the secondary schools where quality vocational industrial-technical education programs were offered.

By contrast, two other 1966 summer instrumentation institutes, (approved under PL88-210) were primarily invitational ones to teachers of instrumentation or automatic control in existing or potential programs of technical institutes or junior colleges.

Wise Use of Industry Know-How

The Rutgers/Oswego Institutes followed a completely within-industry approach for the development of skills, related instrumentation technology, and the mathematics, physics, measurement and circuitry principles and practices that are supportive related subjects in a curriculum.

The California institute took the U.S. Office of Education's "Instrumentation Technology" Curriculum Guide and attempted to prepare teachers to teach physics for instrumentation, related mathematics, mechanical measuring principles, electronic circuitry, and instrumentation shop practice as the first year of a two-year post-secondary program. Thus, the emphasis was on the "development of knowledges and skills essential for teaching specialized courses in Instrumentation Technology."

While the Rutgers and former Oswego institutes were conducted in industrial plants with a fine cooperative working arrangement among representative industries, the California project used the instructional facilities of a city college and added loaned or rented equipment.

The report of the Institute contains daily critiques and evaluations of: the number of specialists from the college and industry who participated in a closely coordinated program, the instructional facilities, and the field trips and supportive services. Since the institute was keyed to the "Instrumentation Technology" Curriculum Guide, no curriculum materials are included. The second similar institute report for State University of New York, Agriculture and Technical College at Morrisville, was not available for reporting at this time.

Programs to Match the Capabilities of People

The point that needs to be emphasized at this time is that teacher trainers, state supervisors and others who may plan similar institutes in future years should carefully compare the plans of instrumentation at Rutgers, Oswego, California, and elsewhere. Importantly, recognition should be made that quality Instrumentation Technology Curriculums may be provided at either or both the high school level as part of a vocational industrial-technical education program or within post-secondary institutions.

Missing Ingredient: Vertical Curriculum Planning

Taking an editorial prerogative, it is a sad indictment of industrial teacher trainers and vocational curriculum specialists when the preparation of teachers and the development of curriculum materials are not planned so there is vertical curriculum coordination between secondary and post-secondary levels. Until such time as there is an awakening of the tremendous capabilities of secondary school age youth, the needs long expressed by the Instrumentation Society of Amerca for education and trained instrumentation technicians, who are graduates of the secondary schools, as well as others who are developed at a higher level which builds upon such training, the present aggravated shortage will become even more severe. And youth, as the most priceless human resource, will continue to be downgraded.

• 2:4 "Program for Technical Communications Training for Technical Education Teachers (Summary Report)" by Weisman.

Effective communication, trite as it may sound, is an essential ingredient in the teaching/learning process. Thus, the ability of the teacher to communicate depends on the wise use of the written and spoken word as well as any other aid, device or technique that may reach another person.

The first two weeks of this communications institute were specially planned for technical education teachers. Here they listened to and worked with able educational and industrial leaders in particular areas of technical and industrial communications. This subjected the candidates to principles, skills and effective practices in technical communications, relating this knowledge to improving teacher-made curriculum materials, personal writing skills, and more effective oral communication.

Wholesome Approach to Improved Communications

A series of instructional units are included in the summary report. These may serve as a base for outlining future course content. Those who plan teacher education programs or supervise teachers and evaluate their instructional effectiveness will find a wholesome approach in both content and methodology. This may be the key to the problem of continuously improving the communications skills of educators. It may provide foundational

information for pretesting communication abilities in new teachers and may help to define in a more practical way the nature and extent of communications courses and experiences required in the professional preparation of teachers.

Some of the major units related to: basic elements of technical writing, technical, editorial practices, information storage and retrieval, publications photography, principles and practices of graphic arts, industrial and technical forms of communication, and advanced elements of technical writing. Resource materials used as out-of-class references are identified with each unit.

The third week of the institute was coupled with another annual institute on Technical and Industrial Communications. Here, other industrial personnel presented a different panoramic overview of the entire area of communications and attempted to extend still further the communication capabilities of each conferee.

• 2:5 "The Documentation of Steps to Establish a Technical College and the Evaluation of 'PERT' as a Planning Tool for Educators, (Phase I)" by McKee.

The project title indicates that the researchers considered the essential steps of planning, constructing and equipping the physical plant and instructional facilities of a technical college. Other documentation relates to curriculum development, staffing, recruiting and student selection, etc.

The term "technical college" in this study refers to a post-high school institution which concentrates on occupational, technical and semi-professional education, and provides training for those who will directly enter the work force following completion of a two-year program leading to an associate in applied science degree.

Secondly, the study attempted to evaluate "PERT," a management tool and system as a Program Evaluation and Review Technique. Another term, "critical path," is used to denote the starting and target or completion dates: the period between conception and the actual operation of a program.

Major Classifications in "PERT"

The body of the report reveals the major items, activities or tasks to be accomplished in establishing a college. In this case, nine important classifications are used with the PERT system. These include: physical plant, instructional equipment and facilities, students, personnel, budget, library, curriculum, contractual services, policies and operating procedures.

To "old timers" familiar with established school planning procedures in vocational education, the nine major activities follow analysis techniques of breaking down complex overall administrative responsibilities into major components, then into other prime activities and sub-activities.

The devising of the PERT charts does add the visual dimensions of preplanning, permits easy and constant checking at critical points in a tight schedule, and provides opportunities to assess program development progress.

While a statement in the report indicates that a college was built and established in 84 work days after the first staff member reported, the total manhours required was 15,000 or the equivalent of 7½ man years of work! The report recommended the need for an even greater number of manhours in the planning stage. Persons reviewing the report should not lose sight of the fact that, in addition to preplanning, time had been spent for such preliminary work as the making of occupational studies to determine interest, need and support; and in devising appropriate legislation, and seeking assurances of financial support.

A Helpful Guide to School Planners

The tasks identified in the narrative body matter, the master chart, and the flow charts with major activities and schedules, are commended to school planners, State education department administrators and supervisors, teacher trainers and others who are planning vocational education programs.

While devised for a technical college, the plans and techniques are also applicable at the secondary school level. This is a refreshingly different approach to school planning with consideration given to latest industrial management techniques for possible application in vocational education.

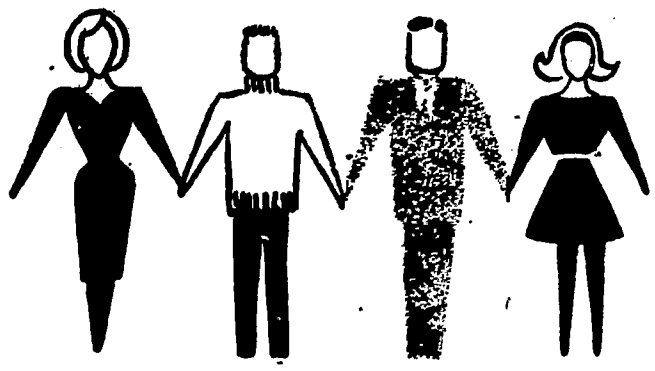
The techniques of analyzing, charting out and developing check lists and check points for significant activities and according to a time schedule, should simplify and accelerate the establishment of new area vocational schools. With some adaptations and ingenuity it may be possible to use the plan and system to assess and modify existing programs of vocational education.

• 2:6 " Summer Institute to Train Data Processing Teachers for the New Oklahoma Statewide Computer Science System, (Final Report on Phase I)" by Tuttle.

A total statewide program of teacher education in a newly evolving field was preceded by and based upon a design of a data processing curriculum. Such a curriculum was developed from an analysis of industrial data and a feasibility study which, among other issues, sought to determine the practicability of utilizing a time-sharing schedule and a remote data communication transmission terminal.

Part of the study dealing with the summer institute concluded with statements that:

• Teachers with good backgrounds in mathematics, science and business may be trained in two ten-week summer sessions to become qualified teachers in telecommunications;



• Aptitude interest and capabilities for teaching data processing can be measured;

• Teacher training requirements can be defined for teaching post-high school technical education programs leading to the development of computer programers or systems analyst technicians; and

• Teachers of data processing can develop in institutes a wholesome philosophy of vocational education and the significant place of the technician in an automated industrial society.

Other states may want to study carefully the significant findings and experiences for organizing a statewide program using a centralized data processing unit as a complementary, functional part of every area school's program.

The researchers developed course outlines and bibliographies of resource items which relate to the assembly language, basic data processing mathematics, data processing accounting, and statistics. Instruction in specialized program languages of FORTRAN AND COBOL emphasized a problem approach through actual laboratory work. The electronic data processing curriculum developed as a result of this study is included in the Appendix.

Time-Sharing Computers and Remote Terminal Devices

Equally valuable is the scholarly and yet down-to-earth research study containing National data and testimony on the burgeoning need to train great numbers for computer programing, giving consideration to time-sharing computers and computer systems and remote terminal devices which may be applied in an educational setting.

While data for this research project was obtained for one state, the methodology and instruments used, and the comparable information received, the experience should be utilized and built upon by other states. The data was analyzed and classified according to major occupational clusters like programers and systems analysts for business applications or scientific applications. Cost analyses and essential considerations for establishing a statewide, and possibly regionalized, program are projected.

Feasibility and Effectiveness

The feasibility study contains tremendous significant information that demands careful analysis by contiguous states as well as others who are either operating limited programs or planning new ones. This step is recommended for state and regional levels with committee representation from local areas. For, it is at the state level where the first decision must be reached to correlate facilities, programs, and services among all school districts into a state or regional vertically coordinated program for secondary and post-secondary schools.

Curriculum coordinators, general and vocational administrators and supervisors, researchers, subject matter specialists, potential teachers, counseling and manpower personnel, teacher trainers, et al, will find both the occupational/labor market feasibility study and the teacher institute report important to the extension of data processing programs which may reach across more than one school district.

Topic Two: EVOLVING CURRICULUMS AND LEVELS • Meeting manpower training demands in a constantly changing technological society • Identifying levels of vocational education programs within post-secondary institutions to provide instruction beyond the high school level • Curriculum materials development for post-high school • Administration of technical education. (Study 2:7. See also, studies 2:20 through 2:26, in process).

• 2:7 "THE FEASIBILITY OF A SYSTEMATIC STUDY OF MANPOWER REQUIREMENTS AND EDUCATION AND TRAINING PROGRAMS OF SELECTED HEALTH OCCUPATIONS" BY POLLIARD.

The newly emerging concept of health means optimum physical, mental and social efficiency and well being, in addition to freedom from disease and untimely death. These demanding health goals require greater utilization of health programs and services and more health manpower. Many of these persons will need to develop higher levels of skills and related technical knowledge.

Studies Essential to Wise Manpower Utilization

As skilled personnel and high quality service requirements in the health occupations are projected according to population, evidence points to the need for: • conducting occupational studies of health and related occupations; • clustering job specifications into levels according to degrees of complexity, maturity of judgment, and extent and depth of training required; • making analyses to define scope and sequence of knowledge and skills; • organizing and managing education and training programs, facilities, staff, etc.; and • utilizing in- and outside-of-school personnel and facilities.

Major projects or experiences were studied which may apply to the conduct of a comprehensive systemwide health occupations manpower study in an urban community. This feasibility report indicates that such a study of requirements, utilization of resources, education and training programs for selected health occupations, should be undertaken.

Components of a Long-Term Study

A general plan was advanced for a long-term project aimed to alleviate health manpower shortages by preparing adequate numbers of well-trained and educated personnel. The proposed study is to be conducted in different phases with tasks identified and scheduled using good occupational analyses, organizational and modern management techniques. These are well documented in the report.

The study would relate to:

- the coordination of need with the wise use of community resources;
- the assessment of manpower to conserve human energy and resources;
- translating emerging occupations into curriculum patterns;
- matching human capabilities with job specifications for a more intelligent dispersal of manpower;
- the systematic planning and articulation of functional assignments with education and training programs;
- developing pilot programs and; finally,
- suggesting a plan of action for consideration by other urban communities which would build upon whatever outcomes might apply.

Chief school administrators on state levels and others serving enlarged school population areas; manpower, labor market and economic area planners; supervisors responsible for health occupations; researchers and teacher trainers, will find the report a good resource which establishes the feasibility of an in-depth systemwide study and identifies the nature of and structure for such an undertaking. The study report applies equally as well to high school age youth.

Note: This research project was listed (item 65) as being "in process" in the last issue. Experience indicates that manpower findings in health occupations require full and part-time education and training programs provided at various educational institutes.

Topic Three: FORCES INFLUENCING QUALITY STANDARDS • Direct relationships between training and employment • Occupational information feedback • Program flexibility built upon occupational analyses • Vocational guidance and feeder schools; placement and follow up of work performance. (Studies 2:8 through 2:10. See also, studies 2:27 through 2:36, in process).

• 2:8 "The Influence of Industrial Arts Experiences on Grades Earned in Post-High School Trade and Technical Curriculums" by Moss.

Teachers of industrial arts subjects and trade and technical courses in vocational industrial-technical education curriculums have for years supported the premise that one of the many unique contributions of industrial arts education at the senior high school level was its pre-vocational value; that the success factor of students continuing in a related trade or technical curriculum was greater than for those who entered without such experience. And on this basis, and some others, many programs of industrial arts education were justified.

Continuous Self-Assessment

Over this same period of time, industrial arts educators have continuously carried on a self-assessment and dialogue about objectives, functions, organization, accomplishments, etc. These were always attempts to keep the programs modern and to extend the nature and scope of services, particularly to youth. Lacking research findings and other objective evidence, like any other field where people are to be measured, too many determinations had to be made at a speculative level.

So, it was only natural for a beginning measurement to be made of the positive transfer of manipulative, attitudinal and intellectual skills ("psychomotor," "affective" and "cognitive" domains) developed through experiences in industrial arts for application to trade and technical training.

The four major questions that require answers all relate to: "Are there differences in a student's post-high school scholastic achievement which may be attributable to high school— •"Course work which does not provide any experiences in industrial arts; provides from one to five semesters of such work; and six or more semesters?"; •"Grades in industrial arts courses as compared with grades where no industrial arts are taken?"; • "Course work which has direct or indirect relationships to post-secondary content in trade and technical curriculums and where no industrial arts courses are taken?"; and •"Course work where there is an above or below average emphasis on a 'prevocational' or claimed 'vocational' objective for industrial arts, again, as compared with those students who took no such courses?"

To summarize, the study assessed the effect of differences (a) in the amount of industrial arts course work, (b) grades earned, (c) the content of high school industrial arts as compared with post-high school vocational curriculums, and (d) the prime purpose for which industrial arts courses were taken.

Students pursuing one of four different trade or technical curriculums, (automotive, drafting, electrical and machine shop), were selected for the sample. The research design included a statistical measurement of controlled, independent, dependent and descriptive variables.

Findings, Limitations and Caution

The significant results should be of value and concern to industrial arts and trade and technical education curriculum planners, teacher trainers, researchers, student personnel services coordinators, officers and members of professional organizations, and administrators. However, before the outcomes are widely disseminated, a word of caution is in order here the same as with most educational research. What the recorded results disclose is the actual prevocational value of certain industrial arts courses on a limited sample of students in a selected cluster of four curriculums offered in one outstanding post-secondary institution.

Under these conditions there is urgent need for other probing studies to build on this one. For, it is important to substantiate or disprove the conclusions that differences in the amount and content of grades earned, and degree of emphasis on a prevocational objective as one of industrial arts, had no influence on the scholastic achievement of students in each of four different post-secondary trade or technical curriculums.

• 2:9 "EMPLOYMENT OPPORTUNITIES AND USABLE AGRICULTURAL SKILLS IN NON-FARM AGRICULTURAL OCCUPATIONS" BY DILLON.

Employers in thirty-eight counties in the Appalachia region of two contiguous states were surveyed for employment opportunities and patterns, job specifications, worker competencies, preemployment and upgrading training needs, and other relevant manpower data.

From this mass of information, fifteen occupational clusters of job titles requiring similar preparation were formed. These may be translated into course content areas such as plant and soil sciences, physical science technology, animal science and food science.

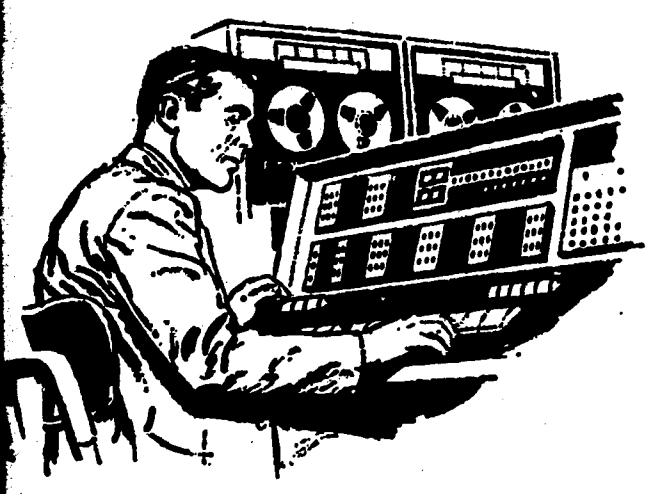
Determining Occupational Competencies

The employers in the sample, who were interviewed by a trained team, employ workers who use agricultural knowledge and skills. From their responses and those of other workers, it was possible to establish general competency areas for entry and advanced agriculturally oriented vocational jobs (where high school preparation may be adequate) and others of a technician nature that may require post-secondary training.

Interestingly, while technician jobs are emerging and demands will increase, the study reveals that two and a half times more "agricultural vocational" workers will be needed in the next five years.

The final report describes the design and techniques used. It brings together the data for systematic analysis into the agricultural knowledges and skills needed in non-farm agricultural occupations. This comes close to the end point of broadly defining curriculum patterns.

These recorded experiences, manpower facts, and the analyses should be examined by adminstrators who are planning to extend area vocational education programs and services: employment, student and employee counselors and personnel service coordinators; teachers, and others responsible for curriculum development or research activities.



• 2:10 "IDENTIFYING SUCCESSFUL TECHNICAL STUDENTS IN JUNIOR COLLEGES" BY TURNER.

Can the waste of human and material resources resulting from high attrition rates among students pursuing non-technical associate degree programs in junior colleges be reduced? Are there particular characteristics that may accurately differentiate between students and potential success in completing selected technical and non-technical curricula? Can any characteristics found to be essential for predicting success be measured reliably?

Toward Saving Potential Failures

Well, by analyzing personal data, test scores and earlier performance, this study team hypothesized that many possible failures from among non-technical program students could succeed if they possessed certain characteristics and pursued a technical curriculum.

This project centered around specified curricula in a junior college in a State School system. The report makes no generalizations about the findings and conclusions as being representative of or applying to any other junior colleges.

The sample consisted of students enrolled full time in one of four programs, each having an anticipated 35 students from the population who would graduate. The four programs included: technical education (a combination of civil, design/drafting, electronics and laboratory technology curricula), business administration, engineering and liberal arts. The socio-economic index of parents; various test scores, grade point average high school rank, and graduation status, were the dependent variables.

The report may provide some statistical yardsticks and techniques to guide junior college adminstrators, other professional teaching staff, and guidance personnel in conducting similar studies to (a) develop predictors of students' potential for successfully completing specific curriculums, (b) appraise internally the academic philosophy of the institution, and (c) assist students to make realistic career decisions.

VOCATIONAL EDUCATION IS PEOPLE . . . HIGH SCHOOL AGE YOUTH

Additions to completed research, demonstration and institute projects that have been reported in "Research Visibility" for a major "Area" will be received continuously after publication date for a particular issue.

Important research and development projects will be selected from these additions for coverage in subsequent issues of "Research Visibility."

Reported at this time are those in Area One ". . . High School Age Youth . . ." relating to Quality Standards and Curriculums to Meet Needs.

Topic Three: Quality Standards

• 1:90 "AN INVESTIGATION AND DEVELOPMENT OF THE CLUSTER CONCEPT AS A PROGRAM IN VOCATIONAL EDUCATION AT THE SECONDARY SCHOOL LEVEL" BY MALEY.

(Phase I, "Final Report"; Course Outline: Construction, Electro-Mechanical Installation and Repair, and Metal Forming and Fabrication Clusters)

The "cluster concept," considered in this project as an innovation in vocational education, is designed to develop student capability to enter into employment in a cluster of related occupations. This means the development at the high school level of skills and understandings to "enter a family of occupations" as contrasted with a conventional program "which prepares a person for a particular job. . ."

Basic Questions for Curriculum Activities

This study did not attempt to establish a local, regional or national program of vocational education. Rather, it sought to answer these questions:

• Is the cluster concept of organizing instructional programs in vocational education feasible?

• How acceptable would "cluster training" be to those who employ and work with the product?

• Are occupational clusters and specific occupations within the cluster identifiable and are they adaptable to a cluster concept program?

• Can course outlines be developed for a program?

After analyzing earlier studies of classification systems and analyses, occupational clusters were formed ultimately for (a) construction, (b) electro-mechanical installation and repair, and (c) metal forming and fabrication occupations.

A combination of modified statistical, behavioral science, and content analysis approaches were used to identify the "human requirements"; i.e., the skills, mathematics, measurement, science, communication and related information. The human requirements became the basis for course outlines.

For each occupational cluster, • the tasks performed by a worker going into an entry job are given; • these are analyzed for the mental and manipulative skills required; • and are followed by an example of an instructional sequence of tasks; and • the common learnings and skills needed for the occupational cluster; • finally, course outlines are prepared, giving sources of instructional materials.

Establishing Need and Feasibility

Criteria were determined for identifying job titles in the occupational cluster and the characteristics of occupations. Further, based on national reports and many papers and writings of individuals, • the need for a cluster concept; • the mobility and adaptability of workers to changing technology and employment patterns; and • the flexibility within programs to permit wide student choices, were established.

Up to now what has been written looks back over the why, how, where, who, what, and the results of this project. It is time to look quickly ahead to experienced and highly qualified operational level vocational educators at state and local levels to objectively weigh out all of the materials.

Missing Ingredients . . .

Experienced state and national leaders who have contributed significantly to major curriculum philosophy and developments in vocational industrial/technical education seem to be missing. Certainly those who serve as approved vocational industrial teacher trainers, vocational curriculum development personnel, outstanding vocational industrial/technical education teachers, qualified area directors of vocational education, and others need to carry on independent evaluations of this study.

To be forthright, editorially, these experienced, knowledgeable persons and groups need to resolve a philosophical issue. Is the broad generalized occupational cluster program approach really sound vocational education? In this instance would it constitute a bonafide quality vocational industrial education program?

• 1:12 "APPROACHES TO USE IN ASSESSING NEEDS FOR, CONTENT OF, AND CERTAIN FACTORS TO BE CONSIDERED IN PREPARING FOR GAINFUL EMPLOYMENT" BY COZINE.

Many studies similar to this one are being carried on simultaneously throughout this country. All are seeking answers to the challenge of the Panel of Consultants and the Vocational Education Act of 1963.

The guidelines for this research project were the early and continuing principles for establishing and administering vocational education programs. Interpreted in the context of home economics programs that prepare for gainful employment, here are some of the guidelines that were used:

- Programs should be offered only if they make significant contributions to the welfare of the individual;
- There is evidence of local interest, vigor and support;
- At the completion of a training program there is a possibility of employment;
- Sufficient instructional time will be made available to develop marketable skills;
- Vocational counseling will be provided by persons who from experience know labor market needs;
- Curriculum change is based on valid occupational analyses from which content is derived in preparing for a cluster of jobs, each requiring comparable skills and knowledge; and
- The helpful support and advice of a Vocational Advisory Committee is a necessity.

Outside Agencies Assist

Related services and agencies like the State Employment Service, State Department Personnel, County Health Officers, Social Service Supervisors, Child-Welfare and Family Relations Units, businesses and service centers assisted. Many of the conclusions resulted from information furnished by these groups.

Unfortunately, the study is circumscribed by certain limitations relating to size of geographic area, number of respondents, and involvement of experienced vocational educators from other fields. Such persons, over the years, may have been providing in-depth specialized instruction for the same or closely related clusters of job titles. Further, curriculum change should be based on valid occupational analyses covering an enlarged area, State or National labor market.

The report should be considered not as a final answer to fit precisely into another community's needs. Rather, it contains important materials relating to the techniques developed, the data gathering forms, and the interpretations of the findings. To this end, the report should be valuable to teacher educators, home economics teachers, and supervisors, and to related services concerned with curriculum revisions to include the development of skills and related technical information as preparation for wage-earning, child care, clothing and home sewing service occupations.

• 1:91 "FLEXIBILITY FOR VOCATIONAL EDUCATION THROUGH COMPUTER SCHEDULING" BY ALLEN.

With continuing improvements in computer-based scheduling, is it feasible to harness this technology to improve vocational curriculums by moving away from uniform time and space schedules, conventional student groupings and current staffing patterns? If a "break out" could be effected, would it provide a better balanced program for students majoring in vocational education if they were able to get more prevocational experiences? Can vocationally-oriented experiences be introduced for students who are enrolled in non-vocational curriculums?

Essentially, these were the principal goals for exploring the feasibility for curriculum improvement using the Stanford School Scheduling System. If practical, it was envisioned that schools might refine and redeploy the time and talents, and the human and material resources of students and teachers to provide an enriched and more functional program of vocational education.

Two sets of schools were studied: vocational-technical and the so-called comprehensive school. They were selected to represent different geographic areas, types and sizes of schools, school organizational and administrative patterns, etc.

Minimal Programs of Comprehensive Schools

A few significant findings are reported. Most "comprehensive schools," said the report, have only ". . . minimal vocational education programs which are frequently on the periphery of the total curriculum . . ." and poor articulation with the rest of the instructional program. Also, since vocational students spend considerable time in general education, it is vital that there be a penetrating analysis to effect greater articulation.

Equally important is the need to assess the time schedules for vocational curriculums and the all-too-often limited interface of vocational educators and vocational programs with the work world, especially through the establishment and use of advisory committees and the public.

Substituting Performance for Time Criteria

The investigators suggested the substitution of a performance measurement for the established time criteria as a possible shift of focus back to the student. What is reported out covers the first year of what was conceived in the objectives of the demonstration as a three year project. Starting as a developmental model, continuous refinements may ultimately result in its conversion to a production system.

The demonstration, quite naturally, established a series of hypotheses to be tested as these relate to:

- serving greater numbers of youth in vocational education;
- greater flexibility in scheduling with variations in group size;
- differentiation of course content in parallel fields;
- more dependence on the student for independent and individual study;
- increased recognition of differences in abilities and interests;
- changed teacher and teaching specifications and assignments; and
- wiser utilization of administrative capabilities and time.

School administrators on state and local levels, teacher trainers, student personnel services coordinators, researchers, advisory committees, and others concerned with program planning and organization, will want to study the report. Significant changes in curriculum designs, staff assignments, plant utilization, student scheduling, and other implications for program change, may result from computerized scheduling.

At this point, what is reported should be recognized as statements of progress, rather than final recommendations based on the complete demonstration.

• 1:13 "AN EXPERIMENTAL VOCATIONAL EDUCATION INSTITUTE FOR THE PREPARATION OF TEACHER COORDINATORS OF NEWLY EMERGING HIGH SCHOOL VOCATIONAL PROGRAMS" BY SAMSON.

Vocational cooperative education programs have over the years provided many high school age youths with in-school instruction coordinated with on-the-job development of skills as preparation for employment. Otherwise, such opportunities would have been denied them.

Value Proved By Service

Vocational cooperative education programs have been offered in each vocational education field in secondary schools and post-secondary institutions. Where the cooperative phase of such instructional programs has been preceded by a quality full-time, in-school preparatory vocational education instructional program, this capstone provides an ideal final culminating school-to-work experience.

The setting for this study and institute for preparing teacher coordinators is the State of Wisconsin. Here, new programs of vocational education are emerging, in addition to those that have been offered in agriculture and home economics. Selected teachers who were to serve as teacher-coordinators had to be prepared through a sequence of experiences to analyze needs within their geographic areas; become knowledgeable of organizational and management patterns to use in the program; know legal employment practices, etc.; and have available resource materials necessary in the instructional process.

The teacher-coordinators determined the characteristics of their areas according to four population groupings. These ranged from the large Metropolitan areas of over 80,000 to minor Metropolitan areas and from major to minor urban-rural areas.

Primarily, there were four parts to the institute program. The on-campus phase was intended to develop basic knowledge about the organization, management, and operation of programs at the high school level. This was followed by field and project work within the schools and with employers and other groups to be served. The teacher coordinators then returned to campus for further assessment of experiences, refinements to program plans, and additional instruction on program operation.

On-The-Job- Evaluation

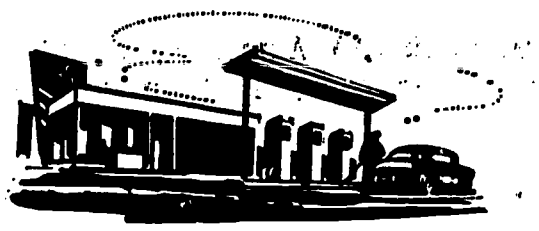
Throughout the year, four observer groups composed of teachers, administrators, counselors and local vocational coordinators carried on evaluations. This follow-up covered the teacher-coordinator, the program, and student achievement.

It may be interesting to review the major topics covered on-campus. Seven were emphasized starting with foundations for vocational programs. The other topics included: program development, student selection and placement, planning occupational experiences, program operation, instructional coordination, and program evaluation and improvement. As an end result of the institute and with subsequent planning, sufficient information became available upon which to develop a vocational teacher-coordinator training program.

Vocational teacher educators may find value in the organization and planning procedures for the institute, the statistical approach and techniques used to determine the characteristics of each population area, the follow-up evaluations, and study of problems and issues. These are recorded as "critical incidents" in initiating high school vocational education programs. Area vocational education directors may want to analyze the report for program development implications.

Building Upon Accomplishments

An editorial reminder may be in order. Persons contemplating the developing of teacher education programs or the development of essential instructional materials should make an intense search of materials necessary for such purposes. This is not a new program of teacher preparation as many states have had certification requirements for vocational teacher-coordinators. These requirements and the available instructional material should be reviewed to build upon, rather than to duplicate the professional planning and efforts of others.



• 1:15 "DEVELOPMENT OF MARKETABLE TYPING SKILL: SENSORY PROCESS UNDERLYING ACQUISITION" BY WEST.

Does a learner who is denied the use of certain sensory processes in the development and acquiring of a new skill learn the skill faster, slower, or at the same rate? In this instance, the particular skill selected for investigation was one of ordinary copying at the typewriter.

Unfortunately, the results of this study are based on the experiences with limited numbers and for a single skill. The 266 typists in the sample had a skill range of from 9 to 108 words per minute. Predominantly, there were 224 high school and college students from four schools. Another 42 employed typists were included.

There were three test conditions under which each participant typed:

- The first condition provided a basis for classification according to skill level. Each typist was given conventional instructions to follow copy word by word.
- Under the second condition, each typist was instructed to space once and retype immediately any word thought to have been mistyped, before proceeding with the next word.
- Finally, the typists followed the second set of conditions but, in addition, were deprived of visual reference to the typewriter or typed copy.

From the results it was established that visual control is important early in the development of new typing skills. However, deprivation of vision had no significant effects on performance speed. This revealing fact, together with the feedback data, raise important questions about the insistence on conventional teaching according to "touch" typewriting from the start of learning. The free and early use of vision is suggested.

The references cited by the investigator did not identify recent studies on the subject by specialists in the field or extensive related new studies by psychologists and others. At this point, the study may be of value to researchers who may want to evaluate the findings and methodology as foundational to greater in-depth studies. The results of such effort may then provide sufficient and extensive information to materially effect changes in curriculum and methodology.

• 1:92 "Appraisal of Curriculum Materials Developed for Use by Secondary Home Economics Teachers" by Horn, Fern.

A two-year statewide curriculum project by teachers of home economics in secondary schools resulted in the development of resource teaching units. These were prepared for different grade levels (7 to 12) to develop competencies for effective personal and family living in the two areas of clothing and child development.

In this part of the study, the coverage of the unit objectives was analyzed and the complexity of content was compared by testing at each grade level. The data are summarized in tables which show how the use of each resource unit was measured in relation to (a) types of programs, (b) service as a supervising teacher, (c) curriculum enrollment, and (d) the quality of the objections. Item analyses findings are also summarized.

Value of Teacher-Made Resource Units

It was learned that teacher-made resource units

- provide challenging student experiences;
- affect the learning process significantly; and
- change the teaching patterns of many, especially those who are supervising teachers. A need was cited for analyzing teacher competencies to develop the capacity for critical thinking. The tests were reported as valid measurements of difficulty and had necessary discriminating power.

Classroom teachers of home economics, supervisors, curriculum specialists, administrators and teacher trainers should be able to adapt the instruments and procedures to fit any similar curriculum planning, teacher training or evaluation endeavor.

Those who counsel and guide youth may be interested in comparing accomplishments in the resource units with IQ or any other score like the Minnesota Scholastic Aptitude Test. This should be especially useful in determining how the needs of low ability students may best be met.

• 1:93 "Developing a Scale to Measure Interests in Agricultural Occupations" by Hamilton and Hill.

Changes in curriculum direction, in vocational-agricultural education, for essential preparation to enter work on-the-farm now include off-farm occupations which require agricultural skills and call for the development of more valid vocational guidance instruments and procedures. Thus, to assist young people in identifying their interest in the five major occupational fields of agricultural production and management, ornamental horticulture, agricultural business, agricultural mechanization, and conservation, this research team concerned itself with an Agricultural Occupations Interest Scale.

Developing Interest Items

Interest items of typical job activities and concepts were developed. These were reviewed, revised, and then tested. In turn, a list and a scoring key were developed for those items that would discriminate most successfully between each field.

Extensive field trials were made with successful men and women. Their responses were compared with those of high school students. Background information was given and uniform reporting techniques were developed in a special training program for the interviewers.

The study results established the fact that persons in agricultural production and management, ornamental horticulture, and agricultural mechanization had interest patterns in each separate field that could be differentiated using the Agricultural Occupations Interest Scale with reasonable success, conservation with moderate success, and agricultural business to a lesser degree. Although women's scores were ranked, more work needs to be done.

The principal investigators recognized the trial nature of the 100 items on the Scale, the need for extensive long-term application, and continuous follow up to prove its guidance value.

This down-to-earth report is recommended to administrators, coordinators and planners of area programs of vocational education on secondary and post-secondary school levels, vocational curriculum coordinators, vocational guidance and employment service personnel, vocational subjects supervisors and, importantly, teachers of agricultural subjects.

To supplement the body of the research report, its findings and conclusions, the Appendices contain the research instruments, statistical tables, and Interviewers Manual.

• 1:94 "Review and Synthesis of Research in (A) Agricultural, (B) Business and Office Occupations (C) Distributive, (D) Home Economics, (E) Industrial Arts, (F) Technical, and (G) Trade and Industrial Education" by Taylor, and Others.

Research studies and other valuable documents in seven "substantive" fields of vocational and practical arts education were reviewed and synthesized by specialists into a series of papers, each covering a specific field. The papers follow a somewhat uniform format for style and organization, starting with the important area of Philosophy and Objectives (1).

R & D Related to Fifteen Major Areas

Then, other significant studies are reported as they apply to (2) Manpower Needs and Employment Opportunities, (3) Curriculum Development, (4) Educational Programs, (5) Instructional Materials and Devices, (6) Learning Processes and Teaching Methods, (7) Student Personnel Services, (8) Facilities and Equipment, (9) Teacher Education, (10) Administration and Supervision, (11) Evaluation, (12) Research, and (13) Ancillary and Other Contributing Activities. Conclusions and recommendations of the specialists (14) and a composite Bibliography (15) of resource materials are included.

Stimulating and Facilitating Research

At local, state and national levels, researchers, teacher educators, supervisors, administrators of vocational education programs, curriculum coordinators, manpower and human resource personnel, and their counterparts in the occupational world, may consider these Review and Synthesis reports as benchmarks for • assessing research, • planning new research activities realistically, • disseminating new knowledge and skills, and • stimulating and facilitating the application of proven techniques, information, processes, etc.

Coupling the increased potential, the accelerating rate for producing and transmitting information through the Clearinghouse for Vocational and Technical Education, the ERIC system, "Research Visibility," and other channels, it is feasible to keep updated.

But, equally important, is the added capability to reach back over the years to the pioneering efforts of the early and visionary leaders of vocational education. The principles and practices which they established as firm foundations need to be assessed again and again for their value toward insuring the integrity and excellence of vocational and practical arts education in serving man's needs.

"PLAIN TALK"

A few concerns that came to light as research, development and institute projects were analyzed for "Research Visibility" should be shared. For example, in any research effort affecting people and the whole educational system, or a program in a vocational or practical arts field, there comes the moment when all of the data, information, and experiences that can be brought to bear on a particular issue reach a focal point for decision making. Here is the crucial human equation . . . a single individual or group who must ultimately make subjective judgments.

Critical Human Judgments

This is especially critical in educational research which is rarely "pure" research. Totally objective evidence that may be pyramided to always get the same conclusive answers is usually not possible to obtain. Thus, in most educational research the principal investigator subconsciously or deliberately builds himself into the research. And, the conclusions which result are conceived in the context of his experiences. Special precautions, therefore, need to be taken to approve persons who are qualified to make profound judgments.

Here an abstraction from the philosopher Kahlil Gibran may be in order. In essence, he said: ". . . No man can reveal to you ought but that which lies half asleep in the dawning of your knowledge. . ."

It is Obvious That . . .

√ . . . Too many persons plan research and other studies and demonstrations with limited and myoptic vision. The practice of a single researcher or group relegating an instructional program to the instructional or institutional level at which he serves, without carrying out a vertical curriculum correlation study, is an insidious one!

Such practices normally downgrade the capabilities of youth in high schools and deny them, as well as other adults, instruction at advanced levels. Higher levels may be reached when secondary and post-secondary programs are developed simultaneously to complement, rather than to duplicate one another.

√ . . . Research dealing with curriculum planning, organization and development is too narrowly defined, representing small, fragmented parts. Instead, curriculum efforts should fit into an enlarged concept where they are central to every facet of total program planning and organization, such as the design of physical plant and facilities, staffing, and instructional services.

√ . . . Potential researchers need to follow the practices of their own teachings. Too many violate the principle

of making extensive preliminary surveys by not seeking out all known research studies and experiences before completing the design and proposing a project. Until there is this degree of professional commitment, persons conducting studies will continue to waste priceless human and material resources to "rediscover America."

√ . . . While professionals talk about interdisciplinary working relationships among vocational and practical arts fields, much research that should involve more than one field is carried on in isolation from the others.

√ . . . Specialists in one field should withhold the making of decisions affecting another field in which they have limited over-all facts, experience or responsibility.

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- **DEMONSTRATIONS**
- **INSTITUTES**

Note: The inclusion of a report in this issue is not to infer that the principal investigator classified the project this same way or that the findings or results are not applicable to other levels, programs, or services in vocational education.

Subsequent issues of "Research Visibility" will report changes as (a) new projects are approved, (b) other completed manuscripts are reviewed, (c) additional abstracts are made available, and (d) further information is received.

VOCATIONAL EDUCATION IS PEOPLE . . . WITH EDUCATIONAL NEEDS BEYOND THE HIGH SCHOOL

*RESEARCH, DEMONSTRATIONS, AND INSTITUTES (reported in this issue)

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• 2:3 "An Eight Week Summer Institute Training Program to Train Instructors of Instrumentation Technology" by Ziol, Frank J. Pasadena City College, Pasadena, Calif. (Project # 6-2142) VT # 003 373

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AVAILABILITY OF REPORTS FOR FURTHER STUDY*

All reports which are followed by the letters ERIC and an acquisition number like ED 010 000, may be purchased from the ERIC Document Reproduction Service, Microphoto Division, Bell and Howell Company, 1700 Shaw Avenue, Cleveland, Ohio 44112. The letters (MF) indicate the availability of microfiche copies; and (HC) for hardbound copies, at the prices given.

Other completed reports that have not been entirely processed through ERIC may have what is called a Clearinghouse acquisition number, like VT 000 000. A facsimile copy of each entire report, only, may be obtained at cost. Address requests for VT numbered reports to: Retrieval Specialist, ERIC Clearinghouse, The Center for Vocational and Technical Education, Ohio State University, 980 Kinnear Road, Columbus, Ohio 43212.

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RESEARCH VISIBILITY

SYNTHESIS / APPLICATION / DISSEMINATION

•"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633; "Synthesis and Application of Research Findings in Vocational Education").

Vocational Education is People

"YOUTH WITH SPECIAL NEEDS"

TABLE OF CONTENTS

YOUTHS' PROBLEMS AND EDUCATION

The 1962 Report of the Panel of Consultants to President Kennedy, *Education for a Changing World of Work*, devotes considerable attention to the problems of youth with special needs. Characterizing these youth as persons having one or a combination of a whole gamut of handicaps, the report states:

"These students are sometimes called potential dropouts, disinterested, reluctant, disadvantaged, alienated or culturally deprived. Other youth problems are recognized in connection with the minorities, the migrants, the mentally retarded, the emotionally disturbed, and the delinquent. Altogether, the number represented in this classification is very great; the dynamite generated as a result may be social, political, and economic, especially in large population centers."

Research and development projects, relating to Youth With Special Needs which is also the theme of this "Journal" issue, are organized into six topics. These are derived from the six specific recommendations made by the Panel of Consultants—"To improve and redirect vocational education to better serve youth with special needs."

(1) "New occupationally oriented programs of vocational education should be added to the school curriculum designed to lead to employment in jobs known to exist and to be successful educational experiences for students who cannot profit from instruction in the traditional programs.

Dr. Gordon F. Law is editor of "Research Visibility." The organization for this department of the JOURNAL, the pattern for reporting and the writing represent his work.

(2) "Cooperative (school-work) programs should be organized wherever possible, so that the student concerned may have the advantage of school experience coordinated with employment;

(3) "Diversity and flexibility should be the keynote of such programs, and instruction should be highly individualized in order to assure the occupational stability of such students when they enter full-time employment.

(4) "Appropriate vocational guidance of practical significance should be made available to each person, and each one trained and employed should be followed up to determine the value of training provided and to secure information leading to improvement of both content and method in future courses;

(5) "Specially trained teachers who understand the variety of needs of disadvantaged youth and who are occupationally competent in the specialized vocational areas represented should be employed for these programs; and

(6) "Experimental and pilot programs should be planned and conducted to develop practices to serve these students more effectively."

Additional Information

Another prime source of information is OE Handbook 8-0038, "The Youth We Haven't Served: A Challenge to Vocational Education," by Barbara Kemp. This excellent publication describes some of the characteristics of the socio-economically handicapped; steps which must be taken to enable young people to succeed in the regular vocational education programs; and, it lists some of the opportunities made available for them by the provisions of the Vocational Education Act of 1963.

Reports that are included under each topic represent a synthesis of findings from completed and available research studies. Other approved and completed projects are given in the Bibliography. Please note, at the end of the Bibliography section, specific information regarding the availability of studies listed.

Topic One: OCCUPATIONALLY ORIENTED PROGRAMS • Those leading to employment • For students who cannot profit from traditional programs

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3:1 "Identification of Concepts Important for Youth Orientation to the World of Work" by Warren

In the statement of purpose of this study is the information that "the need for research in this area was urgent. A review of occupational-psychological literature revealed that identification and communication of concepts relating to youth orientation to the world of work was neither formalized nor immediately relevant to the needs of youth. No universally accepted set of concepts or plan was available by which teachers could efficiently and expediently communicate concepts; and

"It was believed the concepts identified would be important to high school youth in guiding them to personal awareness of the demands of the world of work. . . . Further, these concepts would be applicable to youth in most types of employment and in the areas of high school vocational education: agriculture, business and office, distributive, home economics, technical, and trade and industrial."

Conference Activities

During a two-week conference, twenty-four selected high school faculty consultants evaluated relevant materials, resources, and media assembled by project research assistants. The conference program consisted of presentations by speaker-consultants representative of business-industry, government, higher education, youth panels, and a reacting panel of selected consultants who evaluated the concepts identified.

Conference participants evaluated literature reviewed; interacted with speaker consultants and youth panels; and reacted to selected audio-visual media. The concepts were identified and areas noted where media are needed to communicate concepts to students.

For the conference, "concept" was defined as "An abstract idea related to general preparation for employment."

Concepts identified were organized into four major classifications:

• Socio-economic, • Psycho-social, • Communication, and • Individual and family management concepts, all of which related to work.

Semantic Differences in Concepts

A significant finding reported for this study is that "abstract concepts do not communicate *per se*. Semantic differences in concepts existing in our society affect the understanding a person obtains about the world of work. . . ."

This study should be of particular interest to any one who is preparing a course of study or topical outline in occupational orientation. The major concepts identified by the summer conference, which are listed in outline form, may serve as a checklist of topics that could be considered. Also of value would be the bibliography of literature cited and literature reviewed, which contains over two hundred and fifty titles of books and articles.

As further studies relative to youth orientation are made, it may be desirable to test the concepts identified in this study with young people, especially socio-economically disadvantaged ones, to determine how closely these concepts do in fact relate to their occupational aspirations.

Topic Two: COOPERATIVE SCHOOL AND WORK PROGRAMS • School experience coordinated with employment

Note: As cooperative education programs may have special meaning for disadvantaged youth, an expanded report of the Wisconsin study, which was treated in a former edition of "Research Visibility," is presented here.

1:13 "AN EXPERIMENTAL VOCATIONAL EDUCATION INSTITUTE FOR THE PREPARATION OF TEACHER COORDINATORS OF NEWLY EMERGING HIGH SCHOOL VOCATIONAL PROGRAMS" BY SAMSON

There was a time when cooperative education was thought of as a substitute for a "regular" vocational program, functioning mainly in communities with limited school populations or where extensive material acquisitions for shop or business practice equipment were not feasible. We now find more and more elements of cooperative education associated with vocational schools and programs that do have adequate facilities as the benefits associated with these school-and-work programs have become better known.

The Teacher Coordinator

The most critical ingredient for success in a cooperative program, regardless of the type and size of school setting, is the teacher coordinator. This person needs to have all the skill and ability of a master teacher as well as a number of other special qualities. It is heartening, therefore, to note that the University of Wisconsin has undertaken a program specifically designed to prepare teacher coordinators to develop new vocational education programs in Wisconsin high schools.

A special summer institute prepared 20 vocational teachers who were selected to develop new vocational education programs in Wisconsin's high schools. The design was a combination of five weeks intensified on-campus study and three weeks of full-time field work.

The problems, concerns and successes of first year vocational program development were recorded by weekly planning and progress reports from each school, and by interviews and staff visitation.

Critical incident reports were collected from participants and selected school staff. The summer institute was evaluated. Successful and unsuccessful practices in vocational program development were identified.

Three-hundred and three critical incidents were found. Twenty-two critical requirements were reported. The Chi-Square test was used in determining the significance of differences in comparisons made on community, school and personal factors of participants. It was generally concluded that training institutes for new coordinators should be no less than nine weeks in length; that three weeks of field experience is highly desirable; and that up to six hours per day of intensified institute activity is tolerable.

Critical Factors

Critical factors in new program development are (1) time allotted for coordination, (2) communication effectiveness of coordinator, and (3) competence of coordinator in education and administration of work. State supervisory services need to be intensive during the first year as innovative practices have a high mortality during this period.

A section of this report that should be of value to coordinators of cooperative education, teachers preparing for such positions, or administrators responsible for work-study programs, is the one which describes "effective and ineffective critical incidents in the development of new vocational-education programs."

Here, the experiences of institute participants were related with respect to effective, ineffective and "no action" results obtained for their activities pertaining to each of the following categories: (1) Program Organization, (2) Public Information and Relations, (3) Operation of Program, (4) Staff Relationships, (5) Coordination, (6) Curriculum Planning and Development, and (7) Student Selection, Guidance and Placement.

Topic Three: DIVERSITY AND FLEXIBILITY • Individualized instruction for occupational stability

3:3 "CONFERENCE ON HOME ECONOMICS PROGRAM DEVELOPMENT FOR DISADVANTAGED YOUTH" BY GRAVATT

The two-week conference on Home Economics Program Development for Disadvantaged Youth and Their Families was held at Pennsylvania State University during the summer of 1965. Thirty-six participants were identified as men and women selected for their potential to initiate new Home Economics programs with the disadvantaged.

The conference program included the reading of five papers; field trips to poverty programs in Pittsburgh; a symposium entitled "New Home Economics Programs With the Disadvantaged"; a report of Home Economics extension programs dealing with disadvantaged families in Pennsylvania; and a series of workshop sessions by conferees.

Information included in the five main presentations, which are copied in the report, should be of special interest to Home Economics teachers and supervisors. A rather extensive Bibliography of titles relating to the topic is also included.

Arthur Gravatt's paper, "A Frame of Reference for Home Economists Working With the Disadvantaged," presents several sociological applications to the study of families and groups. When speaking of the conflict in the field of home economics education, the author suggests that 'skills' have been deemphasized in professional training at the collegiate level in favor of the 'conceptual' approach.

Application Needed

He warns that "both orientations are needed. Indeed, each end of the continuum has much to offer the other. Colleges and universities can best function at the conceptual level in theory development, testing of theory through experiment and research, product de-

velopment, and evaluation of programs. But theory and research without application are of little help to the poor."

When discussing the people served by home economics, the author questions the degree of involvement of home economists in matters relating to the disadvantaged. "Whom are we serving? Who is the clientele of home economics programs? Formerly the focus has been working with middle-class groups in the community or captive groups in schools and colleges. As one reads the rich literature on helping disadvantaged families, it becomes evident that home economists are conspicuous by their absence."

A Perspective Analysis

The presentation by Barbara Kemp, author of the monograph, "The Youth We Haven't Served," is especially enlightening. A perspective analysis of the traditional middle class values associated with work, cleanliness, education and family behavior, it relates how many socio-economically disadvantaged people wish also to adopt these values if only shown the way.

The author makes special recommendations for Home Economics teachers with respect to such topics as family planning and sex education, community organization, consumer education and child care.

When discussing approaches to classroom instruction for disadvantaged youth, Miss Kemp urges teachers to:

"Use material they can handle . . . praise and compliment small progress. Give them individual attention . . . let them teach you. Listen to them. Let them tell you what some of their needs are before you suggest the kinds of programs and materials you think good for them."

3:4 "THE VALIDATION OF EDUCATIONAL SYSTEMS PACKAGES FOR OCCUPATIONAL TRAINING OF DEPRESSED AREA STUDENTS" BY PURL

It goes without saying that improved curriculum materials, together with refined teaching methods, are needed to bring about more effective instruction for disadvantaged youth. Purl's validation study of educational systems packages sheds light on both items.

Hypothesis for Instructional Material

"The hypothesis under test in this study contends that instructional material, revised in iteratively (repeated) cycled individual tutorial sessions with students from an urban deprived population, would yield more learning than would material revised in a typical curriculum workshop situation involving modifications based upon the teachers' subjective experience, but not upon direct interaction with the individual student. By placing the student into the feedback loop of material evaluation and modification in the tutorials, it was assumed that more powerful instructional resources could be developed through face to face interaction between the teacher, author, and the student."

Data Bank of Student Response

Another aim reported was to investigate the feasibility of establishing a data bank of student responses to the instructional material. The study was conducted in Simon Gratz High School, Philadelphia.

The methodology employed consisted of comparisons of learning test scores between groups of students using tutorially revised material, and a group studying instructional materials prepared exclusively by teachers. All subjects were tenth graders currently enrolled in a general mathematics course.

Fifty subjects each were chosen at random for the laboratory and control groups. Pairs of students were matched in accordance with I.Q., arithmetic, and reading test scores. Attendance records became a further criteria selection. No student who had missed more than 30 days in his previous year at school was considered for either group.

Tutorial Sessions and Analysis

Tutorial sessions were conducted to revise the basic text materials. Individual sessions were initiated using a unit on "The Measures of Central Tendency" from the tenth grade *General Mathematics Book One*, by Brown, Simon and Snader. Experimental groups and the central group were given the same criterion tests in order to measure learning performance. Instruction was in the Simon Gratz tutorial center and usually lasted a full forty-five minute period per child.

Analysis of data obtained through tests and a frequency diagram of criterion test scores supported the hypothesis that tutorial revision of instructional material will produce a more effective teaching tool than will workshop revision. There was no basis for concluding any correlation between teaching effectiveness of materials and level of I. Q.

This study supports the theory of learning that students are perceptive, and given the opportunity, they can make positive contributions toward improving teaching method and curriculum content. There is a lesson here for all teachers. But, particularly, those of *youth with special needs.* Before determining what should be taught and what teaching methods to use, it is important to find out what students feel they need to learn and how the learning can best be accomplished.

Topic Four: VOCATIONAL GUIDANCE • Of practical significance • Available to all • Follow-up studies

3:7 "A DEVELOPMENTAL PROGRAM FOR VOCATIONAL COUNSELORS DIRECTED TOWARDS SERVING DISADVANTAGED YOUTH MORE EFFECTIVELY" BY SWEENEY

This report is the product of a one year cooperative effort of South Carolina educators to determine more effective ways in which to serve disadvantaged youth.

A two week institute for twenty-nine counselors from "employment, trade, technical, and school settings" constituted a major phase of the project. Institute sessions were made up of presentations by visiting speakers, and workshop sessions for discussion and program development. Follow-up meetings of conferees were held on three subsequent dates.

According to the program report, problems associated with counseling disadvantaged youth in South Carolina are compounded by the fact that the State has no compulsory attendance law.

"As a result, many youth are not just drop-outs: they have never attended school" it is pointed out in the report.

Recommendations

Perhaps the most illuminating aspect of the developmental program for vocational counselors was the set of recommendations made by institute participants with relation to (A) joint action by agencies working with disadvantaged youth, and (B) for counselor education and in-service training.

Many of these recommendations, although prepared by South Carolina vocational counselors for conditions in that state, should be applicable to many other regions and situations.

Among the first group of twelve recommendations was one that "a state agency assume responsibility for compiling a directory listing and describing the functions of various agencies and facilities available in each specific area of the state presently serving disadvantaged youth," and another "that studies be made to determine how present and proposed programs for disadvantaged families could be longitudinal and developmental in nature, i.e., to provide educational, cultural, and other experiences for the entire age range of disadvantaged from pre-school children through the adult level."

Among the ten recommendations for counselor education and in-service training was one that "counselor educators provide field and class experiences for the counselor candidates which would help them to be more knowledgeable about skill levels required of trade and technical workers, working conditions in major state industries, vocational training and entry occupations available in the state, and occupational trends and projections for both the state and the nation. . . ."

3:8 "Analysis of Dropout Statistics of the Colorado Dropout Research and Action Project" by Burrows

The Colorado study of school dropouts was predicated on the concept that any dropout represents a defeat, not only to the individual, but also to the educational system that failed to keep him in school.

Five Basic Assumptions

The Colorado State Department of Education initiated a long term, cooperative, action research project directed toward the dropout problem. The development of the project has been based on five basic assumptions:

1. The problem is broad in scope involving complex educational, psychological and social situations. Therefore, there is no one single simple solution.

2. A comprehensive approach to the problem that involves the community as well as the school has most promise of success.

3. Specific factors involved in dropout vary from community to community. Therefore local study and action directed to real and specific causes of dropout are most appropriate.

4. Problems leading to dropout are often developmental in nature. Action programs should be concerned with elementary as well as secondary school pupils.

5. The nature of the problem may require new concepts, philosophy and activities on the part of the school and community.

Project Goals

Goals of the project were to decrease the rate of pupil dropout; to evaluate the effectiveness of different approaches used by school districts; and to develop a model for local study and action through the identification of common elements of the most successful action research programs.

Local school districts involved in the study mainly had to do with the assignment of a local coordinator of the program, the conduct of an action plan, and the keeping of record and evaluation systems. The State Department of Education was to provide for coordination between school districts; establish uniform dropout definitions and methods of calculation; provide a basis for project evaluation; assist local districts; enlist cooperation of State Governmental agencies; and attempt to obtain financial aid for the project.

Statistical Range

The statistical treatment of Colorado school dropouts proceeds from the tabulation of annual attendance and dropout report forms to dropout statistics in each school district to the dropout data form used in the study.

The dropout data form was designed for use with an IBM card. The qualitative data requested on this form is organized according to the following outline:

Identifying data
Academic ability
Achievement

Emotional maturity
Social adjustment
Socio-economic conditions
Parental attitude
Physical disability
Summary
Future item additions
Local data

Dropout Data

Information was gained through summarizing dropout data by size and location of district. The development of factor analysis for 2,389 dropouts, and a stepwise multiple discrimination analysis, led to a report of the characteristics of dropouts and graduates from Colorado project dropout schools, and to the development of revised forms to be used in further studies.

In this concluding section of the study is the information that "the data reported here are being analyzed further through the use of a stepwise multiple discriminant analysis in an effort to develop an automated system for use in identifying educationally deprived students. A report on the findings of these analyses will be available later this fall."

The Colorado analysis of dropout statistics should be of special interest to researchers who may be involved in the design of similar projects. Although this document does not contain a discoursive treatment of findings and recommendations, examination of the statistical data will reveal a pattern of educational and socio-economic characteristics of school dropouts in Colorado which would relate to other studies in other areas.

Topic Five: SPECIALLY TRAINED TEACHERS • Those who understand needs of disadvantaged youth and who are occupationally competent

3:9 "A TEACHER INSTITUTE TO PREPARE TEACHERS AND MATERIALS FOR THE EDUCATION OF RURAL, LOW ACHIVEING, DISADVANTAGED JUNIOR HIGH SCHOOL STUDENTS FOR ENTRY INTO VOCATIONAL—TECHNICAL PROGRAMS" BY HODGSON.

The Delaware institute to prepare vocational teachers to assume responsibilities as instructors of pre-vocational core programs for rural underachieving junior high school students was designed to combat the educational problem of disadvantaged rural children who either drop out of school before the tenth grade, or who lack the essential basic education for entry into vocational school.

The two procedures employed to achieve the program's objectives were the establishment of a demonstration class in which a model program would be developed with a group of rural disadvantaged junior high school students; and the preparation of a program of instruction for the teacher-participants to prepare them for a similar role in a Delaware school district.

Pupils' Progress Measured

Twenty disadvantaged underachieving children from Newark, Del. were selected to participate in a demonstration class. This class served as an experimental unit in which the pre-vocational occupational core curriculum was used. Measurements of pupil progress for the six week session included the Gates Reading Survey, Differential Aptitude Tests, Taped Interviews, Student Questionnaire, and Pre- and Post-Analyses of Written and Dictated Stories.

Seventeen vocational teachers were selected as teacher-participants in the institute. The program developed for the teachers included three basic goals:

- Orientation to the needs, characteristics, and problems of the disadvantaged;
- Instruction in corrective and remedial procedures; and
- Acquainting them with skilled and semi-skilled occupations to be used in motivating the disadvantaged.

The program of instruction for teacher-participants included formal classroom work, guest lecturers, collateral reading, field trips to poverty areas and agencies, public seminars, writing assignments, and supervised practice teaching.

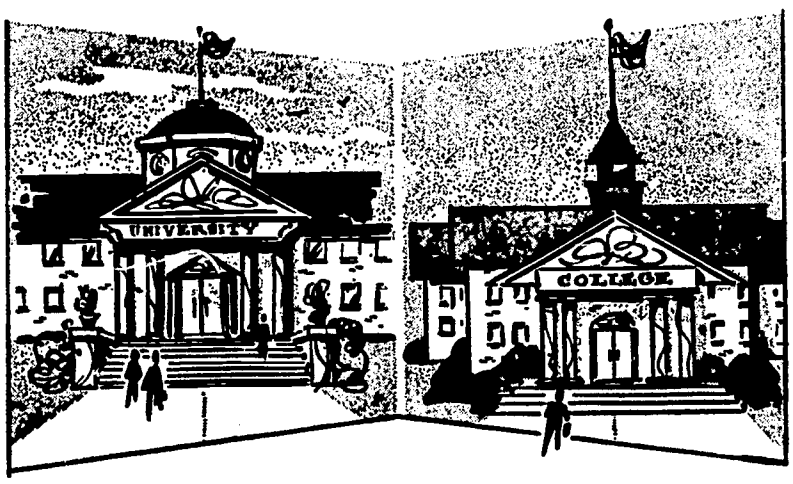
Conclusions Favorable

The conclusions for this institute were generally favorable. Included were statements that vocational teachers can be oriented to the needs, characteristics, and problems of disadvantaged junior high students; a pre-vocational core curriculum can be successfully employed to motivate the disadvantaged; teachers are interested in further in-service instruction; academic subject matter can be correlated with vocational activities; and, the six week duration of the institute was too short to accomplish all the objectives outlined in the proposal.

In-Service Program for Teachers Recommended

Among the recommendations for the study was one for the establishment of an in-service program for vocational and pre-vocation teachers with strong emphasis on remedial reading and language arts techniques. Other recommendations referred to such matters as pre-vocational core curriculum development, diagnostic teacher training in testing procedures, separation of classes by sex, and the extension of time needed for laying a foundation for such a program.

In the section of this report recommending the correlation of academic subject matter with vocational activities, may be found some of the procedures which have for years been standard practice in our better vocational high schools. This material, together with information and recommendations relating to diagnosis and instruction of a corrective or remedial nature, particularly in reading, should be of general interest.



3:10 "THE DEVELOPMENT OF A MASTER TEACHER TRAINING CURRICULUM FOR TEACHERS OF OCCUPATIONAL LEVEL TRAINING PROGRAMS" BY O'BRIAN.

Specially Trained Teachers . . .

"A critical problem facing education today, and one in which vocational education can play a leading and prominent role in solving, deals with providing a realistic educational program for Youth With Special Needs. . . . Remedial programs need to be replaced with preventative programs. This responsibility must be and is being accepted by our public schools," stated Dr. John O'Brian of Rutgers University as he introduced the purpose of his investigation: "To Develop A Curriculum With the Corresponding Courses of Study for a Master's Degree to Prepare Teachers for the Instruction of Youth With Special Needs."

In the process of developing the curriculum, five specific factors relating to youth with special needs were given consideration. These are:

1. Characteristics;
2. Educational, psychological, and sociological needs;
3. Skills, knowledges, and understanding needed by teachers and other supporting personnel to work effectively with the youth;
4. Methods of teaching that will be effective; and
5. Types of internship experiences that will be effective for teachers of the Youth With Special Needs.

Master's Degree Program

The development of a Master's degree curriculum and concomitant courses of study was accomplished by a committee of seven members. The thirty-three semester hour graduate program for teachers of students with special needs is comprised of four major instructional blocks:

1. Summer Session—Orientation Workshop (3 credits)
2. Fall Semester:
   - The social psychology of the disadvantaged (4 credits)
   - Seminar in urban society (4 credits)
   - Field experience (4 credits)
3. Spring Semester:
   - Seminar in Learning, Development, and Measurement (4 credits)
   - Educational Processes for Teaching the Disadvantaged (4 credits)
   - Educational Practicum for Teaching Disadvantaged Youth (4 credits)
4. 2nd Summer Session:
   - Professional Issues Seminar (3 credits)
   - Integration Option
   - Masters Project (3 credits) or
   - Evaluation Paper (no credit)

Wealth of Material Available

Course outlines developed by the committee are stocked with discussion topics, suggested experiences, and other valuable information. They are replete with bibliographies of books, plays, films, records and TV documentaries, all of which should be of interest to faculties of vocational teacher training institutes.

A valuable addendum to the course development work is a series of eleven papers, all relating to the preparation of teachers of disadvantaged youth.

3:11 "Production of a Motion Picture for the In-Service Training of Teachers in Problems of Human Relations in Teaching the Socio-Economically Disadvantaged—An Evaluation of the Motion Picture" by Breitrose and Voelker

Effective instruction of disadvantaged young people requires a high degree of teacher insight. But how is a teacher to gain such insight? And, for those engaged in the preparation of teachers, can there be any particular elements in the professional curriculum that will insure the program's graduates of having indeed developed the dimensions of appreciation and understanding so necessary for successfully teaching youth with special needs? The inherent difficulty lies in the fact that insight is an intangible concept which eludes specific definition or accurate measurement.

The use of the motion picture for the inservice training of teachers in problems associated with teaching the socio-economically disadvantaged, may prove to be a significant new approach in preparation. Since the film invites involvement through identification with the characters, it highlights problems in a dramatic way and, in summoning responses, may lead to personal insight, self-enlightenment and appreciation.

A Special Film Is Made

The motion picture "For All My Students," which deals with problems of teaching disadvantaged students, was prepared under the direction of Miss Bonnie Sherr, a Master of Arts student specializing in film in the Department of Communication, Stanford University.

In the proposal for vocational education funds to produce the film it was stated:

"It would seem that problems of human relations in general, and those relating to the disadvantaged, are at the root of much teacher failure . . . that student-teacher relationships, teacher stereotypes and teacher prejudices can be seen as operating against the important vocational education goals of teaching basic knowledge, occupational skills, and personal characteristics necessary for economic independence and human dignity."

Miss Sherr developed an outline and shooting script, which was then circulated to advisors for recommended revisions. The actual photography and recording of the film was made at Ravenswood High School, East Palo Alto, Calif. by a crew of student film makers from Stanford.

The product is a 33-minute, 16mm sound production. "For All My Students" investigates the particular difficulties and rewards of teaching disadvantaged high school students and demonstrates the possibilities for effective and satisfying teaching by contrasting poor and ineffective approaches.

The main sequences of the film include a white social studies teacher, Shirley Smith, who is having considerable difficulty disciplining a class; Harvey Cole, a Negro science teacher, whose class represents a less formal but more effective approach; and Carolyn Silvera, a white English teacher who provides a third dimension of teacher attitudes and classroom techniques.

The technical style of the film is essentially that of the

re-enacted documentary. Ravenswood High School teachers and students role-play situations from a script.

The film was shown to groups of teacher interns, 87 of whom were enrolled at the University of California at Berkeley and 132 at Stanford. The average age of Berkeley students was 25 and for Stanford 21.

The over-all consensus of both audiences was a strong vote of approval. Out of the total number of teacher interns viewing the film, 188, or over 85 per cent, rated the film very good or excellent. Over 90 per cent of those who viewed the film were satisfied that it had accomplished its stated purpose.

The motion picture, "For All My Students," is available for rental or sale from the distributor: Extension Media Center, University of California Extension, Berkeley, Calif. 94720.

Topic Six: EXPERIMENTAL AND PILOT PROGRAMS • Development of practices to better serve disadvantaged youth.

• 3:13 "INCREASING TASK ORIENTED BEHAVIOR: AN EXPERIMENTAL EVALUATION OF TRAINING TEACHERS IN REINFORCEMENT TECHNIQUES" BY KRUMBOLTZ AND GOODWIN

In stating the problem for this experimental study is the commentary that: "The child who is unable to sustain attention to learning tasks is at a considerable disadvantage in a classroom. The intermittent nature of his task behavior must produce a result not unlike a television demonstration which is constantly turned off and on by a defective switch. . . . The inattentive child may fall behind his classmates in understanding the subjects presented. The pupil's discouragement and growing confusion with assignments are the immediate outcome of non-attention."

Hypotheses

The study was based on the two-phase hypotheses that first, teachers trained to use certain reinforcement methods would show a greater application of these techniques than teachers not given the special training, and second, pupils whose teachers were trained in recommended techniques would show (1) more task-oriented behaviors, (2) more independent task-oriented behaviors, and (3) more favorable behavior ratings by their teachers.

Fourteen second grade teachers identified children in their classes least able to sustain attention to tasks. The teachers were randomly assigned to control and experimental groups. Two pupils in each class were designated as subjects, but only one was identified as such by his teacher. Both experimental and control group teachers were led to believe that they played an important part in the study.

The assumption was made that the inattentive behavior of pupils was maintained, in part, by the reinforcement unintentionally provided by frequent teacher reminders for the child to get back to work. In addition, the teacher might not be giving sufficient recognition at times when the pupil was attending his work. The experimental procedure simply reversed these contingencies, urging the teacher to withhold attention from pupils behaving inattentively and rewarding attentive behavior as soon as it occurred.

"Criterion data were collected by observations of the behavior of teacher-pupil pairs and by ratings from teachers of their pupils' behavior. Paid observers were trained in the observation technique but were unaware of the purpose of the study and the identity of control and experimental subjects. An observation technique was designed which permitted simultaneous ratings to be made of both pupil and teacher behavior. Observations were made at the beginning, mid-way, and at the end of the six-week period. Teacher ratings of pupil behavior were made before and after the study on a 39-item rating scale.

Results Inconclusive

Results were analyzed to determine the effectiveness of the training given experimental group teachers to use the reinforcement procedures. By the end of the study, experimental group teachers tended to make more use of reinforcement techniques than control group teachers but the differences were not clearly significant.

The use of these methods by the experimental group was not consistent over the period of the study. While experimental group teachers did not use reinforcement methods, their application was less than desired and was confined to pupils identified as subjects.

The second set of hypotheses concerned the responses of pupils in the control and experimental classrooms. The experimental group subjects did not show a greater frequency of task-oriented behavior. While the task-oriented behavior of all groups improved during the study, the reinforcement procedures were not more effective than those of the control group.

Experimental group subjects showed a greater frequency of independent task-oriented behaviors than control group subjects, but differences between the groups were not sufficiently large to confirm the hypotheses at the .05 level.

Experimental group subjects received no more favorable behavior ratings from their teachers than control group subjects. Identified and non-identified subjects showed about the same degree of improvement on all criteria measures and none of the interaction effects were significant.

The results of this study suggest that the training of teachers was crucial to the outcome of the study. In spite of their approval of reinforcement procedures, experimental group teachers found themselves unable to apply them consistently. Thus, the main effect of the training may have been for teachers to give recognition for inattentive behavior on a partial instead of a continuous reinforcement schedule. Such a change could be predicted to result in an increased frequency and intensity of inattentive or disruptive behaviors and could cancel any other improvements.

The results of this study also raise questions about the efficacy of cognitive methods in changing teachers' behavior, particularly when the expected

change is incompatible with previous behaviors. "Future research designed to test the effectiveness of reinforcement techniques should first insure a thorough application of the techniques before pupil behavior is assessed."

Krumboltz's experimental investigation should be valuable to those researchers in vocational education who wish to conduct further studies of student motivation, attention, and reinforcement techniques by teachers.

It also should be of interest for its well organized experimental design, procedure, and review of literature relating to attention to learning and teacher reinforcement methods.

This study of relations between teachers and second grade pupils appears to be rather far afield from vocational education to be conducted under the auspices of 4(c) Vocational Education Act of 1963 funds. Although it could be argued that data derived would ultimately benefit vocational teachers, could this not lead to a rationale that all learning theory studies may also be supported with vocational funds?

3:14 "A Study in Communication Between High School Teachers of Vocational Agriculture and Socio-Economically Disadvantaged Youth by the Use of the Semantic Differential," by McMillion

One of the basic problems associated with teaching the disadvantaged is the usual disparity in cultural background between teacher and pupil and the concomitant failure in adequate two-way communication between them.

The lack of interest or motivation, so commonly associated with "slow learners," "underachievers," "truants," "potential dropouts," "trouble makers," and the like, can at least in part, be traced to teachers' inability to listen and learn, and in their failure to develop a climate of mutual understanding and communication.

Word Connotations Important

The purpose of McMillion's study was (1) to determine whether or not socio-economically disadvantaged students of vocational agriculture place different connotative meaning on selected words and phrases; (2) whether or not the connotative meanings the agriculture teachers of these pupils placed on words and phrases were more like those of the higher socio-economic classification of pupils than the disadvantaged classification; and (3) to determine the extent to which teachers recognize any difference in connotative meaning for selected words and phrases which may exist among the various classifications of pupils.

Pupils studying vocational agriculture in 21 Illinois high schools were classified into three socio-economic groups by use of the Sims SCI Occupational Rating Scale.

A stratified sample of 240 pupils composed of 20 pupils from each of the 12 stratifications and 21 teachers of Agriculture completed a semantic differential instrument. Respondents indicated the connotative meaning of words and phrases by judging them against Likert-type scales. The major statistical procedure employed was a multivariate analysis of variance. The hypotheses were tested at the .05 level of significance.

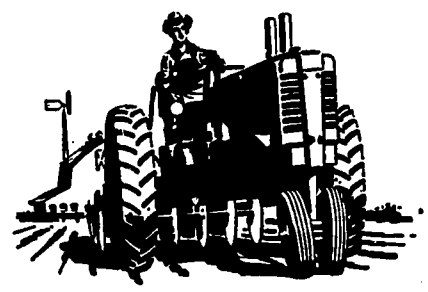
Teachers Underestimate Students' Word Values

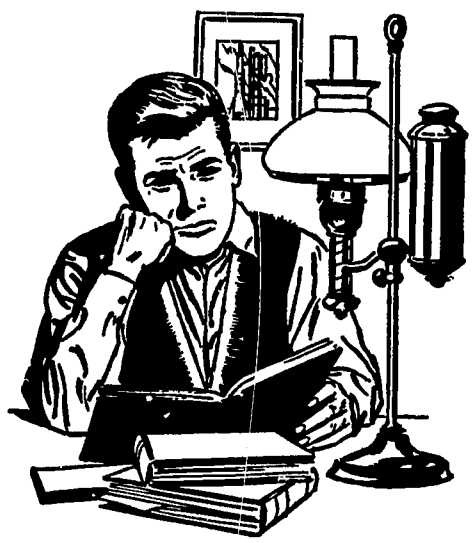
One of the significant findings in this study was the connotative meaning tested pupils placed on the words "leadership" and "cooperation." The word "leadership" was valued more highly by the socio-economically disadvantaged group of pupils than by the upper socio-economic group; the word "cooperation" was valued more highly by the low and middle than the highest socio-economic group. It is also of interest that teachers consistently underestimated the value which all vocational agriculture pupils placed upon the words and phrases being studied.

The investigator recommended that teachers of agriculture should encourage the opportunities for leadership for socio-economically disadvantaged vocational agriculture pupils.

Although McMillion's study of communication is restricted to a local region, and the students and teachers involved were all in the field of vocational agriculture, its significance to all teaching of vocational education—all teaching for that matter—should not be taken lightly.

As recommended in the investigation, "the study of the connotative meaning of words by the use of semantic differential technique is recommended for use in the further studies. It is superior to an attitude scale in that it measures more than the evaluative dimension of meaning."





Persons interested in further studies relating to communications between teachers and pupils in vocational settings should search the literature of the behavioral sciences as considerable theoretical background is available in this area.

• 3:12 "Opportunities and Requirements for Initial Employment of School Leavers with Emphasis on Office and Retail Jobs" by Cook and Lanham

The two and one half year study of office and retail jobs in Detroit was based on the assumption that "Shifting job requirements brought on by automation and other technological developments have caused an imbalance between the needs of business and the current high school curriculums."

Objectives

The major sources of data about entry jobs for school dropouts and graduates were the employers and school leavers themselves. The objectives of the study were four-fold:

1. To determine the current labor market for high school leavers (aged sixteen to twenty-one) as reported by employers;
2. To determine what actually happened to school leavers as they sought to enter the labor market as reported by themselves;
3. To determine relationships, if any, between data collected from both groups of respondents; and
4. To develop a prototype for examining entry job opportunities and requirements that other metropolitan school districts could follow.

Procedure

The procedural steps in conducting the study included (1) the determination of sampling procedures for employers and students, (2) development of survey instruments for each and (3) sorting and collection of resultant data for various analyses.

The employers' "disproportional stratified serial sample" of 683 companies was drawn from a list of 35,091 businesses in the City of Detroit. The total list was stratified by number of employees and by *Standard Industrial Classification* groupings.

The universe of school leavers was made up of all June, 1963 graduates (7,422), and all who should have graduated in June, 1963 but dropped out of school in their senior year (330). The list of persons was stratified by graduate or dropout, school attended, and sex of the respondent.

Interview instruments were field tested and revised before interviewing began. Professional interviewers were employed. Business respondents were interviewed three times at six month intervals. Each school leaver was interviewed once. Trained coders transferred information into numerical form so that the analyses could be handled on Wayne State University's computers.

Findings

Among the 18 findings of the study was information that four percent of all Detroit companies account for 55 percent of all office and retail jobs secured by 16-21 year olds; "Co-op" was the most positive factor in determining whether a school leaver secured a job; being a female Negro was the most negative factor. Other findings had to do with Intelligence—it plays an important role in entry-job success; size of the company and varying employment practices; and variety of skills required for entry employment.

"Forty-four percent of all office and retail jobs demanded the skill of typewriting. Of all jobs demanding one or more skills, 85 percent demanded typewriting. Typewriting ranked first as the most frequently required skill in 13 office and retail occupations."

Conclusions

Among the eighteen conclusions derived from the Detroit study are the following which seem to have particular bearing on youth with special needs:

- The fact that in 1965, a period of unprecedented economic activity, 62 percent of all businesses in Detroit stating that they did not have jobs that could be filled by an inexperienced high school leaver, raises serious questions about the future opportunities for the 16-21 year old group entering the world of work.
- More than one third of all entry jobs filled in Detroit during the year ending June, 1965, did not by definition require formal high school preparation.
- A hard core of unemployed school leavers appears to be developing in the class of 1963 school leavers.
- More 16-21 year olds lost their jobs for incompetence and inability to do the job than for any other reason. Inability to get along with people accounted for one-third of the reasons for dismissal.
- Females generally have a more difficult time obtaining an entry job than do males. Female Negroes have more difficulty obtaining jobs than do any other group. It has been generally assumed that male Negroes have more difficulty in obtaining entry jobs than do white males. The findings in the study do not support this belief for the school leavers from the class of 1963.
- Clerical occupations appeal to a higher intelligence group than is commonly believed by most school personnel—especially counselors. Low intelligence may be a factor that excludes school leavers with business training from entering the clerical occupations.
- Low-intelligence students should not be encouraged to enter an office education curriculum, since a small proportion of them will secure office jobs. High-intelligence students should not be counseled out of an office curriculum, since a high proportion of them secure office jobs.
- Employers do not consider the school as an important source for seeking office and retail employees; school leavers do not consider the schools as an important resource for seeking employment.
- The application blank and interview, formal or informal, are two of the most frequently used forms of screening employees.

Serious Social Problem

In the section of the Detroit study pertaining to needed additional research is the statement, "The findings and conclusions cited are at the heart of a social problem much broader and deeper than can be solved by school people alone . . ."

This study touches on a vital problem of urban life—that many young people who graduate or drop out of high school have increasing trouble finding entry into employment. As mentioned in the study report this problem cannot be solved by school people alone.

No doubt, curriculum improvements will help reduce the numbers of hard core urban unemployed. In addition, concerted efforts are needed, mainly through advisory committee work, to encourage the interests of business, industry and organized labor to take on a greater measure of this responsibility.

Note: The following three topics, 1:128, 1:129, and 1:130, (additional information), relate to the September issue's section on "High School Age Youth." Under discussion are • Small high schools • Specialized instructors, and • Experimental programs

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• 1:128 "SUMMER SCHOOL ADMINISTRATIVE WORKSHOP: NEW HORIZONS IN DEVELOPING VOCATIONAL EDUCATION PROGRAMS IN SMALL HIGH SCHOOLS IN SMALL DISTRICTS" BY GREEN, ERTEL AND BIGGAM

This one week conference of Idaho school administrators on the development of vocational education programs in small high schools was mainly comprised of formal presentations followed by general and small group discussions. Visiting speakers included Dr. William J. Micheels, president of Stout State University; Dr. Merle Strong, director, Research and Development Section, U.S. Office of Education; and James R. Beima, vocational supervisor, Clarkston, Wash. Thirty-two school administrators participated in the workshop.

Speeches

The project report contains drafts of Dr. Micheels' keynote address, "The Challenge of Change"; a second speech by Dr. Micheels entitled "Education for All the Children"; Dr. Strong's address, "Opportunities for Developing Action Research in Vocational Education at the District Level"; and the speeches of Beima, Cooney and Giles, dealing with "Youth with Special Needs," "Curriculum Development," and "Effective Counseling," respectively. Also published are the reports of four workshop committees.

Topics

In the week preceding the conference, four conferees who had been designated to lead small group work sessions were brought to the University of Idaho to pre-plan with conference directors the sessions for the following week. It was the decision of this group to center the discussion around the following topics:

1. The development of the curriculum patterns and possible administrative patterns for operation of prevocational education at the local level;
2. Isolating and identifying researchable problems relating to vocational education at the local level;
3. Creating a pattern for evaluating emerging vocational programs at the local level; and
4. Studying and determining the training needs of youth in their communities.

Education for All the Children

Dr. Micheels' second address, "Education for All the Children," identifies ten needs relating to vocational education. These include the development of new concepts, processes, and techniques; a massive coordinated attack involving industry, labor, the community, home, educational institutions, and government; occupational training and re-training beginning at an early date and continuing as long as needed; a new focus on the needs of people rather than selected occupations; a careful new look at vocational guidance; a new look at the place of women in our work corps; new types of teacher preparation programs; and a national program of research.

Questions Value of Work Experience

When speaking about new types of programs that will provide competent teachers for emerging technological programs, Dr. Micheels made the following statement:

"This whole idea that you had to get six or seven years of work experience in industry before you can teach in the vocational program is going to have to go by the board; in many places it has already because there are not enough teachers or workers available for us. We are going to have to find different ways of providing the college and university training that is necessary and, in addition, give teachers some kind of industrial on the job experience."

"Baby With the Bath Water"

This form of reasoning seems to brush aside the significant contributions to vocational teaching that come from solid and substantial payroll employment experience. There can be no question that all vocational teachers need a sound program of liberal technical and professional education. But to make the assumption that only college and limited quasi employment experience can supplant the real and significant benefits that come from the disciplines of productive work, whether in office, data processing center, shop, or farm, is another matter. Could this approach if generally accepted, "throw the baby out with the bath water?" More attention will be given to the preparation of teachers for vocational education in the January edition of "Research Visibility."

• 1:129 "EVALUATION OF THE EFFECTIVENESS OF USING SPECIALIZED INSTRUCTORS IN PROVIDING OCCUPATIONAL TRAINING FOR INDUSTRIAL JOBS FOR HIGH SCHOOL VOCATIONAL AGRICULTURE STUDENTS" BY TEETER

The University of Arkansas experiment, in the use of specialized instructors with industrial skills for high school vocational agriculture classes, was in part motivated by the fact that a large proportion of vocational agriculture graduates have been found to

enter occupations other than farming.

Roy Roberts' study of former vocational agriculture students in Arkansas showed that "Seventy-two percent of former students who were available for employment upon leaving school entered occupations other than farming. Most of them were employed as semi-skilled workers in manufacturing industries."

Purpose of the Investigation

The purpose of the investigation was to demonstrate the effectiveness of using special instructors to supplement the day school class in agricultural mechanics for nine high school seniors enrolled at the Magnet Cove, Arkansas, High School. The study was designed to answer the following questions:

(1) Whether or not offering training of this nature would help students to make firm choices of a vocation, (2) whether or not such training would increase the stability of their employment, (3) whether or not the length of the apprenticeship period would be reduced as a result of the training, and (4) whether or not the training would reduce school dropouts.

Three special instructors, who were employed in local industries, were secured to teach in the Magnet Cove High School for one hour each day for a period of six weeks during the spring semester of 1965. The three units—Blueprint Interpretation, Electricity and Welding—were taught consecutively as part of the agricultural mechanics course.

Conclusions

Concluding statements for this demonstration project gave affirmative answers to two of the questions included in the objective of the project. "The special instructors course assisted all students enrolled to make a firm choice of an occupation and prevented one or two potential dropouts from leaving school." It was recommended that follow-up studies would be made to determine whether the courses will add stability to employment and reduce the length of apprenticeship training.

A further recommendation was that special instructors should be employed to enrich the agricultural mechanics course in most of the vocational agricultural departments of the state.

The concept of using working practitioners to supplement the regular instruction provided by a professional staff seems worthy of consideration in a number of rapidly changing occupations. A team teaching approach, utilizing the organizational ability of a professional staff member and, reinforced with specific up to date skill and knowledge of a rotating cadre of experts from the field, could add a new dimension to many vocational offerings. Further demonstration programs involving larger numbers of students are needed to further validate the relative merits of using specialized instructors on a part-time basis.

An intriguing question pertaining to vocational education in rural sections of the country is to what extent a local board of education is responsible for providing vocational instruction in skills and occupations that do not exist within the confines of the district. One point of view frequently expressed is that the Board has no business training local young people for jobs in other areas, as such training would not serve the local community interests and the recipients of training would have to either re-locate or travel long distances to urban centers to find employment.

A converse position, and one which is more in keeping with the principles associated with federal support for vocational education may be found in the statement, "They will have to leave home to find work anyway—why not give them the equipment needed for employment success when they get to the city?

"This argument may be further strengthened by considering that college preparatory programs are not restricted to college towns; they are generally available to everyone. And many young people who leave rural communities for college go on to work in other settings.

"In relation to the question, the New York State Position Paper on Occupational Education has endorsed the construction of both area centers of technology for high school students, and two year community colleges in every region of the state to insure that 'no students are handicapped due to geographical location.'"

• 1:130 "PILOT PROGRAMS IN HIGH SCHOOLS TO PREPARE STUDENTS FOR A WIDE SPECTRUM OF COMPUTING, RECORDING AND BOOKKEEPING OCCUPATIONS" BY STEWART

During the 1965-1966 school year, three Virginia secondary schools (one urban, one suburban, one rural) offered three-course pilot programs in record keeping, bookkeeping and accounting. Three other high schools which offered the traditional one-course program in bookkeeping, served as control schools. Records of aptitude and achievement were kept for the students in all six schools.

Specific Problems

The specific problems stated for this project were as follows:

1. To compare end of year achievement of record keeping students in two pilot schools vs. bookkeeping students in two control schools;
2. To compare end-of-year achievement of bookkeeping students in three pilot schools vs. bookkeeping students in three control schools;
3. To report on the success of the accounting courses offered in three pilot schools;
4. To compare drop-out rate, absence rate and student opinion toward the course between pilot and control students; and
5. To report the opinions of teachers and principals in the pilot schools toward the pilot programs.

New Directions

Citing occupational analyses of bookkeeping and accounting work found in related studies, and considering newly emerging occupations in computing, record-keeping, and bookkeeping, the author states, "The traditional one-year high school bookkeeping course does not seem to provide a suitable training vehicle for the diverse occupations in computing, recording and bookkeeping open to youth of a wide range of reading, arithmetic and learning abilities."

Open-Ended Curriculum

The basic innovation in the proposal is the replacement of the traditional bookkeeping course by a sequence of three courses, record-keeping, bookkeeping and accounting. Students are to enter the sequence at the point most suitable for them to progress as far as possible. The completion of any part of the sequence would be considered acceptable preparation for specific DOT jobs.

Teachers and Students

Teachers in pilot schools were assigned to classes on the basis of their interest in participating in the pilot program. Record-keeping students were selected from those who had asked for bookkeeping, and from students who had previously asked for record-keeping. Bookkeeping students were selected from highly successful record-keeping students and others who asked to be placed in bookkeeping. Students selected for accounting and other high ability students were chosen from highly successful Bookkeeping I students who indicated their desire to take Bookkeeping II.

Advisory Councils and Field Visitations

Teachers in pilot schools worked with local advisory councils composed of local accountants and other administrative managers for the purpose of adjusting the courses to occupational needs and trends, and setting course standards. Also, teachers in pilot schools made a minimum of five office visits to study computing, recording and bookkeeping occupations with the purpose of adjusting courses occupationally and to establish standards of achievement.

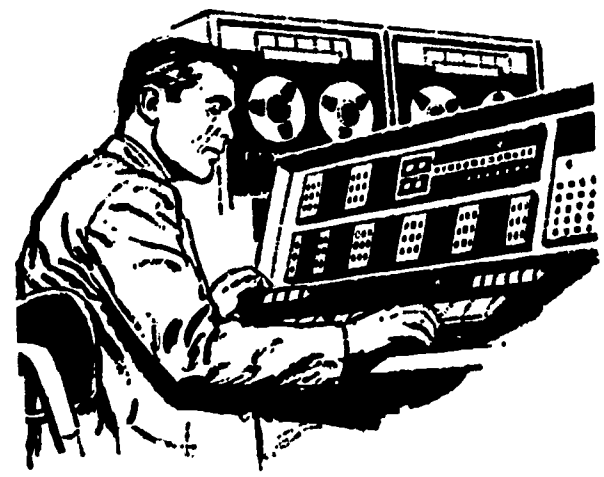
Testing of Achievement

At the end of the school year, all students in pilot and control groups were given achievement tests; record keeping and accounting students received specially constructed examinations; and all bookkeeping students took the six-part Bookkeeping Test of the National Business Entrance Test series. Groups of students were equated in age, grade, intelligence; and aptitude and statistical analyses of variance were programmed through an IBM7040 computer.

Summary of Findings

Included in the summary of findings of this report is information that pilot record-keeping students made significantly higher scores on the record-keeping achievement test than did control bookkeeping students. Neither group did well on the National Business Entrance Bookkeeping Test, and the results obtained in accounting appeared to be inconclusive.

It was recommended that additional three-course pilot programs be instituted in Virginia and in other states; that schools offering traditional bookkeeping programs study student achievement, drop-out rates and student opinions. It was further recommended that subsequent programs in record keeping, bookkeeping and accounting be carefully evaluated for their contribution to vocational preparation in existing and newly emerging computing, recording and bookkeeping office occupations; and that particular attention should be given to student aptitude and motivation where accounting is offered in high school.



Comment

It is encouraging to note the attention and support given in this study to *occupational analysis* and *work with advisory committees.* As both of these activities are basic for success in all true vocational education programs, they belong in any design for curriculum improvement.

"PLAIN TALK"

Something in the neighborhood of fifty studies relating to the vocational education of youth with special needs have been submitted to the U.S. Office of Education. The initiators of these investigations have broken new ground in a sector of research generally neglected in the past. Hopefully, more studies will be generated by their leadership.

The number of studies dealing with the disadvantaged may appear substantial at first glance. Actually, when they are compared with the multiplicity of complex and interrelated problems associated with socio-economically handicapped young people, it becomes evident that research efforts thus far completed have only scratched the surface.

Realistic Research Needed

There is an urgent need for all sorts of additional experimental demonstration and innovative work in vocational education, particularly "where the action is"—at the point of contact and application between teachers and students and counselors and students.

Research studies need to be on closer terms with the "subjects" of experimentation, the people involved. In this respect, there appears to be a tendency among students of the disadvantaged to discuss their problems from afar—especially from air-conditioned rooms, and to assign prescriptions for what is good for disadvantaged youth without making adequate assessments of the young peoples' wishes and desires.

Many Questions Unanswered

There appear to be any number of research questions that still beg to be answered. In the field of occupational orientation, there is a need to develop a satisfactory operational concept of the term and how it may be applied to

youth with special needs. Vocational educators should lead the way in developing demonstration and pilot programs of occupational orientation as a regular part of a school curriculum.

There should be experimentation with the various components of a comprehensive orientation program to determine to what extent and in what form each should be employed. Such elements of a total program as group guidance, occupational analysis, field trips, career days, diagnostic testing, student self analysis, shop exploration, and cooperative work experience, should be considered here.

Occupational Orientation

The concept of using group guidance as a vehicle for occupational orientation is often discussed, occasionally practiced and seldom tested. Although there appear to be any number of approaches that would lend themselves to research and demonstration, the number of studies relating to this topic have been limited.

The knowledge and experience of vocational educators is especially valuable as plans are made for further investigation. In this respect, it is time for vocational people to stop talking about what is wrong with guidance and begin formulating their own designs for new and innovative approaches.

As a vital phase of the educational program, guidance cannot continue to take place in an organizational setting that has typically 400 to 500 students assigned to one guidance counselor. The disadvantaged young person, who desperately needs a close and continuous relationship with a sympathetic school person, can get little out of this kind of ratio.

A different pattern is required for helping young people through the difficult transition from school to productive employment. However, where would this pattern fit in the school's program? Perhaps occupational orientation should be thought of not only as a guidance matter, but should also command time and space in the curriculum.

Tiedeman has proposed that orientation to the world of work begin for all students as early as kindergarten level, continue through grade 12 and into the first phase of employment. Throughout the program, students will be made familiar with the opportunities and occupations available to them. More importantly, emphasis would be placed on the development of decision-making abilities and the essential character building qualities of self-appraisal and self-confidence in making choices.

The guidance counselor would play a less strategic role in such a long-term developmental project where the major weight of responsibility would rest with the student. The effect of such a program would not only produce more stable employees but more conscientious free-minded citizens.

Still, some practical questions must be asked. Where would regularly scheduled, small-group orientation sessions have a place in a vocational or prevocational program? Who would conduct such sessions? How may some of the lessons obtained from cooperative education and multi-occupational MDTA programs for young adults be applied to regular school operations? Finally, how would the cost of having a regular program of guidance and orientation on a small group basis compare with the expense of not having such a program?

"Common Sense" Approach

The motivation of students, particularly those who have rejected the general school curriculum, is an educational problem of primary concern. What is there about the vocational program—the teacher, school setting, period of time for vocational instruction, curriculum plan or instructional method—which leads to improved motivation of many vocational students? Which of these factors have the most bearing on motivation; are they independent or interrelated? How may both traditional and innovative approaches to student motivation be tested and improved?

How important is prior occupational experience of teachers in the motivation of students taking vocational courses? Do teachers who have carried a lunch pail find more success in relating to students than those who have not? For what reasons? What are some of the subtle yet pervasive waves of communication and empathy that flow between teachers and students? Can these be captured and classified through scientific inquiry? Can all insights and appreciations be taught, or do some require time and seasoning?

Additional studies are needed that focus attention on problems of motivation, curriculum content and teaching methods for slow or reluctant learners, and/or for young people with other handicaps to learning. Although a considerable body of theory relating to motivation and learning is available, its application to realistic school situations, particularly within the framework of vocational education, has only been conducted on a limited scale.

The supervised study method of individualizing instruction for diversified classes, recently "discovered" in some educational circles, *has long been employed in vocational education.* Is it not time to assess the effectiveness of supervised study techniques, not only as a vehicle for learning the subject at hand, but also for developing habits of study that might transfer to other school subjects, or for the improvement of reading skill and comprehension?

Teacher Participation in Research

The contribution that teachers can make in the identification of research problems and the early planning of experimental designs should not be overlooked. As persons in immediate contact with students, and with the various situations and problems associated with teaching and learning, they could be most helpful to college researchers. The fact that teachers generally lack the skills and techniques needed for advanced research work should be no deterrent.

A team approach to a research problem, combining the recent practical experience of teachers with the sophisticated talents of trained research specialists, may make for a more effective program of investigation than would have been feasible with either group working alone.

A second important benefit would be to the teachers themselves. Not only will they add a measure of practical application to college sponsored research and demonstration projects, but their participation will also help them to become research oriented, developing new perspectives toward objective evaluation and experimental study that could carry over into many other aspects of their daily work.

Teachers of vocational subjects have in many instances experienced singular success with disadvantaged students. They now need to document with scientific study these "common sense" approaches and practices.

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3:45 "An Experimental Program to Compare Education Versus Training for Young School Dropouts" by Kaufman, Jacob. Pennsylvania State University, University Park, Pa. (Project # 5-0060)

3:46 "The Re-Education of the Culturally Deprived Dropout" by French, John R. University of Michigan, Ann Arbor, Mich. (Project # 5-0075)

3:47 "Demonstration: An Educational Program on Slow Learners in Grades 7-12" Matthews, Charles V. Southern Illinois University, Carbondale, Ill. (Project # 5-0086)

3:48 "Improved Opportunities for Disadvantaged Youth Through Vocationally Oriented Education" by Phipps, Lloyd J. University of Illinois, Urbana, Ill. (Project # 5-0125)

3:49 "Study and Development of Programs of Shop-Centered Team Teaching for Potential High School Dropouts" by Odell, William R. Stanford University, Stanford, Calif. (Project # 6-8524)

Availability of Reports for Further Study

All reports which are followed by the letters ERIC and an acquisition number like ED 010 000, may be purchased from the ERIC Document Reproduction Service, Microphoto Division, Bell and Howell Company, 1700 Shaw Avenue, Cleveland, Ohio 44112. The letters (MF) indicate the availability of microfiche copies; and (HC) for hardbound copies, at the prices given.

In cooperation with the ERIC Clearinghouse for Vocational and Technical Education at The Ohio State University, *Research Visibility* is attempting to alert the profession at the earliest possible moment to significant publications. In providing this early announcement it is not possible to assure that sufficient time has been allowed for processing and inputting the documents into Central ERIC. These reports have been assigned a VT number. A facsimile copy of each entire report, only, may be obtained at cost. Address requests for VT numbered reports to: Retrieval Specialist, ERIC Clearinghouse, The Center for Vocational and Technical Education, Ohio State University, 980 Kinnear Road, Columbus, Ohio 43212.

Important: Later issues of *Research Visibility* will contain ERIC document numbers for publications that were listed in earlier issues and assigned only a VT number. After these documents have been accepted by ERIC and given an ED number, the requests for microfiche and hard copy should be directed to ERIC Document Reproduction Service.

RESEARCH VISIBILITY

SYNTHESIS / APPLICATION / DISSEMINATION

"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633: "Synthesis and Application of Research Findings in Vocational Education").

VOCATIONAL EDUCATION IS PEOPLE . . .

When speaking of the vocational training needs of out-of-school youth and adults, the Panel of Consultants noted the restrictive aspects of the Smith-Hughes and George-Barden Acts, which limited instruction to updating or upgrading workers already employed. The Panel recommended that training opportunities for youth and adults should be expanded by developing programs to adjust the skills of the labor force to changing needs of the economy. Particular emphasis was made for retraining the unemployed and for increasing the number of occupations for which training is provided.

It was further recommended that apprenticeship programs should be expanded and improved by encouraging apprenticeship training for both traditional and other occupations; requiring related instruction for all apprenticeships; maintaining updated instruction materials and equipment, and using the joint apprenticeship committees representing management and labor.

Unfortunately, there seems to be no U. S. Office of Education sponsored studies dealing with apprenticeship. Although considerable research on apprentice training has been done by college departments of industrial management and labor relations, and also by the U. S. Department of Labor, this important realm of the vocational program has not caught the attention of educational researchers.

Since no U.S.O.E. sponsored projects are available, there is included in this issue of "Research Visibility" a review of the book, *The Negro and Apprenticeship*, which is based on a

Youth and Adults Unemployed or at Work

TABLE OF CONTENTS

Dr. Gordon F. Law is editor of "Research Visibility." The organization for this department of the JOURNAL, the pattern for reporting and the writing represent his work.

research study conducted by F. Ray Marshall and Vernon M. Briggs for the U. S. Department of Labor. This is an important book that should certainly be read by persons with interests in vocational education. It is a disturbing commentary on the very small proportion of Negroes in certain skilled trades. Although racial discrimination was given as an important contributing factor, a variety of other complex and interrelated reasons why so few Negroes have participated in apprentice training are cited.

Studies reported in this issue have been organized into five main topics, all relating to the major theme, "Youth and Adults Unemployed or at Work." These topics are:

1. Expanding Education and Training Opportunities Commensurate With Needs of the Labor Force.

2. Innovative Programs, Methods, Materials, Techniques.

3. Expanding and Improving Apprentice Programs.

4. Utilizing Total Educational Resources (Vocational and General) To Adequately Provide Vocational Opportunities for Employed and Unemployed Workers.

5. Guidance and Placement Services and Follow-up Studies.

The reports that are included under each topic have been derived from completed and available studies. Other investigations still in process and not yet available through the ERIC system are given in the Bibliography. (See pages 47 and 48.)

In September 1967, the ERIC Clearinghouse on Vocational and Technical Education issued the first of a continuing series of publications. The two publications, known as, "Abstracts of Research and Related Materials in Vocational and Technical Education" (ARM) and as, "Abstracts of Instructional Materials in Vocational and Technical Education" (AIM), are issued quarterly (Fall, Winter, Spring, and Summer).

ARM incorporates abstracts of research and other materials which are useful to a wide audience of users interested in vocational and technical education. AIM includes abstracts of materials typically designed for teacher use or student use in the classroom, and annotations of bibliographies or lists of instructional materials. AIM will be of particular interest to teachers, curriculum specialists, supervisors and administrators involved in the use of instructional materials in the teacher-learning setting, or in curriculum development.

Subscriptions are available at $9.00 per year for each publication. Individual issues are $2.75. Order forms should be requested from Publications Clerk, The Center for Vocational and Technical Education, 980 Kinnear Road, Columbus, Ohio 43212.

TOPIC ONE: Expanding Education and Training Opportunities

4:1 "PATTERNS OF ADULT INFORMATION SEEKING" BY EDWIN B. PARKER. STANFORD UNIVERSITY, STANFORD, CALIF. (PROJECT # 5-0083) 1966. ERIC # ED 010 294. MF $0.45 HC $11.00. 177 PAGES.

The introduction to the Stanford University study of information-seeking patterns by adults stated that "few studies have been undertaken to determine the scope and depth of adult education." Most have been limited in their generalizations by the character of the educational institutions and by geographical area. "One exception was the general description of adult participation in formal and informal educational pursuits undertaken on a national scale by Johnstone and Rivera of the National Opinion Research Center and published in 1965."

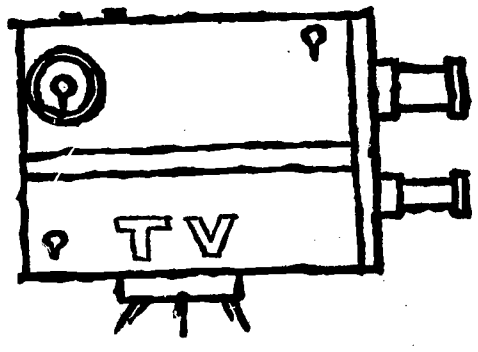
Among the Johnstone and Rivera findings was information that participation in adult education programs is skewed toward higher socioeconomic status, suburban living and support of a family in middle or upper-middle life style. Previous studies reported these same trends.

In this study of two contrasting California comm the investigation sought to di here adults n for educational information on various topics, "what kinds of people seek what kinds of information through what channels?"

A structured schedule was used for interviewing 575 San Mateo residents and 1,294 in Fresno. The schedule was divided into seven sections: mass media used and reasons for use; information seeking related to leisure activities; occupational information seeking; educational history; participation in adult education; projective values questions, and questions dealing with personal characteristics.

In both cities, the selection of interviewees was made through random sampling procedures. All data from the two surveys were transferred to punched cards and, later, magnetic tape for processing on the Stanford 7090 and B-5500 computers.

The section of the study which reports demographic correlates of participation in on-the-job training contains significant information.



"Many more than half the respondents reporting on-the-job training were under 40, but a certain number of respondents in their sixties also reported receiving this training. Participants are more likely than not to be relative newcomers to the community. . . . There are at least four distinct levels of participation in on-the-job training. Younger men are the most active, with higher education accounting for even greater activity among them. Next are the older men and the younger women with some college education. Third are older men and younger women with only high school education. Lastly, older women are very unlikely to have received on-the-job training, whatever their educational background."

Among other findings of the study is information that men made greater utilization of vocational instruction than women; attitudes toward prior schooling had little influence on adult participation; and educational level is a strong determinant of information-seeking. Adults at lower educational levels depend on broadcast media while those with college training seek information in print.

The concluding section of the study

ints out that the most useful dings of the report are perhaps not ntained in the summary statements, t are to be found in the detailed bulations of the diversity of in- rmation sought through a wide vari- y of channels by different kinds of ople. Certainly the study does con- in a wealth of statistical information at could not readily be presented rough a summarization.

This report should be of interest for well organized procedures as well for the specific data that is extract- d. Although readers are cautioned ot to apply the adult information eking findings in San Mateo and resno too literally to their own con- itions, they could use this report for uidance when planning any similar udy in a local situation.

4:2 "THE PREDICTION OF OUT- OMES OF MDTA PROGRAMS: A PILOT TUDY" BY HAROLD A. EDGERTON AND OBERT W. SYLVESTER. PERFORMANCE ESEARCH, INC., WASHINGTON, D.C. (PROJECT # 5-0127) 1966. ERIC # D 010 011. MF $0.09 HC $1.52. 19 AGES.

The success of training programs, uch as those organized under the Manpower Development and Training ct, may in part be evaluated in terms f two important factors: the propor- ion of entrants who complete the ourse, and the number of graduates ho are placed in appropriate jobs.

The Performance Research Corpo- ation pilot study, while recognizing hat many other measures of success an be identified, has concentrated on retention and placement of MDTA rainees in six major cities. To make he sample sufficiently homogeneous he following limitations were dopted:

1. Only MDTA programs approved uring fiscal 1964 were used.

2. Only programs for which the Office of Manpower and Training had ollow-up data were included.

3. Institutional programs but not OJT were included.

4. Refresher training programs were excluded.

Data for the study came from two sources: follow-up data for each program obtained and organized by the Office of Manpower and Training, and by a questionnaire answered by program directors. Of the 312 questionnaires mailed, 222, or 71 percent, were completed and returned.

"Two codes were developed for recording the data on IBM cards. Plans for statistical treatment required that all data be in a form which would permit correlation with each of the criteria as well as with each of the other characteristics; hence, each coded item of information had to be expressed as a variable or as a dichotomy."

Two kinds of statistical evidence were produced for the study:

1. Correlations of each of 93 independent variables from the questionnaire and from the OMAT files with each criterion (retention and placement).

2. Combinations of independent or predictor variables for the best possible prediction of each criterion.

A stepwise regression was used to select a small number of variables having the highest correlations, after correction for chance factors, in making a purely statistical prediction of retention and placement rates for MDTA programs.

The investigators report that the results of this statistical analysis may be divided into two groups: those predictors which relate to the characteristics of trainees, and those which describe the program or its management.

"If the variables which relate to characteristics of trainees and also show significant correlation with either retention or placement were used to select trainees, the people selected would not fit the description of the people for whom the MDTA program was designed. According to the statistical evidence, if trainees are selected to show a high retention rate, those selected would have education at the twelfth grade level or higher. They would not be receiving public assistance nor have marketable skills, and would have had employment within the three months preceding the training program.

"These are not the people for whom the MDTA program was designed. . . . The real problem is that of making the program fit the trainees rather than trying to select trainees to fit the training program."

When considering how to improve retention and placement in MDTA programs, the authors state that the "significant variables" of their investigation indicate that the following actions might well be taken:

—Reduce class size and reduce the trainee—teacher ratio

—Promote a sensible counseling program for the trainees, especially taking advantage of the instructor in his classroom relationship to the trainees

—Develop valid and acceptable ways of measuring progress in learning

—See that training is adjusted to the level and energies of the trainees

—Have course content and organization preplanned so that the instructor does not have to organize the course

—Be sure that financial allowances for trainees are adequate

—Have knowledge of the overall abilities of the trainees

—Make use of aptitude tests to aid in assignment and as an aid in performance evaluation

—See that the time demands of the course are reasonable

—Have available an estimate of the trainees' quality of work in the course

—Develop contacts with local industries to aid in placement

—Have a program of evaluation of instructor performance

—Select instructors who have had experience as workers in their field of instruction.

The next step recommended is to study more intensely and in greater detail the effects of program organization and administrative and instructional practices on both retention and placement.

It was suggested that retention and placement are not the only measures of a program's effectiveness. Many other factors need to be considered. These would include the educational and socio-economic level of trainees, family problems, trainee's age and physical condition, and regional transportation problems.

When considering these, it is necessary to keep in mind that the federal Manpower program is specifically de-

signed to provide training and assistance to those sectors of the population at the lowest rungs of the ladder, those who need help the most rather than those who are "best qualified" for training.

4:3 "A TRAINING PROGRAM FOR SELECTED HOME ECONOMISTS TO TRAIN ADULTS AND OLDER YOUTH FOR HOMEMAKER SERVICE RESPONSIBILITIES" BY CHARLENE DETRO. LOUISIANA STATE UNIVERSITY, BATON ROUGE, LA. (PROJECT # 5-1315) 1967. (VT # 003-212) 64 PAGES.

In keeping with the expanding role of home economists in the education and aid of culturally disadvantaged people is the Louisiana State University training program for field service workers.

Twenty-eight qualified home economists were selected to attend a three-week workshop at Louisiana State University during the summer of 1966. The program's purpose was to prepare participants for leadership in training adults and older youth to assume homemaker service responsibilities.

The local homemaker-home health aid training program consisted of an 80-hour course. The first 60 hours were spent in classroom instruction and evaluation of trainees. This was followed by 20 hours of supervised work experience in which trainees were placed in hospitals, nursing homes, private homes, and nursery schools.

Problem Areas

The workshop program was comprised of lectures, reports and discussions of research findings. Emphasis was placed on practical application of findings to individuals and family situations. Sixteen problem areas relating to the training of homemaking service workers were considered. Among these were:

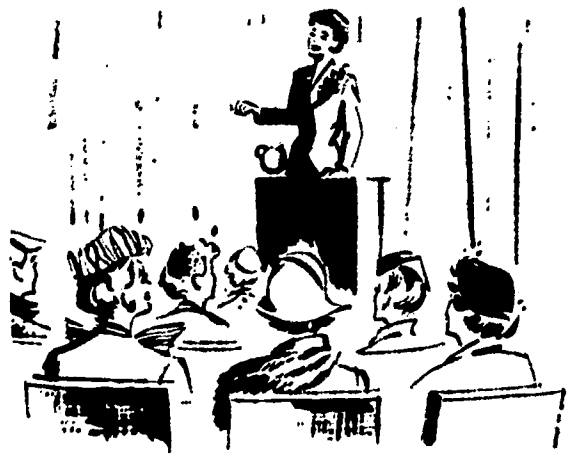
1. Basic emotional, social and intellectual needs of family members and implications of working with families and individuals in communities differing in socioeconomic and educational background.
2. Biological and physiological aspects of aging.
3. Personal care of the ill and aging; prevention and treatment of common illnesses.
4. Ways of giving assistance in families experiencing emergency situations disturbing to the life of family members.
5. Nutritional needs of family members. Meal planning and preparation with emphasis on special problems due to age or illness.
6. Care and guidance of children of various ages.
7. Contribution of social services and agencies and community service organization to families.
8. Teaching methods related to the training of adults and older youth.
9. Development of a syllabus to be used as a guide for training adults and older youth for homemaker service responsibilities.
10. Methods of arranging for supervised work experiences of adults and older youth.
11. Arrangements for placement and supervision of trained adults and older youth by one community agency.
12. Development of techniques to evaluate the training program.

Work Shop Materials

For each problem area, a consultant was asked to speak during the workshop. Copies of these supplementary materials and annotated course outlines were made available to each trainee. They are reproduced in this report.

Workshop participants reviewed the annotated course outline of the Homemaker Service Training Program and then proceeded to revise specific areas of study within the total outline, using a small group approach.

The organization of local training



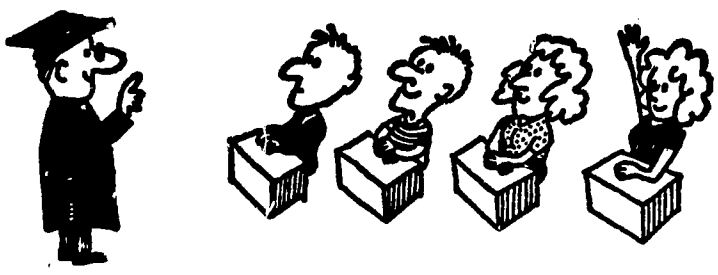
programs for homemaker service workers was varied in accordance with community situations and the size of the class. Steps taken in the development of a local program included the organization of a parish advisory committee; a publicity campaign; interviewing and screening applicants, and the actual conduct of the local homemaking training course.

A total of 12 findings and conclusions were developed through the workshop. These pertain to the function of state and parish advisory committees; the need for working relationships between various agencies; items referring to qualities of training personnel; instructional content and methods; and specific services rendered by trained homemakers.

The recommendations of the report stress the value of advisory committees, identify the need for additional publicity, the importance of frequent evaluation of trainees, and the need for strength in interpersonal relations at the local level.

Value

This report should be especially valuable to home economists, whether at the college or local level, in those states that do not have a similar program. The use of local women, presumably those not likely to have professional preparation beyond the training program discussed for homemaking services, presents some intriguing possibilities. It would be interesting to know, for example, whether a two-way learning process takes place between the professionally prepared home economist and the field worker she trains. Also, has the work that homemaking service persons do helped them to develop less stereotyped approaches to their own interpersonal and to their community relationships?



4:4 "Research, Development and Demonstration in Adult Training and Retraining" by Jacob Kaufman. The Pennsylvania State University, University Park, Pa. (Project # 5-0007) 1966. ERIC # ED 010 495. MF $0.36 HC $10.24. 136 pages.

A great variety of studies and activities, some completed and others in progress, are included in the overall scope of the Penn State study. The four general objectives of the project were to:

1. Ascertain if a university representative could act as a "change agent" in the initiation of a community action program.

2. Study the process of community action organization as a case study.

3. Involve existing institutions in development of a community action program.

4. Assist in the development of new programs.

A number of longitudinal studies, now in process, have been initiated as part of the total project. These include: (a) Experimental program to compare education versus skill training for young school dropouts. (b) Developmental program for an economic evaluation of vocational education. (c) Cost benefit analysis of vocational education. (d) Demonstration program to develop labor community specialists.

A research, development and demonstration program in the Mon-Yough Region, a deprived area which includes 31 communities in the southeast section of Alleghany County, Pa., is a major part of this report.

Part II of the report is a case study of the region, focusing on the people living there. Economic and social profiles were drawn up, including an estimate of decreasing population trends, aging population distributions, growing proportion of non-whites, ethnic composition, educational attainment, and structure of the labor force.

The main effort of the project was the creation of the Mon-Yough Community Action Committee, an inter-community endeavor which was a new experience to the region. The report offers a blueprint of the phases of development and organization for community action. The last stage, synthesis, where other organizations are recruited and merged to form one organization, is significant in that the new organization grows through channels already established in the community.

Through informal organization and flexible objectives the committee became a "Gateway to Opportunity." The fundamental deficiency in the area was the lack of basic skills provided by public education. In 1964 an evening course granting high school equivalency was set up. A Headstart Program was initiated. Additional plans were being made for a permanent institution to help dropouts which would be an extension of the local public school system.

Additional activities initiated were:

1. A multi-functional community center, including adult education and work experience for teenagers.

2. Pre-vocational Opportunity Center for the Handicapped.

3. Information and referral center.

4. Project 44—to create part-time jobs for potential dropouts.

5. Organized play areas in housing projects operated by Vista workers.

6. Community action programs for municipalities.

Recommendations

Although the report asked to what extent federal legislation might be the basis on which the region could organize itself, it recognized that the community must be the locus of the war on poverty.

Still, a broad concern for the development, allocation and utilization of all levels of human resources is necessary for the formulation and implementation of public policies related especially to the disadvantaged. The relation between the disadvantaged and their environment must be ascertained. Consequently, there is a need for longitudinal studies to determine economic, psychological and sociological problems encountered by the disadvantaged.

The major recommendations were:

1. Need for more and better data in most areas and need to disaggregate data so its scope relates to appropriate levels of decision making.

2. Need for longitudinal studies in all of subject matter areas.

3. Great need for sub-national and local studies in all areas.

4. Need for more evaluation of effects of on-going anti-poverty and other projects and building into them of individual and evaluative research.

5. Need to assess human resources and implications of major developments.

6. Need to disseminate research results to potential beneficiaries.

7. Great need for in-depth studies of present employer policies and practices relating to hiring, promotion, training incentives, and retirement.

8. Need to develop and relate effectively new or proven tools of analysis, especially cost-benefit, to appropriate problem areas.

This project, stimulating a number of research studies, some relevant to vocational education, and initiating community action development, is certainly vast and ambitious in scope. It is hoped that some plan for permanency can be evolved for the community action endeavors so that fluctuations associated with federal appropriations and funding will be eliminated. The process for transition from a "crash" program to a permanent one, operated mainly with local people and local funds, seems built into the project.

The "cost-benefit analysis of vocational education" now under way as part of one study, needs to be closely observed as such an approach to evaluation may have serious implications for all phases of education. Are cost accounting methods an appropriate measure of the subtle and intangible aspects of the educational process and its product? The findings of these and other long-term investigations will be awaited with interest.

4:5 "The Influence of Speed and Prior Knowledge and Experience on Adult Training" by Douglas D. Sjogren and Alan B. Knox. University of Nebraska, Lincoln, Neb. (Project # 5-0011) 1965. ERIC # ED 003-490. MF $.27 HC $7.16. 112 pages.

The introduction to this experimental investigation states that adult educators have little information based on research to tell them how to design educational programs for adults so

that learning effectiveness and efficiency are optimized. "It has been well established that the human changes physiologically and psychologically throughout the life span. Along with these are environmental and social changes. Whether these changes should result in changing educational procedures for the adult is also an important question."

Four experiments treating sex, attitude, prior knowledge, and speed were conducted. Experimental groups were obtained from a stratified pool of 168 adults, classified into 24 cells with seven persons within each cell. Factors used in grouping were sex, socio-economic status (SES), previous participation in adult education and age. Three age groups were established: under 31, 31-44 and 45-65.

Recruitment of Adults

In order to fill all the groups or cells for the experimental design, several groups of adults were contacted including service clubs, business groups, labor unions, church groups, adult high school and college classes, and servicemen at a nearby air base. After hearing a description of the project, those still interested were asked to fill out a questionnaire that included questions pertinent to the classifications, a 15-item vocabulary test, and questions related to their knowledge about and interest in some possible topics for study in the project. From about 500 who attended the information session and completed the questionnaire, 211 adults were selected and were assigned to cells.

The first session in the project, a second session in the middle and the last session were each devoted to testing. A 10-item pretest of each of the topics studied was administered along with three standardized tests. The Strong Vocational Interest Blank, Poe Inventory of Values and McMahon 48 Item Counselor Evaluation Test were given for two purposes: (a) to obtain baseline information for using the sample in further longitudinal studies, and (b) to determine whether the scale scores on these instruments were correlated with the performance of adults in the project. The Wechsler Adult Intelligence Scale was administered individually to each subject to serve as a control variable and also to provide information for further study.

It was decided to use the "cells" of seven subjects as a sampling unit, rather than the individual participants. Detailed descriptions of analysis of variance procedures employed, statistical data derived and generalized results obtained for each of the four major experiments are reported.

Among the findings reported to have important implications for adult educators are the following:

"There is a lack of apparent relationship between the age and performance on any of the criterion measures. . . . The evidence was consistent with other research comparing the performance of adults of different ages conducted by Birren, 1963; and Knox and Sjogren, 1965.

"There is an apparent facilitative effect on performance of previous participation in adult education activities.

"The SES classification accounted for a significant portion of the variation on all but one of the achievement tests. . . . The one test in which no difference resulted was Russian; a topic with which neither SES group was familiar prior to the study.

"The SES classification did not yield consistent results across the experiments.

"The data from mental ability tests supports previous research by Birren, 1963, in which the level of performance or information, comprehension and verbal items tended to increase steadily with age, and the level of performance on perceptual and timed items tended to decrease with age."

Limiting Factors

The Limitations of the study state that the sample was not drawn randomly from a population of adults, hence generalization of findings to the total adult population is not justified. Also mentioned is the limiting factor that all study materials were programmed and investigated individually. Thus, generalizations to other types of educational activities should be made with caution.

This report should be of value to researchers interested in developing other studies relating to learning in adult education. It also should help administrators of adult programs as they make plans for appropriate curriculum materials and teaching methods. The positive relationship between age advancement and level of verbal comprehension supported by this and other research should be considered when preparing instructional materials for classes with wide differences in ages.

4:6 "AN EXPLORATORY STUDY OF KNOWLEDGES IN CHILD DEVELOPMENT AND GUIDANCE NEEDED BY MOTHERS AND WORKERS IN OCCUPATIONS RELATED TO CHILD CARE" BY RUTH E. WHITMARSH. UNIVERSITY OF ILLINOIS, URBANA, ILL. (PROJECT # 5-8465) 1966. ERIC # ED 010 071. MF $0.27 HC $5.48. 106 PAGES.

This study attempted to:

1. Ascertain the knowledges in child development and guidance needed by mothers and by employees in selected occupations related to child care.

2. Identify those knowledges which are unique to the mother role and to the employee roles and those which are common to both.

3. Ascertain to what extent employment education in certain occupations which require knowledges and skills usually considered a part of the field of home economics can be included in separate courses.

"The main task of the investigation was to gather and analyze the opinions of practitioners and specialists in child development regarding the kind and depth of knowledge in child development and guidance needed by mothers and by employees as day care foster mothers, day care center directors and child care assistants."

The sample groups were taken from an 18-county area in Illinois. The instrument used in the study was an approved list of 68 items of knowledge in child development and guidance. Presented as a rating scale from one to five, the items were thought essential for the performance of a job. This list of knowledges was also designed to assist in curriculum development in home economics.

Also employed was a descriptive data questionnaire which asked the

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number of years of formal schooling, the number of years of experience and the number of courses taken in child care and guidance. All the data, chiefly consisting of the opinions of practitioners and specialists, was tested statistically.

The conclusions drawn from the testing of null hypotheses are:

1. There are no differences between the professionals' and practitioners' opinions concerning the depth of understanding in 68 items of knowledge in child development and guidance needed by mothers and employees in occupations related to child care. Therefore, it may be assumed that practitioners are capable of making good judgments about knowledge needed to perform their jobs.

2. Mothers and employees in each of three occupations related to child care need different amounts of knowledge in child development and guidance.

The descriptive data questionnaires pertaining to formal education and the number of courses in child development revealed that professional groups had means higher than the practitioners' groups with which they were compared.

The study refers to Dr. Elizabeth Simpson's proposal for curriculum development in home economics at the secondary level as a possible model. ("Projections in Home Economics Education," *American Vocational Journal, Vol.* 40, Nov., 1965, pp. 41-43). A curriculum would be organized around the three major purposes of home economics education:

1. Preparation for homemaking and family life

2. Preparation for employment in occupations utilizing home economics knowledge and skills

3. Motivation and recruitment of college-bound students for professional careers in home economics.

Importantly, Simpson recommends an area of commonality with a "roles of women" core.

It was the hope of the researchers that the findings from the summaries of knowledge in child development could be useful in determining which knowledges are common to all three purposes of home economics and which are unique to only one. Common knowledges might be used in a core course while those items of knowledge which are unique might be included in advanced or separate courses.

It was recommended that knowledge needed by mothers and employees in all three occupations related to child care be included in a core course. Items needed only by mothers should be included in homemaking. Items needed by employees should be included in courses emphasizing preparation for occupations. Items requiring considerable knowledge should be included in an in-depth second core course unit in child development and guidance.

As Simpson points out in the Introduction to the report, there are factors other than knowledge, such as abilities, attitudes, socioeconomic conditions, student needs and the school situation, that must be considered in curriculum planning.

TOPIC THREE: Expanding and Improving Apprentice Programs

No U.S.O.E. sponsored projects reported.

The Negro and Apprenticeship BY F. RAY MARSHALL AND VERNON M. BRIGGS, JR., THE JOHNS HOPKINS PRESS, BALTIMORE, MD. 1967. 283 PAGES.

Apprenticeship, the traditional and established route to journeyman status in many skilled trades, has, for one reason or another, not been readily accessible to Negroes. Of the more than 50,000 apprenticeships made available each year in the United States, only a token number of Negroes has been admitted. As a result, a heated controversy developed during the late 1950's and early 1960's between civil rights spokesmen and the apprenticeship establishment.

The clashes between increasingly militant civil rights organizations and craft unions brought a focus of attention to the situation by governmental agencies and the press. Declining job opportunities in the unskilled occupations previously open to young Negro males and the corresponding sharp increases in Negro unemployment added a new sense of urgency to the problem.

In the summer of 1965, the Department of Economics of the University of Texas entered into a contract with the Office of Manpower, Automation and Training (OMAT, now known as the Office of Manpower Policy, Evaluation and Research) to undertake a study of Negro participation in apprenticeship programs. The project director, Professor F. Ray Marshall, his associate, Vernon M. Briggs, and 21 special interviewers studied the participation of Negroes in apprenticeship programs in 10 major cities with large Negro populations. This book is based on the study report.

The 10 large cities used for the study were selected to represent a variety of problems and geographical locations. Consultation with spokesmen for civil rights, government, industry, and labor unions was part of the selection process.

Since the investigators were primarily interested in "trouble spots" where civil rights organizations or governmental agencies were attacking or about to attack the apprenticeship establishment, they paid particular attention to those trades having the lowest number of Negro members. These included electricians, ironworkers, sheet metal workers, plumbing and pipe fitting trades, printing, and some mechanical trades in industrial plants.

In addition to examination of written documents and reports were a series of interviews with two groups of people. The first of these was comprised of representatives of a variety of governmental, union, management, civil rights, and other agencies. From this group the investigators sought to elicit background information, to gather names of potential Negro interviewees, to seek suggestions for remedial action, and to verify conflicting reports. In most instances, these reports were conducted by the director and associate director.

The second group of interviewees consisted of Negroes

who were currently indentured in apprenticeship programs, awaiting a decision on their applications, rejected when they applied, apprenticeship program dropouts, or those who had failed to complete the application procedures after expressing an initial interest.

Citing the fact that the U. S. Census Bureau reported that Negroes constituted 1.90 percent of apprentices in the labor force in 1950 and 2.52 percent in 1960, the study confirmed the virtual absence of Negroes from apprenticeship programs until 1960. Studies in California and New York found that only 1.9 and 2.0 percent of apprentices were Negroes. New Jersey and Connecticut had .5 and .7 percent respectively. A survey of 1,000 apprentices in Tampa, Florida failed to identify a single Negro. And so on . . .

A variety of reasons was found for the very small proportion of Negro apprentices. The authors state, "Although the reasons why so few Negroes are represented in apprenticeship training are easy to list, it is much more difficult to assign weights to each of the factors in the complex constellation of causes. Civil rights groups have emphasized discrimination as a causal factor, while unions stressed lack of qualified Negroes. Specialized government agencies often add to the confusion by supporting the civil rights leaders (if they are antidiscrimination organizations) or the industry (if they are apprenticeship officials)."

The book reports that although racial discrimination continues to be an important factor, there are other causes as well. It is pointed out that unions have traditionally been exclusive, even when race was not a consideration. Other reasons here noted are: the principle of labor shortage; quality control; politics and nepotism. "Craft unionists argue that their sons and relatives are more likely to have this feeling of craftsmanship than a youngster "off the street" who is merely looking for a job and often has been marked down on this point by apprentice-selection committees.

The first recommendation made is that city governments have important roles to play in increasing the number of Negro apprentices. Among the specific activities suggested for city governments are the establishment of a human relations agency, witholding of city funds from building projects which exclude qualified Negroes, operation of mediation facilities and the maintenance of relations with the various union, management, civil rights and governmental agencies that are involved in the problem.

Another recommendation of the study has special interest to guidance counselors. It points out that many interviewees blamed high school counselors and the exaggerations of civil rights leaders for their ignorance on apprenticeship information.

"Realistic information should be readily available on such matters as the number of apprenticeship openings likely to be available each year in a given city, as well as qualifications and procedural details for applying to these programs."

And also: "While counselors cannot be blamed for all of the ignorance surrounding the apprenticeship question, very few of them seem to give realistic advice to Negro youngsters concerning apprenticeship training. In part, this is because counselors have become convinced that Negroes cannot get into these programs. However, our evidence also indicates considerable bias by high school and other employment counselors against apprenticeship programs."

(*Note*: The U. S. Department of Labor, Manpower/Automation Research Monograph No. 6, "Negroes in Apprenticeship," is essentially a sequel to the book. Single copies may be obtained free upon request to the Office of Manpower Research, U S. Department of Labor, Washington, D.C. 20210)

TOPIC FOUR: Utilizing Total Educational Resources (Vocational and General) To Adequately Provide Vocational Opportunities for Employed and Unemployed Workers

4:7 "RESULTS OF AN EXPLORATORY STUDY OF FUNCTIONAL ILLITERATES IN MACON COUNTY, ALABAMA" BY THEO. J. PINNOCK. TUSKEGEE INSTITUTE, TUSKEGEE, ALA. (PROJECT # 5-0023) 1965. (VT # 002-478) 136 PAGES.

It is hard to think of illiteracy as a condition that persists in jet age America. But it does. And the large numbers of people who cannot read and write, whether they live in the rural south or the urban ghetto, represent a multitude of personal tragedies—and a national disgrace. The Tuskegee Institute study of functional illiteracy is a shocking revelation as it points up in graphic detail the nature and scope of the problem.

The main objective of this project was to comprehensively identify the problems of functional illiteracy in Macon County, Alabama. The variables contributing to illiteracy were examined in terms of the functional illiterate persons, their status and self-image, educational level, economic and civic activities, and health and nutritional practices.

The secondary objective was to conduct a limited experimental teaching program for functional illiterates in three communities.

In 1950, 835 Negroes and 35 whites living in rural areas had not successfully completed one year of schooling. In 1960, 995 Negroes and 50 whites had not completed one year of school. This rise in illiteracy suggests that illiterates foster illiterates, setting in motion a most vicious and miserable circle.

The socioeconomic and cultural problems faced by these illiterates are manifold. Machines are replacing unskilled workers. Farmers leaving the land and unskilled workers cannot be retrained at their educational level. There has been much evidence that

illiterates are being "exploited" economically and are being "robbed" of their rights as citizens. Unfortunately, the illiterates do not know where to turn for help.

It was recognized that illiterates needed assistance of a fundamental nature. Adults needed knowledge of domestic relations, economic improvement, available public services, rights privileges and citizenship. This study has provided the data and partial "know-how" which permitted a major attack in four counties to ameliorate illiteracy and some of the problems created by it.

It was also felt that innovations had to be developed to accelerate the learning process of functional illiterate adults. The experimental phase of the project sought to develop techniques to speed learning.

General Design

The sample was composed of 648 Negro and 10 white functional illiterates. The data-gathering devices were:

1. A comprehensive interview schedule designed and prepared to record data secured from functional illiterate adults by interviewers.

2. An interview schedule designed and used in soliciting information from Macon County Cooperative Extension Service, Public Health Division and Sheriff's Department.

3. A questionnaire designed to seek interviews from voluntary organizations.

4. Gray Oral Reading Test.

5. Wechsler Adult Intelligence Scale.

6. Participants' rating of class experience.

7. Teacher's perception of program as it related to participants.

Four classes were established, three in rural communities and one at Tuskegee Institute. Progress was measured in terms of class participation, attendance, teacher evaluation, difference in grade equivalence between first and final oral reading test, and changes in I.Q.

The experiment was designed to find out if persons 40 and under would absorb more in 2/3 time than older persons. It was also designed to determine if a small cash incentive offered on a competitive basis would make a difference in learning to read. One group was given stipends of 10 cents for every class hour attended

and an increase on the basis of achievement. Another group meeting only twice a week rather than three times a week, was not offered a monetary incentive.

Investigators were very satisfied with participation and interest. The assumption that illiterates will not participate in educational endeavors was proved wrong. The understanding and experience of the teachers who prepared the adults contributed to high participation. The attrition rate for attendance from February to May was only eight percent.

Older participants showed an increase of grade equivalent of more than twice that of younger participants. The indication is that increase is due to the way the stipend was given on a competitive basis. The investigators assume that fixed stipends guarantee attendance but only motivate the learner if prorated and paid within the framework of performance.

The I.Q. test was administered at the beginning and end of the program. I.Q. tends to rise as the environment improves. Since the investigators could not improve the physical environment it is the academic work that caused the significant leap in I.Q.

Many participants felt that the classes were too short. Most liked the courses in civics and mathematics, since these fulfilled immediate needs.

Recommendations

The investigators feel the following recommendations will have a lasting effect in improving the conditions of functional illiterates:

1. Illiterate adults should be exposed to continuing programs of formal education and skills training.

2. Government policy in giving stipends to persons who participate in adult education programs should be changed. Allowances should be prorated not in terms of family size but in terms of performance in the training programs. Such stipends are needed and will accelerate any basic education program.

3. Administrators of county governments should be required to attend a three-week workshop on college campuses in which they would be exposed to lectures and discussions on subjects relative to their role and responsibilities in liberalizing education for all. These workshops should continue over a five-year period during which time changes in policies toward illiterates may be made.

4. Higher institutions of learning and other agencies should initiate programs for self-help housing along with federally employed guidance counselors for poor and illiterate families.

5. Special attention should be given to illiterate adults who are victims of the share-cropping system.

6. Teachers, counselors and other personnel who are to work with functionally illiterate adults must be carefully selected by "experts" if maximum results are to be achieved. Two or three months of on-the-job/off-the-job training would be advisable.

4:8 "A Review and Appraisal of Adult Literacy Materials and Programs" by Robert F. Barnes and Andrew Hendrickson. Ohio State University, Columbus, Ohio. (Project # 5-0067) 1965. ERIC # ED 003 519. MF $.36 HC $8.72. 202 pages.

The study of 35 adult literacy programs in 15 states was conducted to identify factors that underlie problems in the teaching-learning process as it applies to the development of basic skills in the functional and totally illiterate. An observation team of four collected "mainly subjective" data by way of interviews with administrators, teachers and the illiterates themselves. Also included in the report are surveys and appraisals of published materials and a review of research on instructional materials, tests, methods, and programs for adult literacy education.

The sections relating to the visits to adult literacy programs were presented in a series of narrative reports. Topics herein discussed were students, teaching staff, program administration, motivation of students, forms of learning, and use of instructional materials.

Interviews with teachers throughout the 35 programs revealed that all

seemed to feel an urgent need for special teacher training. A summary of the remarks of teachers contains the following specific training needs recommended for teachers of adult illiterates:

1. Psychological and sociological peculiarities of adult illiterates.
2. Adult learning principles as they pertain to adult illiterates.
3. Psychology of the slow reader as applied to adult illiterates.
4. Group dynamics in the adult basic education classroom.
5. Human relations.
6. Identifying needs and immediate goals of the individual student.
7. Establishing attainable, measurable objectives.
8. Formulation of objectives around the individual's needs and goals.
9. Program evaluation.
10. Selection and evaluation of instructional materials.
11. Developing supplemental materials to meet individual needs.
12. Testing and the place of testing in the program.

The series of interviews also identified four characteristics that were considered especially desirable for teachers of illiterates. These were: (a) ability to accept the student as a human being who is capable of learning; (b) ability of the teacher to subjugate his middle class values and attitudes; (c) quick identification of students' immediate short-term goals, and (d) imagination, creativity and flexibility.

Suggested Research

The section which proposes 21 research questions for further investigation may be the most significant contribution of the project. Among the suggested research topics are the following:

—How important is it to the total learning process of the adult illiterate that his immediate, personal objective be met as soon as possible?

—How important to the success of the learning process is it that the teacher make the adult illiterate aware of the "whys" of the learning process?

—Are there any qualities that a teacher of adult illiterates must possess that are different from those found in successful teachers in any other fields of education? If so, what are they and are they qualities that can be developed?

—Do classes which allow and even encourage the adult students to enter into the planning obtain greater gains in achievement; lesser dropout rates; more commitment to learning?

—Repetition as a learning procedure has been discussed under latent learning . . . Why is there a need for so much repetition? Is it possible that other forms of instruction could eliminate much of this repetition? Could teaching principles in the transfer of learning decrease repetition?

—What is the actual level of student anxiety in testing for initial placement? What can be done to obtain placement data without adding to the student's anxiety? Do diagnostic batteries have a role in initial placement?

The three-fold question asking whether special qualities are needed for teachers of adult illiterates and, if so, what they are and can they be developed, could also be applied to other teachers, particularly those with responsibilities for handicapped and disadvantaged students. A related question may be, are teachers of the handicapped made or born? Which qualities are more important to teaching success; those coming from personality and attitude, or the ones developed through specialized training?

The effect that adult student participation in instructional planning has on student morale, commitment to learning and levels of achievement is also worthy of further study. Although the principle that student involvement improves learning is well supported by elementary school research, its efficacy in teaching situations involving out of school youth and adults needs additional testing.

4:9 "STANDARDIZATION OF A SPANISH LANGUAGE ADULT INTELLIGENCE SCALE" BY RUSSEL F. GREEN AND JUAN N. MARTINEZ. UNIVERSITY OF PUERTO RICO, RIO PIEDRAS, PUERTO RICO. (PROJECT # 5-0081) 1967. (VT # 003-639) 258 PAGES.

The urgent need for a project to develop a standardized Spanish language adult intelligence scale was supported by the author's statement that: "Numerous psychologists and agencies throughout Latin America have been using inadequately developed forms with inappropriate norms for many years. Insofar as could be determined, this is the first instance of an adequately developed and standardized intelligence scale in the whole of Latin America. . . . The use of improper norms . . . almost surely leads to incorrect labeling of, and therefore improper attitudes toward, individuals. Such labeling and attitudes can have profound effects on the individuals all their lives."

There were four general goals established for this project, which were to be achieved in the time sequence as they are listed:

1. To produce and standardize in Puerto Rico an individual intelligence scale written in the Spanish language and adapted to Spanish culture for the age range 16 through 64.
2. To develop *a test and a procedure* which will make it possible to adapt the test to other Spanish American countries with a minimum of cost and effort.
3. To develop information which will allow for an automatic correction factor which will adequately account for much of the time related to shift in mean score that is normal for tests of this kind.
4. To incorporate into the overall effort the investigation of a variety of questions of general interest.

Existing Tests Adapted

By permission of the Psychological Corporation, the project undertook the task of adapting the Wechsler Adult Intelligence Scale (WAIS) for use among Spanish-speaking adults. The advantages of adapting existing tests, rather than developing a completely new instrument, are given. Included are arguments that there is a known model to follow; large amounts of information, especially concerning validity, are available; and general criteria for scoring are available and can be used as a guide in setting up scoring keys for the new test. "In short, very large amounts of work need not be repeated."

The first step of the project was to make a direct translation of the Wechsler Adult Intelligence Scale into Spanish. The initial translation, made by Dr. Carlos Albizu-Miranda of the Department of Psychology, University of Puerto Rico, was reviewed and revised by other members of the same department. These translators also initiated a study of work frequencies in order to develop a guide as to word order in the vocabulary subtest and in order to find possible alternates for

words now included in the English WAIS.

The research team then attempted to modify or eliminate all test materials that in any way appeared to be specific to the culture of the United States. New test materials were then assembled into an experimental form of the test. This form was about 25 percent longer than the final version was expected to be. Two linguistic experts, specialized in the study of regional and national differences in the use of Spanish, were retained. They were asked to base their revision on four criteria:

1. The Spanish used was to be correct although the emphasis was not to be on producing a high literary style.
2. The instructions were to be as simple and concise as possible.
3. The parts of the instructions to be read to the subjects were to be expressed in colloquial language which would be as clear, simple and precise as possible.
4. The verbal materials were to be as meaningful and fair as possible for all the various subcultures of Spanish America.

Following a training program for examiners and initial tryouts of new materials, all subtests were further pretested by administering them to two groups of subjects who were known to be widely different in intellectual ability. Any item that failed to differentiate between these two groups was dropped from the test.

A representative sample of about 250 persons from the population of Puerto Rico was then tested. In order to assure that this relatively small population was a truly representative group, the subjects were chosen by a multi-stage, partially urban-rural stratified, random sampling.

The Standardization Phase

A sample of 1,176 rural and urban Puerto Rican residents was selected for the best standardization sample. Six variables in the population were identified for the organization of data. These six were age, sex, urban-rural residence, geographical location, occupation, and education. Statistical data obtained from scoring the tests were processed through an IBM 7074 facility at the University of Rochester, Rochester, N.Y.

The results of the analyses of item data from the first representative sample were all favorable except for one very important aspect. The test proved to be too difficult for the general population. It also revealed that the test had a much higher ceiling than was needed for the population.

When discussing validity of the test, it is pointed out that there could be no direct validity evidence at this time. It is suggested that validity for predicting success in school may prove to be fairly good as the correlations between test scores and years in school were comparable with corresponding correlations in the States.

The main value of this Spanish language intelligence test will be to the people of Latin America. It also should prove useful in sections of the United States that have large numbers of Spanish-speaking people. The clear and orderly description of procedures needed to adapt a test from one language to another, and the steps that must be taken to standardize a test, comprise another interesting aspect of the study.

TOPIC FIVE: Guidance and Placement Services and Follow-Up Studies

4:11 "CAREER DEVELOPMENT" BY WARREN D. GRIBBONS. REGIS COLLEGE, WESTON, MASS. (PROJECT # 5-0088) 1966. (VT # 002-144) 218 PAGES.

Career guidance—the orientation and instruction of young people to help them make realistic and meaningful plans and decisions concerning immediate and future employment goals—has certainly had less than sensational success in our public schools. Many high school graduates and dropouts now enter the labor market with insufficient specific information of the employment world and with little insight into their own real capabilities and aptitudes.

Once out of school, their ranks are augmented by job drifters and a growing new breed of floundering young adults—college dropouts. All of these people are in desperate need of counseling and orientation. More significant over a long haul is the need for correcting the weaknesses of the secondary school guidance programs that failed them in the first place.

The Regis College longitudinal study, which is still in progress, gives attention to the problems associated with unrealistic self-concept, immaturity and social pressures that affect a young person's career choice. It is a carefully designed experimental study that should be valuable for all persons who have concerns for this basic education problem.

When speaking of the traditional guidance approach to career orientation, the report states:

"One of the most serious frustrations facing guidance counselors today is their inability to predict what the future holds for their counselees. . . . The traditional guidance approach has been to help the pupil acquire information about the world of work

and to match his traits with the requirements of specific occupational fields.

"This approach often fails because there is insufficient knowledge available concerning which traits are generally common to a particular occupational field. Also, it fails to recognize the social pressures exerted on the youngster, and that interests and values may not have been stabilized for some youngsters who are asked to make these vital decisions and choices."

Series of Objectives

The plan for the study was set forth in a series of objectives:

1. Test the theory of occupational choice which proposes a process running through a sequence of developmental stages.
2. Determine whether there are significant sex differences in career sequences.
3. Describe in detail 111 real career patterns over 8 years of development, and seek unifying mathematical and psychological models for them.
4. Determine the extent to which career decisions are based on selecting self-concept and other factors.
5. Accomplish a successful multidimensional scaling of early vocational maturity from interview protocols, naming the resulting scales, as a set, Readiness for Vocational Planning (RVP).
6. Explore the statistical dependence of numerous criteria of career development on the RVP scales, with the criteria being collected in three-, five- and seven-year follow-up interviews.

At the time of this report, the emerging careers of 57 boys and 54 girls had been traced from the eighth grade to two years past high school. Five communities, all within 25 miles of Boston, were selected for the study. The number of subjects was limited by the cost in time and effort needed to conduct personal interviews. The study group was selected by means of a random number table in each of nine participating eighth grade classes. Subjects selected were classified in accordance with I.Q., age and socio-economic status.

A standardized personal interview was used to gather data for study of pupil progress in career planning. Four interview schedules, used during the time span of the study, were designed along the lines of Super's Career Pattern Study of the Vocational Maturity of Boys.

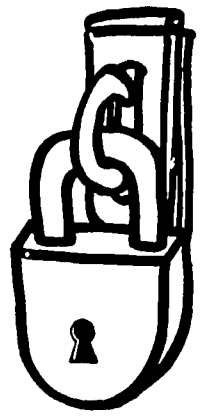
Noting the contribution of Frank Parsons, Donald Super and David Tiedeman to Vocational Guidance, the author summarized a number of implications of the study that relate to the theory of careers and to career counseling. Here discussed are: vocational maturity as a most meaningful developmental concept; the need of special career guidance by lower socio-economic groups and the importance of counselors determining students' apparent and hidden motives in stating occupational goals.

A most significant recommendation for vocational educators may be found in the statement, "The delay of one or more years in forced curriculum choice, as advocated by many vocational psychologists, may be unnecessary for one group (High RVP), and the other group (Low RVP) apparently would not profit substantially."

A summary of preliminary specifications proposed to prepare individuals to make thoughful career planning decisions contains a series of recommended activities, based on Tiedeman's Harvard studies on career development, which begin in kindergarten and continue in three year blocks through the elementary and secondary years, the first job and on to post-entry jobs. The implications of this concept of developmental occupational orientation as well as the operational patterns that may evolve, should certainly be known by all persons associated with vocational schoolwork.

4:12 "HIGH SCHOOL DROPOUTS: FATE—FUTURE—IDENTIFICATION" BY RALPH O. GALLINGTON. SOUTHERN ILLINOIS UNIVERSITY, CARBONDALE, ILL. (PROJECT # 5-0700) 1966. (VT # 003-641) 34 PAGES.

The Southern Illinois University study of high school dropouts was motivated by concern over an observed high dropout rate in Alexander County. Questions were asked concerning the status of dropouts and graduates, the characteristics of potential dropouts and what remedial practice would retard the dropout rate.



The first section of the study attempted to identify differences between high school graduates and dropouts in such areas as family, marital status, spouse's situation, economic status, and attitude. Extreme cases were selected for study purposes, and an interview outline for collecting data was prepared. In each case, the home of the subject was visited. 63 graduates and 57 dropouts were studied.

Identifying Potential Dropouts

The second part of the study dealt with the validation of two instruments which had previously been constructed to identify potential high school dropouts in Southern Illinois. One, a subjective instrument, had been developed for use in cases where lack of uniformity of school cumulative record systems limited the effectiveness of the objective instrument.

It was stated that by making an identification of the potential dropouts in the schools, teachers, counselors and school administrators in the local area could plan more appropriate programs. It was thought that this study might assist also in discovering some of the faults of the high school programs from which dropouts had withdrawn.

Common Characteristics

The series of interviews given to graduates and dropouts revealed that there were a number of discernable characteristics that could be associated with each group. These were summarized in a series of generalizations that include the following:

—The high school graduate had demonstrated more initiative than one who had dropped out.

—The graduate tends to delay decisions of commitment such as marriage, employment and the like until he is prepared better to accept responsibilities.

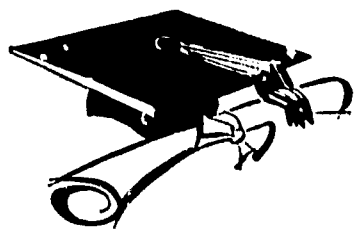
—The migration of graduates is greater than that of dropouts.

—The graduate seems to be less dependent on others than the dropout.

—Graduates recommend high school graduation; dropouts seemed to prefer not to discuss the subject.

—Generally, the immediate job opportunity for a dropout is common labor, and then only if such work is available.

Tentative correlates for identifying potential high school dropouts, which were available from preliminary studies, were compared with the total scores of actual graduates and drop-



outs. Correlation coefficients of .84 for the subjective instrument and .826 for the objective measure were obtained. Among 12 conclusions drawn from this section of the study are the following statements:

—Graduates may be identified falsely by the instruments developed, but the values at cut-off points seem to indicate that the instruments may be of value in identifying potential dropouts in large numbers.

—As many previous studies have shown, the greatest objective predictors were (a) Achievement; (b) Reading Placement, and (c) Mathematics Placement.

An accumulation of several correlates was found to be much more predictive of graduation or not. The biserial correlation formula measures this fairly well and permits the development of satisfactory total measures.

This and other studies relating to school dropouts should be of general interest. Knowledge gained about the socio-economic, personal and educational factors of early school leavers should be useful in developing both preventative and rehabilitative measures. This investigation, similar to a number of other school dropout studies, deals mainly with the qualities found in students who are dropout prone. The influence of the school—curriculum, attitudes and methods employed by teachers, class size, grouping, and scope of meaningful guidance —will need to be treated in other research projects.

4:13 "A GUIDANCE PROJECT TO INVESTIGATE CHARACTERISTICS, BACKGROUND AND JOB EXPERIENCES OF SUCCESSFUL AND UNSUCCESSFUL ENTRY WORKERS IN THREE SELECTED INDUSTRIES" BY ROERT E. GORMAN. UNIVERSITY OF MONTANA AND MONTANA STATE DEPT. OF PUBLIC INSTRUCTION, HELENA, MONT. (PROJECT # 6-2147) 1966. (VT # 002-799) 30 PAGES.

This project was conducted over a nine-week period of the summer of 1966 by a selected group of 14 certified school counselors. These men engaged in field research as investigators while being actively employed as unskilled and semiskilled laborers in three industries—mining, lumbering and construction.

"The major goal of the project was to provide school counselors with a work-research experience which, as they returned to their positions, would contribute to their becoming more competent vocational counselors of non-college bound youth."

The on-the-job investigation concentrated on:

1. Discerning the characteristics, backgrounds and job experiences of successful and unsuccessful entry workers.

2. Determining how school experience and vocational education contribute to success of entry workers.

3. Examining the effect of environmental and economic background on entry job success.

4. Discovering job variables which contribute to early termination of entry workers.

Motivation for Study

Industrial management and union officials were concerned by surveys in one industry which revealed that there was a 34 percent turnover of entry workers within the first 30 days of employment. Employers, employment agency officials, union leaders, and educators hypothesized that the school curricula inadequately met the needs of non-college bound students. Furthermore, they presumed that young entry workers had not received appropriate counseling. Surveys revealed that less than eight percent of potential wage-earners in the region had received vocational education.

The report stated that generally there had been a lack of emphasis on vocational guidance programs. Counseling and guidance personnel in high schools seemed to respond to college-bound students while neglecting the future dropout and non-college bound youth.

The report suggested that higher educational institutions had established this pattern of emphasis. "Training programs in counselor education institutions have stressed areas of instruction relating to counseling the academically able. . . . Not included in the prospective counselor's work backgrounds are significant learning experiences in the type of work that industry-bound students are likely to explore."

Recommendations

At the conclusion of their work-research period, the investigators compiled constructive recommendations based on their case studies, interviews, field diaries, and personal impressions. The suggestions are standard precepts for counselors. Since the report implies that they have generally been neglected, they need to be restated.

1. Counselors need work experience in industries which provide entry job opportunities for non-college bound students.

2. Counselors should encourage personnel management and other prospective employers to visit schools and talk with students who are potential entry workers.

3. Students who are non-college bound should be identified, as early as possible, and be guided into vocational education programs.

4. Potential entry workers should be given summer jobs with possible future employers. A liaison between counselors and industry personnel should be established.

5. School counselors need to inform the students about the nature and requirements of work experience.

6. Counselors should conduct a follow-up of former students who have been employed.

7. Counselors ought to evaluate school curricula for non-college bound youth.

8. Counselors need to work toward establishing a joint industry-education board to facilitate evaluation of vocational education curricula and to ease the students' transition from school to job.

9. Industry-bound students need orientation to the value and worth of entry industrial employment, since attitudes formed toward the first job experience establish a precedent for future conduct.

Counselors Need Job Experience

The summer period was found to be too limiting for a fully realized sociological study. Nevertheless, the work-research project seems more advantageous and enlightening than no experience at all. The investigators who had previously enjoyed sedentary

positions found their labor strenuous, hazardous and depressing. However, they felt they had gained fresh and vital insights into the problems faced by entry workers, insights which would hopefully increase their effectiveness and influence as counselors.

The recommendation that counselors receive on-the-job experience must be given attention. Would it not be advisable that some appreciable term of full-time work experience be an integral part of the training of counselors? Certainly, it should help them to better assist and empathize with other than college preparatory students. If counselors with prior work experience are unavailable in higher educational institutions, then the training programs might shift their emphasis and offer opportunities for practical employment within the curriculum.

The third recommendation of the study, which states that "non-college bound students should be identified, as early as possible, and be guided into vocational education programs," needs to be treated with some reservations. First, the early identification of non-college people is at best tentative; also, steering all students so classified into vocational or any other form of education seems to be rather arbitrary and not consistent with sound guidance practice.

"PLAIN TALK"

THE RESEARCH STUDIES which have been reported in this issue give attention to such items as teaching methods, learning theory, early identification of school dropouts, and training programs for guidance counselors and home economics teachers. Among the group are some important contributions to knowledge. These studies are generally high quality efforts, with carefully selected topics and well organized designs and procedures.

Notwithstanding the value of these investigations to the field of adult education, there are areas of interest relating to the vocational instruction of out-of-school youth and adults that still need attention. There has been no extensive study, for example, to determine what combination of courses and programs would constitute an adequate total program of adult vocational education or what criteria would be used to evaluate such a program. It is not known how many adult courses are now offered merely because facilities and teachers are available, or what proportion of programs for adults are based on careful analysis of individuals' interests and available job opportunities.

How Can More Adults Be Reached?

The study of information seeking—how adults find out about adult education opportunities—revealed that persons taking advantage of adult programs tend to come from higher socio-economic sectors of the population. Could further exploration help determine what channels of communication are most successful in reaching other social and economic ranks? And what specific forms of education—basic—exploratory—remedial—avocational—vocational—are now not provided but are needed?

Recent research emphasizes the need for greatly expanded programs and services for out-of-school youth and adults. When the average unemployment rate in some Negro urban slums approaches 30 percent of the work age population, it is obvious that technological unemployment is here. And now. As manual, menial unskilled and semi-skilled jobs continue to diminish, the demand for permanent and comprehensive programs of continuing, year-round, night-and-day career oriented education, available for all people in all locations, is a pressing and urgent need.

We are at the threshold of a revolutionary new concept in American education—"free continuing schooling for all." In some respects, this cause is as universal and significant in scope as the movement for free public high schools during the first half of the nineteenth century, and the subsequent development of land grant colleges.

Who Will Do the Job?

The problem is no longer whether universal career-oriented, continuing education is necessary. The important question at present is, "Who will do the job?" What administrative organization is best equipped to provide a permanent base for adaptable and extensive programs of occupational guidance and training of less than college grade? The school district? Community college? The State? The Federal Government?

The local school district, as the administrative unit closest to the people, is a logical first choice. But very real obstacles stand in the way. First, under existing systems of taxation and finance for educational purposes, school districts are not getting enough money to meet their current responsibilities. Also, the problem is with school people themselves. Long associated with academic matters, too many school teachers and officials—even some in vocational schoolwork—fail to identify with those people

outside the regular school program who need their help.

The community college may also seem a logical vehicle for a universal program of continuing adult education. Perhaps, but if the institution is "all college," and staff selection, curriculum organization and design of physical facilities are all dominated by college-oriented thinking and collegiate accreditation policies, the occupational level program will surely suffer.

Venn's treatise on post secondary vocational education, *Man, Education and Work*, calls attention to some of the problems of providing less-than-college-level vocational education through the two-year college. If the two-year college campus is to be the setting for universal continuing education, provisions will have to be made to insure that all people from all backgrounds will be welcome—and will want to come—at the periods of time that will be most suitable to them.

Other Questions Raised

In the educational organizations now under development, does the administrator of adult vocational education have sufficient status and authority to carry out an effective program, or are his hands tied by college-related administrative policies? And will the teacher of Beauty Culture find happiness as a college professor?

What about state or county operated secondary schools, not associated with a collegiate program? There may be hope here, too. Connecticut and Wisconsin have developed excellent adult vocational programs through their regional, state-operated vocational and technical schools. The county vocational and technical high schools of New Jersey and Pennsylvania also have some outstanding vocational programs for adults.

A question may be raised for proponents of comprehensive high schools as the relative benefits for students attending comprehensive vs. separate vocational high schools are debated and tested. The adult vocational program has been a significant community asset in specialized vocational schools. However, they are virtually nonexistent in many so-called comprehensive schools. As plans are made for more comprehensive high schools, what provisions are being incorporated in them for adult vocational education? And if the adult vocational program is not being considered, what assurance is there that other agencies are available and prepared to do the job?

Some have expressed the fear that universal continuing education will be administered by the Federal Government. But how a federal agency or combination of federal offices could possibly handle all phases of continuing vocational education at the operational level, for all persons in every community in the nation, is hard to comprehend.

The real purpose of federal money, regardless of the agency, has been to plant the seeds for local progress and initiative. So far, the small amount of local participation in adult vocational education, when compared with the burgeoning urgency of the national situation, has forced a greater degree of federal action. Actually, the seemingly impressive sums of federal Manpower dollars expended so far have been mainly limited to emergency job training measures for hard core unemployed in selected pockets of greatest concern. Under present proposals there would not be enough federal money to blanket the country with the permanent facilities and programs for adults that are needed.

Opportunity School

Many AVA members who attended the 1966 convention in Denver visited the Emily Griffith Opportunity School. Operated by the Denver Board of Education, the Opportunity School is built upon a simple humanitarian principle: "Any individual should be served when the help is needed —not when it is convenient to the school."

Initiated by a remarkable woman for whom the school is named, and further developed by Russell K. Britton and other outstanding Denver educators, the Emily Griffith Opportunity School now has more than 30,000 enrollments each year in a great variety of adult job related and avocational programs. When considering the influence of this prestigious organization to the economic stability and social fabric of Denver, it is saddening to note how few other cities and communities have done anything that can compare.

Perhaps the need is simply for more enlightened individuals in the educational field, like Emily Griffith and Rusty Britton, than for more impersonal organizations.

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RESEARCH VISIBILITY

SYNTHESIS / APPLICATION / DISSEMINATION

*"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070653, project 7-0653; "Synthesis and Application of Research Findings in Vocational Education").

Vocational Education Is Service . . .

The real strength of vocational education has come from its teachers—those experienced and informed persons who have brought to their students an appreciation for honest work and the knowledge and skills that lead the way to successful employment. And in this period of change, when each day brings another expedient practice, or palliative theory or device aimed at improving the educational process, it is good to keep in mind that the really important factor in any educational prescription is the teacher.

As the solid contributions of vocational education teachers are acknowledged it is also appropriate to spell out some of the ways in which they will have to be better in the future, and to speculate upon the various methods and approaches that will help insure that needed improvements will be accomplished.

Although much has been done to catalog the abilities and qualities that are needed for successful vocational teaching, the careful assessment of how each of these competencies may be realized is another matter. It is here that all agencies and institutions involved with vocational teachers—the schools that employ them, departments of education that certify them, and the colleges of education that train them—must give more attention to the various factors which contribute to teaching excellence.

Included here would be the basic human qualities of the persons who would become teachers, the methods employed in recruiting and selecting them, and the range and nature of the educational programs designed to prepare them for careers in teaching.

Toward Teaching Excellence

TABLE OF CONTENTS

Dr. Gordon F. Law is editor of "Research Visibility." The organization for this department of the JOURNAL, the pattern for reporting and the writing represent his work.

Some of the unique aspects of vocational subject teaching and the influence that quality teaching has on the total educational program are discussed in the Report of the Panel of Consultants, *Education for a Changing World of Work*, and in the subsequent Vocational Education Act of 1963. It was from these historic documents that the five topics relating to the theme of this issue were derived. These topics are:

1. Vocational Teacher Recruitment Practices: Evaluation of Occupational Competency and Potential Teaching Ability.
2. Opportunities for Inservice Seminars and Workshops.
3. State Education Department Leadership in Vocational Teacher Education.
4. Expanding the Vocational Teacher Training Activities in Higher Educational Institutions.
5. Pilot and Demonstration Projects in Vocational Teacher Education.

A recent publication of the Minnesota Research Coordinating Unit in Occupational Education is of special interest to this issue. This is Dr. Jerome Moss' *Review of Research in Vocational Technical Teacher Education*. Containing a bibliography of 141 titles relating to vocational teacher education, the *Review* gives attention to a number of topics, such as "studies of job requirements," "input studies," "program development," and "teacher recruitment." The *Review* also contains a classification model, which is the guide used for the assignment of research studies to various categories.

Directed principally to researchers who desire an organization and interpretation of completed projects that will open new vistas for further investigations, the review encompasses some materials from the general field of teacher education as well as materials dealing directly with teachers of vocational-technical programs. Research, developmental, and pilot training projects were considered appropriate to report, but articles, speeches and conference discussions were generally excluded.

Also contained in Moss' *Review* is information that the University of Texas has recently established a Research and Development Center in Teacher Education. "We should follow its progress closely, so as to utilize relevant results, but we should also undertake additional systematic efforts of our own. The task before us is too important and too large to depend entirely upon the efforts of others, or upon sporadic, uncoordinated activities on our part."

Limited numbers of this guide are available and may be obtained from: Dr. Jerome Moss, Department of Industrial Education, College of Education, University of Minnesota, Minneapolis, Minn. 55455.

TOPIC ONE: Vocational Teacher Recruitment and Selection Practices: Evaluation of Occupational Competency and Potential Teaching Ability

Trade Competency Examinations

5:1 "Feasibility of Providing Trade Competency Examinations for Teachers on a National Basis" by Gerald Griesse. Rutgers—The State University, New Brunswick, N. J. (Project # 5-0043) 1965. (VT # 002 617) 85 pages.

The use of examinations to evaluate the occupational competency of prospective teachers has long been employed in trade and industrial education. But there has been no uniform national pattern or procedure. Some states employ a combination of written and performance tests; others use a written examination only; and yet other states, unfortunately the majority, have developed no comprehensive system for evaluating vocational skills and knowledge.

The Rutgers University investigation into the feasibility of establishing national proficiency examinations, and along with them, national norms, was conducted through a series of conferences, written reports and panel discussions. Participants from 22 states and the District of Columbia attended a series of four workshop meetings. At each session, selected individuals, persons with wide experience in the construction and use of trade proficiency examinations or standardized test construction, prepared and presented papers. These were followed by reaction presentations and by general and small group discussion meetings.

The four topics presented were:

—"Constructing Valid Occupational Competency Examinations" by Joseph T. Impellitteri, Pennsylvania State University.

—"A Limited Field Test of the Automotive Competency Examination" by Ray A. LaBounty, Eastern Michigan University.

—"Preparation, Administration and Implementation of Trade Competency Examinations for College-University Credit" by Joe L. Reed, University of Tennessee.

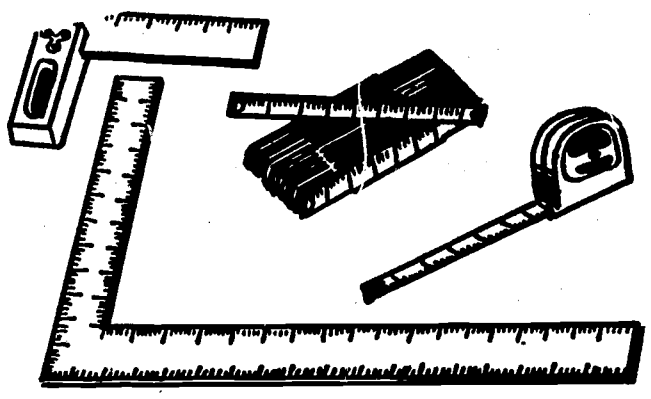
—"The Performance Phase of Trade Competency Examinations" by Benjamin Shimberg, Educational Testing Service.

Impellitteri's paper focused attention on three questions:

1. What considerations should be given to reliability and validity in constructing nationwide occupational competency examinations?
2. How may valid and reliable occupational competency examinations be constructed?
3. How may the validity and reliability of occupational competency examinations be measured?

When discussing the importance of establishing norms, Impellitteri indicated that primary consideration must be given to the manner of selection of individuals to be included in the norm group. "A decision must be made as to the nature of the persons in this norm group. The basis for this decision lies in the answer to the question: 'With whom do we want our prospective candidates to be compared?'"

Among the factors to be considered when establishing national norms are geographical differences in occupa-



tions and varying levels of experience and training required for teacher candidates from one state to another.

LaBounty's report deals with the limited field testing of automotive competency examinations. Fifteen automotive competency examinations, previously developed in Michigan, were administered in three states, Michigan, Kansas and North Carolina.

States Must Cooperate

In Donn Billings' reaction presentation is the statement that: "The major problem to overcome, in the development of trade competency examinations on a national basis, is the reluctance of the various states to: (a) share developmental projects; (b) accept at par value other state philosophies and standards; (c) exchange test instruments on an unlimited basis, and (d) discharge traditional patterns of trade testing.

Reed's discourse on the preparation, administration and implementation of national competency examinations identifies seven major uses:

1. To provide state certification boards with an alternative to the "years of experience" requirement.
2. To give university credit for work experience or experience gained in cooperative programs.
3. To help raise salaries and prestige of vocational education, maintain high standards and to help teachers recognize important facets of the trade to emphasize in teaching.
4. To validate vocational teachers' competencies in the eyes of academic administration.
5. For teacher certification purposes, as evidence of competency, for reciprocity purposes between centers and states.
6. For teacher recruitment and selection.
7. To identify sub-marginal and non-competent teachers who have been approved for teaching subjects in areas outside of their fields of preparation and experience.

Performance Test Needed

There has been a general lack of agreement in the past concerning the value of performance tests. While some have advocated that they are essential to assessing accurately a person's competency to teach a vocational subject, others claim that a written test relating to trade theory is all that is needed. In view of this difference of opinion, the Shimberg report should be of special interest.

Shimberg's report, which gives particular emphasis to the performance phase of trade proficiency examinations, supports the need for practical as well as theoretical evaluation of trade competency. Citing the Navy's experience with performance examinations during World War II, Shimberg states, "Today it is generally conceded that written tests of trade knowledge are not a very dependable way to evaluate shop performance and that without some type of direct or indirect performance measure it is unlikely that we can make an accurate assessment of an individual's trade competency."

Suggested Considerations

When discussing the construction of performance examinations Shimberg cites five considerations suggested by David Ryan and Norman Frederickson in *Educational Measurement* (ed. by E. E. Lindquist, American Council on Education, Washington, D.C., 1951. pp. 455-494). These suggestions are:

1. The sampling of activities should be as wide as practical.
2. A minimum of easy or routine operations should be included.
3. The task should be sufficiently exact to permit accurate standardization and enable objectives to be made.
4. The task chosen should have face validity to command the respect of the examinee.
5. Tools and equipment should be reduced to a minimum and should be capable of standardization.

Shimberg further suggests that a two-way grid, listing job specializations along one axis and performance tasks along the other, will help to identify the contribution of each task to the evaluation process. Such a grid will serve to reveal gaps, overlap and possible duplication.

Main Value of Study

The main value of the feasibility study is that it identifies a growing need for trade proficiency tests that would be available on a national scale. The development of national tests, both written and performance, could serve a number of purposes. First, they would be of great benefit in states which lack adequate numbers of teacher candidates in various occupational categories to justify a substantial financial investment needed for their own test construction. Also, national tests and norms, used at the discretion of state departments and teacher education institutions, could help bring about standards of objectivity in the vocational teacher selection process.

With respect to the use of proficiency examinations for the allowance of college credit, important precedents have been established. Many institutions are now granting college credit for skill and knowledge gained outside the classroom in a variety of fields and disciplines. These fields include, in addition to trade and technical occupations, proficiency in mathematics, foreign language and musical performance.

Retiring Military Personnel

5:2 "A STUDY OF POTENTIAL UTILIZATION OF RETIRING MILITARY PERSONNEL IN VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS" BY MALCOLM RICHLAND. SYSTEM DEVELOPMENT CORP., SANTA MONICA, CALIF. (PROJECT # 5-0147) 1967. ERIC # ED 010 593. MF $0.27 HC $5.84. 130 PAGES.

This is the report of a project designed to explore the feasibility of developing a computerized system to match military retirees to job vacancies for teachers and other support personnel in vocational and technical education. The project had five major objectives:

1. To determine the compatibility between military occupational specialties and skill areas in vocational education programs.
2. To determine state certification requirements and needs for teachers in vocational education programs.
3. To identify from a sample of current retirees those who might qualify for teaching positions in vocational education.
4. To develop an on-going method of matching retirees with specific skills, interests and experience to available teaching positions in vocational education.
5. To recommend, if needed and feasible, a military retiree job matching system—including its requirements, its possible sponsors, operators and funders.

A four-phase plan was developed to accomplish the objectives of the proj-

ect. During a planning period, cooperation and coordination with the Department of Defense and each of the military services were accomplished; data collection instruments were designed; data collection procedures were established, and the advisory council convened to review project plans.

During the second or data collection phase, surveys were conducted with selected retired military personnel. State teacher certification requirements in vocational education were also obtained by survey methods. Military skills and vocational education skills were analyzed so that compatibility could be determined, and data were coded for analysis and computer treatment.

The third section of the study had to do with analysis of data, and the fourth was the final report, in which the findings, conclusions and recommendations are stated.

Conclusions

The principal conclusions of the study were as follows:

—There is a widespread shortage of vocational education teachers, yet there are thousands of military retirees who are occupationally and educationally qualified for vocational teaching positions.

—No simple conversion can be made from military specialty titles to vocational and technical education instructional areas.

—After screening and analysis of military retiree backgrounds have been accomplished, it is feasible to use them as teacher candidates in vocational education programs.

—State certification requirements, both for education and occupational experience, pose no insuperable barriers to the employment of military retirees.

—There does not exist at present any systematic procedure nor method for channeling interested and qualified military retirees into the field of vocational education.

—Computer-assisted matching of retirees to job vacancies in vocational education is technically feasible.

Recommendations

Based upon the study results, the following recommendations are proposed:

1. A military retiree-job matching, computer-assisted system should be designed and implemented as soon as possible.

2. The systems sponsor should be the American Vocational Association with the possible co-sponsorship of the American Association of Junior Colleges.

3. The system could be funded either individually or collectively by the Department of Defense, Department of Labor, Office of Economic Opportunity, and U. S. Office of Education.

4. The system's operator should be an independent, nonprofit organization, possessing certain appropriate computer facilities and experience in the field of education, information system design, computer programming, and advanced data management technology.

The report further states "the proposed system has the immediate goal of assisting in the placement of military retirees who are interested in and qualified for teaching positions in vocational education. However, the system should be designed in such a way that it could be readily expanded to serve (a) all the job-seeking needs of all military retirees, and (b) all the personnel-seeking needs of employers in vocational education."

Limitations Reported in Study

Among the limitations reported in the study was information that matching of military retirees to jobs in vocational education by using service specialty code numbers was unsatisfactory, and that investigators found it necessary to rely heavily upon their personal judgment to accomplish the matches needed for the project. Another limitation cited was that "no satisfactory method was found for predicting the need for instructors or other personnel in future vocational education programs by occupational categories."

It may be fair to ask, at least before a national system is incorporated, that there be further refinement of the matching process. To be specific, although the skills performed by auto or truck mechanics in military and civilian establishments may be very similar, there are a variety of associated procedures and fields of knowledge in such things as parts purchasing, inventory control and customer relations that would be quite different.

There are also some basic differences in purpose and mode of operation between military life and public school work. For example, the military traditions of caste and automatic conforming behavior, and the relative insulation of military personnel from public scrutiny and control would not be similar to the prevailing conditions in the public school environment.

Vocational Teacher Resources

5:3 "SUPPLY AND DEMAND FACTORS AFFECTING VOCATIONAL EDUCATION PLANNING" BY HARRY V. KINCAID. STANFORD RESEARCH INSTITUTE, STANFORD, CALIF. (PROJECT # 5-0208) 1966. ERIC # ED 010 305. MF $0.27 HC $6.12. 121 PAGES.

The wise and judicious recruitment and selection, and the subsequent professional preparation of persons for vocational teaching positions, are critical to the ultimate success of vocational education. The Stanford University study, therefore, directed toward developing techniques for surveying and cataloging vocational teacher resources, deals with an important topic.

The objectives were to develop within a selected geographical area, Santa Clara County, California: (a) a description of present and potential vocational education teachers; (b) estimates of future needs for change in vocational education programs, and (c) estimates of the influence of instructional personnel policies and practices on the size and quality of vocational teacher manpower resources.

It was further stated that the overall purpose of the study was to develop and test methods for extending a comparable inventory on a regional or national basis after evaluation of the various data used in the preliminary program.

Using the Panel of Consultants' definition of vocational education, the study sought to identify such programs in two-year colleges, high schools and proprietary schools and in programs which were out of regular school organizations throughout the county.

Attention was directed to development of a self-administered questionnaire to obtain information on the educational background, teaching experience and status, and employment experience of instructors in public high schools and community colleges. Information as to how individuals first

came to the attention of school officials and to what degree they satisfied the qualification requirements was discussed in personal interviews with school administrators. As background information for these interviews, discussions had been held with state education officials concerned with credential requirements of vocational teachers.

Among the results reported for the study is information that the availability of vocational offerings for high school students varied widely and that public vocational education is concentrated at the junior college level.

When speaking of the collection of data from high school programs it was reported that a problem exists in determining which staff members should be classified as vocational teachers and which should not, as some teachers had responsibilities for both general and vocational courses.

TOPIC TWO: Opportunities for Inservice Seminars and Workshops

Computer Assisted Instruction

5.4 "COMPUTER ASSISTED INSTRUCTION; SUMMER TRAINING PROGRAM" BY GEORGE C. MCGREGOR. PROVIDENCE COLLEGE AND STATE DEPARTMENT OF EDUCATION, PROVIDENCE, R. I. (PROJECT # 5-0014) 1965. (VT # 002-424) 35 PAGES.

5:6 "COMPUTER ASSISTED INSTRUCTION; IN-SERVICE TRAINING FOR VOCATIONAL TEACHERS" BY GEORGE C. MCGREGOR. PROVIDENCE COLLEGE, PROVIDENCE, R. I. (PROJECT # 5-1214) 1966. (VT # 2423) 18 PAGES.

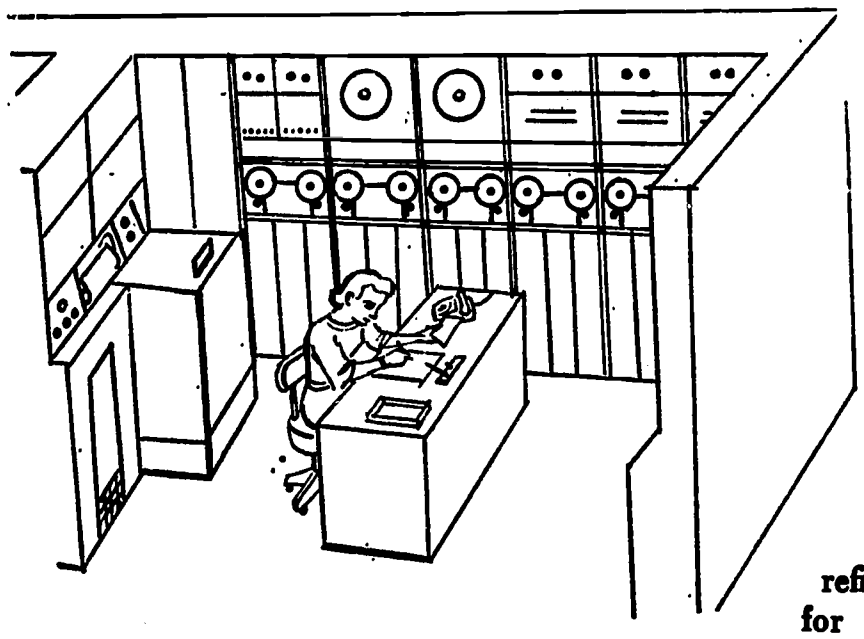
The summer program in computer assisted instruction, cooperatively developed by the Rhode Island State Department of Education and Providence College, had two main objectives:

1. To develop a group of vocational teachers who understand computer assisted instruction and who are proficient in coursewriter techniques for converting individual lessons into the proper format for computer assisted instruction.

2. To prepare sample lessons for computer assisted instruction in a variety of vocational course areas.

Letters were sent to general and vocational high schools in Rhode Island and Massachusetts, announcing plans for the summer training program. It was pointed out that a prerequisite for enrollment was the IBM Programmer Aptitude Test. Ninety-four vocational teachers applied for enrollment and took the test. The 30 teachers who scored highest were interviewed, and 20 were chosen for the program.

The 20 enrollees represented a variety of vocational subject areas, including electric arc welding, electronics, sheet metal work, graphic arts, and business education. They received 120 hours of classroom instruction and laboratory practice in computer assisted instruction under the guidance of a programmer, a psychologist and a variety of consultants.



During the final phase of the summer training program, the students actually planned, designed, wrote, and tried out sample lessons.

The final report contains selected materials on computer assisted instruction that were used and the summarized comments and reactions of persons enrolled. Among the instructional materials contained in the report are a description of computer assisted instruction, its educational advantages, some guidelines for CAI, a synopsis of student comments and reactions, and the relations between the teacher and the program. The report also contains three computerized lessons, having to do with basic bookkeeping, the electric circuit and calculating and estimating costs.

Sequential Report

The sequential report of "Computer Assisted Instruction" (U.S.O.E. Project 5-1214) relates to a winter evening program of advanced instruction for 13 of the same 20 teachers who had received the basic instruction. The objectives of this section were to:

1. Develop a group of vocational teachers who understand computer assisted instruction and who are proficient in coursewriter techniques for converting individual lessons into the proper format for computer assisted instruction.

2. Prepare, test and refine a series of lessons for computer assisted instruction in a variety of vocational course areas.

Weekly two-hour class sessions were held at Providence College. These were divided into two one-hour sessions. The first hour was used for class discussions of problems arising during the writing of individual course sessions. On alternate weeks, this hour was used for formal instruction of coursewriter language. The second hour was used for class work on individual courses.

In the final evaluation of the project it is stated that each participant had acted in the roles of author and proctor, each had written a course sector using coursewriter language, and each had had an opportunity to use the 1050 data communications system to enter a portion of his course material.

Among the 10 conclusions of the study are statements that "computer assisted instruction offers an entirely new approach to individual instruction . . . CAI is especially suited to remedial work due to the ability of the author to utilize the branching features . . . and the preparation of meaningful course material is much more difficult than may first be realized."

There are those who say that teaching machines will ultimately take over many of the processes now handled by teachers. Others speculate on a day when virtually all learning will take place through the use of various forms of education media; those teachers still needed would have completely different roles.

On this point it is important that we remind ourselves of the human qualities of sympathy and understanding which a teacher should possess. A person is responsive to feelings, emotions and needs. A machine is not. But the teacher who is merely a data bank, a storehouse of specific knowledge, and whose teaching processes are mechanical and directional can quickly be replaced. Hopefully, the machine may be most beneficial in bringing into focus the human qualities needed in teachers.

Teaching Food Service Programs

5:5 "WORKSHOP FOR THE PREPARATION OF HOME ECONOMICS TEACHERS TO TEACH WAGE-EARNING PROGRAMS IN FOOD SERVICE" BY ANNA CAROL FULTS. SOUTHERN ILLINOIS UNIVERSITY, CARBONDALE, ILL. (PROJECT # 5-0015) 1965. ERIC # ED 003 493. MF $0.45 HC $11.48. 280 PAGES.

This study is to assist in the planning of wage-earning programs for boys and girls in the 11th and 12th grades. The materials included are to help teachers prepare students with wage-earning skills for occupations which utilize home economics-related knowledge and skills. The programs can be adapted to junior colleges, area vocational schools and adult classes in wage earning.

Prime consideration was given to the food service worker, although program outlines for hotel and motel housekeeping aides are contained in the study.

The general steps in initiating and developing an effective wage earning program are:

1. Organizing an advisory committee.
2. Obtaining information on employment opportunities.
3. Developing a job analysis.
4. Planning job placement, evaluation and follow-up.
5. Determining the qualification of trainees.
6. Reviewing the qualifications of wage-earning teachers.

Part I of the bulletin introduces steps in organizing wage-earning programs. Part II contains a series of lessons in food service occupations for a non-cooperative program in home economics wage earning. The lessons include information sheets in the form of generalizations regarding particular foods; procedure sheets for more than 70 work experiences planned as sample lessons to give students a chance to gain skill in relation to food principles; a cost sheet; suggested test questions, and evaluation sheets on work experience.

Part III is a suggested program for training of youth as housekeeping aides for hotels, motels, homes, and public buildings.

Wage Earning Programs

To establish work experience programs, school board members, superintendents, principals and teachers should share in the responsibility along with business and the community at large. Officials should establish an advisory committee and specific occupational committees to assist in planning. Listed are purposes, duties, suggested personnel for such committees, and suggested method of appointment and organization.

Steps to be taken in setting up a program include: (a) deciding on the type of program to be established; (b) considering the budget; (c) selecting a coordinator, assigning duties of the coordinator and his place in the guidance program; (d) selecting classroom, fixtures, equipment, and instructional materials, and (e) naming the course and scheduling classes.

The study contains a number of guides—check sheets, questionnaires, form letters—for the establishment of a good program. These guidelines are:

1. Suggestions for the planning of a survey to gain information on opportunities for employment. Such information will determine the needed training in initiating and developing a successful program.
2. A guide for making a precise job analysis. The analysis will point out fundamental procedures, determine the course of study and help identify instructional units.
3. Suggestions for information that should be included in job specifications, describing the person to do the job and not requirements for the job.
4. Recommendations for job placement and suggestions for essential course evaluation and follow-up.
5. A guide for determining qualifications of trainees as well as methods of selection of trainees.

This study offers highly specific, constructive, step-by-step suggestions for the implementation of a wage-earning program. Because of the detail it can be used as a practical handbook for officials and teachers. Educators who are also homemakers may want to try some of the numerous recipes that have been included in the study.

Office Occupations Teachers

5:7 "GUIDELINES FOR THE PREPARATION OF OFFICE OCCUPATIONS TEACHERS" BY FRED S. COOK. WAYNE STATE UNIVERSITY, DETROIT, MICH. (PROJECT # 6-1522) 1966. ERIC # ED 010 195. MF $0.18 HC $3.88. 87 PAGES.

This study's Purpose states that: "Business and office teacher educators had relatively little contact with and no direct responsibility in the preparation of vocationally certifiable teachers prior to the passage of the Vocational Education Act of 1963. Under the provisions of this Act, however, business and office teacher educators have immediate, direct and continuing responsibility for the preparation of teachers for office occupations."

In order to implement adequately the Vocational Education Act of 1963 in the office occupations, a series of clinics were held to:

1. Focus the attention of business and office teacher educators on the Vocational Education Act of 1963.
2. Discuss the implications of the Act for business and office teacher education curriculums.
3. Obtain the best thinking for the profession for the development of guidelines for viable business and office teacher education curriculums.
4. Disseminate the guidelines which were developed through a series of training clinics. (These guidelines establish, among other things, recommended minimum work experience requirements, general and vocational education courses and levels of subject matter competencies.)

The four-phase series of clinics gave leaders in business education the opportunity to establish minimum requirements for office occupations teachers.

During the first, or planning phase, 52 city and state business education supervisors, business teacher educators and consultants met to develop preliminary guidelines and to determine methods for dissemination and revision of the preliminary draft. As a result of this clinic, a series of 20 guidelines was developed and revised. Sets of these were mailed to 1,200 city and state supervisors and business teacher educators for comment.

Many Educators Assist

Conferences were held in the nine H.E.W. regions, where recommended guidelines were revised and sent on to a national clinic for further refinement. At this stage an editorial staff reviewed and further revised the guidelines and, with the assistance of professional editors, prepared a final draft. A total of 323 business educators participated in the development of these guidelines, either by submitting written suggestions or by attending one or more of the regional or national meetings.

Nineteen guidelines for the preparation of office occupations teachers were finally submitted. The report states that these guidelines are suggestions for action . . . describing the qualities and competencies which these teachers should possess and indicating the processes for achieving these goals. Each guideline is presented as a statement, and each is followed by supporting material dealing with "why" the guideline has been included and "how" it may be implemented.

All vocational business and office practice teachers and teacher educators will find information valuable to them in the Wayne State study. Although it could be said that the majority of guidelines presented are already well known and generally accepted, there are several others which should add new perspectives to the preparation of office practice teachers.

These include the guidelines which specifically recommend job-related experience and competency—"providing opportunities for work-study and field experience; requiring part time or full time work in a regular job; requiring competency in conducting job analysis, or requiring simulated office experience in well-equipped laboratories."

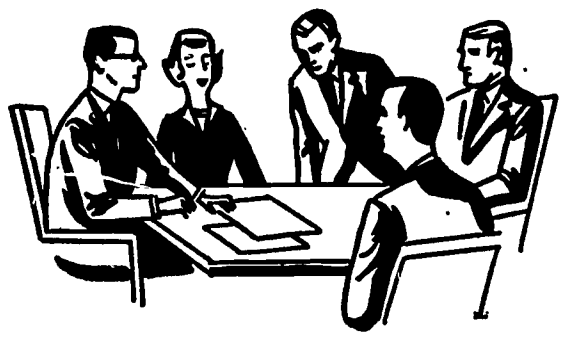
New Media of Instruction

5:8 "CONFERENCE FOR VOCATIONAL TEACHER EDUCATION ON NEW MEDIA OF INSTRUCTION" BY W. VINCENT PAYNE. TUSKEGEE INSTITUTE, TUSKEGEE, ALA. (PROJECT # 6-2224) 1966. ERIC # ED 010 435. MF $0.18 HC $2.76. 29 PAGES.

The conference on new media of instruction was conducted by Tuskegee Institute for 50 teachers from the southern region of the United States, Puerto Rico and the Virgin Islands. Four major divisions of vocational education were represented.

The specific objectives of the one-week conference were to (a) develop an awareness on the part of vocational educators of the availability and value of the new media of instruction; (b) develop the ability to select and use the educational media in respect to accepted principles of teaching and learning, and (c) develop the ability to utilize the results of research relating to the use and development of new media in vocational and technical education.

Each day of the conference was begun with an address by a consultant—an authority in the field of communication theory or educational media. In most cases, the presentation was coordinated with demonstrations and practical applications involving one or more of the new media. Among



the media used were educational television and video tape systems, programed instruction, tape recordings, 2x2 slides and filmstrips, 8 mm. single-concept films, 16 mm. films, opaque and overhead projections, and overhead projectals.

Subsequent to each presentation was a period for discussion. Further discussion took place in organized, small-group, vocational interest seminars conducted during the afternoon. The four fields of interest represented were agriculture, business, home economics, and trade and industrial education.

During evening sessions, oral reports were made by each group. Each day's activities were then summarized and clarified for written reports. Implications from these are included as a part of the conference report.

Valuable Experience

Participants' ratings of the various sections of the conference, together with selected comments, are presented in this report. They convey the impressions that the one-week institute, although too short in duration, was a valuable experience.

The report states: "At least one of the specific objectives of the conference was achieved. . . . There is evidence that an awareness on the part of vocational and technical teacher educators of the availability and value of the new media of instruction was developed."

The report further states that the presentation on theories of learning awakened the participants to the fact that no single set of theories can be applied to a specific learning situation. It was pointed out that there is a stratification between what is discovered through research in the laboratory and what is actually applied in classrooms. . . . There are no theories of *teaching* that can be applied in using the new media—research has centered on the behavior of *learners*—not the teachers.

TOPIC THREE: State Education Department Leadership in Vocational Teacher Education (No Reports)

TOPIC FOUR: Expanding the Vocational Teacher Training Activities in Higher Educational Institutions

Teacher Technology Center

5:9 "A VOCATIONAL-TECHNICAL TEACHER TECHNOLOGY CENTER—THE DEVELOPMENT OF A MODEL" BY MILTON E. LARSON. RUTGERS, THE STATE UNIVERSITY, NEW BRUNSWICK, N. J. (PROJECT # 5-0018) 1965. ERIC # ED 003 522. MF $0.18 HC $2.72. 60 PAGES.

Until recent times there was a practice of relegating the vocational department to a discarded school building, portion of the basement or some other substandard facility. The concept of second-class education for second-class citizens, so often associated with vocational schoolwork, seemed to be exemplified in these makeshift and outmoded shops and classrooms. On college campuses, too, the vocational teacher education department seems to have suffered from similar policies and practices.

It is most encouraging, therefore, to find a model teacher technology center, in which there are facilities for updating and upgrading vocational-technical educators in recent developments of industry and technology.

The purpose of this study was to devise a vocational-technical teacher technology center model for keeping teachers updated in their occupational fields and aware of new developments in pedagogy. Specifically, the objectives were to develop the educational specifications for a "model" center; to formulate architectural graphics and an outline of structural considerations related to design and construction of such a facility, and to disseminate research findings to potentially interested individuals, institutions and organizations.

Two Phases of Project

The project was carried out in two phases: (a) the development of educational specifications and (b) preliminary architectural plans. For the establishment of educational specifications a Panel of Consultants, composed of specialists of national reputation, was selected. Field study visitations were made to assess the progress at other large universities. The resolution of educational specifications led to the formulation of architectural plans.

To aid in the dissemination of findings, fliers were circulated at the American Vocational Association Convention of 1965. Later, a Dissemination Conference was held for 60 guests from 8 different states. Information was further circulated through brochures and periodicals.

The Technology-Resource Center was planned to provide the ultimate in innovations and advanced hardware, such as closed-circuit TV and a data retrieval system. Constructed in flexible modules or key instructional space, the physical plant is designed for short and long time spans, lectures and conferences, and combining teacher learning with teacher training. The space is adaptable for demonstrations, institutes, seminars, and workshops. The Center was also designed for the development of modern curricula and mass media teaching materials.

The research oriented Resource complex includes a library, a curriculum and evaluation center and a reproduction area.

The operational policy allows for a full-time base staff; the granting of graduate and undergraduate credit for students at other universities, and evaluation as a basic part of all activities.

The student body will be made up of teachers, teacher educators, administrators, and guidance personnel. The facility will be open to boards of education, supervisors, and management and union officials.

The Center will serve Distributive, Technical, Business, Agriculture and Trade and Industrial Education, as well as Home Services and Home Economics.

Recommendations

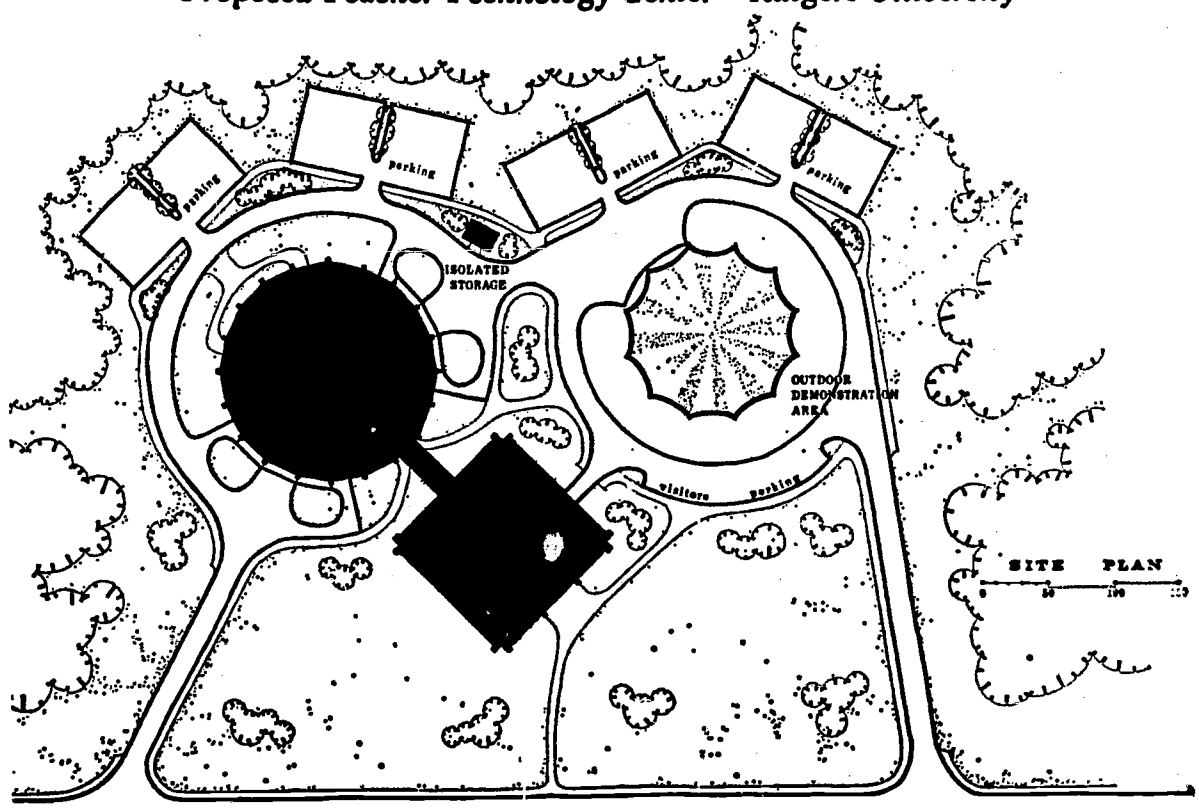
The report urged the wide dissemination of the findings of the study, the implementation of its concepts by educational institutions and state departments of education, and the circulation of a brochure by the Superintendent of Documents, U.S.O.E., which would provide information related to the Center. (The report contains suggestions for such a brochure.)

Further recommendations were:

1. Cooperation of two or more states supporting a unified Technical-Resource Center.
2. Further research devoted to the components of such a Center.
3. U.S.O.E., state departments and educational institutions give consideration to the principle that learning is a continuing process and needs provisions for proper facilities geared to updating education in technology, science and pedagogy.

The value of the report describing the proposed Rutgers University mod-

Proposed Teacher Technology Center—Rutgers University



el teacher technology center would have been greater if it had contained substantially more supporting materials with respect to the various specific activities that would take place there. It is a maxim in modern education theory that the physical plant should be an outgrowth of the planned curriculum rather than the other way around. It is hoped, therefore, that subsequent developments of plans for vocational teacher education will be designed from within—from a detailed and comprehensive set of educational specifications.

Training Programs in H.E.

5:10 "TRAINING PROGRAM FOR TEACHERS AND LEADERS OF GAINFUL EMPLOYMENT TRAINING PROGRAMS IN HOME ECONOMICS" BY JUNE COZINE. OKLAHOMA STATE UNIVERSITY, STILLWATER, OKLA. (PROJECT # 5-0053) 1965. ERIC # ED 003 105. MF $0.27 HC $6.64. 148 PAGES.

This four-week training program conducted by Oklahoma State University had 32 participants enrolled—26 home economics teachers from Oklahoma, 2 from Kansas, 3 graduate students from Oklahoma State University, and one representative of the Home Economics Education Staff of the Louisiana Vocational Program.

Staff for the program consisted of six home economists (three full time and three part time) with special training and experience in child care, clothing, food, and home economics education.

Four courses were offered with all participants taking the course, Education for Gainful Employment in Home Economics. Each participant chose one course from three others "aimed at providing leadership training for child care service workers, clothing service workers or food service workers."

Several days were spent in developing an overall viewpoint of the gainful employment aspect of the home economics program and an understanding of the characteristics, purposes, factors involved, opportunities, and need for this type of program. The curriculum materials developed were designed for use with girls in the 11th and 12th years of high school.

The report states: "The real values of the materials can only be determined as they are used. If other home economists use the materials in the

teaching of gainful employment courses, an evaluation with suggestions for revision would be greatly appreciated. Please send to the Home Economics Education Department, Oklahoma State University, Stillwater, Okla."

Included in the report are outlines of each of the courses, complete with bibliographies and other resource materials. Mainly of interest to home economics teachers and teacher educators, the report is illustrative of the increased interest in home economics that is being given to instruction leading to gainful employment.

Technical Programs in Vo-Ag

5:11 "A TRAINING INSTITUTE FOR TEACHERS OF TECHNICAL PROGRAMS IN AGRICULTURE" BY HOWARD SIDNEY. STATE UNIVERSITY OF NEW YORK, COBLESKILL, N. Y. (PROJECT # 6-2662) 1966. ERIC # ED 010 335. MF $0.18 HC $3.44. 79 PAGES.

The report of the Cobleskill, N.Y., Agricultural and Technical College one-week training institute is comprised of summaries of the speeches, workshops, field trips, curriculum plans for vocational technical education in agriculture, various committee assignments, and reports from 13 other states.

Participants of the training institute included representation from agricultural business and industry and teacher educators, administrators and teachers of agriculture. The purpose for the program is that since a large number of post high school institutions in many states will be expanding agricultural education at the technician level, there is a need for the development of guidelines for programs to train technicians.

An opening address by John Lacey, Program Specialist in Agricultural Education, U.S.O.E., spelled out the need for and expected outcomes of the Institute. Among his remarks was a statement that, "Technical education for agriculture is not really new to many parts of the nation. New York State and the Agricultural and Technical College here at Cobleskill have offered programs for 50 years."

Lacey mentioned the growing demand for technically trained workers in farm-related fields of service and distribution and the need to develop further understanding of the meaning of technical education. He stated the objectives of the conference to be the following:

1. To determine the needs for technical education in agricultural occupations.
2. To present information about the opportunities for graduates of technical programs.
3. To identify the successful practices and procedures with regard to administration.
4. To observe and study the necessary physical facilities for technical programs.
5. To determine faculty needs in technical education in agricultural occupations.
6. To provide help in developing new curriculums for technological programs.
7. To determine the role of youth organizations in technical level occupations and post high school programs.
8. To provide information on initiating technical programs in agricultural occupations.
9. To determine good placement and follow-up procedures.
10. To provide supervised occupational experience.

In his address to the conference, Dr. S. V. Martorana, Executive Dean for Two Year Colleges, State University of New York, revealed that New York State now has 28 public community colleges and 6 agricultural and technical colleges, virtually blanketing all regions of the State. He estimated that upwards of 85 percent of the State's high school graduates live within reasonable daily commuting distance of a public two-year college.

Martorana indicated that two-year colleges are encouraged to adopt vocational programs of less than two years

duration for high school graduates and thus take on responsibility for continuing vocational education. However, he made no suggestion concerning the pre-employment vocational instruction of dropouts and otherwise disadvantaged youth and adults in these collegiate settings, nor did he suggest alternative administrative units.

Martorana further stated: "In a sense, the movement that has occurred in New York State and in some other states to establish area vocational schools which specialize and particularize their program only to the vocational programs, represents a violation or departure from the basic educational principle of comprehensiveness."

In statements relating to the instructional faculty for technical agricultural subjects, Evan Dana, Chairman of Agricultural Technology, New York State Agricultural and Technical College, Canton, identified three major competencies of qualified agricultural teachers: (a) technical subject matter; (b) agricultural experience; (c) formal course work in science or agricultural teaching methods.

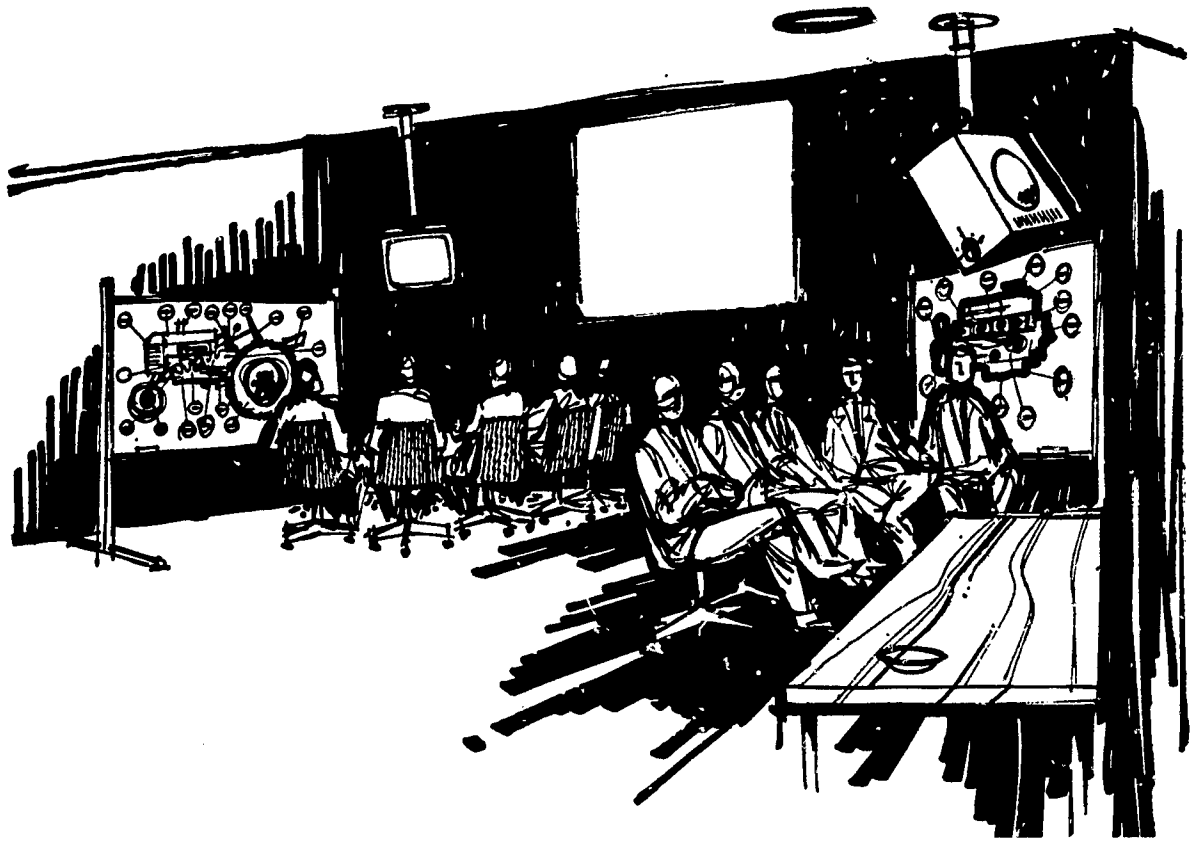
Other Reports

Norman Foote, Chairman of Agricultural Technology at Farmingdale, advocated the combination of knowledge and teaching ability; he stressed the need for technical agricultural education faculty to have a strong commitment for being of service to students.

Wilbur Farnsworth, Agriculture Chairman at the Delhi Agricultural and Technical College, spelled out that the teacher we are looking for today be a person with a master's degree in a subject field; teaching minor in related field; one semester of professional education courses, and four to five years of successful work experience in the field.

Other sections of the Cobleskill report deal with such topics as the importance of training for the farm equipment business; providing planned supervised occupational experiences for technical occupations; planning and initiating curriculums, and technical education in agriculture as assessed by members of advisory committees.

This report would be of principal interest to persons who teach or wish to teach technical agriculture in two-year college programs. For others, it may be a source of information concerning the expanding nature of farm-related jobs and the corresponding recommended curriculum changes. The Institute did not appear to give adequate attention to needed articulation between secondary and post secondary vocational programs, nor to the vocational instruction of out-of-school youth and adults.



Trade-Technical Teachers

5:12 "A DEVELOPMENTAL PROGRAM FOR THE IMPROVEMENT OF TRADE-TECHNICAL TEACHER EDUCATION IN THE SOUTHERN STATES" BY DAVID ALLEN AND MELVIN L. BARLOW. UNIVERSITY OF CALIFORNIA, LOS ANGELES, CALIF. (PROJECT # 6-2861) 1966. ERIC # ED 011 961. MF $0.18 HC $2.96. 53 PAGES.

The special six-week program at U.C.L.A. for selected teacher educators from southern colleges provided an opportunity for participants to get away from their local and immediate problems and activities and observe an extensive and progressive operation involving more than 500 California trade and technical teachers. Included in the program were periods of observation of the U.C.L.A. team approach to teacher education, a series of field trips, guest lectures, and workshop seminars.

It was reported that previous research at U.C.L.A. using small-group procedures in an actual instructional environment had produced excellent results, and that the use of this approach with trade and technical teacher educators also had appeared to be successful.

At the first conference with southern vocational educators, and before the six-week agenda was explained, participants were asked to list the outcomes they desired from the U.C.L.A. program. These objectives included the following concerns:

—The overall purposes of vocational and technical education.

—How the total program is administered and the place of teacher education in the administrative pattern.

—New concepts in teaching and in teacher education.

—Techniques of upgrading teachers with little or no professional training, but a great deal of work experience.

—New curriculum approaches and resource materials.

—Factors in selection and placement.

Except for electives, all U.C.L.A. Core teacher education courses employ team teaching techniques. The report explains that a team teacher cannot work as an individual; he must function as part of a unit so that he can successfully relate his instruction to the material the other members of the team present.

"Unlike many teacher education programs in which the instructor is brought from the outside to teach one or several classes and is left to determine his own instructional content, team teachers attend planning meetings prior to teaching their assign-

ments. At these meetings they discuss in detail what they will teach and ways in which to best present their instruction."

"The instruction material is multi-media. It includes workbooks, notes, instructional sheets, audio tapes and programmed books. No textbook is used with the course, which thus necessitates the continual development of instructional materials designed to meet the ever changing program requirements. Closed circuit TV and video tapes are used and technical subject specialists are brought into the programs to make presentations when their specialties are needed."

While the primary purpose of the developmental program for the improvement of trade-technical teacher education in southern states involved observation of the Core teacher training program, a secondary activity of daily conferences and field trips was also considered to be extremely important. The conferences were led by outstanding educators, mainly persons with substantial experience and high levels of responsibilities in different phases of trade and technical education. The field trips were made to high school, junior college and occupational center programs of trade and technical education and to the business and administrative offices of the Los Angeles City School System.

The unified Core program of vocational teacher preparation employed at U.C.L.A. should have special interest to all persons involved in pedagogy. The carefully planned use of team teaching techniques and the discussion of their benefits, when compared with traditional methods, is most enlightening. Readers not concerned with the preparation of teachers may gain insight into practical applications of team teaching to their own school and college situations and the ways in which multi-media forms of instruction may be employed.

TOPIC FIVE: Pilot and Demonstration Projects

Dental Assisting Training

5:13 "SUMMARY AND EVALUATION REPORT: PILOT SUMMER VOCATIONAL TEACHER TRAINING INSTITUTE IN DENTAL ASSISTING" BY A. RAYMOND BARALT, JR. UNIVERSITY OF DETROIT, DETROIT, MICH. (PROJECT # 6-2652) 1967. (VT # 002 927) 35 PAGES.

In the introductory statement of the University of Detroit report is information that today's practicing dentists are using the services of auxiliary dental personnel more widely than at any other previous time. Citing data obtained from the American Dental Association Surveys and from the Division of Dental Health of the United States Public Health Service, the report estimates that the number of dental assisting programs in the country should expand from the 92 programs now established or in the late planning state, to 400 by 1980.

The objective of the four-week summer institute was to present an intensive, specialized course to prepare dental assistants for teaching positions in dental assisting schools. The course was developed to encompass those dental assistants who had very limited or no teaching and administrative experiences, and to provide instruction in basic teaching principles as well as guidance and background information necessary to develop an accredited dental assistants training program.

The program was planned to devote approximately half of the subject area to professional education deemed essential to successful teaching in community and junior college programs in dental assisting. The remaining subject area would relate to the role of the dental assisting teacher in directing a school of dental assistants, developing its curriculum and coordinating the total program.

The course was planned on the basis of 120 hours of instruction and the students ranged in age from 20 to 54. They represented 11 states.

The report contains lists of faculty, teacher trainees and guest participants, an outline of the program of instruction and a summary of recommendations.

In the summary section is a strong recommendation that future programs should be conducted in conjunction with a dental school that has an accredited dental assistants educational program. Other recommendations were made in relation to class size—2 sections of 20 instead of one; length of program—4 weeks seemed appropriate, and the need for more detailed pre-institute planning taking advantage of consultant services.

Dental Assisting Teachers

5:14 "FINAL REPORT: PILOT VOCATIONAL TEACHER TRAINING INSTITUTE IN DENTAL ASSISTING, SUMMER, 1966" BY ROGER E. BARTON. UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL, N. C. (PROJECT # 6-2653) 1966. ERIC # ED 010 334. MF $0.18 HC $3.16. 67 PAGES.

The University of North Carolina summer training institute for dental assisting teachers differs from the one conducted in Detroit in that it was held in the School of Dentistry at Chapel Hill.

The objective of this four-week institute was stated, "To present a short, concentrated program of instruction on the art and science of dental assistant teaching as well as refresher material in chairside assisting in the many phases of dentistry to those persons qualified and who had been associated with dental assistant teaching for five years or more."

The faculty of the School of Dentistry provided a curriculum and the Dental School's facilities were used throughout the program.

Participants were given a pre-program test in the knowledge and skills of dental assisting and a pre-program opinion survey. The class was limited in size to 13 because only that number of qualified participants with five years of teaching were obtained.

Ten Topics Presented

The presentation of the program included lectures, demonstrations, TV demonstrators, clinic and laboratory observation, dental assistant student clinical achievement evaluation, practice teaching participation, and discussion sessions.

The following 10 topics were presented in the 60-hour section on the art and science of teaching: Philosophies of Education; Development of Educational Objectives; Curriculum Design and Course Instruction; Theories of Learning; Student Evaluation;

Teaching Methods; Preparation and Use of Teaching Aids; Communications—Public Speaking; Student Counseling, and Student Selection.

The chairside assisting section of the curriculum, scheduled for approximately 50 hours, was organized in accordance with the following items: team concept; office orientation and maintenance; oral diagnosis and treatment planning; anesthesia; operative dentistry; crown and bridge prosthodontics; endodontics; prosthodontics; pedodontics; oral surgery; periodontics; orthodontics, and instrument care and sterilization.

It was reported that even though the institute was organized for those persons with five years or more of dental teaching experience, the problem of arranging a curriculum meaningful and interesting to all was a major one.

Scheduling of topics was arranged to provide a sequential coverage of both major areas. The schedule also had to be arranged to coincide with other programs being conducted within the School of Dentistry, to coincide with the schedule of the dental assisting training program, and in conjunction with the faculty summer schedule.

Critiques Summarized

The report contains descriptions of the methods and materials employed in the presentation of both major phases of instruction. There is a summary of institute critiques prepared by the trainees. Among the items discussed in this section are statements that: more emphasis in practice teaching was thought to be desirable; the dental school is seen as a desirable setting for teacher training institutes because if dental assistant programs are to be taught at high school and vocational schools, the instructors need exposure to polished professional examples and standards; and, dormitory living is a "plus" since a genuine appreciation was expressed for the experience.

It is significant that both summer training institutes for teachers of dental assisting were conducted with the full cooperation and support of the American Dental Association. It is mentioned as a reminder to any college department of vocational teacher education that plans to become involved in the preparation or upgrading of teachers in various occupations relating to medical and dental professions. The sanction and active cooperation of professional organizations and individual practitioners—prior to the initiation of any such program—are strongly recommended.

Communication-Linked Techniques

5:15 "PRELIMINARY INVESTIGATION OF COMMUNICATION-LINKED TECHNIQUES FOR OFF-CAMPUS TEACHING OF VOCATIONAL AND TECHNICAL SUBJECTS" BY ALEXANDER SCHURE. NEW YORK INSTITUTE OF TECHNOLOGY, NEW YORK, N. Y. (PROJECT # 6-8254) 1966. (VT # 002 569) 149 PAGES.

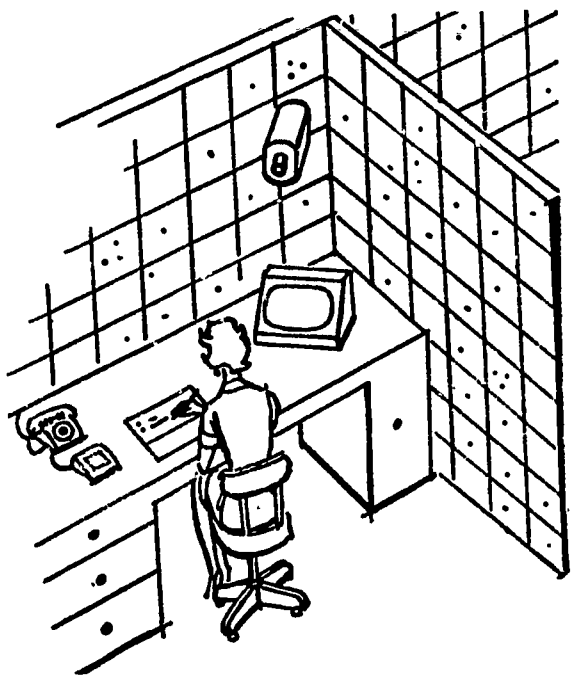
This study recognizes the need to provide opportunities for nonskilled and semiskilled workers to improve their skills. Fifty percent of the working population now demands post high school education. Unfortunately, colleges and vocational schools do not have sufficient space to accommodate those significant numbers who wish to pursue a continued education. The study suggests that one solution to increasing opportunities is to bring the classroom to the students' homes, place of work or community center, via a communication-linked classroom system.

This system, utilizing modern materials, communication technology and well-trained teachers, has several other advantages. It provides for individualized learning and communication between student and teacher. Computerized instruction makes possible immediate reinforcement. Presenting material from least to most difficult in tested steps, the computer is geared to the individual's learning pace.

A preliminary survey on elements of communication-linked classroom system methodology was proposed. Second, a comprehensive survey was planned to evaluate actual experience with this system. The third objective was to prepare a detailed plan for execution of such a survey and for the evaluation.

The comprehensive survey of literature and ongoing activities would use a detailed questionnaire and visits for information gathering. A team of consultants from areas of psychology, programed instruction and educational evaluation would be organized along with specialists from colleges, government, industry, and research.

The result, a catalog of information on institutions, curriculum, success achieved as well as research, cost factors and personnel specifications, would serve as a source book to those determining the feasibility of techniques now used for future systems.



Reported in the study, as an example of the kind of activities to be included in the catalog, is a technique conducted by the Catholic Diocese of Brooklyn and I.B.M. This $100,000.00 experiment employs a telephone-linked computer to make homework simpler.

The study contains a detailed list of elements to be found in a communication-linked classroom. Included are specifications on classroom location and size, curricular material, presentation devices, and computer equipment. Also listed are intangible considerations such as academic organization, methodology, psychological factors, and economics of various systems.

The bibliography includes several hundred books, articles and references relating to ongoing activities. The report states that the techniques now in use are interim measures as new theories of design are evolving.

Hypothetical System Described

Most fascinating is the study's description of a hypothetical communication-linked classroom system.

The classroom would contain 20 to 30 students of various ages, interests and accomplishments, all learning different things. A teacher aide is present to orient and assist the students. Each student is assigned to a study carrel, containing desk, chair, bookcase, and tape machine, and he is given his materials. He may speak to

his teacher at the communication desk. The classroom contains an examination scoring station where students' short answers are read and graded. A cartridge loading motion picture projector is provided for individual viewing. Also at the learning center is an Auto Tutor teaching machine, tape recording station and an automatic library request desk.

The academic center provides direction, materials and supervision by teachers. Each teacher is responsible for three to four courses. The teacher can supervise several times the number of students found in a normal teaching situation. The center is the teachers' base of operation and contains the central academic computer.

The communication-linked classroom system is only one answer to the critical shortage of facilities, teachers and equipment. Since the preliminary literature search reveals that interest already exists, the study recommends the conduct of a survey and evaluation of actual experience of existing operations with regard to implications for technical and vocational education.

Such a comprehensive survey would be most helpful before the implementation of additional systems. The communication-linked classroom system would enlarge facilities and provide specially trained teachers. It realizes the principles of immediate reinforcement, individual differences and individual pacing.

A Partial Answer

However, do we meet the problems caused by automation with automation? Learning is not always an individual process but also a social one where an exchange of thought and experience between teacher and student can provide incalculable stimulation. There can be no system to supersede human contact and involvement.

Despite the popularization of the behavioral approach to learning, other educational psychologists, like Bruner, stress that greater transfer and creative thinking occurs through conceptual learning rather than a step-by-step absorption of factual information, facts that may quickly become obsolete.

As computers take over more and more of our mundane responsibilities, we ought to train for and inspire potential that will not be replaceable. As one of the investigators states: "Within our lifetime there will be no jobs for people who cannot perform more creatively than machines."

"PLAIN TALK"

AMONG THE 15 projects reported in this issue are 5 that pertain to new media of instruction: programmed learning, computer assisted teaching, communication-linked techniques, a model center for teacher technology. Other studies have dealt with the potential use of retired military personnel, teacher supply and demand factors, several clinics and institutes to upgrade teachers, and a study of the feasibility of providing trade competency examinations on a national basis.

Perhaps the most significant of these is the feasibility study. It was revealed that the majority of states do not now have any comprehensive program for giving trade proficiency examinations to teacher candidates. For many, the limited numbers of candidates in each occupational category would make a statewide test development program prohibitive in cost. Subsequent investigations are needed to follow up on the work begun at Rutgers. Special attention could be given to the various ways in which national proficiency examinations would be put to use by state and college authorities. Further research is also needed to test preliminary findings that support the need for both written and performance examinations.

When considering the range of topics that have been selected for investigation, it is disturbing to note how little attention has been given to the very foundations of the vocational teacher education program. It would appear legitimate to ask why more research has not been initiated which attempts to analyze the role and effectiveness of the various components involved in the preparation of teachers. Included here would be the administrative setting, the instructional staff, the curriculum, and the student.

A basic precept in research is that all ideas and all institutions are legitimate subjects for scientific measurement and evaluation; conversely, there should be none that are immune or exempt. If this is so, then it would appear incumbent upon educational institutions that espouse the principles of research to practice what they preach, and hold their own organizations and institutions up to a hard objective light of appraisal.

The comments of Moss, in his "Review of Research in Vocational Technical Teacher Education", are most appropriate here.

"With some exception of course, little has been done which materially contributes to the development of a science of teacher education. We need a system of verified principles which will permit us to understand and control the teacher education process. At present we are still operating programs primarily on the basis of tradition, 'convention,' wisdom, and personal experience."

The lack of a scientific base for teacher education, and the apparent hesitancy of teacher educators to give attention to

the problem, place the professional status of pedagogy in real jeopardy. In this period of crisis and turmoil, educators can be sure that others will be making more and more critical appraisals of schools, teachers and the teacher education process. They now are. (See Friedenberg's article, "Requiem for the Urban School," *Saturday Review*, Nov. 18, 1967.)

There appears to be no uniform organizational pattern for vocational teacher education. Each state, and in many cases institutions within each state, appears to have a different concept of what education is. Certainly, there is a proliferation of different instructional approaches. There seem to be few common denominators among colleges preparing teachers for positions in agriculture, business, health services, home economics, trade and industrial, and technical education. And when colleges and universities have departments preparing teachers for various fields of specialization, there is often a lack of common identity among them.

If vocational education is to continue as a significant and vital phase of the total educational program, then it must strive to have an identity—a set of fundamental goals and purposes that can be readily articulated and understood, and which can have the general support and commitment of all who call themselves vocational educators.

Staff, Curriculum, Students

There ought to be further investigation of the instructional staff for vocational teacher education. Penetrating studies that are more than an exchange of opinions of staff members are needed. Should all staff members have common patterns of prior experience and training, or would it be better to insure that each position in the faculty is designed to bring discreet and unique contributions to the total effort? Should professors of vocational education be specialists or handymen; which is better and who decides?

And what about the professional curriculum in vocational teacher education? Is that not fair game for objective analysis and critical appraisal? The faculty that relies entirely on tradition and opinion here is likely to be most vulnerable to the slings and arrows of the generalists and liberal artists. It would seem that the more the vocational curriculum is indeed the product of careful objective analysis—involving others than the vocational staff members—the more it would gain general acceptance and support, and the better it would serve the broad interests and specific goals of education.

There are also some questions that need to be answered regarding the recruitment and selection of candidates for the vocational teaching curriculum. What research exists to determine whether or not intensive payroll employment experience is indeed a significant factor in teacher effectiveness? At present there is considerable controversy on this question, and the arguments on both sides are influenced by opinion, tradition, emotion and hearsay, scarcely the valid sources of scientific inquiry.

When further studies concerning the relative values of prior occupational experience are made, it is hoped that job-related skill and knowledge will not be the only criteria measured. There have been some rather superficial studies made to show that skill and knowledge can be learned in a collegiate situation. True enough, but the factors overlooked here are the contributions to teaching that come from insights, attitudes and patterns of behavior that are developed on the job.

There has been considerable comment regarding the shortage of qualified vocational teachers in a variety of occupational fields. The solution that seems to be most frequently proposed calls for major changes in regulations and minor adjustments in college programs. Why?

No doubt, many teacher certification requirements, designed in the past for different conditions, are in need of revision. But this could be said of the teacher education programs as well. How diligent have teacher education institutions been in seeking out competent young practitioners in various occupations, persons who combine the capacity for college work with some practical experience?

What innovative programs have been initiated to take such young people into a vocational teacher preparation curriculum on an extension basis, while they remain at work gaining additional job experience? It would seem that this approach would have certain advantages over the cooperative work-experience approach now being used at some colleges. There is a basic weakness in cooperative experience when both parties—the worker and the employer—are aware that it is temporary and for experience only. Such a program is not real and meaningful.

The employer is not likely to give the individual more than just experience; the secrets of the business, the disciplines and rewards, are likely to be missed. The employee, on the other hand, who knows that this will just be a temporary experience, will have trouble getting any real sense of involvement. Also, the associations and relationships with other workers are likely to remain tenuous.

Department of Education Leadership

There is little evidence that state departments of education are giving attention to the improvement of vocational teacher education, at least through U. S. Office of Education sponsored studies. Although it is known that some of the more populous states are conducting studies that relate to vocational teachers, it must be assumed that there are others where further investigation is badly needed.

Some of the problems associated with vocational teacher education that appear to be appropriate for research are: the assessment of minimum standards for teaching in various vocational categories; the identification of present and future teacher requirements; the development of articulation between various teacher education institutions, department of education offices, and other governmental agencies; and, the development of policies and practices concerning vocational teacher education that could serve as guides for all teacher education institutions.

Perhaps the most serious deterrent to effective state

leadership in vocational education is the plethora of uncoordinated offices and institutions that now prevail. The diffusion and duplication of authority and responsibility make for lack of direction.

There seem to be completely different sets of regulations and policies that apply to teachers in each form of organizational setting for vocational education. Even when the vocational course title, curriculum objectives and instructional plan are virtually identical, there is a wide variation in the qualifications prescribed for teaching from one type of school to another.

In some cases, the only prerequisite for teaching is occupational competence, possibly laced with a modicum of teacher training. At the other extreme is the program in which college degrees are essential and occupational knowledge is incidental. Still other institutions for vocational education, generally the secondary schools, require a rather elaborate combination of requirements to meet certification standards.

It would seem that there are two major approaches that could be taken, either independently or through coordinated effort, that could improve the situation. The first of these would be the clear identification of one state authority for all vocational education in each state; the other would have to do with the establishment of accreditation agencies and evaluative criteria that would be concerned with programs of vocational education, rather than just for institutions that may have some vocational instruction.

PREVIOUSLY REPORTED STUDIES

There are a number of studies reported in previous issues which are relevant to this month's topic. Those readers who are particularly concerned with teacher training may want to refer to the following reports included in the September, October or November "Research Visibility" section.

Studies on inservice seminars and workshops are:

—"Eight Week Summer Institute Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing" by Koschler, Watson, Breese, Carter and Valentine (September).

—"Program for Technical Communications Training for Technical Education Teachers (Summary Report)" by Weisman (October).

—"Production of a Motion Picture for Inservice Training of Teachers in Problems of Human Relations in Teaching the Socio-Economically Disadvantaged—An Evaluation of the Motion Picture" by Breitrose (Nov.).

The following study shows evidence of state education department leadership in vocational education:

—"A Teacher Institute To Prepare Teachers and Materials for the Education of Rural, Low Achieving, Disadvantaged Junior High School Students for Entry into Vocational-Technical Programs" by Hodgson (November).

Studies related to vocational teacher training activities in higher educational institutions are:

—"Eight Week Summer Institute Training Program To Teach Instructors of Instrumentation Technology" by Ziol (October).

—"An Experimental Vocational Education Institute for the Preparation of Teacher Coordinators of Newly Emerging High School Vocational Programs" by Samson (October).

—"The Development of a Master Teacher Training Curriculum for Teachers of Occupational Level Training Programs" by O'Brian (Nov.).

Previously reported studies on pilot and demonstration projects are:

—"A Proposal to Prepare Teachers and To Develop Instructional Materials for Food Service Occupations" by Hollandsworth and Barbour (Sept.).

—"A Pilot Study in Advanced Instrumentation for Technical Instructors" by Larson (October).

—"Summer Institute To Train Data Processing Teachers for the New Oklahoma Statewide Computer Science System (Final Report on Phase I)" by Tuttle (October).

—"Increasing Task Oriented Behavior: An Experimental Evaluation of Training Teachers in Reinforcement Techniques" by Krumboltz (Nov.).

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TOPIC ONE: Vocational Teacher Recruitment and Selection

5:1 "Feasibility of Providing Trade Competency Examinations for Teachers on a National Basis" by Griesse, Gerald. Rutgers-The State University, New Brunswick, N.J. (Project # 5-0043) 1965. (VT # 002 617) 85 pages.

5:2 "Study of Potential Utilization of Retiring Military Personnel in Vocational and Technical Education Programs" by Richland, Malcolm. System Development Corp., Santa Monica, Calif. (Project # 5-0147) 1967. ERIC # ED 010 593, MF $0.27 HC $5.84. 130 pages.

5:3 "Supply and Demand Factors Affecting Vocational Education Planning" by Kincaid, Harry V. Stanford Research Institute, Stanford, Calif. (Project # 5-0208) 1966. ERIC # ED 010 305. MF $0.27 HC $6.12. 121 pages.

TOPIC TWO: Inservice Seminars and Workshops

5:4 "Computer-Assisted Instruction: Summer Training Program" by McGregor, George C. Providence College and State Department of Education, Providence, R.I.

(Project # 5-0014) 1965. (VT # 002 424) 35 pages.

5:5 "Workshop for the Preparation of Home Economics Teachers to Teach Wage-Earning Programs in Food Service" by Fults, Anna Carol. Southern Illinois University, Carbondale, Ill. (Project # 5-0015) 1965. ERIC # ED 003 493. MF $0.45 HC $11.48. 280 pages.

5:6 "Computer Assisted Instruction; In-Service Training for Vocational Teachers" by McGregor, George C. Providence College, Providence, R.I. (Project # 5-1214) 1966. (VT # 2423) 18 pages.

5:7 "Guidelines for the Preparation of Office Occupations Teachers" by Cook, Fred S. Wayne State University, Detroit, Mich. (Project # 6-1522) 1966. ERIC # ED 010 195. MF $0.18 HC $3.88. 87 pages.

5:8 "Conference for Vocational Teacher Education in New Media of Instruction" by Payne, W. Vincent. Tuskegee Institute, Tuskegee, Ala. (Project # 6-2224) 1966. ERIC # ED 010 435. MF $0.18 HC $2.76. 29 pages.

TOPIC THREE: State Education Department Leadership

No studies.

TOPIC FOUR: Expanding Vocational Teacher Training Activities in Higher Educational Institutions

5:9 "A Vocational-Technical Teacher Technology Center—The Development of a Model" by Larson, Milton E. Rutgers—The State University, New Brunswick, N. J. (Project # 5-0018) 1965. ERIC # ED 003 522. MF $0.18 HC $2.72. 60 pages.

5:10 "Training Program for Teachers and Leaders of Gainful Employment Training Programs in Home Economics" by Cozine, June. Oklahoma State University, Stillwater, Okla. (Project # 5-0053) 1965. ERIC # ED 003 105. MF $0.27 HC $6.64. 148 pages.

5:11 "A Training Institute for Teachers of Technical Programs in Agriculture" by Sidney, Howard. State University of New York, Cobleskill, N.Y. (Project # 6-2662) 1966. ERIC # ED 010 335. MF $0.18 HC $3.44. 79 pages.

5:12 "A Developmental Program for the Improvement of Trade-Technical Teacher Education in the Southern States" by Allen, David and Barlow, Melvin L. University of California, Los Angeles, Calif. (Project # 6-2861) 1966. ERIC # ED 011 061. MF $0.18 HC $2.96. 53 pages.

TOPIC FIVE: Pilot and Demonstration Projects

5:13 "Summary and Evaluation Report: Pilot Summer Vocational Teacher Training Institute in Dental Assisting" by Baralt, A. Raymond. University of Detroit, Detroit, Mich. (Project # 6-2652) 1967. (VT # 002 927) 35 pages.

5:14 "Final Report: Pilot Vocational Teacher Training Institute in Dental Assisting, Summer, 1966" by Barton, Roger E. University of North Carolina, Chapel Hill, N.C. (Project # 6-2653) 1966. ERIC # ED 010 334. MF $0.18 HC $3.16. 67 pages.

5:15 "Preliminary Investigation of Communication-Linked Techniques for Off-Campus Teaching of Vocational and Technical Subjects" by Schure, Alexander. New York Institute of Technology, New York, N.Y. (Project # 6-8254) 1966. (VT # 002 569) 149 pages.

Studies in Process

TOPIC ONE: Vocational Teacher Recruitment and Selection

"Performance Tests of Instructor Competence for Trade and Technical Education" by Popham, W. James. University of California, Los Angeles, Calif. (Project # 5-0004).

"Vocational Programs in the Public Schools: The Role of the Teacher" by Godfrey, Eleanor P. Bureau of Social Science Research, Inc., Washington, D.C. (Project # 5-0140).

"Evaluation of Student Teaching in Home Economics: by Nelson, Helen. Cornell University, Ithaca, N.Y. (Project # 5-1333).

TOPIC TWO: Inservice Seminars and Workshops

"Changing Teacher Morale" by Bently, Ralph R. Purdue University, Lafayette, Ind. (Project # 5-0151).

"The Development of Training Lessons for Pre-Service and Initial In-Service for Vocational Teacher Education Recorded and Presented Through Video Tape and Seminar Discussions" by Wick, S.K. State Dept. of Education, St. Paul, Minn. (Project # 5-0168).

"Maximization of the Professional Potential of Home Economics Teachers Through Group Counseling" by Ray, Elizabeth. Pennsylvania State University, University Park, Pa. (Project # 5-0194).

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"Institute for Home Economics Teachers on Initiating, Developing, and Evaluating Programs at the Post High School Level To Prepare Food Service Supervisors and Assistants to Directors of Child Care Service" by Cross, Aleene. University of Georgia, Athens, Ga. (Project # 6-2258).

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"Institute for Home Economics Teacher Educators on Preparing Teachers for Occupational Programs" by Hill, Alberta D. Iowa State University, Ames, Iowa. (Project # 7-0500).

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TOPIC THREE: State Education Department Leadership

"Summer Institute to Train Data Processing Teachers for the New Oklahoma Statewide Computer Science System (Phase II)" by Tuttle, Francis. State Board of Vocational Education, Stillwater, Okla. (Project # 7-0822).

TOPIC FOUR: Expanding Teacher Training Activities

"Instructional Program for Teachers of Occupational Training Programs Utilizing Home Economics Skill and Knowledge" by Gorman, Anna M. University of Kentucky, Lexington, Ky. (Project # 6-1699).

"Increasing Knowledge in Social Sciences Training Among Agricultural Educators" by Pesson, L.L. Louisiana State University, Baton Rouge, La. (Project # 6-8226).

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TOPIC FIVE: Pilot and Demonstration Projects

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"Experimental Research Program for Vocational-Technical Teachers" by Merrill, E. C. and Russell, Wendell H. Oak Ridge Associated Universities and University of Tennessee, Oak Ridge and Nashville, Tenn. (Project # 6-2329).

AVAILABILITY OF REPORTS FOR FURTHER STUDY

All reports which are followed by the letters ERIC and an acquisition number like ED 010 000, may be purchased from the ERIC Document Reproduction Service, Microphoto Division, The National Cash Register Company, Box 2206, Rockville, Md. 20852. The letters (MF) indicate the availability of microfiche copies; and (HC) for hardbound copies, at the prices given.

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RESEARCH VISIBILITY

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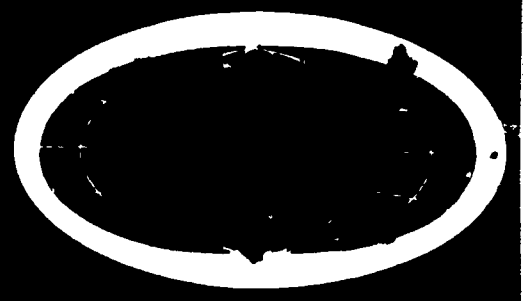

"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633; "Synthesis and Application of Research Findings in Vocational Education").

VOCATIONAL EDUCATION IS SERVICE . . .

The major problems which have been identified with vocational curriculum development and the preparation of instructional materials are associated with the diversity of students involved, and with the general lack of coordination and articulation among the various types of school and college organizations that provide vocational instruction.

When making specific recommendations for improving vocational curriculum and instructional materials, the Panel of Consultants called attention to the need for large unit laboratories for the production and distribution of instructional materials. The Panel further recommended that curriculum programs for new and changing occupational fields should be developed which would include programed learning and other new forms of educational media, and that persons out of school, particularly those with special handicaps to learning, should receive special attention.

The recommendation for the establishment of national or regional curriculum laboratories has been an item frequently discussed in federal offices. For some reason, action has not as yet been taken to create such facilities and programs.

In the absence of large unit curriculum operations, it may be assumed that research and development activities in many occupations will continue to be incomplete, sporadic and fragmented. Curriculum projects conducted by school districts, and other administrative units with limited resources, will be bound to concentrate on those vocational fields having the most programs and largest student enroll-

Curriculum Development and Instructional Materials

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Dr. Gordon F. Law is editor of "Research Visibility." The organization for this department of the JOURNAL, the pattern for reporting and the writing represent his work.

ments. The need for curriculum work in new and emerging occupations may be overlooked. Also, the financial resources necessary for intensive research and subsequent construction of instructional materials would be prohibitive where there would be limited local enrollments.

A recent publication, *Developing Vocational Instruction*, by R F. Mager and K. M. Beach, has been made available through Fearon Publishers, 2165 Park Blvd., Palo Alto, Calif., at $2.00 a copy. Derived from an Office of Education publication bearing the same title, this monograph presents a systematic approach to course development. Included are chapters relating to job description and task analysis, target population, measuring instruments, and sequencing instructional units. This 83-page booklet should be of interest to anyone involved in vocational curriculum work.

The ERIC Clearinghouse Document, *Abstracts of Instructional Materials in Vocational and Technical Education* (AIM), which is issued quarterly, is an important source of curriculum materials typically designel for teacher or student use. These publications, which are available through the Center for Vocational and Technical Education, 980 Kinnear Rd., Columbus, Ohio 43212, should be of particular interest to teachers, curriculum specialists, supervisors, and administrators. The single publication cost is $2.79. Annual subscriptions are $9.00.

TOPIC ONE: Curriculum Development Institutes and Laboratories

Fluid Power Institutes

6:1 "1966 SUMMER INSTITUTES ON FLUID POWER EDUCATION FOR VOCATIONAL AND TECHNICAL TEACHERS" BY THEODORE PEARCE. THE FLUID POWER SOCIETY, THIENSVILLE, WIS. (PROJECT # 5-0019) 1967. (VT # 004-122) 17 PAGES.

This report recognizes the serious shortage of skilled workers and technicians trained in fluid power and the lack of qualified people to teach fluid-power technology in industrial and vocational programs. The project offered an opportunity to investigate the most effective techniques for introducing a new technology to educators.

During the summer of 1965, U.S.O.E. supported a contract providing for summer institutes on fluid-power education. These five institutes were attended by 167 teachers of vocational and industrial education. The 1965 program was evaluated as "extremely successful." The 1966 program was undertaken because there still existed a need to train additional qualified teachers and to provide for the further application and refinement of effective techniques.

Ultimate Objectives

The ultimate objectives were to:

—Prepare young people for gainful employment in industries which manufacture or use fluid-power systems.

—Provide prevocational preparation for young people to continue vocational education in fluid power.

—Provide groundwork for a continuing research project to evaluate the institutes, and to research their results and techniques in terms of their effect on the participants, the participants' home schools, and their students.

More specifically, the purposes of the project were to:

1. Develop an adequate base of teachers in the United States qualified to teach fluid power.

2. Provide for instruction in basic fluid-power theory and application, and develop competencies in the participants which will enable them to teach and to enlarge their knowledge of fluid power.

3. Identify desirable curricula with instructional units in fluid power on the junior, senior and vocational high school levels, and at the technical institute—adult education levels.

4. Provide planning techniques for follow-up activities in schools represented by the participants.

5. Determine the most effective techniques for the development of teachers in a new technology.

The Fluid Power Society administered and coordinated institutions and, through advisory groups, established the content and procedures. The Society also made contracts with five colleges and universities in accessible geographic regions to provide facilities and instruction.

Each institute had at least one full-time instructor as well as guest lecturers and consultants. Weekly evening workshops and seminars were conducted in which participants were divided into teams for curriculum development. Each team developed a recommended curriculum, while each participant suggested specific activities related to course content.

A variety of teaching demonstration devices were used, and 150 copies of instructional materials were supplied to each participant.

Seventy-five participants from 24 states were selected. They qualified as staff teachers of vocational education at secondary schools, vocational schools, post-secondary or teacher-training institutions which provided, or intended to include, fluid-power instruction.

The program was evaluated as highly successful. The uniform tests administered at the beginning and end of the program showed a considerable increase in mean scores. According to the preliminary analyses of the evaluation sheets given to directors and participants, the level of instruction was better when the director was not involved in teaching. Guest lecturers were judged slightly less effective than the instructors. The curricular plans drawn up by the participants included recommendations for the preparation of an evening program for employed adults, and the establishment of a curriculum committee to prepare guides for city or state.

Five Conclusions

The following conclusions are common to the 1965 and 1966 programs:

—The summer institute can be an effective vehicle for introducing a new technology for teachers.

—A program can best succeed when participants are intense, leave their families at home and live on-campus.

—A new technology should use the professional society which represents it as a coordinating agency, unifying activities involving cooperating educational institutions.

—A broad range of affiliated organizations and existing committees is essential in eliciting support and advice.

—Similar programs should offer graduate credit.

Need for Occupational Data

6:2 "OCCUPATIONAL DATA REQUIREMENTS FOR EDUCATION PLANNING" BY GEORGIANNA B. MARCH. UNIVERSITY OF WISCONSIN, MADISON, WIS. (PROJECT # 5-0066) 1966. ERIC # ED 003 491. MF $0.27 HC $7.20. 165 PAGES.

The Conference on Occupational Data Requirements for Education Planning, held at the University of Wisconsin on June 15-16, 1965, is the substance of this report.

Forty economists, educators and government personnel participated in the program. They were chosen "because of their interest and continuing study in the field of the labor market and its relation to educational programs."

The material contained in this report comprises chiefly the edited transcripts of 24 papers and presentations on four major topics:

1. The Occupational Data Requirements for Education Planning.
2. The Role of Technological Forecasting in the Development and Use of Manpower.
3. Foreign Experience in the Utilization of Occupational Data for Educational Planning.
4. The Evaluation of Occupational Data and Their Use in Occupational Planning.

It was reported that at least two distinct schools of thought appeared to emerge from the sometimes-heated exchanges. One group felt that the need for occupational data is urgent. The arguments were that information on labor demands is essential for the use of guidance services and as background for legislative measures and school planning.

On the other hand, "An equally vocal group of conferees denied that increased efforts to provide occupational data would improve educational planning. Because of the weaknesses in the methodology of current occupational studies, and because of the difficulties inherent in obtaining accurate data from employers on current and projected job vacancies, this group felt that further expansion of studies of occupational data would be a questionable investment of government funds.

"Regardless of the views concerning the desirability of expanded study of occupational demand, one of the principal findings of the Conference was the extent of ignorance about the availability of current data and the uses to which existing data were being put."

This report contains a wealth of ideas and points of view that should be especially meaningful to graduate seminars relating to the vocational curriculum. The general high quality of presentations and the timely and provocative nature of the topics discussed make this report a valuable document. It should be of interest to all serious students of vocational and practical arts education.

Career Development Conference

6:3 "CONFERENCE TO EXAMINE THE IMPLICATIONS OF CURRENT TRENDS IN CAREER DEVELOPMENT THEORY AND RESEARCH FOR SCHOOL CURRICULUM" BY DAVID TIEDEMAN AND KENNETH ASHCRAFT. NATIONAL VOCATIONAL GUIDANCE ASSOCIATION, WASHINGTON, D.C. (PROJECT # 5-1304) 1966. ERIC # ED 010 182. MF $0.36 HC $8.20. 194 PAGES.

The four-day career development conference, held at Airlie House, Warrenton, Va., came about as a result of a proposal submitted by the National Vocational Guidance Association.

A planning committee of the NVGA selected topics for the conference and chose persons identified as prominent innovators to prepare papers for distribution prior to the conference and then make presentations at the conference. Eight background papers and three substantive papers were prepared.

Following each presentation, a participant reacted to the paper and presentation. There were also periods for small group meetings in which each of six groups was given assignments for developing implementation procedures.

During the final morning, three summarizing presentations covered Implications for Curriculum, Implications for Counselor Education, and Implications for Research. Discussion-group reports were also summarized.

The objectives of the conference were stated to:

1. Expand the dialogue between occupational theorists and researchers, counselors, vocational educators, and curriculum specialists by mobilizing and sharing knowledge in career guidance, behavioral science, labor market and manpower information, and curriculum development.
2. Identify concepts of occupational behavior and work in a changing society which should be incorporated into curricular practice.
3. Conceptualize vocational readiness and the related structure of motives in youth at different age-grade levels.
4. Identify areas of research which need attention and demonstration projects by which new approaches to vocational guidance might be systematically explored within the curriculum setting.
5. Identify vocational topics and types of competencies which might augment and strengthen counselor-education programs.
6. Disseminate the hoped-for insights and conclusions of the proposed conference by making the proceedings widely available to counselors and counselor-educators, vocational psychologists, vocational educators, and curriculum specialists.

Kenneth Ashcraft reported the following results of the conference:

—It was evident that those from each discipline had rather common perceptions within their own group but that these perceptions were quite divergent among the various disciplines represented in the conference.

—There seemed to be general agreement that the meaning of work is deeply interwoven with our value system. As productivity in our affluent society is increasingly achieved by machine performance, man increasingly attains a sense of satisfaction through service to his fellow man. It is imperative that our educational system make youth aware of such changes.

—Dr. Tiedeman prepared a structural conceptualization relating age, developmental stages and counselor functions in a most definitive way.

—It became evident that we need much exploration of various curricu-

lar patterns to ascertain the strengths and weaknesses of approaches to vocational guidance. Why are some group programs effective in one setting, yet relatively ineffective in another?

—A number of counselor-educators believed that more efficient ways of training counselors-to-be should be developed so as to give them a better perception of workers' attitudes toward their jobs and the relationship of their jobs to their way of life.

—Plans have been adopted to publish the proceedings of the Conference for wide distribution to counselors, counselor-educators, vocational psychologists, vocational educators, and curriculum specialists.

In his summary presentation, "Curriculum Implications for Career Development", Robert G. Woods proposed a total of 13 guidelines for implementing a curricular program for career development and a seven-stage process for initiating a new program. The report also contains transcripts of "Implications for Counselor Education" by Carl McDaniels and "Implications for Research" by David Tiedeman.

The real significance of this report is that it illustrates a growing interest in making vocational guidance a regular part of the school curriculum. For example, Tiedeman's chart depicts vocational development stages and some concepts, responsibilities and procedures for the cultivation of career development. This chart is now the subject of considerable attention in vocational guidance circles, and hence, the information it contains will surely become widely known. What has not been clearly articulated—in either the presentations of this conference—or the Tiedeman projection—is the role to be taken by vocational teachers in the total process.

TOPIC TWO: New Vocational Curriculum Programs

Vo-Ag Curriculum Change

6:4 "A Determination of Needed Adjustments and Extensions in the Curricular Patterns of Vocational Education in Agriculture" by Robert E. Taylor. The Ohio State University, Columbus, Ohio. (Project # 5-0031) 1966. ERIC # ED 010 497. MF $0.18 HC $4.12. 98 pages.

Agricultural educators have recently pointed out that agriculture and farming are not synonymous. Broader agricultural businesses and services have evolved to assist the farmer and rancher with production. Consequently, leaders in agricultural education have undertaken an extensive research program to identify workers who require a knowledge of agriculture to perform their jobs successfully and to identify the major agricultural competencies they might need.

This project represents a national effort to modify curricular offerings. Its purpose was to "determine the adjustments and extensions needed in high school and post-high school curricular patterns of vocational education in agriculture to more effectively meet preparatory training needs in off-farm agricultural occupations. The summarization, interpretation and resulting synthesis of the studies on agricultural occupations completed by 26 states provided the basis for determining extensions and adjustments in curricular patterns."

The specific objectives were to:

1. Identify the major occupations which require competency in agriculture.

2. Determine the agricultural competencies needed by workers in these occupations.

3. Cluster the major agricultural occupations which require similar competencies.

4. Develop and refine the curricular guides and supporting materials which were most needed and feasible for the major clusters of agricultural occupations.

5. Examine the data from the studies on agricultural occupations for other implications, giving particular attention to: (a) programs for disadvantaged youth; (b) projected employment opportunities in major agricultural occupations; (c) needed adjustments in administrative and supervisory procedures; (d) organizational structure for providing vocational education in agriculture; (e) needed adjustments in teaching and coordinating methods; (f) preservice and inservice education of teachers; and (g) selection, placement and follow-up of students.

6. Train key state leaders in the use of curricular guides and supporting materials.

The first advisory committee met in January 1965 to make recommendations to the task force. The conferees considered 18 specific questions providing a summarization of employment opportunities and the direction to be taken in the development of curriculum materials.

The areas and types of programs selected for concentration were:

1. *Horticulture-Service Occupations.* A two-year program for eleventh and twelfth grades, at the semiskilled level for disadvantaged youth.

2. *Agricultural Supply-Sales and Service Occupations.* A two-year program for eleventh and twelfth grades at the skilled level, and a post-high-school program for the skilled, extending over several years.

3. *Agricultural Machinery-Service Occupations.* A post-high-school cluster of training needs for five different occupational titles, extending over several years.

4. *Agricultural Chemicals Technology.* A two-year, post-high school program in community colleges at the technical level.

For the development of instructional materials, the task force conducted a nationwide search to identify capable personnel, visited and evaluated successful programs, analyzed and developed materials. The emphasis was on competencies identified as necessary for successful job performance.

Another advisory meeting, held in March, provided specific direction and established channels of communication between persons in education and persons representing different power structures in agricultural businesses and industries.

In April, a national advisory committee met to give direction to the development of educational programs. Its members stressed the needs for more programs at the post-high school level, assistance by local or area advisory councils, adequate vocational guidance, and greater cooperation with the Department of Labor, employment security agencies and the Agricultural Extension Service.

In May, 153 persons from 49 states attended a national conference on off-

farm agricultural occupations for teacher educators and state supervisory personnel. They presented an outline for developing new programs, showed the need for such programs and presented preliminary materials. It became clear that developing competency in off-farm occupations requires a complete coordinated program of education.

Following the national conference, area meetings focused on the responsibilities and activities which local school administrators, boards, vocational coordinators, vocational teachers, and lay personnel could undertake to determine needs for initiating programs at the local level.

The major objectives of the project were accomplished through the specialized publications developed to: provide information to laymen, employers, and for use by mass media; assist state-level policy-making bodies and administrators in launching new programs; provide teachers with materials to assist them in organizing and conducting new programs, and report research findings for guidance purposes.

Listed in the report are the titles of publications intended to assist educators in developing programs and curricular materials. Among the listed materials are outlines for instructional modules designed to help teachers develop courses in agricultural machinery, agricultural supply, horticulture and agricultural chemicals technology.

The project was first evaluated by participants at the May conference. Evaluation sheets were sent out with the curricular materials previously reviewed by specialists. Pilot programs using the materials were judged. Finally, an overall evaluation was conducted by a National Seminar on Evaluation and Program Planning in Agricultural Education.

It was felt that the strengths of the project were: (a) states were given assistance in their studies; (b) area meetings, emphasizing the development of local and area pilot programs, permitted involvement at the action level; (c) qualified persons from other disciplines, business and industry were invited to lend assistance and prepare specific materials, and (d) interstate cooperation was encouraged.

I. A. Curriculum Project

6:5 "An Industrial Arts Curriculum Project for the Junior High School" by Edward R. Towers. Ohio State University, Columbus, Ohio. (Project # 5-0059) 1966. (VT # 003-145) 37 pages.

This report represents the first phase of a continuing project to study the Industrial Arts curriculum. The problem statement includes the comment that "Many of the traditional approaches to industrial arts education are incapable of providing students with an adequate understanding of the impact of industry upon our modern man-made world and upon industrial personnel."

Blocks to developing a new program in Industrial Arts are stated to be:

1. Failure to develop a fundamental structure of the field.
2. Absence of textbooks and other instructional materials.
3. Lack of appropriate laboratory facilities and equipment.
4. Scarcity of research and demonstration projects.
5. Outmoded teacher education programs.

"These blocks to curriculum improvement call for a comprehensive project which will rigorously define content; develop a package of teaching materials; field test, demonstrate and disseminate these materials; and organize teacher education programs. Through the procedures subsequently delineated, this project will make possible a fundamental breakthrough which can provide a powerful thrust on the national scene."

The general purpose of the Curriculum Project is to effect curriculum change in Industrial Arts. The two objectives for this phase of the project are:

1. To conceptualize a structure of industry as a basis for content in Industrial Arts.
2. To translate this structure into a syllabus which outlines a junior high program in Industrial Arts.

"In order to accomplish these objectives, it was necessary to develop a rationale for conceptualizing a structure of industry and a rationale for selecting learning experiences from a structured body of knowledge. Subsequent phases of the project will require the syllabus to be engineered into an innovation package."

The application of PERT (Program Evaluation and Review Technique) was used in planning the first phase of the project. The project staff began with a comprehensive literature analysis and the production of an annotated bibliography.

During the review of various industrial classification systems, such as the *Dictionary of Occupational Titles, The Standard Industrial Classification Manual* and the *Census of Manufacturers,* the project staff began developing a set of criteria for determining structure. These criteria involved scope, limitations and sequence.

Consultants were employed to assist the staff in these activities. Selected to provide an interdisciplinary approach to the "conceptualization of the structure," the following fields were represented: philosophy, sociology, psychology, economics, physical science, engineering and industrial management, labor and business.

After a structure had been organized within which the major concepts were placed in taxonomic order, the next step involved development of a syllabus for the junior high school. Six factors were identified which were to provide guidelines for the selection and organization of learning experiences:

1. The Structure of the Body of Knowledge.
2. Desired Behavioral Change or Objectives of Instruction.
3. The Nature of the Learner.
4. School Facilities and Materials.
5. Instructional Procedures and Materials.
6. Measurement and Evaluation.

In order to "conceptualize" a body of knowledge contained in industrial

technology, a three-dimensional matrix approach was devised, the axes of which are Industrial Material Goods, Industrial Production Technology, and Industrial Management Technology.

The report states that the matrix approach provides a way of looking at the multiple dimensions of industrial technology. "The matrix approach may be equally helpful in the conceptualization and certification of other techniques." The rationale for the inclusion of a study of industrial technology in the school program suggests that these other technologies (e.g. marketing, transportation and health) should also be studied in the school program.

Curriculum Development

The Ohio State Industrial Arts curriculum project represents a systematic approach to curriculum development that should do much to broaden the scope of industrial arts teaching. The syllabus which will be developed from such inquiry will be of general interest as to both the methodology used in its construction and its implications for the junior high school Industrial Arts program.

Among the six factors named for the selection and organization of learning experiences is one that needs to be given constant emphasis. This is *The Nature of the Learner*—in this case, the junior high school student. Any realistic curriculum plan must begin and end with these active, restless, inquisitive, and impressionable young people who love to feel, form, construct, create, experiment, and explore. Therefore, it may be reasonable to ask for multi-dimensional studies of curriculum in which the students involved, their qualities, capabilities, needs, and desires are considered in the basic structure of experimental design.

Television Instruction for Youth

6:6 "PROJECT NOTIFY—NEEDED OCCUPATIONAL TELEVISION INSTRUCTION FOR YOUTH" BY WILLIAM H. LAWSON AND JOHN BANCROFT. SAN BERNARDINO VALLEY COLLEGE, SAN BERNARDINO, CALIF. (PROJECT #5-0068) 1966. ERIC # ED 010 641. MF $0.18 HC $2.68. 67 PAGES.

Job selection is a difficult problem for career-oriented students. Students should receive adequate information but, as the report states, in many cases the information available is not helpful because of the scarcity of qualified counselors, lack of a central source of information, dull methods for presenting the information, and rapidly changing job requirements. This report is concerned with the use of television to provide occupational information.

Television is probably the primary source of entertainment and informal education for today's youth. Because television engages the senses and directly involves the viewer in actual situations, the authors felt that it could be effective in disseminating information. Project NOTIFY, a pilot program, produced "dramatized documentaries" concerned with career-ladder opportunities. The project, employing amateur actors who played themselves at their jobs and filming programs at local firms, provided a sense of immediacy and realism.

The purposes of this study were to report on Project NOTIFY, determine the effect and appropriateness of Project NOTIFY as a means of disseminating occupational guidance information to high school students, and make recommendations for effective utilization of Project NOTIFY video tapes.

Four Objectives

The specific objectives of the project were to:

1. Provide occupational information for high school and junior college students, particularly those from low income or educationally deficient groups. The long-term desired result was a decrease in the rate of unemployment and underemployment resulting from poor job selection and dropping out of school.
2. Provide counselors, advisors, teachers, parents, and friends of students with detailed information on the career opportunities in specific occupational families that are currently available in their local metropolitan areas.
3. Inform disadvantaged minority groups of the new and varied opportunities that are now possible in the local business community.
4. Develop and expand a new vocational education tool in the form of occupational guidance through educational television.

The following occupational areas were selected because they are available in major metropolitan areas, offer equal opportunities, offer additional training and are relatively immune to change: (a) Secretarial, (b) Food Retailing, (c) Department Store Retailing, (d) Automotive Technology, (e) Lodging and Food Service, (f) Financial Institution, and (g) Law Enforcement.

The television programs were designed to identify entry-level jobs in the above occupational areas. Career opportunities, means of preparing for advancement, and participation of minority group members were portrayed.

Evaluation was conducted using eleventh and twelfth graders attending eight senior high schools in the San Bernardino Valley College district. Three data-gathering instruments were used: two to gain information from students, and one to elicit responses from the project counselors. Comparable items were included on all questionnaires. After each program, students were given an inventory questionnaire for an initial evaluation. A selected sample of 15 percent of the students who viewed the programs were involved in structured interviews.

Later, a stratified sampling by program and school was conducted to select students for follow-up interviews one or two months after viewing, in order to determine the long-range value of programs and to obtain the students' comments and suggestions.

Student Selection

A portion of the project was designed to assure that consistent procedures were followed in the selection of students, viewing procedures and evaluation techniques. Unfortunately, a few counselors selected students based on a preconceived idea of the aptitude level needed for an occupation. Most of the students were already vocational-oriented. Few college-bound students attended the viewing. Counselors had been asked to select students enrolled in courses related to the area to be viewed. They were also requested to refrain from selecting students for whom employment in a particular area seemed unlikely.

No use was made of control or opportunities for statistical comparison. It was assumed that students could not have had an opportunity to gain information through any other school experience.

Students and counselors found the video tapes a valuable source of in-

formation. The students' evaluations based on responses made immediately following the program compared favorably with those made one or two months after the viewing. The students gave the highest rating to those programs that presented a development of facts, a moderate rating to those encouraging the students to stay in school, and a low rating to those related to job planning.

The programs were found to be more beneficial to disadvantaged minority groups in acquainting them with job possibilities. School principals also found the programs effective, although they suggested a need to supplement the tapes with guest speakers or informed instructors.

Trends Revealed

The study revealed several trends:

—There is a strong demand for occupational information by students seeking careers.

—Occupational projections on a short-term basis are difficult to obtain from firms and industries.

—Educational television in the elementary and secondary school systems is handicapped by the lack of equipment and technicians. Scheduling of programs can be difficult because of differing "bell" systems. It is costly for schools to own their own video tape equipment.

The report made the following recommendations:

1. All television scripts should be reviewed by U.S.O.E., and resources should be made available to improve them.
2. Programs should be reduced to two or three occupational families, with greater concentration in each area.
3. Existing tapes should be made available to everyone interested.

Significance of Report

Because evaluation procedures of this study were somewhat crude, the significance of the report is tenuous. Educational television may certainly be valuable in disseminating occupational information but, as the report suggests, its effectiveness may be diminished by continued use. This implies that television now commands attentiveness in the classroom because it is a novelty.

The report claims that educational television has been found to be as effective as conventional classroom instruction. As the school principals involved in the study stated, television is an appropriate jumping-off point as a technical aid, but it cannot replace the teacher.

Skills in Sales

6:7 "A PROCESS FOR DETERMINING VOCATIONAL COMPETENCIES FOR THE PERFORMANCE OF NINE ESSENTIAL ACTIVITIES FOR SALES PERSONNEL IN THE FEED INDUSTRY, AND THE LOCI AT WHICH THE COMPETENCIES COULD BE TAUGHT" BY JAMES J. ALBRACHT. MICHIGAN STATE UNIVERSITY, EAST LANSING, MICH. (PROJECT # 5-0156) 1966. ERIC # ED 010 070. MF $0.27 HC $5.96. 149 PAGES.

The major emphasis of this project was on the development of a process for determining vocational competencies for sales personnel in the feed industry. Forty vocational competencies were identified and submitted to a jury of 24 experts to determine whether they were needed for the performance of nine essential activities.

Jury members were selected from four occupational groups having to do with the feed industry. There were Sales Training Directors, Feed Dealers, Agricultural Teacher Educators, and Office Education and Distributive Education Teacher Educators. In the vocational agriculture North Central Region of the United States, six members were chosen from each of the four groups.

The process developed and used in this study incorporated the following factors:

1. Use of an "industry function" approach rather than the traditional "job title" approach.
2. Inclusion of all vocational education competencies involved in the performance of a function rather than only those competencies which might be taught by one of the vocational service areas.
3. Use of a regional survey approach rather than the traditional local survey approach.

4. A team approach of industry leaders and vocational educators in determining which competencies are needed, and the loci at which the competencies could be taught.

The overall objectives of the study were to:

1. Identify and verify the sales activities performed by personnel in the feed industry, and to rank the activities as to their relative importance to the feed industry.
2. Identify and verify the competencies necessary to the performance of the sales activities in the feed industry.
3. Determine the loci at which the sales competencies could be taught.

On the basis of previous research, nine functions in the feed industry were identified. The functions were sales, service, processing, transportation, office service, research, public relations, purchasing, and maintenance.

Sales Functions

A list of 28 activities by personnel for the performance of the sales function was submitted to a jury of 12 persons recognized as experts in feed-industry sales. The jury indicated whether or not the activities were performed in the sales function and ranked nine selected activities for their relative importance on a five-point rating scale. These nine activities were to:

1. Assist farmers in planning feeding programs and troubleshoot their feeding problems.
2. Assist local dealers in promoting the use of specific feeds by local producers.
3. Sell direct to the producer.
4. Assist the producer to see through his own problems by reviewing with him his own situation.
5. Follow up results obtained by customers and report them to management.
6. Sell directly to customer across the counter in an informative manner without misrepresentation.
7. Solicit local dealers to sell company's products.
8. Recognize abnormal and detrimental practices and animal health conditions.
9. Assist local dealers in promotional campaigns and feed-and-grain clinics held for livestock feeders.

The major steps in the development

of the instrument used for the study were:

—Preparation of the list of competencies.

—Consultations with representatives of both the university and the feed industry to refine the list of competencies.

—Personal interviews of the trial juries to refine further the list of competencies.

An interview schedule was developed by listing the competencies that might be required for the performance of Activity One, then adding any additional competencies that might be involved for the performance of Activity Two, and so on, through the list of nine activities. Additional competencies were identified through a review of agricultural and business education textbooks, and consultation with college representatives. A preliminary interview instrument of 62 competencies was developed. After a period of trial-testing and revision, the instrument was reduced to 40 items. These were then evaluated and rated by the jury.

Included in the summary of findings of this study is information that 21 competencies were identified as essential for the performance of each of 9 sales activities in the feed industry, and all 40 competencies were considered essential for the performance of more than one activity.

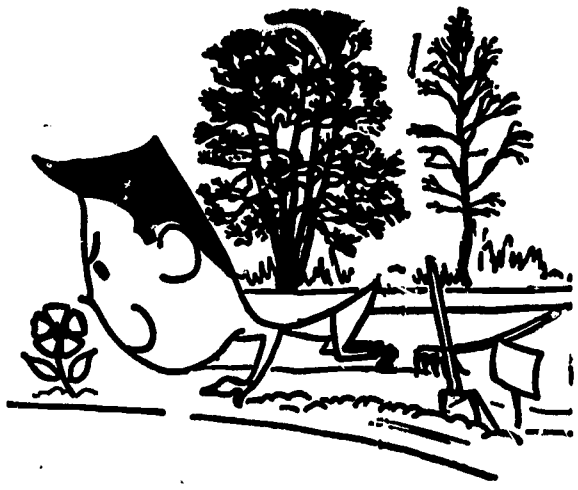
It was recommended that the process involving the four factors used in this study could be used for studying other functions in the feed industry and functions in other industries. It was further recommended that competencies and loci could be considered in the development of curricula and courses of study.

Although the focus of this investigation is on sales and distribution in agriculture, it has implications for persons associated with the other divisions of vocational education.

Groundsman-Gardener Training

6:8 "GROUNDSMAN-GARDENER FOR SPECIAL CLASS STUDENTS (EDUCABLE MENTALLY RETARDED YOUTH)" BY G. ROY NICOLAYSEN. OAKLAND UNIFIED SCHOOL DISTRICT, OAKLAND, CALIF. (PROJECT # 5-0178) 1966. ERIC # ED 010 280. MF $0.09 HC $1.32. 39 PAGES.

The objective of this project was to train mentally retarded students in the



Groundsman-Gardener field and for placement in the Landscape-Nurseryman Aide Course and/or enrollment in post-graduate Groundsman-Gardener training.

The vocational goals of the project were:

—Job training and placement of Educable Mentally Retarded students.

—Absorption of Educable Mentally Retarded students into the regular-class Groundsman-Gardener program.

—Part-time employment of Educable Mentally Retarded students.

—Continued training as Department of Vocational Rehabilitation clients.

Eleventh and twelfth graders enrolled in special classes at the Oakland Senior High Schools were asked to participate in a pilot summer program for Groundsman-Gardener activities. One unit of elective credit was offered to participants, as well as a daily training allowance for their work. Sixteen students enrolled and completed the six-week course as clients of the Department of Vocational Rehabilitation.

The course was divided into classroom study and actual work experience in the field. The classroom curriculum was designed to meet the academic abilities of the students and included six areas of interest. (The curriculum outline is reported in the Appendix.) Students kept notebooks on horticulture which were graded at the end of the session. Classroom activities in the morning consisted of lectures, observation, audiovisual materials, and elementary research.

In the afternoon, a planned program of work experience was conducted at a nearby, poorly maintained recreation and park area. Students were divided into teams for the projects of pruning, trimming, grubbing, hoeing, planting, and watering. The teams rotated so that each student became acquainted with these various skills.

The report stated that the vocational goals of the project were realized. Specific vocational training objectives were met in the instruction and student performance of gardening tasks.

All agencies and the community were satisfied with the summer activity. Most of the students enrolled expressed their intentions of continuing in this field in some capacity.

Curriculum planning by specialists in Mental Retardation and by technical advisers in the field of horticulture, together with close supervision of activities, contributed to the success of the program. There were no dropouts and very little absenteeism; a high level of enthusiasm was sustained.

The study recommends that this program be continued and expanded, so as to offer opportunities to more students.

The Cluster Concept

6:9 "AN INVESTIGATION AND DEVELOPMENT OF THE CLUSTER CONCEPT AS A PROGRAM IN VOCATIONAL EDUCATION AT THE SECONDARY LEVEL (PHASE I)" BY DONALD MALEY. UNIVERSITY OF MARYLAND, COLLEGE PARK, MD. (PROJECT # 5-0183-A) 1966. ERIC # ED 010 301. MF $0.27 HC $5.40. 135 PAGES.

This project, Phase I of a series of studies, was initiated to study the cluster concept as a form of secondary vocational education. The initial phase was aimed at determining the acceptability and feasibility of the cluster approach, as well as identifying several occupational clusters. The final section, not contained in this report, is directed toward developing a series of course outlines for selected clusters.

The term, "cluster concept," is described as the development of skills and understandings related to a number of allied fields. The skills and understandings would be common to a number of the occupations in the field. However, it is not an in-depth development into any one job. The "cluster concept" differs from the conventional vocational programs in terms of scope and depth, preparing a person to enter into a family of occupations rather than a specific occupation.

The first objective was to determine the appropriateness of the cluster concept as a program in vocational education at the secondary school level.

Four procedures used to answer this question were:

1. An extensive search of literature in the areas of education, labor, economics, and industry.

2. A series of interviews with representatives of industry, education and labor conducted to ascertain the acceptability and feasibility of the cluster concept program.

3. A continuous dialogue with these representatives in order to obtain perspective and a broad reaction.

4. An analysis of the data obtained from the interviews and the review of literature to determine the need, acceptability and feasibility of the cluster concept.

The second objective was to identify occupational clusters and the specific occupations in each cluster that would be suitable for a cluster-concept program in vocational education at the secondary school level. To satisfy this objective, three steps were taken:

1. A review and evaluation of research was conducted in the area of occupational grouping.

2. A method of research, based upon a sampling technique proposed by Altman and Gagne of the American Institutes for Research, was developed to determine occupational clusters.

3. A group of three occupational clusters, with their respective selected occupations, was identified for further analysis.

Among the findings of this investigation, based primarily upon the responses to interviews, was the indication that the cluster concept was feasible and could be implemented in the secondary schools with little difficulty. "Representatives from labor and industry indicated that students with a cluster concept background could obtain employment and would be able to advance and specialize through on-the-job training and apprentice programs."

After reviewing several occupational classification systems, the investigators concluded that the occupational clusters could best be developed from a list of criteria. Criteria were established for the purpose of identifying occupational clusters and their specific occupations. These criteria indicated that the occupational clusters should:

1. Lie in the area of vocational industrial education.

2. Include occupations that are related on the basis of similar processes, materials and products.

3. Be broad enough to include occupations having a wide variety of skills and knowledge.

4. Involve occupations that require not more than a high school education and/or two years beyond high school.

5. Provide the opportunity for mobility on a geographical and occupational basis.

The occupations in each cluster must have:

1. A favorable employment outlook.

2. The instructional capability of being implemented in a secondary school program.

3. Opportunity for job entry upon graduation from high school.

4. Numerous skills and knowledge providing opportunity for the identification of commonalities with other occupations.

5. Opportunities for advancement through further schooling, on-the-job training or apprentice programs.

As a result of applying the criteria to a group of possible occupational families and specific occupations within the groupings, the following clusters with their respective occupations were established:

Electro-Mechanical Installation and Repair Cluster: (a) business machine serviceman, (b) radio and television serviceman, (c) home appliance serviceman, (d) air conditioning and refrigeration serviceman.

Metal Forming and Fabrication Cluster: (a) welder, (b) sheet metal worker, (c) machinist, (d) assembler.

Construction Cluster: (a) carpenter, (b) plumber, (c) mason, (d) electrician, (e) painter.

Changes in Shorthand

6:10 "CHANGES IN GREGG SHORTHAND SIMPLIFIED AS WRITTEN DURING EMPLOYMENT: AN ANALYTICAL STUDY OF VARIATIONS IN A PHONETIC SYSTEM OF COMMUNICATION" BY RUTH HILKERT GAFFGA. NEW YORK UNIVERSITY, NEW YORK, N.Y. (PROJECT # 5-8270) 1966. ERIC # ED 011 076. MF $0.18 HC $3.20. 80 PAGES.

The purpose of this study was to investigate variations from Standard Gregg Shorthand in the Simplified Edition, after use in employment, to determine relationships of variations to principles and procedures, and to determine implications of these relationships for making modifications.

Samples of Gregg Shorthand Simplified already written were sought only from notebooks used on the job in order to obtain the shorthand as written in common usage. Written samples were collected only from persons who had studied Simplified Shorthand and who had received at least two years of instruction.

Local samples were collected by the investigator; a national collection was made by mail with the aid of the Administrative Management Society. Some 285 samples containing an estimated 166,725 outlines and representing 203,205 words were collected and transcribed. Ultimately, 212 samples were used for purposes of the study.

The first 25 samples collected were set aside and studied as a preview to determine how many variations might be located, their characteristics, why they seemed to occur, and what in general might be expected of the main body of samples.

A collection of the largest number of samples was organized by dividing the country into geographical areas. This was planned to serve two purposes: to supply a source for national data, and to compare local samples with those from other national areas.

Nine shorthand experts reviewed the collected materials. They were lecturers, writers of college and secondary texts, college and State Education Department personnel, and chairmen of high school departments of Business Education.

The experts worked individually in three different groups, some serving in two of the groups. Group I approved the list of kinds of variations as important to Simplified theory. Group II sampled the raw data and agreed that the variations were located accurately and completely. Group III, which was comprised of outstandingly well-qualified experts, reached agreement without difficulty on the investigator's interpretations of the data.

Nine kinds of variations were studied, as follows: (a) use of left and right "s"; (b) confusion of "o" and "oo"; (c) circle vowels ("a" or "e") between opposite curves; (d) circle vowels ("a" or "e") in relation to straight strokes; (e) use of "-ings"; (f) "-ith" joining and its misuse; (g) representation of the word ending "-ther", and (h) past tense "-ed," "-ded" and "-t", and (i) treatment of amounts and quantities.

From the analysis of variations to

Gregg Simplified Shorthand seven overall conclusions were derived, which are listed here in abbreviated form:

1. Although certain key elements in Gregg Shorthand Simplified were not followed accurately, shorthand writers did write essentially plate shorthand during employment.

2. Where shorthand writers did not use Standard Simplified Shorthand, Diamond Jubilee was employed.

3. The shorthand writers who were on the job generally used text shorthand.

4. Speed was not a decisive factor in the number of variations written during employment.

5. Gregg Shorthand Simplified was written with no essential differences by shorthand writers during employment throughout the country.

6. Shorthand theory is in the process of changing, very much as a written language changes, to meet the needs of shorthand writers.

7. What is learned stays essentially learned, and it therefore behooves teachers to be aware that aspects of learning situations will stay learned.

Future Goals

Following are the recommendations for further study:

—Devise a Gregg Shorthand system with no choicemaking in the writing of any individual shorthand outline, such as left or right "s," over or under "-ith," and "o" and "oo" hook; and test experimentally with a control group to see what the results are. (The everyday business office situation is not appropriate for technical and accurate testing.)

—Determine the frequency of cases of sounds per 1,000 words for all kinds of variations from Gregg Shorthand text principles and procedures.

—Study the importance of variations from Gregg Shorthand principles and procedures when dictation is given at varying speeds.

The New York University investigation of variations in Gregg Shorthand Simplified should be of particular interest to teachers and supervisors of Business Education, as well as to college and State Department instructional and supervisory staff members. In addition to the information reported, several charts and tables and a selected Bibliography are presented.

Stenography Course Development

6:11 "DEVELOPMENT AND EVALUATION OF A ONE-SEMESTER STENOGRAPHY COURSE" BY PATSY BLAKE MCMURTRIE. SAN FRANCISCO STATE COLLEGE, SAN FRANCISCO, CALIF. (PROJECT # 5-8277) 1966. ERIC # ED 010 256. MF $0.18 HC $4.40. 92 PAGES.

The purpose of this San Francisco State College study was to design a new scope and sequence of shorthand and transcription instructional materials to fit a one-semester stenography program, and to evaluate these materials as a pilot study on three levels—high school, adult education and college.

The first step was the development of instructional materials. It was decided that a package of materials would include a textbook, tapes, transparencies, four-minute film clips, and the basic instructions for teacher use of an overhead projector. Five guidelines were used in the preparation of these materials:

1. It would be based upon the writing principles and theories of Gregg shorthand.

2. It would be a teachable course, adaptable to the needs of average and talented high school, adult education and college students.

3. It would be flexible enough to provide techniques for maintaining the interest of an average class, yet allowing and furnishing challenging work for talented students.

4. It would teach the necessary processes required to write and transcribe shorthand.

5. It would teach these processes by leading the students through simplified examples of the theoretical applications of writing and transcribing shorthand.

The second step of the project was to test and evaluate the course for soundness of design and conception. Experimental teaching with classes in high school, adult school and senior college was undertaken to determine the effectiveness of the course and to determine the feasibility of this proposed approach to teaching a one-semester stenography course.

The three schools participating in the project were the John Adams Adult School, San Francisco State College and El Camino High School, all in the San Francisco area.

It was reported that the findings led to the conclusion that the combination of the Writing of Shorthand and Beginning Transcription can be taught within the generally accepted one-semester time interval.

It was further indicated that the most important implication of the study was that MDTA adult students, from various types of backgrounds and with few or no prior educational successes, were able to orient much of their thinking and attitudes toward finding a place for themselves in the job market.

"It seems very likely that the Shorthand Structured Learning Program gave them a needed realistic approach to learning stenographic skills."

Technical Education Curricula

6:12 "A STUDY OF RECOMMENDATIONS FOR TECHNICAL EDUCATION CURRICULA" BY JOSEPH P. ARNOLD. PURDUE UNIVERSITY, LAFAYETTE, IND. (PROJECT # 5-8371) 1965. (VT # 003-520) 12 PAGES.

The report asserts that there is a need for recognizing, identifying and relating the functions of technicians in industry to those curricula which would best assure occupational competence. This study sought to identify the attitudes of technically qualified management personnel toward the post-high school technical curricula. It was stated that these respondents from management, who had direct responsibility for job performance of technical personnel, had some technical background themselves, and they were assumed to have a higher degree of knowledge and concern for company objectives and policies.

The purposes for which this study was conducted are to:

1. Compare assessments made by management toward technical curricula content with assessments made by technical personnel themselves.

2. Isolate and analyze selected variables and measure their relationship to curricula recommendations.

3. Establish and assess the degree of relationship between level of authority of management and generality of recommendations for curricula content.

4. Identify a core of courses which management agrees is desirable for most post-high school technical programs.

5. Test the hypothesis that, in its recommendations, management will include more kinds of course content than will technicians.

Technicians were used as the criterion group of respondents. Engineering and scientific technicians were defined as those employed in research, design or development, production, operation or control; or in installation, maintenance or sales. Management and/or supervisory personnel were used as respondents. Those in management were employees three steps above who were responsible for at least one technician.

Illinois Firms Selected

The initial portion of the sample of firms was randomly selected from manufacturers in Illinois. Fifty-two firms were finally chosen, each employing 200 or more persons, and each supplying up to four respondents.

An interview schedule and a curriculum deck were the two instruments used in the study. Each technician and each management respondent was interviewed. The curriculum deck consisted of 99 index cards containing all subjects or course content related to a technician's job performance.

One technician from each firm sorted the deck into three stacks in terms of degree of relatedness to his own job. Each management respondent sorted the cards in terms of degree of relatedness to the job of technicians in his firm. In all, there were four sets of responses to each technician job—from the technician, his direct supervisor, his second level supervisor, and the department head, chief engineer or a person three steps removed.

Experimental data, comprising responses to the curriculum deck, were used in analyses or comparisons of curriculum recommendations and for the establishment of cores of recommendations described in the objectives. A system of job families was established for the classification of respondents.

The job families were: Electro-Mechanical, Mechanical, Chem-Mechanical, Chemical, and Chemical-Foods. The core of curriculum recommendations was identified as agreed upon by respondents of all five job families. Individual cores by job family were then identified, which were intended to include the differentiated content for a given job family, in addition to the general core.

Conclusions Drawn

Among the conclusions drawn from this study are:

—The implications of the study are greatest in the Mechanical family of occupations.

—Findings from the other four families may not be capable of being generalized to technicians in each of these areas.

—Several technician jobs appear as "hybrids." If these types of jobs are increasing or changing, there is a need for a systematic identification of the change.

—Programs of study to prepare technicians must provide subject matter and skill development in areas consistent with occupational requirements.

A close similarity in recommendations among groups was indicated. Core recommendations represented the collective views of management and technician respondents. Cores are recommended for use as guidelines in design and refinement of post-high school technical programs.

Building Design Seminar

6:13 "MATERIALS AND STRUCTURAL DESIGN SEMINAR FOR VOCATIONAL-TECH SCHOOLS" BY J. CLARK DAVIS. UNIVERSITY OF NEVADA, RENO, NEV. (PROJECT # 7-0658) 1967. (VT # 004-166). 113 pages.

The three-day vocational-technical facility planning conference at Las Vegas, Nev., had 121 participants and 16 conference consultants and planners. The report includes greetings by Lt. Gov. Ed Fike and by Burnell Larson, State Superintendent of Public Instruction; a keynote address by S. J. Knezevich, Associate Secretary, American Association of School Administrators, and four presentations on vocational facilities design.

Fike's opening remarks called attention to the paradox of chronic unemployment in a time when many skilled craft and technical jobs remain unfilled.

"There are two basic elements which have a direct relevance to the importance of vocational education. First, there is virtually no future for the unskilled worker. What has traditionally been his job is going to be done by automatic machines. . . . The second element is the fact that our potential capacity for economic growth depends on the entire work force being prepared for the jobs that will be available."

An important point made in Knezevich's address was the idea that a one-shot, limited approach to vocational plant design should give way to a longitudinal and developmental concept. "Rather than compromising all spaces to less than adequate specifications it might be appropriate to consider vocational-technical schools in terms of phases with specific parts scheduled for construction over relatively long periods of time. Another very important part of this concept is that a truly dynamic vocational-technical program will require modifications and expansions in the years following initial construction."

When speaking of the systems approach to school construction, John Boice of the School Plant Planning Lab, Stanford University, stressed the importance of trying to project into the future, rather than copy school plant and curriculum designs of the past.

"The program requirements given to the architect three years in advance may not even have relevance for the proposed program on the day the building opens. . . . What is clearly needed are spaces that can quickly and inexpensively be adapted to changes in programs and teaching methodologies."

Harris Sharp of the Architect-Engineering Office, Zick & Sharp, made a presentation on the "Integrated Ceiling." He called attention to the fact that the ceiling is actually more important than the walls in determining the flexibility of a building.

"In the plenum space—that is, the space between the closed ceiling itself

and the roof area—we can run all of our heating, air conditioning, lighting ducts, and other utilities. They can be moved and they can be reached very easily if laid out in a truly integrated system. It also offers a big utility space that covers the entire structure, where in the future we can run closed circuit television along with many other innovations to aid teachers that may not even be in existence today."

Also contained in this report are transcripts of 31 questions and answers relating to the Southern Nevada Vocational-Technical Center, a description of the construction and architectural features of the Center, and presentations of thermal environments and educational models. This report contains a number of concepts and specific ideas that would be valuable to any persons concerned with the design and construction of facilities for vocational-technical education.

TOPIC THREE: Development of Programed Learning and Materials for Other New Forms of Educational Media

Programed Instruction

6:15 "THE RELATIVE EFFECTIVENESS OF SUPPLEMENTING PROGRAMED INSTRUCTION WITH BLOCKED VERSUS SPACED REVIEW" BY JAMES A. SCANLON. CORNELL UNIVERSITY, ITHACA, N.Y. (PROJECT # 7-8068) 1967. (VT # 002-889) 46 PAGES.

Programed instruction has become the most popularized, though still controversial, new medium. Much of the controversy is over the proper use of this technique. Is it designed to replace normal classroom instruction? If a program is used and if the program alone does not fulfill the teacher's objectives, how can it best be supplemented? This study is the report of an experiment designed to determine the effectiveness of supplementing programed instruction with blocked versus spaced review. Simply defined, blocked review is used at the end of a program or unit, while spaced review is incorporated into the learning task at various regulated intervals.

The four hypotheses tested were:

1. Students who have programed texts supplemented with review will learn more than those who have only programed texts, as measured by a test for learning administered immediately after the instructional period.

2. Students who have programed texts supplemented with spaced review will learn more than those who have programed texts supplemented with blocked review, as measured by a test administered immediately after the instructional period.

3. Students who have programed texts supplemented with review will retain more than those who have only programed texts, as measured by a test for retention administered after 30 days.

4. Students who have programed texts supplemented with spaced review will retain more than those who have texts supplemented with blocked review, as measured by a test administered after 30 days.

The experiment was conducted in a series of 10 steps. The program selected pertained to the subject, Parliamentary Procedure, taught in Vocational Agriculture at the ninth-grade level. A film strip was finally selected as the best means for review procedure. The film strip constructed included only the factual information covered in the programed unit. A criterion test was also developed to measure how much the student had learned at the end of the program and how much he retained 30 days later.

Three hundred fifty ninth-grade students enrolled in vocational agriculture in New York were chosen at random for this experiment. Twenty-nine teachers in 28 schools were also involved. Each student was tested for reading ability, by use of the Nelson-Denny Reading Test. Then the classes were assigned to three treatment groups—those receiving blocked review, those given spaced review, and those receiving no supplementary review. After the completion of the programs and after the criterion test was administered, scores were punched on IBM cards and analyzed.

Neither of the groups receiving supplementary review learned more than the group having no review. The group receiving blocked review did better than the one which had spaced review. Hypotheses 3 and 4, concerned with retention, were also rejected.

These findings led to the following conclusions:

1. Supplementing a program with either spaced or blocked review has no effect on either learning or retention.

2. Supplementing a program with blocked review will result in more learning than supplementing it with spaced review, although blocked review does not produce a beneficial effect in retention.

Although the findings do not support the hypotheses of this experiment, the study recommends that programed instruction be supplemented, preferably with spaced review. This recommendation was made because of the sound theoretical framework of the experiment and because no other studies support its negative findings. Consequently, additional research is needed in this area.

This fundamental study in learning theory is of value to *all* teachers seeking new methods of instruction.

TOPIC FOUR: Programs for Evening and Part-Time Schools (No Studies)
TOPIC FIVE: Emerging Programs Beyond High School

Electronics Content Analysis

6:16 "A COMPARATIVE ANALYSIS OF ELECTRONIC CONTENT IN PUBLIC POST-HIGH SCHOOL TECHNICAL INSTITUTES AND ELECTRONICS TECHNOLOGY REQUIREMENTS OF INDUSTRY" BY RICHARD J. VASEK. MISSISSIPPI STATE UNIVERSITY, STATE COLLEGE, MISS. (PROJECT # 6-8590) 1967. (VT # 004-005) 93 PAGES.

This Mississippi State University study was undertaken to ascertain the extent to which post-high school technology programs, through electronic content offerings, were meeting industry's needs in electronics technology. The research was conducted in U. S.

Office of Education Region IV, which includes Alabama, Florida, Georgia, Mississippi, South Carolina, and Tennessee.

It was determined that 223 industrial firms and governmental agencies in the region studied were employers of electronic technicians. These employers were sent a checklist of 435 items of electronic instructional content. They were asked to indicate whether they believed the various items were required, preferred or unnecessary knowledge. A total of 175 firms, employing 15,828 electronic technicians, responded. Of the 435 content items, employers indicated that 20.5 percent was required knowledge, 77 percent preferred, and 2.5 percent unnecessary.

A similar instrument was sent to 63 electronics instructors. They were asked to indicate whether they taught the various content units in depth, discussed them briefly, or did not teach them. Responses from 58 instructors indicated that 72.6 percent of the items were taught in depth and 27.4 percent were discussed briefly.

A total analysis revealed that electronics instructors placed significantly more emphasis on basic electronic content taught than industrial personnel indicated was necessary. Specifically, the following conclusions were reached:

—Eighty-nine instructional units considered "required" by industry were taught in depth.

—Some 227 units were in the category "industrially preferred" but were taught in depth. An additional 11 units considered unnecessary by industry were in the "discussed briefly" category.

—"The positions which could be filled by electronic technicians covered the entire spectrum from routine jobs to those requiring a high degree of specialization. Therefore, a customized approach to technical training ranging from one to three years would reduce the dropout rate, encourage more students to enter the technical field, and better meet the demands of industry where technical needs range from the relatively simple to the most complex."

The first recommendation of this study pointed up the value of an open-ended curriculum. "A study should be made to ascertain the feasibility of developing a continuous technical curriculum whereby a student could enter a technical program and progress according to his ability."

Other recommendations endorsed the value of closer working relationships with guidance, industrial and educational personnel, the value of similar research in other regions and technologies, and the need for a follow-up study of electronic-technology graduates to determine the extent to which the program is meeting their educational needs.

The Mississippi State study of the post-secondary technical electronics curriculum should be a valuable source of information to all electronics teachers and curriculum specialists. Of special interest are the 435 content items and a reference bibliography of more than 60 titles. Also, college and school administrators and Department of Education supervisors should find the specific recommendations relating to a student-centered open-ended curriculum an important base for further consideration.

This study points up a situation that is common in many two-year colleges, a level of instruction that seems to be predicated on the dictates of collegiate accreditation more than on the requirements of employers, or of the educational needs of all the young people who attend. As long as the curriculum is bound by the standard measures of instructional content and other forms of evaluation that are generally associated with "college level" work, it will be difficult for these types of post-secondary schools to readily adopt an open-ended curriculum.

Industrial Technology Curriculum

6:17 "OPERATION GIANTSTEP: RESEARCH IN A NEW REMEDIAL PROGRAM AND COMMUNITY COLLEGE INDUSTRIAL TECHNOLOGY CURRICULUM FOR DISADVANTAGED HIGH SCHOOL GRADUATES" BY MANUEL STILLERMAN. BRONX COMMUNITY COLLEGE OF THE CITY UNIVERSITY OF NEW YORK, BRONX, NEW YORK. (PROJECT # 5-1336) 1966. (VT # 002-615) 119 PAGES.

Operation Giantstep is the name of the Bronx Community College program to give vocational instruction to high school graduates who did not receive vocational training in high school and who were not prepared for college.

The two main problems of this operation were: Developing a post-high school vocational education program for disadvantaged high school graduates, and carrying out research to help design programs capable of salvaging this great pool of undeveloped manpower.

The report states that the community colleges of New York City do not have programs suitable for the population this project intends to serve, namely, general-diploma high school graduates who are interested in engineering-related careers. It was proposed, therefore, to develop a new curriculum in Industrial Technology. It was felt that even with a less demanding curriculum, a majority of the target population would not be adequately prepared, so a vestibule remedial program was also planned.

The research phase of Operation Giantstep was focused on high school graduates, rather than on dropouts. It was stated that "most remedial programs try to cope with the problems of idle youth who have dropped out of high school prior to graduation. Comparatively little has been done to assist the smaller but at least equally deserving group of high school graduates who lack both adequate technical training needed for employment or qualification for entrance to a junior college. . . ."

The operational plan consisted of four partially overlapping steps: (a) administrative tooling up; (b) program-developmental phase, (c) experimentation, and (d) follow-up of on-the-job experience. A total of 250 disadvantaged high school graduates are taking part in the program.

The report states that the results of the developmental and research efforts of Operation Giantstep will be discussed in a subsequent series of reports. It is anticipated that these reports will include descriptions of the three main sections: vestibule training, the Industrial Technology curriculum and research. It is also proposed that the personnel of the project will prepare abstracts and articles for publication in education journals, and that they will be contributing information relating to the topic through their participation in conferences and professional meetings.

"PLAIN TALK"

AS THE COMPLETED STUDIES reported in this issue are viewed in retrospect, it is evident that many of them have materially strengthened the vocational education curriculum. Along with some important additions to subject-matter content has come the communication of some thought-provoking topics and issues.

Most of the studies treated have given attention to the development of curriculum plans and materials for some particular occupation or group of related jobs. Others reported the proceedings of conferences and institutes, the organization of a special junior college program for disadvantaged youth, and the use of new forms of educational media.

The report of the "Conference to Discuss Occupational Data Requirements for Educational Planning" reveals the existence of a basic difference of opinion among educators. From presentations made at the conference, it is evident that one group supported the idea that labor-demand information was crucial for sound educational planning, particularly in the field of vocational education.

Another group at the conference was in strong disagreement. Its members contended that "users of such projections, unaware of the weaknesses in the methodological approach to such studies, would be misled into projecting unrealistic plans into the training and education field."

Open-Ended Curriculum Recommended

The Mississippi State University study of electronics content in post-secondary technical institutes calls for an open-ended curriculum that allows persons having divergent abilities and interests to participate in some phase of a broad program. It was stated that the employers of electronics technicians had openings in a wide range of positions within the technician category, and that various levels of instruction should be provided.

The "Conference on Implementing Career Development Theory and Research Through the Curriculum", reported by Tiedeman and Ashcraft, deals with a topic of vital concern to all persons in vocational and practical arts education. The concept of bringing group guidance into the school curriculum, which was discussed in the November edition of Plain Talk, should help foster better understanding and knowledge of work and employment to all young people. It is also essential, however, that persons having practical, job-related experience should be involved in the planning and operation of projected career-orientation curriculum plans and programs.

Almost every curriculum-related study reported in this issue is based on either a particular vocational subject or some form of school organization. The application of the curriculum to people, therefore, has been transmitted through some established program or institution. This means that work must still be done which gives first attention to *people.*

The school-by-school, or subject-oriented, approach to curriculum organization, valuable as each individual effort may be, is likely to miss the real educational needs of people to be served. Especially is this true for the needs of persons who are not in school or who are not profiting from the form of instruction they are now receiving.

Greater Effort Needed

When one recalls the recommendations of the Panel of Consultants and reviews the specific provisions of the Vocational Education Act of 1963, it becomes painfully clear that large sections of the population are still awaiting appropriate programs of vocational education.

This is a time when the "Challenge of the Sixties" is giving way to the "Nightmare of the Seventies." When the plight of the people we haven't served is gravely considered, the amount of research, innovation, and productive program operation directed toward them appears pitifully small.

The process of change in education has characteristically been tedious and deliberate—and for good reason. Many times the solid traditions of American public education have stood as safeguards against the forces of folly or expediency. But when dramatic new situations do call for drastic and rapid alterations in the educational program, they cannot be adequately served through an inexorably slow process of evolution.

But this country can no longer afford to have an educational system in which at least one-third of its population is handicapped for life.

In the past, it was not a great tragedy to be a school dropout. People who could not achieve success or satisfaction in school could always find some frontier of opportunity available, and many were able to fashion meaningful and productive lives. This is no longer true. Today, the dropout or reject, or the adult worker with obsolescent skills, faces a formidable array of closing doors. These disadvantaged individuals must be counted as social and economic liabilities. It is imperative, therefore, that schools must now adjust their programs to meet the needs of these people as they never have before. The traditional school policy of selection and rejection, whether in general or vocational high school, area vocational-technical school, or community college, can no longer prevail.

Leadership Is Required

If there is to be a realistic, universal program of occupational education for all people in all circumstances, it is not likely to be accomplished on a piecemeal basis. Unless activities are coordinated and articulated, the mere proliferation of new vocational programs and facilities is still likely to leave serious gaps, shortages and omissions in the total program. The solution to this dilemma lies in leadership.

National and state leadership is needed, as never before, to spell out the big issues and problems and to translate them into statements of position and policy. From these offices should come the guidance and direction that will insure that each local or regional institution takes on its full measure of responsibility—toward people and instructional program. Without this leadership, each form of educational institution which provides vocational instruction will tend to remain isolated, each continuing to provide the kinds of offerings rooted in past traditions.

But the commitment to serve all people cannot be imposed from above. In each school and college where vocational education is taught, the persons immediately involved in the teaching process must catch the urgency of the times, and each must take on some larger measure of concern.

What is called for here is not so much a change of practice as a change of heart. Leadership is the individual teacher seeking the way to provide a more meaningful program for each pupil—bright or dull, motivated or inattentive. And for the school administrator, it may be expressed through plans for keeping the buildings open longer in order to reach more people in the community.

ES 70, an experimental program sponsored by the United States Office of Education, should have particular interest to persons in vocational and practical arts education, because it has occupational competency as a major objective. Essentially, the program, which will be tried in 17 cooperating school districts across the country, will provide a high school curriculum combining academic and occupational training and personal development experience. "The student, upon leaving the school system, should be equipped with entry-level occupational skills and also with the qualifications necessary for continued education." As further plans for the implementation of "Education Systems 70" are developed, it is important that persons with knowledge and experience in vocational schoolwork are closely involved.

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"Summer Institute To Prepare Vocational Educators for Curriculum Development through Action Research" by Ryan, T.A. Oregon State University, Corvallis, Ore. (Project # 7-0497).

TOPIC TWO: New Vocational Curriculum Programs

"An Integrated Vocational Education Services Pilot Program in a Secondary School" by Agan, Ray. Kansas State University, Manhattan, Kans. (Project # 5-0027).

"Development of a Curriculum and Materials for Teaching Basic Vocational Talents" by Dailey, John. The George Washington University, Washington, D.C. (Project # 5-0061).

"A Competency Pattern Approach to Curriculum Construction in Distributive Teacher Education" by Crawford, Lucy. Virginia Polytechnic Institute, Blacksburg, Va. (Project # 5-0166).

"The Development of a Beginning Reading Skills Program" by Gotkin, Lassar G. New York Medical College, New York, N.Y. (Project # 5-0749).

"Training and Skill Requirements of Machinery Maintenance Personnel" by Lynn, Frank. Midwest Institute for Education, Research and Training INTEC. Chicago, Ill. (Project # 5-1201).

"The Development and Evaluation of Teaching Text, Operation, Maintenance and Repair of Air Cooled Gasoline Engines" by Henderson, G. E. University of Georgia, Athens, Ga. (Project # 5-1335).

"Teaching Vocational and Citizenship Education in Social Studies" by Howell, Kay M. Michigan State University, East Lansing, Mich. (Project # 5-8271).

"Experimental Curriculum for Electro-Mechanical Technicians in Computer and Business Machines Technology" by Fellows, Douglas M. Ward Technical Institute, University of Hartford, Hartford, Conn. (Project # 6-1489).

"The Preparation of Curriculum Materials and Development of Teachers for an Experimental Application of the Cluster Concept of Vocational Education at the Secondary Level" by Maley, Donald. University of Maryland, College Park, Md. (Project # 6-2312).

"Work Study Programs: Conduct and Consequences" by Schill, William J. University of Illinois, Urbana, Ill. (Project # 6-2851).

"Regional Workships on Project Development for Distributive Education Curricula" by Samson, Harlan. University of Wisconsin, Madison, Wis. (Project # 7-0467).

TOPIC THREE: New Forms of Educational Media

"Development of Multi-Media Programmed Instructional Materials for the Training of Law Enforcement Officers" by Cummings, John M. State Department of Education, Trenton, N.J. (Project # 6-2840).

"Computer-Aided Drafting and Design Summer Institute" by Morphonios, Alex. Miami-Dade Junior College, Miami, Fla. (Project # 7-0435).

TOPIC FOUR: Programs for Evening and Part-Time Schools

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TOPIC FIVE: Emerging Programs Beyond High School

"Development and Testing of an Experimental Mobile Instructional Facility for Applied Courses in Engineering Technology" by Kleine, Louis W. New Mexico State University, University Park, N.M. (Project # 6-2238).

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RESEARCH VISIBILITY

SYNTHESIS / APPLICATION / DISSEMINATION

•"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633: "Synthesis and Application of Research Findings in Vocational Education").

Vocational Education Is Service . . .

Guidance has had a profound influence on American secondary education, especially during the past 20 years. Many practices that are now commonly employed in junior and senior high schools were first introduced by way of the guidance program. The widespread use of standardized tests, and their application in the classification, grouping, and counseling of students, are several typical examples.

Although it may be said that the guidance movement has brought many improvements to secondary education, it must also be admitted that its value to a large segment of the school population has been less than sensational. According to some recent studies, many students, especially those who were not preparing for college entrance, indicated that the guidance office had given them little or no significant counseling service.

Now, in a period when a full measure of guidance that is appropriate for all persons in all circumstances has been recognized among the imperatives in education, it is likely that a drastic change in form and emphasis will have to follow.

Early in the guidance movement, three basic objectives were established: the development of educational, personal and vocational competency. These fundamental goals have been sustained in theory. In practice, however, the major concern of guidance has been for college preparation and admission. Little time has been given to either the personal or vocational aspects of counseling. This college domination of the high school

Vocational Guidance

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Dr. Gordon F. Law is editor of "Research Visibility." The organization for this department of the JOURNAL, the pattern for reporting and the writing represent his work.

curriculum, which has had adverse effects on all levels of instruction and guidance, appears to be finally giving way to a more enlightened concern for individuals.

There are several publications, other than the Office of Education studies reported in this issue, which relate to guidance. These include the proceedings of the *First National Conference on Student Personnel Services in Area Vocational Schools,* available through the Georgia State Department of Education; the January 1968 *Bulletin* of the National Association of Secondary School Principals, and the publication of the University of Wisconsin Center for Studies in Vocational and Technical Education, *Guidance Bibliography No. IV, Addendum No.* 4.

The January 1968 NASSP *Bulletin* is exclusively devoted to "Progress in Pupil Personnel." The 10 articles, prepared by some of the national leaders in guidance work, are sources of insight and information, and at least 5 of them are concerned with topics that are closely related to vocational education.

For persons interested in studying a plan for career development in a major city, the Philadelphia public schools have prepared a publication, *Career Development,* which describes a program leading toward universal continuing education.

TOPIC ONE: Systems Technology in Guidance

Computer-Based Technology

7:1 "EXPLORATORY STUDY OF INFORMATION-PROCESSING PROCEDURES AND COMPUTER-BASED TECHNOLOGY IN VOCATIONAL COUNSELING" BY J. F. COGSWELL. SYSTEMS DEVELOPMENT CORPORATION, SANTA MONICA, CALIF. (PROJECT # 5-0141) 1967. (VT # 004-528) 256 PAGES.

The purpose of the Systems Development Corporation study was to design and implement a man-machine system for vocational guidance.

Five major steps were planned for the design phase. These were to: survey vocational guidance operations in the field; conduct a detailed system analysis of the counseling procedures employed at a selected field site; design a man-machine system by the counselors at the field site and the Systems Development Corporation research team; formulate and develop computer programs in the SDC laboratory, and collect initial evaluation data.

The survey of current counselor practices was conducted at a sample of 12 schools having vocational offerings. The basic instrument used to collect data on counselor activities was a card sort version of the Q-technique.

Counselors were given a brief overview of the project. They were then interviewed by members of the SDC research team. Following the interview, a card sort test was administered. Counselors were instructed to look through the 48 cards and sort them into three piles, in terms of the effort they spent on the counseling activities: "most effort," "some effort" and "no effort." A total of 87 counselors, 56 from post-secondary vocational institutions and 31 employed in comprehensive or vocational high schools, took part in the program.

Analysis of the card sort data indicated that a marked difference existed between what counselors are doing and what they would like to do. The findings from the survey supported the investigators' belief that counselors are forced to spend too much time with information-processing chores, "that ideally, they would like to change their activities in the humanistic direction of working more with students, and that they would like to alter the system to better meet the needs of students."

When looking for conditions that would assure a humanistic orientation, the researchers asked the counselors the question: "Is it possible to design a computer program system that is humanistically oriented?" The answer, based on logical and philosophical analysis, rather than hard empirical data, was a qualified 'yes.' The study proposed two primary rules for humanism in man-machine systems: the system shall exist for the convenience of—and to fulfill the needs of—the system, and the system must be respectful of the humanity of those who are processed by the system.

Speaking about the dangers of nonhumanistic use of computer systems for guidance work, the report identifies three of the more serious problems: *privacy of personal data; misuse of prediction systems,* and *alienation of humans subjected to computer processing.*

When discussing the fact that an individual has a right to privacy of personal data, the report recommends four conditions that should be observed: *right of access; right of knowledge of source; right of review, refutation and appeal,* and *right of approval of dissemination.*

"If a dossier or information file is to be kept on any person, that person should be notified of its existence and be allowed access to it at will; the subject of a dossier has the right to know the source of any information included in his file, and that such sources be recorded with the information; the person who is the subject of a dossier should be permitted to review and refute any information in the dossier, and that his refutation be included as an integral part of the dossier; and the subject of a dossier has the right to approve (or veto) the transfer of information from his file to other agencies, persons or files."

Two principal dangers are reported in the use of computer systems to generate predictions about students. These have to do with statistical prediction and the direction of students to follow courses of action. "Counselors often use statistical predictions to *direct* students to follow courses of action that lead to the fulfillment of the predictions. In such cases, false prediction models can become valid with the passage of time. The automation of such procedures is not an improvement."

The report also includes sections describing the design of the computer software systems, an ethical and moral analysis of the design for a man-machine counseling system and plans for the implementation phase of the program. An appendix of more than 100 pages gives a detailed accounting of the processes taken in the development of this study.

The SDC exploratory study of information-processing procedures and computer-based technology in vocational counseling should be required reading for any person with interests in guidance or systems in education. It is a disturbing and provocative report that poses some fundamental ques-

tions about the entire guidance process. In the summary statement of the report, the concerns of the investigators speak for themselves:

"As the study progressed, it became increasingly apparent that the introduction of the computer into the counseling operation could accelerate the already present trends toward alienation and depersonalization. Despite our efforts to focus the design on the functions that both the men and the machine would play in the new system, we found the major ideas that were developed in the design meetings were for the computer. Very little attention was given to what the counselor's role would be in the new system.

"This observation paralleled past experiences in the design of military man-machine systems. The counseling system was becoming more like a machine than either a man, or a system with functions equitably distributed to men and machine.

"Our concern for the role of the human became more acute when we analyzed some of our data on counselor attitudes. These data suggested that actual experience working as a guidance counselor in schools tends to increase the positive value placed on data manipulation. This observation caused us to fear that once the computer is installed the counselors will use the extra time that would be gained to become more involved with data than with students."

Systems Under Development

7:2 "SYSTEMS UNDER DEVELOPMENT FOR VOCATIONAL GUIDANCE" BY ROBERT E. CAMPBELL. OHIO STATE UNIVERSITY, COLUMBUS, OHIO. (PROJECT # 7-0158) 1966. ERIC # ED 011 039. MF $0.50 HC $2.80. 70 PAGES.

The Ohio State Research exchange conference on systems under development for vocational education was reported to be an unique experiment in research stimulation and coordination. The purposes of the conference were:

—To review experiences, problems and insights developed by the individual participants through research and use of these new technologies.

—To review the relation of these technologies to vocational education, vocational counseling and guidance.

—To arrange for continued communication among participants as they apply systems analysis and technology in vocational guidance, research and practice.

A group of 21 researchers met informally for two days to share problems and ideas in the development of new technologies and innovations for vocational guidance. Before the conference, each investigator had been involved in a research project relating to vocational guidance. These projects were classified into three groups: those devoted to the study of careers; projects for the development and presentation of materials for aiding career decisions, but not involving the use of computers; and, those concerned with the development of materials for the enhancement of career decisions with the assistance of time-shared computers.

Conference participants agreed that exchange during the conference was excellent: there was a sincere willingness for mutual exploration of problems and reciprocal assistance. They concurred that continued communication through a second conference would allow investigators to pursue difficult questions more deeply.

It was reported that systems development for guidance related activities was the topic participants wished to explore further. Special interest was expressed in systems to assist the individual in self-evaluation, support counselor activities, especially routine tasks and data storage, and survey the world of work in its many facets and complexities.

Participants felt they had just scratched the surface in identifying and discussing problems and issues in guidance related systems research. However, they did raise a number of important questions.

Model of Counseling Functioning. "As the building of a system progresses, theoretical decisions have to be met as to how people make vocational choices, the role of diagnosis, amount of self-direction. In building a model, does the researcher operationally simulate observed counselor activities, or does he develop a new model?"

Data Base Construction. "What kinds of information will a system need in order to accomplish its goals? For example, in providing information about vocational training opportunities, how should these be grouped, how much detail should be included, and at what points within a system's sequence should the material be introduced?"

Battery of Measurement Instruments. "What kinds of information should be obtained through tests and which tests are most appropriate to measure the appropriate traits . . . can systems be designed with enough flexibility to handle the complexities of test interpretation not only for singular tests but tests in combination?"

Taxonomy of Occupations and Descriptions. "This is basically a problem of how to classify and present educational and occupational information, e.g., nature of training, requirements for admission, job opportunities . . . To provide this exploration, a complex well-organized occupational classification system is needed . . . There are also problems relating to storing local, geographic or national trends and the continual difficulty of maintaining up-to-date information."

Other concerns expressed by conference participants related to the monitoring of systems by counselors and teachers; the influence that variations in educational settings and student populations would have, and the fundamental differences that exist between a taxonomy of occupations and a comprehensive examination of the world of work.

TOPIC TWO: Career Development Theory and Practice

Career Planning Curriculum

7:3 "GUIDANCE CURRICULUM FOR INCREASED SELF-UNDERSTANDING AND MOTIVATION FOR CAREER PLANNING" BY VIVIAN S. SHERMAN. AMERICAN INSTITUTES FOR RESEARCH, PALO ALTO, CALIF. (PROJECT # 5-0047) 1966. ERIC # ED 010 625. MF $0.25 HC $0.72. 18 PAGES.

The question of what vocational guidance curriculum experiences are appropriate for junior high school students was a major concern of this American Institutes for Research study. How the problem was pursued, what conclusions about curriculum needs were reached and what was proposed and developed comprised the content of this report.

The report acknowledges the considerable individual variation among

young persons' self-understanding and motivation toward career exploration. This suggests that guidance programs have not always been able to bring about adequate self development, so crucial to orientation toward and establishment in a career.

This study views guidance as "a structuring of situations conducive to internal reorganization of knowledge, understandings, attitudes and values" that would further growth within the individual. "If youngsters were given opportunity to project their own thoughts, feelings or experiences against those of others, perhaps with support and acceptance of a group whose members have problems similar to their own, they might gain insight into self."

The first step in curriculum design was the development of questionnaire items on the basis of the following six areas which relate to students' personal values:

1. Students' Perspectives of Purposes of Education and Key Problems Facing Them.
2. Status of Career Planning: individual students' planning, areas of interest, degree of specificity and careers considered.
3. Developmental Perspective of Self: individual variation due to heredity, influence of people and events, early interests.
4. Self Concept: important dimensions of self, influencing environmental-situational factors, self perceptions.
5. Relationship of Personality Characteristics to Occupations: occupational stereotypes, job requirements and opportunities.
6. Planning for Career Exploration: locus of responsibility, clarification of values and goals, clarification of plans.

It was reported that the statement of educational objectives in behavioral terms should be a basic concern of educators. "Specifying desired behavioral changes can clarify both the nature of learning experiences and procedures for evaluating the extent to which these changes occur."

Since attitudes involving the total individual was the realm for investigation, Krathwohl's taxonomy of affective objectives was used as a guide. "This classification system has not yet been widely used and needs practical application in order to evaluate its usefulness as an educational tool. It seemed especially suited to development of the social-emotional dimension of self. It rests upon the process of internalization and includes major categories of receiving or attending, responding, valuing, organization, and characterization by a value or value complex."

The result of this project is a completed set of vocational guidance curriculum materials developed to bring about increased self-understanding and career motivation in junior high school students. These materials, contained in a separate Appendix, are sequentially organized through daily lesson plans. Each lesson includes a statement of Objectives, Means of Eliciting Response and Evaluative Devices.

The Objectives outline specific behavioral responses, possible student attitudinal responses and cognitive processes demanded. Under Means of Eliciting Response are methodological considerations by the teacher, specific practices, plans, materials, verbal directions and statements, and relationship to developmental tasks or growth needs of the learner. The Evaluative Devices for each day are in the form of questionnaires, verbalized responses, comment sheets or observations.

The study suggests that these materials be used flexibly, since they are adaptable to different age and grade levels. However, they seem to be based on an inherently flawed premise. Attitudinal changes and self development for career orientation are vital objectives that may be better realized through a program of loosely designed units rather than daily lesson plans which presume to weigh and credit students' immediate behavioral "changes." Conducted by a directive teacher, this linear curriculum imposes a method of self realization which is fundamentally conformist, non-organic and not actually determined by the variety and involvement of the students.

Life Career Game

7:4 "CAREER SIMULATION FOR SIXTH GRADE PUPILS" BY R. GARRY SHIRTS. DEPARTMENT OF EDUCATION, SAN DIEGO, CALIF. (PROJECT # 5-0123) 1966. ERIC # ED 010 076. MF $0.25 HC $1.64. 41 PAGES.

In considering the career development of younger pupils the principal investigator, R. Garry Shirts, speculated that the Life Career Game might prepare students to gain a better view of the career decisions they would face in the future. It might also help them to realize how their decisions would relate to their forthcoming school program. Consequently, Shirts and others developed and conducted a two-part pilot project which involved sixth grade pupils.

During the developmental part of the project, the Hopkins version of the Life Career Game was modified and simplified. The adaptation seemed more appropriate for sixth graders.

The second or research phase of the study was designed to determine if the modified game would change sixth grade pupils' attitudes toward education and the world of work and/or increase their knowledge about the career process. The Vocational Development Inventory (VDI), developed by John Crites of Iowa, and the Vocational Information Achievement Test (VIAT), developed as part of the project, were used as measures of attitudinal change and information acquisition.

The experimental design included a treatment group of three classes selected randomly from 56 sixth grade classes in the Cajon Valley Union and Santee School Districts of California, and a control group of three classes selected from the same population. The treatment group played the modified version of the Life Career Game for 15 hours over the period of a month. During the same period the control group was taught the regular sixth grade curriculum which did not involve a systematic study of career development.

The final field study was conducted in four classrooms. Two of the classes played the game twice, using different profiles, while the other two completed only one profile game. The two classes which were able to complete two profiles played once with the scoring procedures and once without them.

Information and ideas about the game during the field test were obtained through interviews of pupils and teachers and visits to classes. Teachers kept records of all questions asked by pupils. At the conclusion of the field test, teachers participated in a half-day critique. Following are some of the comments derived from the field testing:

The interviews with pupils were not very productive. However, some things were learned, including the following:

The slower pupils felt somewhat frustrated because they could not understand parts of the game. All pupils felt that the game was "a lot of fun" and that they were "learning a lot." Several suggestions on how to improve technical aspects of the game were made.

The teacher interviews revealed a strong liking for the game. Several suggestions were made for improving the game's technical quality. Observers were impressed that pupils were able to work by themselves with little control or direction. Some doubts were expressed about the readiness of sixth grade pupils for instruction on vocations and career decisions.

It was reported that the experimentation failed to obtain significant differences between the control and experimental groups on the pre-treatment and post-treatment scores. In the opinion of the investigator, the most likely explanation for the non-appearance of significant differences is attributable to the age and maturity of sixth grade pupils. "Although the need for and value of some sort of vocational education in the elementary school has been pointed out many times, it is possible that such experiences, to be meaningful to sixth grade pupils, cannot project as far into the future as the career game attempted to do."

TOPIC THREE: Counselor Training Programs and Institutes

Counselor Training Program

7:5 "A Training Program for Vocational Counselors" by Donald L. Frick. Colorado State University, Fort Collins, Colo. (Project # 5-0054) 1966. (VT # 004-203) 26 pages.

The Colorado State training program for vocational counselors was held for four weeks during the summer of 1965. Thirty secondary school counselors were selected on the basis of needed vocational counseling in the communities they represented. Major emphasis of the program centered around the philosophy and content of vocational education.

The threefold purpose of the training program was to develop in each trainee the ability to make practical application of vocational counseling techniques in his local community; inform trainees concerning the provisions and implications of federal legislation dealing with vocational training of youth and adults, and provide trainees with the information they need to give intelligent counseling for individuals at various levels of educational attainment.

A large portion of the program was devoted to counseling interview sessions in which the trainees gained experience counseling youths and adults faced with vocational selection and training problems. The instruction also included classes relating to federal legislation for vocational education, visits to vocational training programs in operation, and presentations by resource persons from business, labor, community groups, and industry.

The culminating activity was an individual project in which each trainee developed a community action plan to meet the needs of his home situation.

Second Training Program

7:10 "A Training Program for Vocational Counselors" by Donald L. Frick. Colorado State University, Fort Collins, Colo. (Project # 6-1592) 1967. (VT # 002-871) 45 pages.

The second Colorado State training program for vocational counselors, conducted during a five-week summer session in 1966, had a similar format to the program that was held during the previous summer.

Twenty-one school counselors from four states were selected on the basis of type of community, nature of present assignment and the need for training to perform this assignment.

During the first two weeks on the campus of the University, intensive formal presentations were made by staff and resource personnel on the philosophy and structure of vocational education and occupational information services. Formal instruction was supplemented with group discussions, demonstration interviews and further study of personality factors and counseling theory and practices.

The third and fourth weeks were held at the Emily Griffith Opportunity School in Denver, a public vocational-technical school for youths and adults of all ages. During this period most time was spent in counseling interviews with students of the school. This core experience was supplemented by field trips to business and industry.

The counselors reported that the training program had indeed been a significant experience. They stated that their background orientation to the world of work and aspects of vocational development had been inadequate and that, prior to their participation in the program, they had not been aware of the possibilities for vocational training.

The main value of the two Colorado State guidance training programs is that they have approached the problem of counselors' lack of knowledge about vocational education directly and practically. The testimony of participants reveals that guidance counselors who have had neither special preparation nor first hand experience in vocational counseling and teaching need basic instruction.

The field experience at Denver's Emily Griffith Opportunity School was an important phase of both programs. Trainees thus gained experience in testing, interviewing and counseling in life situations with young people and adults from a broad range of educational backgrounds and varied occupational aspirations. Another significant benefit of this experience was that counselors enrolled in the training programs had the opportunity to observe a quality vocational program in operation.

Counseling the Disadvantaged

7:6 "Counselor Institute and Follow-Up Workshops" by Howard E. Mitchell. University of Pennsylvania, Philadelphia, Pa. (Project # 5-0112) 1965. ERIC # ED 010 281. MF $0.50 HC $4.92. 123 pages.

This report deals with a program to improve the effectiveness of high school counselors in their vocational

guidance work with low-income youth. Citing the comments from business, industry, labor, government, and education, the report states that "our presently inadequate vocational guidance program for low-income youth has two major deficiencies.

"1. The school counselors, as a group, often lack essential knowledge about low-income, disadvantaged youth.

"2. The limited rapport between the business-industrial complex and the school vocational guidance program has partially resulted in a potential labor force with 'improper' attitudes about employment and its relationship to education. Furthermore, it is apparent that industrial leadership has limited knowledge concerning the role of the school counselor."

The counselor training program, conducted as part of the Human Resource Program (HRP), University of Pennsylvania, consisted of a three-week summer institute and a follow-up and program evaluation.

The objectives were to:

—Enhance counselors' understanding of the attitudes which culturally deprived youth have toward matters such as employment, education, family life, and the world beyond their experience.

—Increase counselors' knowledge about changing employment conditions and opportunities.

—Assist in the development of an improved liaison between school guidance counselors and industrial personnel.

A total of 50 guidance counselors, 44 of whom were from the Philadelphia public school system, participated in the summer session. The Institute was comprised of four main activities: lectures by visiting specialists and HRP staff members; panel discussions involving counselors, high school students, industry representatives, government personnel, and academicians; field trips to 14 Philadelphia area industries, and unit group discussions in which participants conversed about the lectures and field trips.

During the next school year, two workshop sessions were held (November and March). At the first workshop, attention was given to guidance programs for the culturally deprived in other urban communities. At the later session, new approaches for improving the competence of guidance personnel were discussed.

A newsletter, *Focus-On-Progress*, was published as part of the University of Pennsylvania project. Distributed five times during the year, it contained materials to acquaint counselors with new trends in guidance and counseling which would be of interest to urban school counselors serving low-income families. Although the actual editing and publishing of *Focus-On-Progress* was done by the HRP staff, counselors were actively engaged in collecting material and deciding what should be published.

Vocational Guidance Conference

7:7 "NEW DIRECTIONS IN VOCATIONAL GUIDANCE" BY PHYLLIS C. WILSON. QUEENS COLLEGE OF THE CITY UNIVERSITY OF NEW YORK, NEW YORK, N. Y. (PROJECT # 5-0184) 1965. ERIC # ED 003 099. MF $0.50 HC $4.68. 117 PAGES.

"In the present rapid advance of automation, urban concentration and general industrial change, counselor educators are severely challenged in providing school guidance trainees with pertinent courses in vocational counseling. Forward-looking courses must evolve from up-to-date knowledge and enlightened point of view on the part of the faculty." So urged Dr. Phyllis C. Wilson, coordinator, guidance and school counseling, Queens College, when introducing the purpose for the counselor educator's institute.

The report of this six-day institute contains the papers of six principal speakers and the summary address by Dr. Pierson, dean and director of student personnel, Queens College. The program outline and rosters of registrants, guests and other participants are also included.

In the first address, "Project People or Project Program," given by Hubert Houghton of the U.S. Office of Education, the importance of assisting each person in developing his maximum potential is stressed. "Counselors must assist youth to develop sound self-appraisal techniques that can be used throughout life—indirect and informal ones in the early school years, increasingly direct and comprehensive ones later."

Also contained in this address is an operational definition of vocational guidance, extracted from the March 1965 issue of the National Vocational Guidance Association Newsletter:

> Vocational guidance includes use of the teaching and counseling processes by which a professionally trained individual works with another person or group of persons, irrespective of age or employment setting, to: (a) broaden his knowledge and understanding of the place of work in the socio-economic pattern of societal and cultural development; (b) aid and assist him in obtaining factual data and in gaining realistic insight and knowledges, abilities, skills, attitudes, interests and characteristics, and the relationship of these to job election, satisfaction and performance, and, (c) help plan a future course of action.

Other presentations recorded in this report relate to employment trends, labor's view, problems of increased urbanization, effects of rapid change on personality, and the technological impact on society.

In his summary remarks, Dean Pierson states that counselor training should be interdisciplinary in character. "Greater emphasis must be placed upon the behavioral and social sciences and upon philosophy, theory and research. Techniques of counseling, testing and job analysis are not enough."

This report calls attention to the fact that occupational orientation is becoming a major topic among many persons involved in the preparation of school guidance counselors. The array of participants who are prominent in guidance education circles, as well as the group of distinguished guests and observers, is testimony to the growing stature of vocational guidance. Of particular significance in this and other related reports is the concept that all young people need instruction relating directly to the world of work.

Short Course for Counselors

7:8 "SHORT COURSE FOR COUNSELORS ON VOCATIONAL-TECHNICAL TRAINING AND OPPORTUNITIES" BY FRED D. HOLT. UNIVERSITY OF GEORGIA, ATHENS, GA. (PROJECT # 5-0875) 1965. ERIC # ED 003 108. MF $0.18 HC $3.88. 97 PAGES.

The three-week course on vocational and technical training and opportunities, conducted by the University of Georgia for 25 counselors, had four main objectives:

1. To develop an increased awareness of the diversity of the vocational and technical world of work.

2. To develop an understanding and recognition of the value and potential contribution of the vocational and technical schools.

3. To develop familiarity with the demands of both large and small industries and businesses in terms of desirable employee characteristics and become more cognizant of the situations in which new employees find themselves.

4. To develop a more comprehensive understanding of the interaction of the social and psychological forces which affect man and his work.

The basic instructional program involved large and small group discussions, lectures, field trips, and group meetings. Considerable attention was given to theoretical aspects of vocational development, with particular emphasis directed toward the sociological and psychological factors which affect man in the world of work.

The instructional staff of 4 was augmented by 10 consultants and 6 off-campus personnel. Participants were taught by specialists in sociology, psychology, social work, and counselor education. Representatives from the U. S. Office of Education, a labor union, the U. S. Department of Labor, and other organizations also took part in the program.

Approximately one-third of the total time was devoted to field trips to vocational-technical schools, large and small industries and businesses. Prior to all trips, preparations were made to help determine the intended value of the experience.

Seven findings, together with a tabulation of participants' comments, are contained in the summary section of this report. The findings were concerned with the role of the counselor, relationship between schools and business and industry, training facilities and opportunities available, automation, and prevalent attitudes toward blue collar work.

In addition, the report includes transcripts of reports compiled by groups of participants. These presentations deal mainly with theories of vocational development and dissemination of vocational-technical information. Each report contains a digest of the topics considered in group activity and a bibliography of related references.

Statements in the section on dissemination of occupational and education information advise that the student should leave high school with personal skills in the informal evaluation of ideas, concepts and information.

"He should possess an objective viewpoint which will allow him to survey collected data about himself, his attributes and his talents, and the ability to use this in all decision-making processes. This skill should serve him throughout his life and permit him to relate growing self knowledge to new and complex situations.

"In the occupational information course, the counseling process should be supplemented by *role playing, dramatizations, work experiences, situational workshops, personal interviews,* and the *collection of related data* from many available sources."

Counselor Education

7:9 "VOCATIONAL ASPECTS OF COUNSELOR EDUCATION" BY CARL MCDANIELS. THE GEORGE WASHINGTON UNIVERSITY, WASHINGTON, D.C. (PROJECT # 5-1208) 1965. ERIC # ED 010 016. MF $1.00 HC $8.00. 200 PAGES.

The George Washington University conference on the vocational aspects of counselor education brought 31 leading educators together for a three-day session. The report contains transcripts of five papers presented during the conference and the summations of three work group sessions.

The report states that the background papers represent the views of the writers on previously selected topics. There is a wealth of information contained in these papers—much food for thought and ample material for numerous studies which can be pursued at various educational levels.

Kenneth B. Hoyt, The University of Iowa, presented a paper, "Needed Counselor Competencies in Vocational Aspects of Counseling and Guidance," dealing with skills, knowledge and attitude which should apply to a *majority* of counselors in a *majority* of school settings.

When speaking of the importance of counselor attitude in vocational counseling of all students, Hoyt states that counselors need to recognize the necessity of devoting concentrated attention to students who choose to do something other than attend college. "Counselors cannot become effective change agents in our society if they accept general societal biases as they presently exist. The current popular notion that the 'best' thing a student could do would be to attend college is one that counselors should be actively seeking to change."

Another important point made by Hoyt is the idea that counselors must recognize the kinds of personal values necessary for those individuals who could profit from vocational guidance.

A status report of current training approaches, format materials and curriculum content by R. Wray Strowig and Philip A. Perrone of the University of Wisconsin is based on a nationwide questionnaire which had been sent to counselor educators, state guidance supervisors and city guidance directors. This survey revealed that there is considerable room for improvement in total programs and in their component details. Suggestions for better field experiences of guidance trainees and for a closer integration of learning, research and service, are among the recommendations.

Henry Borow of the University of Minnesota delivered a report on research in vocational development which alludes to the growing dissatisfaction with the classical trait-measurement approach to vocational guidance, and it traces the development of subsequent models. The discussion treats the concepts of psychological life stages, career pattern, vocational development tasks, self identification and occupational role models, and some of the benchmark studies from which the concepts were developed.

Borow states that no simple, clearly discernable relationship may be claimed to exist between research discovery in the field of vocational development and the need for curriculum revision and new training methods in counselor education. "Nonetheless, one can hardly dispute the claim that our expanding views of occupational behavior call for a searching reappraisal of counselor education programs with a view toward effecting substantial modification both in content and method."

The report concludes with nine specific recommendations, mainly dealing with the improvement of counselor education.

University of Oregon educator, John Loughary, in proposing new developments in vocational aspects of counselor education, stresses the importance of counselor behavior in the process of vocational development. While recognizing the potential value of computer-based systems for the processing of occupational information, Loughary places them in proper perspective in his concluding state-

ment. "It must be noted that the one most significant determining factor regarding new developments in vocational aspects of counselor education is the counselor educator."

The fifth paper, "Manpower Legislation of the Sixties: A Threat and a Promise," was prepared by Theodore J. Cote, director of professional services, Division of Vocational Education, New Jersey State Department of Education. In this, the major provisions of federal legislation relating to manpower employment and vocational education are discussed in the light of their implications to counselor education.

In his summarizing remarks, the author states that manpower legislation of the sixties proposes to improve the conditions of people through the combined efforts of counseling and training. "In so doing, it redirects the emphasis of the counseling program to the vocational aspects of guidance and the efforts of counselors to the so-called average and below-average or otherwise disadvantaged student."

The conference report contains a number of interesting topics and positions. Materials presented should have value for vocational counselors and their instructors. At a time when preoccupation in Systems approaches to teaching and counseling often seems to subordinate the importance of persons who do the job, it is encouraging to find a series of presentations and discussions which concentrate on strengthening the qualities and qualifications of counselors.

Rural Guidance Workers

7:11 "VOCATIONAL-EDUCATIONAL INFORMATION WORKSHOP FOR RURAL GUIDANCE WORKERS" BY K. NORMAN SEVERINSEN. WESTERN ILLINOIS UNIVERSITY, MACOMB, ILL. (PROJECT # 6-2208) 1967. (VT # 004-178) 103 PAGES.

The demand for farmers and farm workers has steadily decreased. Consequently, rural students need to know about other job opportunities and the environment of urban communities. However, as the report indicates, only a small proportion of school counselors are equipped to advise students in rural areas of urban employment possibilities.

The chief emphasis of this project was placed on giving counselors information about jobs and employment certificate requirements in Illinois, Iowa and Missouri. Specialists in these areas were brought to the campus, and counselors were encouraged to develop new approaches in the dissemination of information to their students. The main objectives of the project, then, were to attack the problem of inadequate knowledge of vocational and educational information among rural guidance workers and to assess the method to be used.

The project consisted of three phases: the *training* phase where counselors were exposed to concrete vocational information and encouraged to plan new activities; the *implementation* phase where counselors were encouraged in their plans through four "drive-in" conferences conducted throughout the school year, and the *evaluation* phase when participants and staff opinions were surveyed, and the effects of the new services on students were measured.

After the two-week workshop was publicized through mailings, 23 applicants were accepted in the program. Specialists, particularly those in trade and technical occupations, were selected as speakers. Participants in the workshop, extending from Aug. 15 to 26, 1966, were expected to evaluate each session. They were also asked to assist in the development of a vocational information test and a career questionnaire for students.

These 50-minute Vocational Knowledge Tests were objective multiple choice instruments, having two forms for pre- and post--testing. A career questionnaire, designed for machine scoring, was developed to evaluate vocational attitudes of the students. The tests were administered to students at the schools of the participants and at two high schools serving as controls.

The subjective evaluation by the counselors revealed that the goals of the project were accomplished, since the counselors were generally favorable to the workshop.

The Vocational Knowledge Test revealed that students, especially in grades 11 and 12, benefited significantly from increased informational services. However, evidence showed no measured effect of these services on students' attitudes. Changes in attitude seemed to be due to variables other than increased counselor efforts.

Since the workshop stimulated counselors and increased their knowledge, the report stated that such workshops, scheduled just prior to the school year, can be quite influential in stepping up guidance activities in rural schools. The study recommends similar inservice projects for counselors and the use of consultants in these programs.

The study further recommends that tests of vocational knowledge should be refined to determine the value of such testing in research and guidance. Since the measurement of vocational attitudes has not been actively explored, the report suggests that fuure inservice workshops might be devoted to this problem.

Health Career Institute

7:12 "GUIDANCE COUNSELOR INSTITUTE FOR HEALTH CAREERS" BY PHILIP W. MORGAN. UNITED HOSPITAL FUND OF NEW YORK, NEW YORK, N. Y. (PROJECT # 6-2209) 1966. ERIC # ED 012 342. MF $1.00 HC $8.92. 223 PAGES.

The perennial manpower shortage in the health field has been compounded in recent years by the proliferation of jobs arising from new treatment techniques and fields of knowledge, and by increasing public demands for expanded health services.

Recognizing that high school guidance counselors are in a strategic position to stimulate interest and circulate information on health careers, the Advisory Committee of the United Hospital Fund of New York initiated a 12-day counselor institute on career opportunities that are found in the health field.

The Institute gave attention to the full range of health occupations, including professional and ancillary categories. The program was comprised of a series of major addresses, visits to a variety of health facilities, classroom and small group discussions, and the distribution of literature. Altogether, 48 high school and employment service counselors from New York City participated.

In an attempt to gain prior insight into the knowledge of health careers possessed by city vocational guidance counselors, a questionnaire was sent to 300 secondary school counselors. Responses showed the greatest deficiency of materials and knowledge to be in the area of ancillary or paramedic careers. It was further noted that none of the respondents felt he had sufficient information about any of the 38 careers listed. As a consequence, the

Institute focused attention on the full range of health occupations.

The agenda included 19 major addresses, given mainly by administrative officers and professors from hospitals and professional schools and organizations. Two full days were spent visiting New York Hospital, where staff members from different departments spoke on various hospital careers.

Edward Linzer, executive director, Mental Health Center, discussed the scope of new developments in the mental health field and the variety of emerging career opportunities associated with them. He explained that the seven major categories of persons who work in the mental health field function as psychiatrists, psychiatric social workers, clinical psychologists, occupational therapists, recreational specialists, psychiatric nurses, and psychiatric aides.

A visit to the Columbia University School of Dental and Oral Surgery included a tour of the facilities and two film showings, "The Challenge of Dentistry" and "Opportunities in Dentistry." Visitors were given papers describing career opportunities in dental hygiene, dentistry and related fields.

Duties of the trained dental assistant were described in a presentation by Dr. George O'Grady, assistant professor of dentistry. He stated that the formal training of dental assistants is a recent development. "In the past, a dental assistant received on-the-job training from her employer. This system was known as the blind leading the blind. He didn't know what to teach her, and she didn't know what to do."

Participants in the health careers program also visited the Institute of Physical Medicine and Rehabilitation in New York City and Squibb Pharmaceutical Laboratories, New Brunswick, N. J.

The Guidance Counselor Institute for Health Careers revealed to the United Hospital Fund, through its various phases of preliminary discussions and questionnaires, that there are severe shortcomings in the guidance services as they currently exist. "There is a critical need for programs designed to give guidance counselors more information on health careers. It is also obvious that there is a need for better occupational material to be presented to counselors in a variety of ways."

Counselor Training Program

7:13 "TRAINING INSTITUTE FOR VOCATIONAL GUIDANCE AND COUNSELING PERSONNEL" BY FRANK E. WELLMAN. UNIVERSITY OF MISSOURI, COLUMBIA, Mo. (PROJECT # 6-2212) 1966. ERIC # ED 011 614. MF $0.18 HC $4.28. 107 PAGES.

This four-week training institute for vocational guidance personnel, conducted by the University of Missouri, provided instruction for 40 trainees from 12 North Central states. The general purpose of the project was to develop understandings, knowledge and professional materials with respect to:

1. Economic factors influencing the need for vocational and technical education, and the vocational decision-making process among youth and adults.
2. Social and cultural factors related to the vocational counseling of youth and adults.
3. Psychological factors related to the career development and vocational choices of noncollege-bound students.
4. Administrative considerations in the evaluation of economic, social, cultural, and psychological factors in program organization, as well as in the coordination of vocational counseling activities of the various local, state and federal agencies.

The Institute provided 30 hours of scheduled activities each week. Half of the time was devoted to lectures and discussion of vocational counseling in the areas of economics, sociology, psychology, and administration. The remaining time was spent in small group sessions where papers were prepared on assigned topics.

The basic instructional staff was comprised of faculty from the University of Missouri Departments of Economics, Education and Sociology. Representatives of the U. S. Office of Education, the U. S. Department of Labor, local school systems, and other college personnel served as special consultants.

The report contains outlines of the various instructional phases of the program—economic, social, psychological and administrative dimensions of vocational counseling. The content and structure of the Institute was said to be unique as an approach to training vocational guidance and counseling personnel. "The inclusions of multidisciplinary content within one concentrated training period has seldom been attempted, and the indirect approach to the improvement of the work of vocational counselors through supervisory training has not been exploited in the field of guidance and counseling."

Trainees and staff favorably evaluated this new approach. It was reported that the major strengths were the high quality of trainees, appropriateness of curriculum content, program format, and the stature of instructional staff members.

TOPIC FOUR: Regional Resources

Job Information Center

7:14 "REGIONAL CENTER FOR COLLECTION, SYNTHESIS AND DISSEMINATION OF CAREER INFORMATION FOR USE BY SCHOOLS OF SAN DIEGO COUNTY" BY EDWIN A. WHITFIELD AND RICHARD HOOVER. DEPARTMENT OF EDUCATION, SAN DIEGO, CALIF. (PROJECT # 6-1620) 1967. (VT # 004-123) 153 PAGES.

The developmental phase of the San Diego County Career Information Center, conducted from July 1, 1966, through June 30, 1967, is the substance of this report. During this period, career information was produced for all occupations requiring less than a baccalaureate degree for which training within the County was available. This resulted in approximately 200 eight-page descriptions. This material was distributed to 12 participating schools, and an evaluation of the materials and dissemination procedures was obtained from students, counselors and school officials.

The dissemination vehicle used was a system based on the microfilm aperture card. A two-card format was chosen for each occupation. The first card contained four pages of general information; the second card, local information. Each school was supplied a microfilm reader and a reader-printer which enabled students to project microfilm copy on a screen and, if desired, print out hard copy. In addition, parameters pertinent to the occupation, such as aptitudes, length of train-

ing and restrictions, were key-punched into each aperture card.

The main body of information for each occupation was prepared in a standardized format suitable for conversion into microfilm form. Each brief was referred to as a VIEW script (VIEW standing for Vocational Information for Education and Work). Each pair of briefs for an occupation was put on microfilm.

The evaluation of the VIEW materials and their use in the pilot schools involved several phases, each utilizing a different evaluation instrument. The reactions of participating students, pilot school counselors and summer counselors were obtained through a questionnaire and group meetings. Each school counselor in San Diego County was also asked to evaluate the document known as "VIEWPOINT, Entry Employment in San Diego."

Students who had used VIEW materials, as well as other types of occupational information, reported that VIEW materials were more helpful, understandable, realistic, interesting, complete, and up-to-date. A later evaluation by high school students generally

supported the reactions obtained in the first instance.

The 21 counselors queried indicated that, in their estimation, student reaction to VIEW scripts had been either "favorable" or "very favorable." It was further reported that there was increased use of other vocational materials and that there appeared to be more interest in vocational guidance by the total school staff.

Among the specific needs revealed through this study is one for more counseling and guidance for students who do not plan to attend a four-year college. "This was emphasized by the large percentage of students who received jobs unrelated to their training, who changed majors after once entering the junior college, who felt they were not using their ability to their best advantage on the job they held, or who changed jobs within one year after their junior college training."

It was generally concluded that occupational information disseminated via aperture cards proved to be valuable and useful to both students and counselors. With a concentrated effort on the part of guidance personnel working with students, this system can be utilized to provide an even more effective vocational service in the schools.

TOPIC FIVE: Experiments and Developmental Studies

Tests for Creativity

7:15 "A STUDY OF THE CONCURRENT VALIDITY OF THE MINNESOTA TESTS OF CREATIVE THINKING, ABBR. FORM VII, FOR EIGHTH GRADE INDUSTRIAL ARTS STUDENTS" BY LESTER G. DUENK. UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MINN. (PROJECT # 5-0113) 1966. (VT # 002-740) 230 PAGES.

The primary concern of this study was to establish the concurrent validity of the Minnesota Tests of Creative Thinking, Abbr. Form VII, by determining the relationships between its scores and criteria measures based upon industrial arts oriented, creative performance tests developed by the investigator. A secondary objective was to determine the relationships between measures of creative abilities based upon accumulated teacher ratings of observed student behaviors as they occurred in typical industrial arts classes and those acquired through the use of the investigator's instruments.

Other purposes of the study were to estimate the relationships among meaures of creative abilities in industrial arts as determined by: teacher ratings of typical performance in industrial arts; the investigator's specialized performance test approach, and the Minnesota Tests of Creative Thinking, Abbr. Form VII.

The population sample included 129 eighth grade boys who were receiving industrial arts instruction in two suburban junior high schools at St. Paul, Minn.

A specialized performance test of creativity abilities, developed by Jerome Moss, had previously been used in an investigation in which typical classroom performance measures were employed as the criteria of creativity. This test was constructed by the investigator and administered to the sample. The Minnesota Tests of Creative Thinking were also administered at approximately the same time. Descriptive data gathered from cumulative records included intelligence scores, average grades in seventh grade English, social studies, mathematics, industrial arts, and art, and achievement test scores in reading, social studies, writing, mathematics, and science. Personality rating scales were also obtained.

Pearson product-moment correlational techniques were used to estimate the concurrent validity of the Minnesota Tests as well as the relationships between measures of creative abilities, I.Q., achievement, and personality.

The findings of this study revealed that few significant relationships were established between MTCT and industrial arts test scores. It was speculated that "creative thinking" involving specific industrial arts related subject matter may be tapping different or additional characteristics than the "creative thinking" involved in responding to the non-specialized content of paper and pencil tests.

The study states that industrial educators may be wise to use the word "creativity" with caution, for without proper qualification, reference to creative production becomes quite ambiguous. "The artistic student who can express creative talent in an article of esthetic beauty may not necessarily be capable of planning a creative approach to a machine production problem or to a situation which calls for unusual interpersonal relationships."

Motivating Students

7:16 "MOTIVES INFLUENCING NEEDS TO ACHIEVE IN VOCATIONAL EDUCATION" BY FRANCES B. HELTZEL. CORNELL UNIVERSITY, ITHACA, N. Y. (PROJECT # 5-0157) 1966. ERIC # ED 010 295. MF $0.20 HC $1.88. 47 PAGES.

Forces affecting the motivation of high school students are numerous, varied, complex, and extremely difficult to measure. Continued study into this all-important aspect of learning should lead to improvements in teaching effectiveness. And for guidance counselors, constantly assisting students to make educational choices, a better understanding of relationships between motivation and school achievement is desirable.

The Cornell University study of motives influencing needs to achieve in vocational education, although failing to obtain conclusive findings, should serve as an important step in the accumulation of knowledge about this subject.

Objectives were: to construct an instrument to elicit basic motives as categorized by Maslow and measure their strength, using Krathwohl's taxonomy of affect levels; and, to measure experimentally induced motivation in terms of affect, level of aspiration and effort criteria.

Two hypotheses were tested. A task perceived as highly relevant for one's vocational preference and for which one correctly perceives oneself as competent, will elicit a higher level of affect.

The relationship of affect and its antecedents—career-relevance of task, self concept and observed ability—will vary with different subgroups of sex, SES and grade level when grade point average is controlled.

Parallel instruments of 42 items were constructed to measure motives for striving, based on Maslow's hierarchy of needs for security, belongingness, esteem, and self-actualization. The strength of each motive was measured according to Krathwohl's taxonomic levels of responding, valuing, organization of values, and characterization by a value. Subsequent to pretesting procedures, a 20-item test was devised.

Experimentation was designed to provide a validation of the instrument by creating different motivation levels through the manipulation of specific variables: performance score, self concept and task relevance. A total of 214

tenth and twelfth graders in Elmira, N.Y., were tested. An item analysis based on low- and high-scoring students showed that items written at seven of the nine Krathwohl levels discriminated satisfactorily.

It was reported that only pretest results can be given as the research had to be terminated at that stage. "The final pretest results indicated that items written to measure different levels of affect did discriminate satisfactorily; they did not fall into the predicted difficulty levels hypothesized by Krathwohl's hierarchy. However, ... efforts to continue the research beyond the pretest phase proved abortive.

"Further attempts to validate the affect instrument through concurrent administration of Finger's Personal Values Inventory, yielding a persistent score, and French's Test of Insight, measuring need-achievement, likewise proved futile."

Research and Practice Guidelines

7:17 "GUIDANCE IN VOCATIONAL EDUCATION: GUIDELINES FOR RESEARCH AND PRACTICE" BY ROBERT E. CAMPBELL. OHIO STATE UNIVERSITY, COLUMBUS, OHIO. (PROJECT # 5-0212) 1966. ERIC # ED 011 922. MF $0.75 HC $7.60. 190 PAGES.

The Ohio State Center for Research and Leadership Development in Vocational and Technical Education, responding to the growing need for effective programs of vocational guidance, invited nationally recognized leaders from several disciplines throughout the country to develop guidelines for initiating and improving such programs.

The stated major purpose of the three-day seminar was to provide an opportunity for leaders in vocational education, guidance and related disciplines to pool their resources and thinking in formulating plans for initiating and improving programs of research and practice. Among the overall goals were those to stimulate interdisciplinary research and interest, evaluate the status of vocational guidance and identify specific problem areas, and reduce the time lag between research, theory and practice.

The report contains transcripts of the major presentations made at the seminar, together with the comments of reaction speakers. Also included is a directory of 37 consultants and 190 participants, and the schedule of group discussions.

In the summary section are listed 7 guidelines for guidance practice and 14 guidelines for areas of needed research on guidance in vocational education.

Guidelines for Practice

- Guidance is a process of helping the individual to examine his life experiences to the end that he may know and choose himself and his actions more clearly and purposefully.
- Both teachers and counselors have roles to play in guidance, but the counselor should make a unique contribution to the vocational program.
- The educational-vocational framework provides the most logical rationale for pursuing discovery of self.
- The criterion to be employed in defining the role and functions of the counselor in vocational education is psychological consistency.
- There is a job for both vocational educator and counselor in providing experiences which enable the student to identify suitable social work-roles.
- The myth of the individual with a single occupational value can no longer be supported as a basis for vocational guidance practice.
- Guidance in vocational education cannot escape its responsibility to develop the abilities and talents of *all* individuals.

Identifying Areas of Needed Research on Guidance in Vocational Education

- Since many of the attributes learned in early childhood, such as concepts of mastery, coping behavior and achievement motivation, bear upon later vocational planning and adjustment, more research is needed on younger children so that we may discover the conditions under which these traits are learned.
- The values that people hold about occupations are culturally ac-

quired. However, we do not yet understand very much about the psychological proce.. .3 by which this acquisition occurs. Research needs to be designed that will reveal how children, for example, develop their occupational valuing system as well as their generalized vocational motives.

• As new fields emerge and the nature of the industrial order becomes increasingly complex, it becomes more important that those responsible for vocational curriculum construction, training and counseling have access to improved systems for the classification of occupations.

• A larger percentage of secondary school and post-secondary school students hold part-time jobs than at any time previously. Experience with such work is logically expected to assist youths with problems of realistic vocational planning, but we suspect that this expectation is not generally borne out by the facts. Research is needed to compare the vocational maturity status of youth who have had outside work experience with those who lack such experience.

• While research has emphasized chiefly the influence of trained counselors upon the vocational plans of students, investigations are needed which will study the impact of other adults and authority figures on the vocational thinking of youth.

• Curriculum research is needed that will begin to furnish some answers to the question of what kinds of formal course experiences are most likely to lead to the specified goals or behavioral outcomes of vocational education. Despite all the discussion about needed curricular changes, very few studies have yet been designed with this sort of cause-effect relationship in mind.

• The average working life expectancy for American high school girls today is approximately 25 years. Yet many of these young women have seriously underdeveloped work motivation. There is an urgent need for research on cultural variables, both within and outside the school setting, that may be utilized to accelerate vocational readiness in girls.

• The quality of commitment that a vocational education student may have to vocational planning, and the attitude that he shelters toward work in general and his vocational curriculum in particular, will depend upon a variety of life history and background

factors that are frequently unclear to his teachers and which, indeed, may not yet be well understood by occupational research workers.

Studies are needed, therefore, which investigate the comparative effects of selective life experiences, such as history of parental unemployment, parents' occupation, values held by the peer group, etc., upon such indicators of vocational development as level of occupational aspiration, accuracy of occupational knowledge, and strength of career planning motivation.

• We continue to assume in normal economic life that the intellectual traits of the individual, such as his aptitudes and trained skills, are the only important personal variables that contribute to occupational success or failure. However, research has long shown that personality and character traits are at least as important in occupational success and advancement as the cognitive traits.

• A good deal of pressure exists to encourage culturally disadvantaged youths to enter vocational education programs inasmuch as they often seem not to prosper in purely academic or college preparatory programs. Yet such disadvantaged youths have often been exposed to background variables which are serious deterrents to success in any type of formal training program, including a vocational education program. Through research we need to identify those factors related to restricted socioeconomic status which limit the youth's promise as a trainee.

• New types of post-secondary but sub-collegiate occupational specialties have recently been emerging, such as computer programmer, computer technician, social worker aide, and psychiatric aide, on which very little empirical research has yet been done and about which little is known. If vocational training programs in such new fields are to avoid some of the pitfalls experienced in older fields of vocational training, systematic and intensive research will need to be designed to identify important worker trait requirements so that curriculum development and vocational counseling can proceed on a sounder and better informed basis.

• Guidance within vocational education has not prospered in the past for many reasons, notably for the reason that relations and communication between vocational educators and counselors have hardly been ideal. Research is now needed that will focus on a study of interpersonal relations and attitudes between the members of these two fields. What, for example, is the vocational educator's concept of the counselor? Who is he? What does he do? Conversely, what is the counselor's stereotyped impression of the vocational educator?

• It is unfortunately true that the typical training of the counselor does not equip him to work effectively in the setting of the vocational, or technical school. In fact, his training may often bias him unwittingly against the values of vocational education programs. Research can and should be done on the relation of the counselor's socioeconomic background and professional training to his occupational attitudes and values.

• Since some students who enter vocational education curricula do not readily think in terms of long-range goals, the strategy of instruction should include the scheduling of frequent, short-term recognitions and rewards. In this connection the current work in reinforcement counseling, growing out of behavior modification theory, seems most promising.

Important Information Source

This report on the national seminar on guidance in vocational education is an important source of information that should have value to all vocational guidance workers. The report contains a wealth of material, much of it prepared by nationally known authorities in various academic disciplines and governmental offices. As it would be difficult to quickly absorb all of the contents, permanent acquisition of the document is recommended.

The reader is sure to find some interesting and provocative commentaries and pronouncements among the presentations and discussion reports. The wide divergence of background among seminar participants and the many points of view expressed should help to precipitate feelings of identification or reaction among readers, which may in turn provoke further thought and action.

Social Readiness for Employment

7:18 "DEVELOPMENT OF A JUNIOR HIGH SCHOOL INSTRUMENT FOR APPRAISING SOCIAL READINESS FOR EMPLOYMENT" BY VIVIAN E. TODD AND ZELPHA BATES. CALIFORNIA STATE COLLEGE AT LONG BEACH, LONG BEACH, CALIF. (PROJECT # 5-8462) 1967. (VT # 003-235) 84 PAGES.

What are the attitudes or beliefs that stand in the way of job getting and job holding? Is it possible to identify some of those that are critical? Can an instrument be devised to appraise the presence or absence of such beliefs? These are the basic questions asked in this developmental study.

The two-fold concerns of this project were: (a) an exploration of the critical factors in the development of an appraisal device for schools serving disadvantaged communities, and (b) the development of an instrument for appraising or teaching groups of students regarding social readiness for employment.

The general design of the project was developed in accordance with the following methodological organization:

—Identify areas of social readiness for employment through interviews with selected personnel managers and on the basis of related literature.

—Work with junior high school personnel, identifying the level of indices appropriate for junior high students.

—Develop an appraisal form suitable for evaluating readiness for employment.

—Devise appropriate items for two forms of the instrument and arrange them using random numbers.

—Administer the instruments to groups of junior high school girls in each of two schools.

—Conduct statistical analyses and, through interviews, study validity of responses to the instrument.

On the basis of interviews of selected people in business, industry and schools and the *Handbook for Young Workers* published by the U. S. Department of Labor, a two-part instrument was devised ("Where Is It Done?" and "What To Do?"). The project reported that student responses obtained in junior high schools serving disadvantaged communities showed the items were appropriate in differentiating among such student groups. It was concluded that the instrument developed is useful for describing the current status of a group of junior high school students in its social readiness for employment.

"Thus, it is an aid to a teacher taking students from where they are to a greater understanding of the social aspects of employment."

Junior College Study

7:19 "SELECTED CHARACTERISTICS, SOCIOECONOMIC STATUS AND LEVELS OF ATTAINMENT OF STUDENTS IN PUBLIC JUNIOR COLLEGE OCCUPATION-CENTERED EDUCATION" BY JOHN W. HAKANSON. UNIVERSITY OF CALIFORNIA, BERKELEY, CALIF. (PROJECT # 6-8420) 1967. (VT # 003-958) 47 PAGES.

"The public junior college has moved far indeed from the original concept of an institution offering the first two years of undergraduate study. . . . Where fully developed it is no longer a junior or 'beginning' college but an institution responsive to many needs of the people in its locale, truly a community college." With these introductory statements, the report identifies the need for studying the backgrounds, qualities and qualifications of people taking occupation-level courses.

Three purposes are given for the University of California study:

1. To determine whether the relationship between low socioeconomic status and low educational attainment holds when the criterion of achievement is completion of a two-year occupation-centered curriculum in a public college.

2. To examine the extent of shifting of occupational and educational goals and to compare students who enroll directly from high school in two year, occupation-centered programs with those who first enroll in college credit transfer programs and then later change their programs.

3. To describe students in two-year occupation-centered curricula in public junior colleges in terms of selected variables: socioeconomic status, scholastic aptitude, course of study pursued in high school, and sex.

Institutional Settings

Six public junior colleges were selected for the investigation. Four of these were located in Midwestern states of Missouri, Kansas, Illinois, and Michigan. The other two were in California.

Data from the High School Graduate Study, previously conducted by Leland Medsker and James Trent of the University of California, were used in this research. The Medsker and Trent study was designed to survey the general intellectual, psychological and social characteristics of some 10,000, 1959 high school graduates, and to examine factors influencing attendance and persistence in college.

Data concerning personal and social characteristics and educational background were collected by questionnaire in 1959 while these students were still in high school. Information obtained for the follow-up of those in the original survey group consisted of records of performance and retention in post-secondary education as well as employment status.

Treatment of Data

Nine specific questions were framed to satisfy the first objective of this study, which is to describe students in terms of certain characteristics and attributes. These questions are:

—What proportion of these students originate from each of several socioeconomic levels?

—What is the mean and range of their scholastic aptitude scores?

—What proportion of these students falls into each of several levels of scholastic aptitude?

—What is the distribution of these students among different courses of study followed in high school?

—How do men and women differ according to these variables?

—How do students in each of a number of major categories of occupational centered curricula differ in terms of socioeconomic status, scholastic aptitude, course of study in high school, and sex?

—To what extent do students in two-year occupation-centered curricula in public junior colleges differ from graduating high school seniors in terms of these variables?

—How do those who complete a two-year occupation-centered curriculum differ from those who start but do not finish, in terms of socioeconomic status, scholastic aptitude, course of study followed in high school and sex?

—How do those who enter a two-year occupation-centered curriculum directly from high school as a first choice differ from those who enter as a second choice, in terms of the above variables?

The basic method of analysis was to make a series of comparisons of groups of students, each one in terms of a number of selected variables, testing each comparison for significance. Further analysis consisted of percentage conparisons of subgroups in an attempt to discover different relationships between variables. Where the data permitted, cross-classification of three variables was also carried out.

The results of the investigation are treated in considerable detail. From a discussion of the extent of basic shifts in program, a conclusion drawn is that the study points to potentially serious trouble for the junior college movement.

"First, it is apparent that the junior college may well fail to meet society's need for really large numbers of technicians unless it can: (a) entice more high school graduates directly into occupation-centered curricula, or (b) succeed in getting much larger proportions of potential academic program dropouts to switch to terminal programs rather than withdraw.

"Second, unless public junior college enrollees can be brought to a better understanding of their own responsibility for the degree to which they commit themselves to success in their chosen courses of study, they and their parents may hold the college rather than themselves responsible for failure."

"PLAIN TALK"

RESEARCH AND DEVELOPMENT PROJECTS reported in this issue focus attention on three general categories: computer-assisted systems of information gathering and counseling; career development theory and practice, and college and university institutes and instructional programs designed to prepare or upgrade counselors in the vocational aspects of guidance. Other important themes treated are the national seminar for developing guidelines, and the University of California investigation of the status, characteristics and levels of attainment of students taking occupational-level courses in junior colleges.

The systems approach to guidance was the main theme of two projects headed by Campbell and Cogswell. All of the other studies had sections dealing with one or more aspects of computer-assisted guidance work: job information retrieval, analysis of personal and educational qualities in students, and computerized teaching and man-machine counseling.

There was a consensus that school guidance programs would be strengthened through the judicious use of data processing methods for the collection and organization of job and student information, and for the reduction of clerical activities by counselors. However, some deep concerns were expressed about the projected role of the computer in the total guidance function. It was feared that heavy reliance on man-machine systems would cause some counselors to lose their ability to relate with students.

Questions were raised about the value of using the computer to match people to jobs, which has been suggested in some circles. Both the occupational information retrieved and the taxonomy of personal traits and abilities that could be attributed toward predicting job success would always be limited in scope and depth. They would be far too general and incomplete for making individual prescriptions.

Dangers to Students

In Cogswell's investigation of "Information-Processing Procedures and Computer-Based Technology in Vocational Education," there are a series of statements which warn the reader about the "nonhumanistic" effects the computer may have on guidance. Commenting that man-machine systems are intended to provide more counselor time with students, the investigators state that they may lead only to more counselor time with data. Three specific dangers to students who are counseled by computer are cited in this study: possible invasion of privacy; the misuse of predictive systems, and the alienation of people.

Career development, or vocational development as it is sometimes called, is rapidly becoming an instrument for change in guidance and curriculum. After a period in which career development was mainly a theoretical concept, it is

now becoming an integral part of the curriculum plan for many schools and districts.

The implications of career development theory and practice to vocational education are tremendous. Not only will this student-centered approach to guidance and education help insure that many more young people develop realistic concepts and goals, but it should also help to eliminate the gulf that has existed between the so-called fields of preparatory and terminal education.

The term *career development* has been defined as a series of experiences, decisions and interactions which, taken cumulatively, result in the formulation of a self-concept and provide the means by which that self-concept can be implemented through vocation and avocation. Common elements associated with career development are: self and community awareness; experience in simulated and real situations; the capacity for planning and decision making, and willingness to take purposeful action.

Common Elements

Although a good share of career development theory has emanated from the behavioral sciences, it is interesting to note that many of the principles and goals are closely related to those of vocational education. These include the development of self-concept, experience in real life situations, realistic planning and decision-making, the individualization of instruction, all intrinsic elements of any good program of vocational education. There may be some semantic differences, but the overall purpose is virtually identical.

If the vocational or practical arts teacher has missed the opportunity to become acquainted with the theoretical rationale for career development, or with some of the plans for its implementation that are now taking shape, this is the time to correct the deficiency. As the person best equipped through background and experience to effectively apply the principles of career development into the shop and classroom, the teacher of practical subjects should be actively involved in the whole process, and not be a sideline observer.

Many college and university programs to prepare guidance counselors are currently in a process of reconstruction. There is increased emphasis upon the behavioral studies and a corresponding reduction in the number of courses on counseling methods and techniques. The trend is toward the provision for a more extensive theoretical base, capped off by an extended period of supervised internship.

Another new development in the preparation of guidance counselors, one that has received considerable attention in the studies reported here, is the movement toward a multidisciplinary team approach to guidance. The theory supporting this move is that guidance work handled exclusively by former teachers tends to inhibit and stereotype the process. Innovative practices, it is contended, may more likely be developed by group interaction of persons with diverse experiences and points of view. The fields of sociology, psychology, government service, and commercial personnel work are frequently mentioned as additional sources for the pupil personnel team.

Missing Ingredient

When the U.S. Office of Education sponsored studies are viewed in retrospect, it is apparent that a most important phase of vocational guidance has not been treated. This is job placement.

The placement of prepared and qualified persons in productive employment is a rewarding climax to the whole process of vocational orientation and education. It is so pivotal to the ultimate career success of individuals that the position of the placement counselor should be thoroughly studied. It would be good to know, for example, what the placement counselor needs to know about such things as the job market, labor laws, employment practices, and job-seeking techniques.

The process of placement also needs attention. What are the most effective techniques for establishing and maintaining an effective job placement and follow-up program to best help students make the great transition from school to work?

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RESEARCH VISIBILITY

SYNTHESIS / APPLICATION / DISSEMINATION

•"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633: "Synthesis and Application of Research Findings in Vocational Education").

Vocational Education Is Service . . .

THE NATIONAL SHORTAGE of competent vocational education leaders is a serious problem, certainly one that deserves to receive more attention. Although the shortage is well known and frequently discussed, a genuine commitment to correct the situation has been pitifully weak. Only a few agencies have initiated the kind of extensive leadership training program that is commensurate with the requirements of the times. Except for some workshops and seminars, the U. S. Office of Education has done little.

Probably the most prestigious program of leadership training so far has been the three-year effort in New York State. More than 40 administrative interns have received a combination of graduate school instruction, a series of visits to outstanding vocational programs throughout the country and a period of internship. More details of this outstanding program are given in the "Plain Talk" section.

The 1962 report of the Panel of Consultants, *Education for a Changing World of Work*, gives a great deal of attention to leadership and administration. Stressing the importance of leadership to the educational process, the report has four recommendations:

1. An adequate staff for the administration and supervision of vocational education be maintained at the local, State and Federal levels of operation.

2. The Federal Government cooperate with State governments to develop programs for the selection and training of administrative and supervisory staff.

3. The general school administrator —the superintendent and secondary school principal—be involved in train-

Leadership and Administration

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Dr. Gordon F. Law is editor of "Research Visibility." The organization for this department of the JOURNAL, the pattern for reporting and the writing represent his work.

ing for leadership responsibility for vocational education.

4. Positions of leadership in vocational education at the local, state and federal levels provide responsibility, authority and salary sufficient to recruit and hold the best qualified persons in these positions.

The recently released publication, *The Bridge Between Man and His Work*, which contains the highlights and recommendations from the National Advisory Council on Vocational Education, 1968, reinforces the importance of leadership at every level.

On March 5, 1968, Chairman Martin Essex testified to the House Subcommittee on Vocational Education, that the opportunity for leadership in the Federal Division of Vocational Education was starved for funds and authority. Another Council member, Rupert Evans, dean of Education, University of Illinois, stated that there have been only three periods when numbers of vocational leaders were trained: (1) immediately following the passage of the Smith-Hughes Act; (2) during the war emergency in the 1940s; and (3) after passage of P.L. 88-210 in 1963. Evans reported that much more effort is needed, especially to prepare a new breed of young and aggressive leaders, able to face contemporary problems.

The Bridge Between Man and His Work has been prepared by the U. S. Department of Health, Education and Welfare, U. S. Office of Education. It is especially important as a source of direction for both national legislation and local initiative.

TOPIC ONE: Leadership Training, Workshops and Institutes

Interdisciplinary Forum

8:1 "SYMPOSIUM IN OCCUPATIONAL EDUCATION, MANPOWER AND ECONOMIC CHANGE IN THE UNITED STATES" BY MAYNARD BEMIS, PHI DELTA KAPPA, INC., BLOOMINGTON, IND. (PROJECT # 5-0159) 1966. ERIC # ED 010 127. MF $0.25 HC $1.40. 35 PAGES.

This interdisciplinary conference on education is described as an effort to provide leadership and direction to a series of questions relevant to educational research and practice. The symposium, bringing together sociologists, anthropologists and economists, generated fresh ideas and approaches to nationally important educational concerns. It was designed to be provocative and broad in scope, devoted to discovering insights into, rather than finding solutions for, educational problems.

The objectives of the symposium as a developmental project were stated as follows:

—To establish a competent forum for presenting issues and for provoking inquiry on problems of occupational research as these relate to education, manpower and economic change.

—To examine the conceptual framework of fields of inquiry which may contribute jointly and simultaneously to research problems involving education, manpower and economic change.

—To identify specific problems which are barriers to translating knowledge into behavior in occupational education, in manpower programs and in educational programs designed to accelerate economic growth.

—To focus interest on an important educational problem and to invite the attention of educational researchers and educational practitioners to this problem.

—To prompt research projects and action programs in the various colleges and universities at which Phi Delta Kappa has local chapters.

The symposium was organized according to a pattern previously adopted by Phi Delta Kappa for the accomplishment of similar objectives. The preliminary steps involved acceptance of topics by the Legislative Body, endorsement of an action program by local chapters, organization of an advisory committee, and selection of a general chairman who was responsible for planning the symposium.

Six Papers Presented

The program consisted of the presentation of six major papers, which had previously been exchanged among participants and made available to 20 discussants. The papers were read to assembled audiences of approximately 50 to 100 people. Discussion was limited to co-participants and discussants. The six major speakers and the papers they each presented were:

American Education in the Future by Solon T. Kimball, Department of Anthropology, Teachers College, Columbia University.

The Attention to Social Detail in an Economically Developed Society by Fred L. Strodbeck, director, Social Psychology Laboratory, The University of Chicago.

The Role of Government in Promoting Full Employment by Arthur Ross, Bureau of Labor Statistics, U. S. Department of Labor.

Manpower Needs, National Goals, and Educational Policy in the 1970's by Leonard A. Lecht, director, National Goals Project, National Planning

Commission, Washington, D.C.

The Contribution of Education to Economic Development by Hector Correa, Wayne State University.

Dimensions of the Present Era of Technological Change by Gerhard Colm, chief economist, National Planning Commission, Washington, D. C.

Two Questions

Although the report does not include transcripts of the six papers, there is a selective summary oriented around two questions. "What ideas from sociology, anthropology and economics were presented to the symposium, and what do they tell us about the social forces that will affect education in the next decade? Second, how can these ideas be used by educators and others to plan needed changes in education?"

Of the educational problems discussed in the selective summary, the school's general resistance to change was a paramount issue. Alluding to the traditional, community centered school organization, questions were raised as to whether this type of "educational establishment" could indeed meet the national, social and economic challenges, or whether other educational systems have to be found.

In view of poor federal-local relationships the summary recommended the need for greater national leadership to help schools cope with the oppressive problems of societal, cultural and economic change. Concerning the reorganization of the schools, the flexible pattern found in the university was offered as a possible alternative. It was suggested that the young field of administrative science had a body of principles which might be highly valuable to educators.

Economic Importance

Focusing on the inadequate preparation of students for the world of work, the summary emphasized the importance of education to economic growth. That is, the vitality of the economy depends on the training of youth for occupations. There were also a number of expressions of concern about unemployment, poverty and youth with special needs.

It was reported that a complete review of the symposium and a bibliography devoted to education, manpower and economic change are being prepared for publication by Phi Delta Kappa.

Home Economics Workshop

8:2 "REPORT OF WORKSHOP FOR ADMINISTRATORS OF VOCATIONAL HOME ECONOMICS TRAINING PROGRAMS IN WAGE-EARNING OCCUPATIONS" BY ANN BUNTIN. TEXAS TECHNOLOGICAL COLLEGE, LUBBOCK, TEX. (PROJECT # 5-0180) 1965. ERIC # ED 003 098. MF $0.25 HC $1.56. 39 PAGES.

The major objective of this workshop was to provide an opportunity for home economists responsible for administrative or consultative services in vocational education to develop their knowledge and understanding in the vocational aspects of home economics education. Particular emphasis on the training program was focused on the needs of disadvantaged youth.

Participants were selected on the basis of four criteria:

—Professional backgrounds in home economics or in closely related disciplines.

—Current involvement in vocational programs at area or state levels or in metropolitan or large communities.

—Assigned administrative or supervisory responsibilities.

—Eligibility for admission to graduate school.

Thirty-Three Enrolled

The three-week workshop, preceded by a concentrated planning and organization period by Texas Tech staff members, had a total enrollment of 33 persons from six states. Eight members of the group had supervisory positions in city or state education departments, and six had college positions. Other participants were reported to be expecting leadership responsibilities for training programs in wage-earning occupations.

In the first week of the workshop, emphasis was focused on the following five objectives:

1. Greater understanding of the provisions of the Vocational Education Act of 1963 as they affect preparation for occupational competency in jobs requiring home economics knowledge and skills, including food and nutrition, clothing and textiles, child development, family relations and home management.

2. Increased interest in and ability to assume leadership roles for initiating and developing programs for vocational education which prepare for occupational competency in home economics related occupations.

3. Increased understanding of the behavioral range of children who come from disadvantaged homes and communities.

4. Increased understanding of the values and needs of socially disadvantaged children and their families.

5. Improved skills in communicating with persons responsible for program plannng and personnel services, as well as with agencies, businesses and industries which will employ workers trained for occupations involving home economics knowledge and skills.

Several different methods were employed during the workshop. There were presentations related to such topics as the Vocational Education Act of 1963, characteristics of programs which prepare for employment and how they differ from those which prepare only for homemaking, and work with school administrators in program planning and development. Panel discussions were held on the interpretation and implementation of state policies of Texas, Tennessee, Georgia, and California. Reports on occupational programs, especially for underprivileged, were given. A tape, "The Challenge: New Careers for the Poor," was viewed and discussed. Participants were also involved in individual reading and study.

New Objectives Stressed

During the second week, problems raised in the initial week were explored further. In addition, the following five new objectives were emphasized:

—A more thorough knowledge of and the ability to use the series of guides developed by the U. S. Office of Education for Home and Community Service Occupations as bases for local or area program development.

—Awareness of possibilities for cooperation among the various vocational educational services in planning and implementing sound training programs for competency in home economics related occupations.

—Understanding of possible ways of using team teaching involving other disciplines in the training of youths and adults for occupational competency in the home economics related occupations.

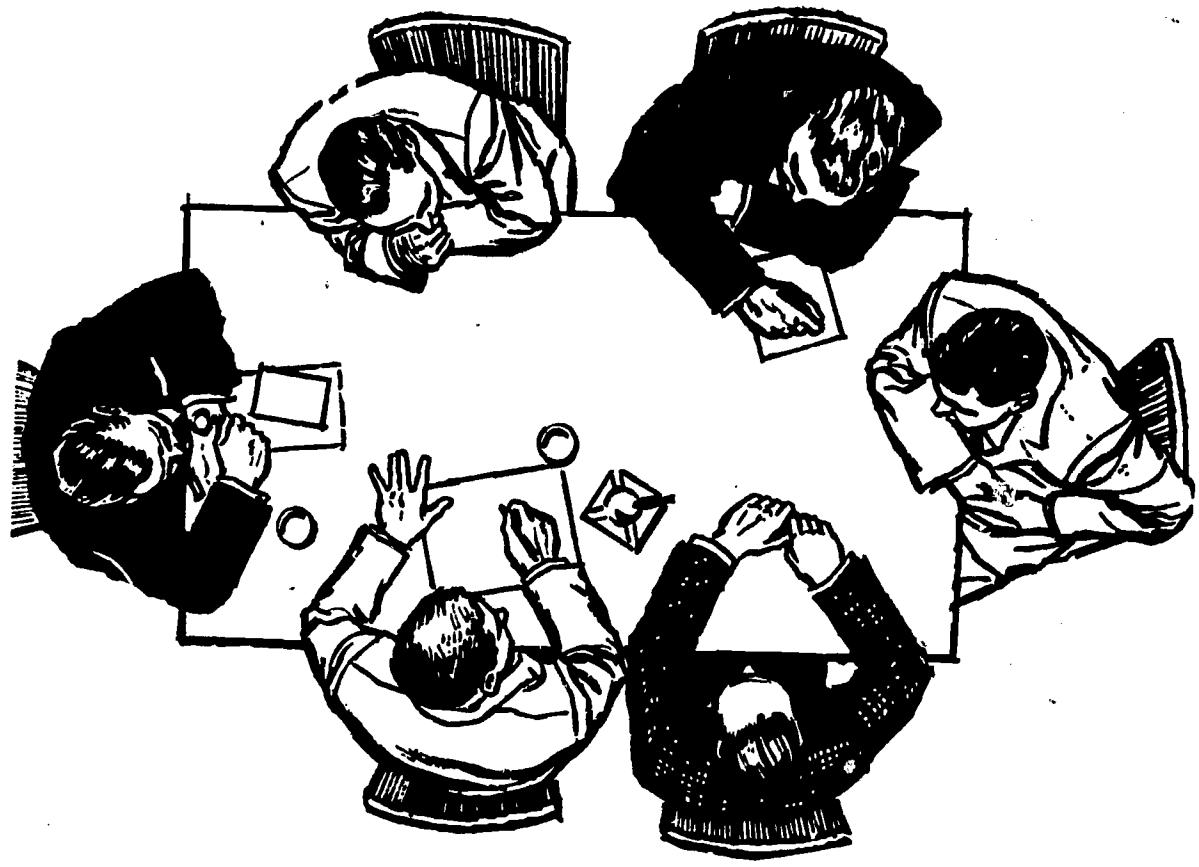
—Knowledge of current experimental programs and pilot studies for

preparation for competency in home economics related occupations.

—Knowledge of current research which has implications for developing effective home economics education programs for wage earning.

During the third week, each person enrolled was engaged in an independent study. These studies involved the development of plans toward initiating or implementing programs to prepare for wage-earning occupations in home economics. Among the topics selected were several curriculum development projects, plans for organization and operation of a child care center, an exploration of a hierarchy of jobs and job analyses which would use home economics knowledge and skills, and the preparation of a bibliography.

The report contains a summary of evaluations, together with a copy of the evaluation sheet used. A bibliography lists more than 100 titles of books, tapes, films, and periodicals.



Doctoral Program Symposium

8:3 "THE ADVANCED DEGREE AND VOCATIONAL-TECHNICAL EDUCATION LEADERSHIP (A SYMPOSIUM)" BY CARL SCHAEFER. RUTGERS—THE STATE UNIVERSITY, NEW BRUNSWICK, N. J. (PROJECT # 5-8464) 1966. ERIC # ED 010 015. MF $0.25 HC $2.40. 60 PAGES.

The three-day leadership symposium at Rutgers was devoted to the development of doctoral level programs in vocational-technical education. The format included the presentation of eight working papers, counterpart reactions and roundtable discussions. There were 48 participants.

Each author of a working paper was asked to relate the contributions his discipline could make to the preparation of future vocational leaders. Specifically, each reacted to the following questions:

—What will be the challenge of preparing youth and adults for the world of work this next decade?

—How does your discipline relate to the problem of man, education and work?

—What contributions can your discipline make to the development of a new breed of vocational-technical educator in terms of discrete content, experiences and techniques?

—How can leadership, and especially those who may be directly responsible for administering vocational and technical programs (both at the secondary and post-secondary levels), be best prepared?

—What role, if any, can an internship play?

—Should graduates of such a program be research oriented?

The 15 authors of the working and reaction papers are distinguished, nationally recognized figures in their respective disciplines. Transcripts of their presentations, the main content of this report, are important additions to the literature of vocational education. Although most of the papers are theoretical and not closely related to the specific aspects of preparing vocational administrators, they contain timely and often stimulating ideas.

Donald Super of Teachers College, Columbia University, identifies three major challenges facing vocational education in the decade ahead. Super recognizes as challenges: (a) the demand for increasing numbers and percentages of skilled and technical workers; (b) the education for work of those who become semiskilled workers, and (c) the avocational education for those in whose lives work is likely to play a declining role temporally and psychologically. Super's commentary includes the recommendation that vocational education must provide for changes in jobs and aspirations, by combining basic academic skills with vocational content.

The comments of Carl Schaefer and Byrl Shoemaker, Ohio director of Vocational Education, deal directly with the doctoral program in vocational education administration. Whereas Schaefer stresses the need for liberalizing the training process, Shoemaker appears to espouse a more traditional approach by recommending a graduate program which is based on analysis of the vocational administrator's duties and responsibilities.

Schaefer's paper, "A New Breed of Leadership for Vocational-Technical Education," alludes to the factors which should be considered in developing a doctoral program in administration and research for vocational-technical education. Citing the need for a more liberally educated practitioner, Schaefer establishes a parallel between the vocationally trained "specialist" and his counterpart in industrial management. He reports that a number of industrial management institutes are now giving considerable attention to instruction in the humanities, as top management searches for more liberally educated executives. "It could be well hypothesized that a similar liberalizing of 'executive type' vocational and technical educators should take place in the advanced degree being proposed at Rutgers."

Shoemaker stresses the value of practical knowledge and experience. Referring to the challenge of preparing youth and adults for the world of work, he recommends a graduate program that is firmly rooted in principles and practices based on experience. The qualities Shoemaker would like to see in the graduates of a doctoral program in vocational education are:

—A depth of understanding of the principles and practices and modern trends in vocational education.

—An understanding of the principles in the related disciplines which will enable them to both develop and implement changes needed in the vocational programs and to adjust to the rapid changes in business and industry and our modern society.

—Leadership skills needed to work effectively with teachers, students, school administrators, business and industry, and the public.

—An ability to be a good consumer of research.

—An understanding of employment practices and trends both within the state and within the nation.

—An understanding of legislative patterns and trends and principles of laws.

—Experiences in coordinating the knowledge and skills identified above to work effectively on the practical problems of the development and improvement of vocational education programs for youth and adults.

The commentary by Burr Coe, superintendent of the Middlesex County, N. J., Vocational Schools, was in close agreement with Shoemaker's recommendations. Among his personal convictions related to vocational education and school administration are statements that:

—"The doctorate in vocational education should be a practitioner's degree rather than a scholar's degree; hence, only persons with experience in vocational education should be accepted as candidates."

—"Students in doctoral programs will learn more and profit most from contact with faculty members with successful vocational education experience than from theoreticians. The job analysis approach can be applied to training school administrators as well as skilled workers."

Leadership Consortium

8:4 "NATIONAL LEADERSHIP DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION" BY CALVIN J. COTRELL. THE OHIO STATE UNIVERSITY, COLUMBUS, OHIO. (PROJECT # 6-1888) 1967. ERIC # ED 011 932. MF $0.75 HC $6.32. 158 PAGES.

The need for a project to develop leaders in technical education is documented in *The Summary Report of Vocational and Technical Program Development,* U. S. Office of Education. This publication cites the millions of dollars being spent, the astronomical building programs under way, and the projections for expansion of present programs and staffs in technical education throughout the nation.

During the summer of 1965, Robert E. Taylor, director of The Center for Vocational and Technical Education, The Ohio State University, and Robert Knoebel, who at that time was director of the Technical Education Unit, USOE, met and discussed the potential role of the Center in meeting the leadership needs in technical education. As a result, a select group of vocational and technical educators was invited to a conference at the Center in August 1965 to explore means in the future development of technical education. The series of five two-week leadership development institutes reported here was a direct outcome of these preliminary deliberations.

Specific Objectives

The specific objectives of the project were:

1. To provide a training program to improve program planning, development, implementation, and evaluation skills of present and prospective leaders in technical educaton.

2. To stimulate and strengthen the long-range interests of institutions of higher education in research and leadership development activities in technical education.

3. To provide evidence for the evaluation of two-week institutes as an administrative tool for accelerating the development of leadership for technical education.

4. To provide data for assessing the effectiveness of the consortium approach to a project wherein one institution coordinates the planning, funding, development of instructional materials, operation, and evaluation of a training program offered by several cooperating institutions.

The National Leadership Development Institutes in Technical Education project was organized as a consortium of the following institutions: Colorado State University, University of Florida, University of Illinois, Oklahoma State University, Rutgers—The State University of New Jersey, and The Center for Vocational and Technical Education, The Ohio State University.

The Center served as the coordinating agency for designing the program, obtaining funds, preparing the core of institute staff, recommending consultants, collecting, preparing and disseminating instructional materials, recruiting and selecting participants, evaluating the institutes, and preparing the final report.

Each of the five cooperating institutions sponsored one two-week institute with a pre-established leadership training program for 40 participants, thereby offering training for a total of 200 persons.

After wide advance circulation of information concerning the five institutes, mainly through State Directors Offices, the USOE, *Technical Education Yearbook,* and the Ohio State Centergram publication, 200 participants were selected from a pool of 403 applicants. Preference was given to state staff members, teacher educators and other candidates having high leadership responsibility or potential. Consideration was also given to maintaining balance and diversity in each of the institutes in terms of geographical mix, field of specialization, and nature of applicant's current position in vocational and technical education.

Project Activities

Each of the institutes covered an agenda which included a 10-unit group of major topics, previously agreed upon by institute directors and by the planning committee. There was no prescribed order or method of presentation, allowing each institution to comply with its schedule of consultants and other local considerations. The 10 units of the topical outline are:

—The Leadership Role and Charge
—The Rationale and Need for Technical Education
—Description of the Technical Education Student
—Administrative Structure of Technical Education
—Program Patterns and Curriculum Development
—Facilities and Equipment for Technical Education
—Staffing Technical Education Programs
—Financing Technical Education
—Supervision of the In-Service Education Program
—Establishing Research and Development Needs

The project evaluation was both ob-

jective and subjective in nature. Data used in evaluating the five institutes were derived from these sources: (a) the application form for participants; (b) participants' self-appraisal form as a pre-test and post-test; (c) completed Topic Evaluation Form; (d) participants' ability to apply knowledge gained; (e) leadership rating forms, and (f) participants' stated plans and objectives.

Conference results, reviewed by a special project evaluation committee, revealed that participants were highly satisfied with content and operation of the institutes. It was reported that they had gained considerable knowledge. A discussion of the directors' evaluation of major topics revealed that the data were primarily helpful in developing a list of the best consultants and resource persons for future institutes. The success of the consortium approach with respect to planning, funding, developing instructional materials, selecting participants, and developing evaluation procedures was also discussed.

Leadership Development Seminars

8:5 "LEADERSHIP DEVELOPMENT SEMINAR: VOCATIONAL-TECHNICAL EDUCATION" BY CLODUS R. SMITH. UNIVERSITY OF MARYLAND, COLLEGE PARK, MD. (PROJECT # 6-2188). MAY 31-JUNE 10, 1966. ERIC # ED 010 629. MF $0.75 HC $5.76. 144 PAGES; JULY 11-22, 1966. ERIC # 010 630. MF $0.75 HC $6.48. 163 PAGES; JULY 25-AUG. 5, 1966. ERIC # ED 010 631. MF $0.75 HC $6.40. 160 PAGES.

This report relates to four leadership development seminars that were held during the spring and summer months of 1966, and again in 1967. The first section is of the two seminars held from May 31 to June 10 and July 11 to July 22, 1966.

The two-week program beginning on May 31 was conducted for 55 participants, who were selected on a quota basis upon recommendations by state directors of vocational education. Many of the delegates were state education department staff members. Others of the group were teacher educators, local supervisors and administrators and, in a few cases, teachers of vocational subjects.

Objectives of the seminar were to present information concerning vocational programs and procedures and to provide opportunities for participants to observe and practice specific leadership skills. These purposes were achieved through a multi-dimensional approach. Program content included: history of vocational-technical education; implications of recent legislation; the world of work; projected state plans; counseling and other supportive services; teacher education; equipment and facilities planning; research programs; curriculum development; coordinating activities with other agencies; evaluation of progress; supervision, and the role of professional organizations.

The program was organized by four University of Maryland staff members. There were also five conference leaders and 25 resource speakers taking part in the seminar.

The report contains lists of personnel, abstracts of presentations, and copies of the various group dynamics and other leadership training materials used. Task force assignments and a questionnaire for evaluating the leadership development seminar are also included.

The second seminar, July 11-22, 1966, was based on the same general format as the earlier version, and many of the main presentations were made by the same speakers.

8:9 "LEADERSHIP DEVELOPMENT SEMINAR: VOCATIONAL-TECHNICAL EDUCATION" BY CLODUS R. SMITH. UNIVERSITY OF MARYLAND, COLLEGE PARK, MD. (PROJECT # 7-0451). MAY 15-26, 1967. (VT # 002-105) 57 PAGES; JULY 24-AUG. 4, 1967. (VT # 002-137) 93 PAGES.

8:10 "EVALUATION CONFERENCE LEADERSHIP DEVELOPMENT SEMINARS, PROGRAM PLANNING, BUDGETING AND EVALUATION" BY CLODUS R. SMITH. UNIVERSITY OF MARYLAND, COLLEGE PARK, MD. (PROJECT # 7-0451) 1967. (VT # 004-630) 42 PAGES.

The May 15-26, 1967 Leadership Development Seminar was conducted expressly for 22 eastern states and the District of Columbia, Puerto Rico, and The Virgin Islands. Each director was asked to select one to three participants to attend. Priority was given to potential leaders in vocational-technical education who came into leadership positions in recent years, such as new state staff members, supervisors, teacher trainers, heads of

departments, consultants in vocational education, local directors, and leaders in expanding areas of vocational education. There were 46 participants and 24 resource persons, as well as four University of Maryland staff members and four conference leaders.

The purpose of the seminar was for the development of understandings, abilities and attitudes for more effective leadership by the professional personnel in the states. "As states move forward with new vocational education plans, there is difficulty in keeping up-to-date, especially in the areas of legislation and current trends."

The bulk of this report is comprised of presentation summaries, given mainly by U. S. Office of Education officials. Some of the topics discussed are: the concept of a total vocational program; state plans and projected activities; sources, analysis and utilization of data; procedures in developing curriculum guides; identification and implementation of research findings; legislative information; coordination of programs with other agencies, and designing an organic curriculum.

An evaluation report, based on a questionnaire, revealed that participants felt the most meaningful parts of the conference were the sessions on conference-leading techniques. They also found interest in the conference organization, contributions of resource persons and small-group work.

Another phase of the National Leadership Development Program was the seminar for 11 western states and Guam, held at Los Angeles in July, 1967. This conference, which was also conducted with University of Maryland leadership, was similar in content and format to the one held in May,

1967, at College Park. A total of 7 staff members and 28 resource persons provided a program for 38 participants. As was the case in Maryland, the purpose of the seminar was to provide an intensive educational program designed to develop understandings, abilities and attitudes for more effective leadership.

On Nov. 26-28, 1967, an evaluation conference was held at College Park, Md. The evaluations of the seminars were conducted in terms of their general objectives. Both process and product were assessed.

In addition to personal observations, the leadership development seminars were evaluated by means of a "reaction instrument" used to check the responses of participants as the seminars were in progress. End-of-seminar evaluation instruments were also employed. Improvement in "group thinking" was given as a possible major result.

Technical Personnel Seminars

8:6 "NATIONAL LEADERSHIP DEVELOPMENT SEMINAR FOR VOCATIONAL-TECHNICAL EDUCATION PERSONNEL" BY H. H. LONDON. UNIVERSITY OF MISSOURI, COLUMBIA, MO. (PROJECT # 6-2236) 1966. ERIC # ED 010 597. MF $0.25 HC $2.08. 52 PAGES.

Reported here are two related leadership development seminars conducted by the University of Missouri. The first seminar, held July 11-22, 1966, had 58 participants from 12 midwestern states. Two university staff members were assisted by four group discussion leaders and 20 resource personnel.

The objectives of the program included needs to: provide opportunities for development of leadership techniques; develop knowledge of trends, regulations and manpower needs; and, become better acquainted with other agencies with which vocational-technical leaders must cooperate in the operation of their program.

The major activities of the program were presentations by visiting speakers, panel discussions and sessions in conference leadership techniques.

The evaluation section of the report states that participants had generally favorable comments regarding the seminar. The group expressed a strong belief in participation by the individual, and most of them felt that the opportunity to participate had been provided. Interest was high in the various leadership techniques that were introduced and placed into practice.

8:8 "VOCATIONAL-TECHNICAL EDUCATION LEADERSHIP DEVELOPMENT SEMINAR" BY H. H. LONDON. UNIVERSITY OF MISSOURI, COLUMBIA, MO. (PROJECT # 7-0417) 1967. (VT # 004-026) 62 PAGES.

The second leadership development seminar was conducted one year later, July 9-21, 1967. Sixty participants from 18 states were enrolled. Speakers representing the U.S. Office of Education, state directors and other members of state staffs, university and college instructors, U. S. Chamber of Commerce personnel, and employment security staff members took part in the program. As in the preceding seminar, the program was comprised of major addresses, panel discussions and sessions devoted to the development of conference leadership techniques.

The report includes the program agenda, digests of presentations, a copy of the conference evaluation forms, and a roster of the conference participants.

Among the speeches reported, the comments of Duane Nielson, U. S. Office of Education, and Joseph R. Strobel, retired N. Y. state director of vocational education, are especially pertinent. Nielson defines leadership as the "cutting edge" in vocational education: "Leaders will need to exhibit much creativity and also maintain the attitude of building for better tomorrows—not living in dead yesterdays.... Problems must be approached with realism, weighing past experiences, considering new ideas, and implementing a workable combination whenever possible."

Strobel's presentation on evaluation stresses the importance of developing comprehensive systems for determining the effectiveness of vocational programs. Among Strobel's 22 beliefs relating to evaluation are the following, beginning with his concept of vocational education:

—It is time to develop a new definition or a new concept of vocational-technical education. My concept of vocational-technical education is designed to contribute to the intelligent orientation and adjustment to the requirements of the modern world, to the choice, advancement, and competence in employment.

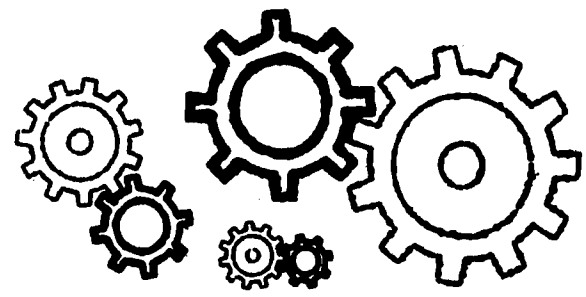
—Evaluations should not apply only to limited phases of occupational education but should include every phase of the public education program that makes a contribution.

—The person who has the responsibility for implementing a program should play a part in its evaluation.

—Accrediting associations cannot be depended upon because they have given little attention to occupational education in local and area schools.

—The casual observation of board members, and the rumors that they hear, provide no basis for judging an occupational education program.

—An evaluation is the means and not the end. It must provide for the foreseeable conditions of tomorrow.



Industrial Education Administrators

8:7 "A CONFERENCE FOR THE ADMINISTRATION OF INDUSTRIAL EDUCATION" BY CLYDE M. MORRIS. UNIVERSITY OF NORTH DAKOTA, GRAND FORKS, N.D. (PROJECT # 6-8505) 1967. (VT # 003-295) 37 PAGES.

This study reveals that North Dakota has critical problems brought about by the limited program in vocational-technical education, the sharp decline in the demand for agricultural labor and the concomitant reduction in unskilled and semiskilled jobs in the state's few urban centers. "Too many young North Dakotans have no technical skills. The result is a deterrent to the industrial expansion needed to take up the labor surplus."

The purpose of the workshop was to increase interest in and understanding of vocational education among local school administrators. Specific objectives were stated to include the presentation of philosophy, trends and federal legislation associated with vocational education; consideration of exemplary vocational programs in other states, and an assessment of the voca-

tional education needs in local communities of North Dakota.

The two-week workshop was comprised of nine major presentations, panel discussions and small group meetings. Following the summer session was a two-day tour of area vocational schools at Wahpeton, N.D., and in Alexandria and Staples, Minn.

The reactions and evaluations received from the 24 workshop participants are summarized in this report. Comments upon the area vocational facilities visited and the ways in which local programs may be initiated reveal that the authors were generally concerned with the need for expanding vocational education in North Dakota.

The real significance of the North Dakota report is that it illustrated that students may be disadvantaged by geographic location just as much as by physical or mental handicaps or socioeconomic status.

TOPIC TWO: Costs and Benefits of Vocational Education

Starting Wage Differences

8:11 "VOCATIONAL EDUCATION: A STUDY OF BENEFITS AND COSTS (A CASE STUDY OF WORCESTER, MASS.)" A. J. CORAZZINI. PRINCETON UNIVERSITY, PRINCETON, N.J. (PROJECT # 5-0172) 1966. ERIC # ED 010 296. MF $0.75 HC $5.32. 133 PAGES.

This case study of the Worcester, Mass., high school system was designed to present an evaluation of the economic benefits of the city's vocational schools to individual graduates and to the local community. The study compares the system's regular high schools with its vocational high schools, giving particular attention to the relative cost of the two types of education. A class of students at the vocational schools is traced through four years of training and subsequent placement in jobs after graduation.

The purpose of the study is contained in the statement that "the economic aspects of vocational education demand much closer examination and assessment than they have heretofore received, since federal grants to states for the expansion of vocational-technical education are made on the assumption that growth of these public training centers will help minimize unemployment and maximize economic growth within regions and within the country as a whole."

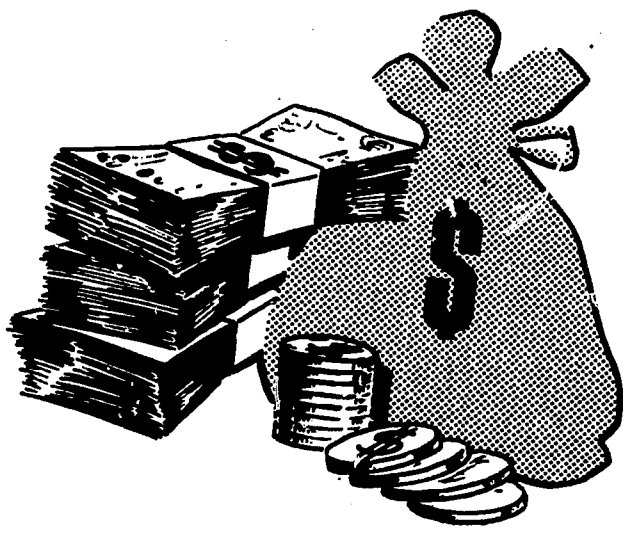
The economic returns of the Worcester investment in human capital were measured in three categories: (a) measurable returns to the individual; (b) measurable returns to society at large, and (c) nonmeasurable returns to the individual and to society.

The economic costs were defined as those resources, human and nonhuman, expended in the production of a given good or service, and their economic value was measured in a standard monetary unit of account. "Thus, computing the total resource costs of the vocational or any other educational program will mean computing the economic value of all resources expended in the production of the public good."

It was found that male vocational high school education was 1.4 times as expensive as regular high school education, and for girls 1.25 times as expensive. The empirical data revealed that, at least initially, vocational graduates earn slightly higher wages than untrained regular high school graduates. The difference in earnings was more pronounced in smaller firms.

It is stated that this study of starting wage differentials was limited to beginning wages of vocational graduates and regular high school graduates employed in the same trades. "Perhaps the vocational graduate should also be compared with the noncollege-bound high school graduate who was not employed in the same trade."

Another limitation of this study, one which could seriously flaw its validity as a true test of educational effectiveness, is the fact that no attempt was made to equate students on the bases of SES, ability, school achievement, and attitude toward school. Also, the factors that lie behind students' "decision" to attend a vocational school were not explored. Did home and family attitudes and pressures influence the decision? Are there socioeconomic differences between the school populations; how much do guidance policies and practices affect the direction students take?



As Kaufman stated in his analysis of costs and benefits, which is reported in this issue, "Corazzini and Taussig have not properly controlled for the socio-demographic factors which significantly affect the earnings of graduates. Therefore, their estimated earnings are *gross* in nature rather than *net*."

Cost-Benefit Analysis

8:12 "AN ANALYSIS OF THE COMPARATIVE COSTS AND BENEFITS OF VOCATIONAL VERSUS ACADEMIC EDUCATION IN SECONDARY SCHOOLS" (PRELIMINARY REPORT) BY JACOB J. KAUFMAN. PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PA. (PROJECT # 5-1190) 1967. 156 PAGES.

It has often been said of vocational education that it is an investment in human resources, paying off in dividends to the individuals involved, the business and industrial community, and to society at large. On the other hand, there are those who denigrade its value by stressing the relatively high per pupil cost of vocational instruction. The Kaufman cost-benefit study, the preliminary stage of which is reported here, sheds light on the fundamental question: Are the benefits of vocational education worth the costs? This is one of the most significant studies of the year, certainly one that should be well known by all with leadership responsibilities in vocational education.

The twofold objectives of the project were to develop a broad methodology on which to conduct an empirical study of the costs and benefits of vocational education; and second, to conduct the study on the basis of which conclusions can be drawn about

the efficiency of vocational education.

It is stated that this report was prepared primarily to assist the U. S. Office of Education in a preliminary evaluation of vocational education for its report to Congress. "A final report, due Oct. 1, 1968, will more fully explore the methodological issues, will contain more and refined data on benefits and costs, and will contain more extensive analysis of the data. In addition, consideration will be given to the 'inputs' and 'outputs' of school dropouts, an area which has virtually been unexplored."

The major steps taken in the development of this project include: an exploration of the theory of public expenditures for education; consideration of special problems in cost-benefit and cost-effectiveness analysis; description and statistical analysis of data, and the presentation of conclusions and implications.

Citing the position that education has its economic as well as cultural and social value, the study examines the complex conceptual problems associated with the analysis of cost effectiveness. Benefits of education, the report states, accrue not only to an individual, but also to the local community and society in terms of increased tax revenues, lowered welfare and protection expenses, and generally greater population stability.

Obtaining data from two cities, each having both vocational and academic high schools, analyses were made in which the educational costs and benefits of each type of school were compared. The two main indices of benefit were graduates' money earnings and the percentage of time they were employed. Costs data were obtained from published cross-section records for the two city school districts that were under investigation.

It was stated that cost-benefit analysis was first developed for public investment projects. "Economists have attempted to apply this evaluation technique to problems in education without looking into the distinctive nature of education. Because of this, until enormous efforts are made to refine the conceptual and measurement problems in costs and benefits of education, analysis of only limited meaning can result. . . ."

Speaking further on the problems inherent in applying cost-benefit analysis to education, the report, in its conclusions, has these statements:

—The application of cost-effectiveness or cost-benefit analysis is less valid for those public investments or expenditures occurring directly on the human agent than it is for public investments in goods, such as dams or highways.

—Before cost-effectiveness and cost-benefit analysis can be used effectively, considerable refinement must be done with respect to the relationship between economic concepts and theory and the institutional (e.g., human, political and social patterns of behavior) framework surrounding education.

The implications of the study assert that vocational-technical education does indeed have a payoff in terms of earnings and employment, when compared with other curricula, "recognizing at the same time the methodological and statistical limitations which have been discussed in this report." Kaufman's main concern, one which is shared by a great many vocational educators, is that only a limited segment of the population has received vocational instruction.

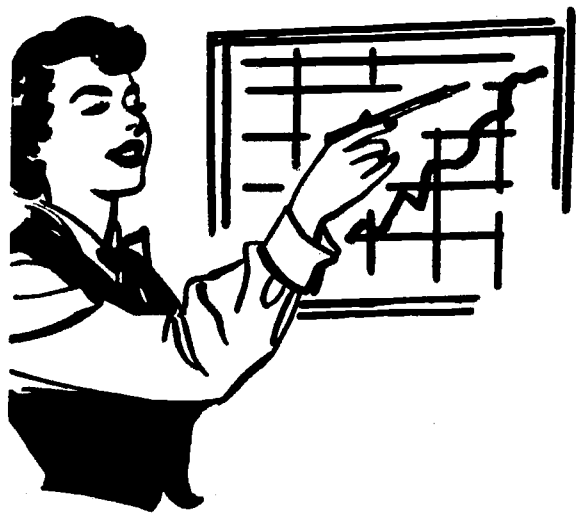
"There is evidence that vocational-technical education has not penetrated the student body, limiting its enrollment to a small percentage of students who not only must meet certain ability and aptitude requirements, but also are confronted with the teaching of related subjects in the more traditional manner. To a large number of students in both the academic and vocational curricula the requirements are too rigid and the courses are not relevant to their needs."

Returns of Technical Education

8:13 "COSTS AND RETURNS OF TECHNICAL EDUCATION: A PILOT STUDY" BY ADGER B. CARROLL AND LOREN A. IHNEN. NORTH CAROLINA STATE UNIVERSITY, RALEIGH, N. C. 1966. (VT # 000-972) (U.S. DEPT. OF LABOR STUDY) 59 PAGES.

This study was conducted for the purpose of measuring costs and returns of human capital created by investments in two years of post-secondary technical education.

Data were obtained from a group of 45 high school graduates and 45 graduates of Gaston Technical Institute, Gastonia, N.C. High school and Gaston Tech graduates were selected in pairs, so that members of each pair were classmates who had similar records in high school.



Graduates were not included in the study if they had formal post-high school education or training other than at Gaston Tech, had permanent disabilities affecting employability, or had migrated more than 200 miles from their home community. Self-employed persons and those in military service were also excluded.

The estimated average cost to society for the two years of post-high school technical education was $7,425 per student. The estimated monetary value of productivity lost while students were obtaining technical education averaged $5,197, or 70 percent of the total. The remaining $2,228 was for costs of providing the educational program.

Monetary returns on investments in technical education began to accrue to Gaston Tech graduates during the first year after graduation. The average annual income from investment in technical education increased from $553 in the first year after schooling to $1,036 in the fourth post-graduate year. Total return per student for the first four years after graduation came to 65 percent of the average private investment.

"The estimated social rate of return on investments in technical education was 16.5 percent and the private rate, 22 percent, assuming that per capita real earnings would increase over time at a rate of 2 percent per annum. . . . Apparently the technical education obtained by the Gaston Tech graduates pays a high rate of return even if only the direct pecuniary returns are considered. If the indirect and nonmonetary returns could have been evaluated accurately, the social and private rates of return probably would have been much higher."

Calling attention to the limited scope of the study, the report states that its results should not be used for making generalizations about the

economic effectiveness of post-secondary technical education.

Three results of the investigation are reported:

1. The study represents a relatively intensive effort to determine the effect of education upon income, not of the effects of other variables often associated with investment in education, by using matched pairs of high school and Gaston Tech graduates plus regression analysis. The size and significance of the regression coefficients are indicative of the importance of standardizing for the income efforts of other variables associated with investments in education.

2. Fringe benefits should be taken into account in estimating the returns to investment in education.

3. The study is another piece of evidence which supports previous findings of high rates of return on investments in education.

TOPIC THREE: State Administration of Vocational-Technical Education

State Leadership Training

8:14 "A STATE PROGRAM FOR THE DEVELOPMENT OF PERSONS FOR LEADERSHIP ROLES IN THE ADMINISTRATION OF LOCAL PROGRAMS OF VOCATIONAL AND TECHNICAL EDUCATION" BY RALPH C. WENRICH. UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH. (PROJECT # 5-0150) 1966. ERIC # ED 010 124. MF $0.50 HC $2.48. 62 PAGES.

The University of Michigan project for the training of persons for roles of leadership had five objectives:

1. To further refine the leadership development programs operated in the years 1964-65 and 1965-66.

2. To validate some of the criteria used in the screening and selection of applicants for the program.

3. To make an extensive follow-up study of the 40 participants involved in the original experimentation project of 1964-65.

4. To prepare additional persons for leadership roles.

5. To make information available to other states in regard to methods employed and the results achieved through the leadership development program.

The leadership training program reported is the third in a series of similar projects. The full program was divided into four procedural phases: the identification of persons in vocational and technical education considered to have high leadership potential; the recruitment and selection of the 20 outstanding candidates; the participation of selected trainees in an eight-week summer workshop, and participation in an internship program during the following school year.

In order to identify persons in vocational and technical education with high leadership potential, 1,124 nomination forms were mailed to local school and college administrators and teacher trainers. As a result, 278 names were received. Members of this group were then sent letters informing them of their nomination. They were asked to declare their candidacy by completing and returning personal data questionnaires. Completed applications were filed by 146 nominees.

The number of candidates was reduced to 47 by using such selective criteria as educational background, work experience, teaching experience in vocational education, age, position of leadership held, and admissibility to graduate studies. Final selections were made on the bases of personal interviews and three standardized tests: the Edwards Personal Preference Test, the American Council on Education Psychological Examination, and the Public Opinion Questionnaire.

The eight-week summer program consisted of formal presentations, field trips, seminars, and discussions. Approximately 80 hours were allocated to each of the three sections. Each trainee received a Carnegie Corporation scholarship of $600 for participation in the summer program.

The internship phase of the leadership training program involved enrollment in a university seminar which met once each month at Ann Arbor, and participation in one or more projects under the direction of a local school administrator. Activities included: making a community occupational survey; studying school administrative organization, and conducting a study of existing vocational programs in the community.

It was reported that interns did not need time off from their regular teaching assignment or other employment. However, interns who could arrange for released time were to be offered desirable additional experiences in leadership roles.

This report is valuable mainly for its complete appendix, which documents the various steps taken to recruit and select candidates and develop an instructional program. An outline of typical intern activities is also contained in the appendix.

Classifying enrollment in a university seminar and participation in one or more part-time projects as internship appears to be an extremely liberal interpretation of the term. If internship is to be a significant phase of leadership training, it must be designed to provide for experience of such duration and intensity that important changes in knowledge and insight into administrative matters will accrue.

Instruments To Study Agencies

8:15 "IDENTIFICATION AND DEVELOPMENT OF INSTRUMENTS FOR A STUDY OF THE EXPECTATIONS AND PERCEPTIONS OF THE STATE VOCATIONAL-TECHNICAL EDUCATION AGENCIES AND THEIR INFLUENCE UPON LOCAL PROGRAMS" BY ALLEN LEE. UNIVERSITY OF CALIFORNIA, BERKELEY, CALIF. (PROJECT # 5-8466) 1967. (VT # 002-614) 76 PAGES.

How influential is state leadership in framing the tone and pattern of the statewide vocational program? Are state divisions of vocational-technical education "change agents" in the sense that they provide the inspiration and impetus for local innovation, or are they mainly concerned with regulatory responsibilities?

Although there is constant conjecture about the role and function of state vocational departments, the amount of scientific analysis about the subject has been negligible. It is for this reason that the University of California program to develop instruments and study state vocational-technical agencies is of special significance.

The purpose of the study was to make a thorough review of literature and accomplish some identification,

development and testing of instruments designed to facilitate a subsequent major investigation of state leadership in vocational education.

The specific objectives of this research effort were:

—To identify, design and develop preliminary drafts of instruments to ascertain the expectations and perceptions of the role of state vocational and technical education agencies.

—To field test preliminary drafts of the instruments in five or more states.

—To make some refinement of the initial drafts of these instruments based upon pragmatic experience.

—To produce instruments in acceptable form and present them to the U.S. Office of Education for approval as required by the Federal Reports Act of 1942.

—To determine an acceptable and/or preferable format of steps and procedures for applying the instruments.

It was reported that the central focus of this project was to locate, adapt or design instruments appropriate for measuring the expectations and conceptual ideals of the roles of state vocational-technical agencies. The review of literature revealed no existing instruments which met the need. Hence, the research effort concentrated on the design and development of a suitable instrument.

The procedures followed in the development of the instrument involved 16 steps, several of which were taken concurrently. These steps included the formulation of hypotheses, review of literature, development of an item pool, application of criteria for selecting items, planning forms of analysis, and instruments construction, field testing and revision.

Consultants such as chief state school officers, state directors of vocational education, university professors and researchers, community college and local school personnel, economics and management analysts, provided advice on various parts of the instrument.

Items which survived the process of critique and refinement were sorted into these categories: (a) those which were pertinent to the "change process"—setting goals, defining problems, research, program development, and (b) those related to inspection, compliance checking, maintaining minimum standards and regulation.

Initial responses to the instrument tended to support the basic assumption underlying its development. That is, there is a taxonomy of educational leadership and change which can be defined and delineated as: (a) setting goals; (b) defining problems; (c) research; (d) program development; (e) field testing; (f) dissemination, and (g) practice. State education agency activities circumscribed by these seven categories were classified as leadership activities. The others were categorized as regulation and inspection activities.

Included in the project report is the instrument developed, "Group Interview Guide for a National Study of the Administration of Vocational-Technical Education at the State Level." This seven-step guide is designed to ascertain perceptions, opinions and suggestions, as well as personal data needed to identify the status of respondents. It should be useful to students of administrative processes at any level.

The nationwide investigation, planned to be the next step, will surely provide some significant revelations concerning state leadership for vocational education. Information thus obtained would be beneficial to all state departments as well as federal agencies. Common problems, whether in administrative organization or operating procedures, would thus be more clearly delineated. Also, the more exemplary patterns of state leadership, when better known to others, may help to raise the national quality of vocational education.

Criteria for Self-Analysis

8:16 "FORMAT AND CRITERIA FOR SELF-ANALYSIS FOR VOCATIONAL-TECHNICAL EDUCATION" (INTERIM REPORT) BY ALLEN LEE. UNIVERSITY OF CALIFORNIA, BERKELEY, CALIF. (PROJECT # 6-2921) 1967. (VT # 003-249) 92 PAGES.

This project is one part of a national study of state-level administration of vocational-technical education. The rationale for having such a national study may be found in the introductory statements: "A good example of the need for change and improvement in state governments today is the current status of public education organizations, which have more often than not just grown 'like Topsy'. Throughout the 50 states, one can observe a hodgepodge of arrangements, influenced by a variety of vested interests and moving with some lack of coordination."

And: "In recent years, there has been a nationwide concern about the respective roles of state and federal agencies; the fragmentation of responsibility for education on both state and federal levels . . . and the need for change and improvement in state education leadership."

The development of criteria for self-analysis of state agencies, it is said, is intended primarily to be a service to these agencies. It is further stated that there are inherent differences among the states; therefore, no one pattern or set of criteria will ever be appropriate for all.

A strong influence in the development of format and criteria for self-analysis has been the National Association of State Directors of Vocational Education. A 14-man committee of this organization together with a number of persons from general education; Freeman Holmer, an outstanding management analyst; and representatives of other disciplines met in a three-day workshop to prepare raw materials for the project.

A six-member staff gave assistance to the principal investigator. Specific tasks performed were the interpretation of committee recommendations, and the development of a format and criteria based on a rational and forward-looking, rather than a state, regional or status quo orientation. It is reported that ideas were borrowed and adapted from the National Committee for the Accreditation of Teacher Education, Evaluative Criteria for Secondary Schools, and the Western Association of Schools and Colleges.

The bulk of this report, taking up 87 pages, is the *Instructions, Symbols and Suggested Criteria for Self-Analyses of the State Vocational Education Agency*. The main subdivisions of the Self-Analysis are: Philosophy and Objectives; The State Board and its Legal Basis; Organizational Structure of the Agency; Individual Program Areas, and Administrative Functions.

Another portion of the report contains a series of definitions under the

title: "Terminology Embodied in a Concept of Occupational Education." Of special interest here is a definition of "occupational education," a term which has certainly had some loose and varied interpretations of late.

Occupational education: Education designed to contribute to occupational choice, competence and advancement.

a. *Professional education:* Specialized education for occupations requiring four or more years of college preparation.

b. *Practical arts education:* Education in agriculture, business, distribution, home economics, industry, and similar fields which is not designed to prepare for a particular occupation or a cluster of related occupations.

c. *Technical education:* Specialized education for occupations ordinarily requiring two or more years of preparation beyond the high school which emphasizes the science, mathematics and laboratory procedures related to the occupations for which the students are preparing.

d. *Vocational education:* Specialized education for a particular nonprofessional occupation or a cluster of these occupations.

TOPIC FOUR: Studies of General Interest to Administrators

Fiscal Relations

8:17 "VOCATIONAL EDUCATION AND INTERGOVERNMENTAL FISCAL RELATIONS IN THE POSTWAR PERIOD" BY BRUCE F. DAVIE. GEORGETOWN UNIVERSITY, WASHINGTON, D.C. (PROJECT # 5-0185) 1966. ERIC # ED 010 642. MF $0.50 HC $5.00. 125 PAGES.

How effectively have the purposes of federal aid to vocational education laws been realized? In the light of research, can allotment systems to the states be improved? Has federal aid stimulated state-local expenditures for vocational education? These are the major concerns of the economic analysis of intergovernmental fiscal relations.

The study calls attention to two problems inherent in a federal structure of government. One is the conflict between the desire to meet national objectives and the commitment to maintain a system of decentralized authority. The other is the divergence between local need and local fiscal capacity.

"Often national needs are not simply the sum of state-local needs. Voters and their representatives at the local level may not see the need for programs, the benefits of which accrue largely outside the boundaries of their locality. In many cases, the benefits of vocational education are of this nature."

When speaking of the means for apportioning federal funds among states and localities, several alternatives are given:

—Federal funds may be used for direct support to particular projects—as is the case with Title III, E.S.E.A. of 1965.

—Federal payments may be apportioned to states and localities by fixed dollar amounts—E.S.E.A., Title I.

—A fixed federal appropriation among states may be divided, based on: (a) state expenditures, (b) some quantitative measure of the program's extent, such as pupil enrollment, or (c) potential demand for the program (e.g., population in a particular age group).

"Federal and state monies for vocational education are often distributed by the states to local school districts on the basis of either expenditures or enrollments. Whatever means are used to apportion funds among states or localities, the allotments so determined can be adjusted to reflect relative state and local fiscal capacity. The Vocational Education Act of 1963 provides for such an adjustment."

The Smith-Hughes Act is given as an example of legislation which imposes conditions on local governments which receive grants-in-aid. These are the well-known matching requirements, and the submission of a state plan which provides for a number of qualitative aspects of the program.

The study traces the intergovernmental fiscal relations of the Smith-Hughes and George-Barden Acts during the 1947-1964 period to determine the way in which federal appropriations for these two acts were allotted among the states. The two basic methods by which states allot funds to local areas were also analyzed. Major concern is given to the fiscal response of states to federal funds earmarked for vocational education. The states of Maryland, Pennsylvania, Virginia, and West Virginia are used as examples.

Also examined are the technical education programs initiated in 1959 under Title III of the George-Barden Act.

The conclusions of the study are made in relation to two basic questions: "Can the procedures used to allot federal vocational education funds among the states be improved?" And: "Has federal aid stimulated state-local expenditures for vocational education?"

In response to the first question, the study states that despite the improvements introduced by the Vocational Education Act of 1963, significant changes in allotment procedures can be made which would better meet national education objectives.

"A major innovation of the 1963 Act was the inclusion of an equalization provision in the allotment procedures. Only about 6 percent of the 1966 appropriation was in effect shifted from rich to poor states by applying the equalization provision. As indicated in that section, the particular mathematical form of the formula used in the equalization provision could be improved so as to better reflect the intent of Congress.

"It was also argued that per capita personal income is a misleading measure of state fiscal capacity to use in such equalization formulas. In addition, matching ratios could be adjusted so that states which receive larger federal allotments because of their relatively low fiscal capacity would not be required to spend larger amounts of state-local funds."

The second question—"Has federal aid stimulated state-local expenditures for vocational education?"—received a qualified negative response.

"The study of the 1947-64 period indicated that no significant relationship existed between changes in federal expenditures for vocational education and changes in state-local expenditures: . . . Some states were in a good position to match federal funds as they already had such programs, and other states did not respond to any significant extent."

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Social Factors in Slums

8:18 "AN ANALYSIS AND INTERPRETATION OF DATA ON THE SOCIAL CHARACTERISTICS OF RESIDENTS OF "VINE CITY" — A NEGRO SLUM GHETTO WITHIN THE CITY OF ATLANTA, GEORGIA" BY MARCIA L. HALVORSEN, SPELMAN COLLEGE, ATLANTA, GA. (PROJECT # 6-8162) 1967. 61 PAGES.

The sociological study of "Vine City," a Negro section of Atlanta, was conducted to gain more perspective and understanding of the Southern urban Negro community. "Thus far, very little has been done in the way of controlled and objective study of the nature and problems of the Southern urban community whose populace is both Negro and poverty-stricken."

Primarily a statistical analysis with some interpretive material, the study was planned and conducted by the instructor and undergraduate sociology students at Spelman College in Atlanta.

The community studied, consisting of about 40 square blocks near the center of Atlanta, had 1,275 families living there. An arbitrary grid was placed over the complete area, dividing it into 10 interviewing sections. Structured interviews were conducted with 136 "Vine City" residents, or 11 percent of the family population. The questions asked centered around 11 areas of interest: family structure; housing; education; health; budget and spending; income; employment; political behavior and attitude toward authority; social activities, entertainment and recreation; deviant behavior patterns; and, finally, social class identification.

The study reveals that the median annual family income of those reporting was between $2,000 and $2,100. More than half of the respondents had family incomes of less than $3,000. Many of the people interviewed, over one-third of the group, did not appear to know, or remember, or care to say, what their incomes were.

The investigators found the patterns of employment and unemployment complicated and confusing. Many people had casual or sporadic work in a variety of jobs, and it was difficult to determine how they should be categorized for statistical purposes. It is suggested in the report that "underemployment" was a more characteristic description of workers' status.

The study's tabulation of specific occupations reveals that the great majority of workers were engaged in low-level service, unskilled and semi-skilled occupations. It was reported that the level of educational attainment could not be considered the prime deterrent to upward job mobility, as might be the case in Northern cities. Rather, discriminating practices severely restricted Negroes' job opportunities, regardless of qualifications.

Among the conclusions of this disturbing study is the statement that the Southern Negro is in no position to control or alter his destiny. "At the core of the problem is the fact that in all the major areas of life, the people are in a position of dependency. They have little control over what happens to them. They are not even asked, effectively, about solving their own problems. Outsiders tell them what is good for them and bad about them."

All of the 11 topics treated in the study should be sources of concern for the educator, regardless of his geographic location, for the seeds of hopelessness and apathy that have been generated in the "Vine City" of Atlanta are to be found in every state and region. This revealing investigation of the stunted fabric of life in a closed community, stated in stark statistical terms, gives poignant testimony to the great disparity between the mainstream of American life and those who exist in the subculture of ignorance, disease and poverty.

Plant Site Location

8:19 "IMPLICATIONS OF VOCATIONAL EDUCATION FOR PLANT SITE LOCATION" BY ERNEST H. DEAN. UTAH TECHNICAL COLLEGE, PROVO, UTAH. (PROJECT # 6-8498) 1967. (VT # 003-386) 222 PAGES.

"Do industrialists consider the existence of vocational-technical facilities when they are determining plant site location?" This is the main question of the Utah Technical College study.

"For many years, vocational school people, community leaders, government officials and business organizations have maintained that the presence of a vocational-technical school in a community was an important factor considered by manufacturers as they looked for new plant sites."

The major hypothesis for this study is that claims and projections by businesses are based on limited observation, and in no instance upon investigative research to validate their contentions. A second hypothesis is that very little has been written, substantiated by research, upon vocational-technical education as a factor in manufacturing plant site location.

Sixteen research questions relating to the main purpose of this study were stated:

1. Was vocational-technical education considered by manufacturers as a factor in their plant site selections?
2. Among the factors considered in the plant site selection process, where was vocational-technical education considered in rank of importance?
3. Were certain organizatons, including vocational school educators, looked to for assistance in the selection process?
4. Were public relations efforts, such as school information brochures, helpful in the selection process?
5. Did plant site selectors visit the vocational school facilities prior to selection of their sites?
6. Did plant site selectors secure a commitment from vocational-technical schools of their willingness and ability to train workers for the company?
7. Was preference placed upon kinds of schools conducting vocational education a factor in the selection process?
8. What was the importance placed upon levels of vocational education in the selection process?
9. What specific vocational courses are factors in the selection process?
10. What is the importance of certain factors, such as community attitude toward vocational education, which might enhance vocational-technical education as a factor in the selection process?
11. What is the importance of the proximity of the vocational school to the proposed plant site in the selection process?
12. What is the relative importance placed upon vocational-technical education as a factor in plant site selection, by various categories of the manufacturing industry?
13. Do companies of varying sizes assess vocational-technical education differently in the selection process?
14. Do companies locating plants in the states covered in this project assess vocational-technical education differently in the selection process?
15. What alternatives to vocational-technical education are factors in the selection process?

16. How do results of this study compare with other related studies?

The conclusions and recommendations of the study are based on five sources of information: the series of interviews, returned questionnaires, a *Fortune* survey of plant site selection factors, other related literature and a statistical analysis of the first three sources.

The study reveals that among the factors considered in plant site location, the supply of an adequate work force had first priority. This was followed, in order of importance, by transportation, available land and buildings, market, college and vocational education, and allied business relations.

Twenty-four other conclusions are reported. Among these is the finding that vocational education is a factor considered by the intermountain manufacturing industry, particularly clothing manufacturing, metal fabricating and electronic-electrical-refrigeration plants with large numbers of employees.

The Utah Technical College study is a thorough and comprehensive analysis of the methods employed and the factors considered by industrial management when making determinations about plant site location. The vocational-technical administrator will find this document a valuable source of information about policies and practices in various types of industry, which should help him more effectively communicate the benefits and resources of his own program to the industrial community.

"PLAIN TALK"

IN PERIODS OF CHANGE, when new situations and problems cannot be readily satisfied by yesterday's remedies, the value of leadership, at every level of authority and realm of responsibility, becomes a major concern. Such is the case today; the number of capable administrators of vocational education is not sufficient to fill existing vacancies.

Yet the efforts to train vocational education leaders continue to be uncoordinated and sporadic, slow in adapting to changing conditions and demands. In terms of dollar investment, they are feeble indeed when compared with the management training expenditures being made by business and industry. It would seem fair to ask, therefore, why state and federal offices are not doing more to prepare vocational teachers for leadership positions.

In private enterprise, management training has become an important part of the overhead budget. Originally, the training of administrative personnel was devoted exclusively to operational matters, the techniques and practices closely associated with the business. Now, the typical training program not only has instruction in group dynamics and other behavioral studies, but there is also a new emphasis on the humanities, such as art, literature, and history.

There should be lessons for educators in this. If profit-making organizations are willing to invest thousands of dollars on an individual with leadership potential, they must be convinced that such an expenditure pays dividends. Leaders of business and industry must also believe that a more generalized interdisciplinary program has certain profitable benefits.

Although the studies reported in this issue do not effectively deal with the fundamental problem—the need for more extensive financial commitment to leadership recruitment and training—they are, as a whole, excellent. The reports treat topics related to the training and upgrading of leadership personnel, or they investigate problems that should have bearing on the administration of state or local programs of vocational-technical education.

Specifically, the studies include: three analyses of costs and benefits; a doctoral program in vocational education administration; an economic investigation of intergovernmental fiscal relations; an instrument for evaluating state administrative offices for vocational education; factors employed by industrial management in determining plant site location, and a sociological study of the living and working conditions in a southern, urban Negro slum.

Comparative Cost Study Is Significant

Kaufman's analysis of comparative costs and benefits of vocational-technical education is especially important. Giving a thorough and comprehensive treatment to a controversial subject, the Kaufman study carefully delineates the research problems and inherent limitations associated with the measurement of human behavior and achievement. In economic terms, the study reveals that vocational education does indeed have a payoff in earnings and employment that should justify the additional instructional investment. Calling attention to the fact that vocational education has not penetrated the main ranks of the student body, it recommends that additional efforts are needed to insure that many more students become involved in some form of career-related instruction. It also proposes an open-ended curriculum, combining the objectives of gainful employment and continued education.

The Rutgers conference to consider a doctoral program in vocational education and administration presents the varied and often conflicting views of spokesmen from several academic disciplines and organizational settings.

Two practicing administrators of state and regional vocational programs stressed the value of specific knowledge and prior experience, recommending that each candidate for leadership training should have a background of payroll

employment and vocational teaching. Contending that the doctorate in vocational education administration should be a practitioner's, rather than a scholar's degree, the men placed heavy emphasis on tool subjects for administrative work that are based on careful job analysis. On the other hand, spokesmen for academic disciplines espoused the importance of the humanities.

In the extreme, either of these positions would be faulty. There can be no question that a doctor's degree should stand for more than mere proficiency in administrative practices. Equally inadequate would be the doctoral program in vocational administration that is all theory, one which neglects to fully appreciate the contribution of the professor who has run the school. What is needed, it would seem, is a balanced combination of theoretical concepts and practical applications. Expressed in personality terms, the ideal administrator of vocational education is a practical dreamer, one who never loses touch with the broad philosophical concepts affecting schools and people; while at the same time, he is able to balance the budget and make the buses run on time.

Story of "Vine City"

The story of "Vine City," a Negro slum area in Atlanta, is based on an investigation conducted by undergraduate sociology students enrolled in Spelman College. Presented in statistical terms, the report is a stark testimonial of life in a closed society. Many residents of Vine City were subsisting within a perpetual cycle of poverty: malnutrition, disease, inadequate housing, and irregular employment were commonplace. Worst of all, the opportunities for residents to break out of their debility, regardless of personal initiative or ambition, were severely restricted. Education and job training for such persons would have little value in themselves. As long as restrictive employment practices limit the Negroes' access to better jobs, there is little incentive for educational achievement.

An important fringe benefit of the study was reported. This was realized by the college girls who conducted interviews and prepared statistical data. The report states that participation in the Vine City study was for many college students a rare source of insight and understanding.

New York State Story

Probably the most ambitious program to train leadership manpower has been the three year effort in New York State. Here, something in the neighborhood of one million dollars was spent on 45 persons, teachers mainly, who were selected on the basis of educational qualifications and leadership potential. State and federal money was used to subsidize each trainee's salary throughout his year in the program, and for the expenses of travel and college instruction. A significant corollary to this exemplary new departure has been the corresponding breakthrough in new area vocational programs in the state.

Five years ago, New York State had less than 10 area vocational programs for high school students. Today, there are nearly 50, mainly in regions of the state where opportunities for vocational instruction had been severely limited in the past. Closely associated with this dramatic increase has been the intensive program of leadership training.

For a majority of the persons involved, the internship phase of the program was the actual development of a new area program in a new situation. Typical tasks performed included the preparation of five-year labor demand and curriculum projections; the recruitment and selection of staff; and the preparation of educational specifications: in fact, all of the details associated with getting a new school off the ground.

The benefits of this singular investment in management manpower can only be assessed in terms of the leadership contributions of its 45 graduates. So far, one year after the program's conclusion, this has been most impressive. At present, all but two are serving as directors or assistant directors, mainly in new area centers of technology of New York State. Only time will tell how effectively each leadership training graduate will perform, but they already have paid back a substantial return on the original investment.

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8:2 "Report of Workshop for Administrators of Vocational Home Economics Training Programs in Wage-Earning Occupations" by Buntin, Ann. Texas Technological College, Lubbock, Tex. (Project # 5-0180) 1965. ERIC # ED 003 098. MF $0.25 HC $1.56. 39 pages.

8:3 "The Advanced Degree and Vocational-Technical Education Leadership (A Symposium)" by Schaefer, Carl. Rutgers—The State University, New Brunswick, N. J. (Project # 5-8464) 1966. ERIC # ED 010 015. MF $0.25 HC $2.40. 60 pages.

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8:9 "Leadership Development Seminar: Vocational-Technical Education" by Smith, Clodus R. University of Maryland, College Park, Md. (Project # 7-0451) May 15-26, 1967. (VT # 002-105) 57 pages; July 24-Aug. 4, 1967. (VT # 002-137) 93 pages.

8:10 "Evaluation Conference Leadership Development Seminars, Program Planning, Budgeting and Evaluation" by Smith, Clodus R. University of Maryland, College Park, Md. (Project # 7-0451) 1967. (VT # 004-630) 42 pages.

TOPIC TWO: Costs and Benefits of Vocational Education

8:11 "Vocational Education: A Study of Benefits and Costs (A Case Study of Worcester, Mass.)" Corazzini, A. J. Princeton University, Princeton, N. J. (Project # 5-0172) 1966. ERIC # ED 010 296. MF $0.75 HC $5.32. 133 pages.

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TOPIC FOUR: Studies of General Interest to Administrators

8:17 "Vocational Education and Intergovernmental Fiscal Relations in the Postwar Period" by Davie, Bruce F. Georgetown University, Washington, D. C. (Project # 5-0185) 1966. ERIC # ED 010 642. MF $0.50 HC $5.00. 125 pages.

8:18 "An Analysis and Interpretation of Data on the Social Characteristics of Residents of 'Vine City'—A Negro Slum Ghetto within the City of Atlanta, Georgia" by Halvorsen, Marcia L. Spelman College, Atlanta, Ga. (Project # 6-8162) 1967. 61 pages.

8:19 "Implications of Vocational Education for Plant Site Location" by Dean, Ernest H. Utah Technical College, Provo, Utah. (Project # 6-8498) 1967. (VT # 003-386) 222 pages.

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TOPIC FOUR: Studies of General Interest to Administrators

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AVAILABILITY OF REPORTS FOR FURTHER STUDY

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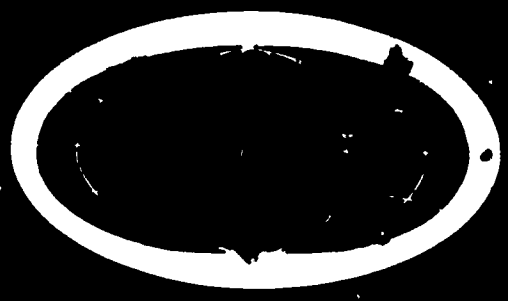

"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633: "Synthesis and Application of Research Findings in Vocational Education").

Vocational Education Is Service . . .

Quality research and evaluation procedures are essential for the growth of vocational education. Scientific efforts serve by validating the achievements and exemplary features of current practice. They also point the way toward desirable change and improvement. What is called for are more coordinated and comprehensive efforts at all levels, with provisions for the widespread distribution of results. The Panel of Consultants, earlier aware of the critical shortage of research and evaluation activities relating to vocational education, made the following recommendations:

1. The States and the Federal Government develop an adequate and standardized system of reporting.

2. Extensive research and program development be performed where adequate facilities and research personnel are located or can be assembled. Such centers would usually be located at universities. Developmental projects will more often be located in local school districts. These activities can

BOUND VOLUMES OF 1967-68 ISSUES TO BE AVAILABLE

A limited supply of paper-bound consolidations of Research Visibility is now being prepared. The nine issues, from September 1967 through May 1968, will be available by June. A charge of $1.25 for each copy will be made to defray the costs of printing, binding, postage and handling. Please send orders to: Research Visibility, American Vocational Association, 1025 - 15th St. N.W., Washington, D. C. 20005.

Research and Evaluation

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Dr. Gordon F. Law is editor of "Research Visibility." The organization for this department of the JOURNAL, the pattern for reporting and the writing represent his work.

only be performed where persons are knowledgeable concerning research methods and have facilities for proper control and evaluation of the activities under study.

3. Research be encouraged, initiated and coordinated at the national level. The results of research and development should be made available on a nationwide basis. An effort should be made to prevent duplication or extensive overlapping of research efforts.

4. The local school district, the State, and the Federal Government each maintain a plan for evaluation.

One major result of the above recommendations has been the establishment of a Research Coordinating Unit (RCU) in each state.

These RCUs report similar objectives: the coordination, dissemination, and initiation of research activities, but their precise organizational structure tends to vary. They are either supervised by State Departments of Education or are located in a university setting. Arguments for the relative advantages of each authority are often stated in the reports. Location in a university, it is said, provides better opportunities for quality research: accessibility to computers and libraries and a ready staff of professional people and graduate students.

On the other hand, it is argued that organization through State Departments encourages less theoretical, and more applied, research. Because of its direct contact with the schools, this structure affords immediate opportunities for experimentation, initiation and adoption of new programs.

Despite certain obvious similarities among RCUs there are a variety of differences, as the Minnesota report suggests:

"There is a wide disparity among RCUs in terms of their purposes, the relative emphases placed upon purposes, and the resultant activities these differences engender. Part of these differences reflect changing views within the Bureau of Research; much more significant, and more relevant causes, however, are variations in the needs perceived by individual states: the continuously evolving conditions within States and the administrative setting in which the RCUs function."

TOPIC ONE: Research Coordinating Units

Minnesota Coordination Unit

9:1 "MINNESOTA COORDINATION UNIT FOR RESEARCH AND DEVELOPMENT IN OCCUPATIONAL EDUCATION" BY JEROME MOSS, JR., AND HOWARD F. NELSON. UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MINN. (PROJECT # 5-0097) 1967. ERIC # ED 011 062. MF $0.25 HC $0.92. 23 PAGES.

The Minnesota RCU, established June 1, 1965, is located on the Minneapolis campus of the University of Minnesota, and administratively in the College of Education of the University. In the original application for funds, six purposes for the proposed agency were stated:

1. To facilitate the voluntary coordination of occupational research and development activities within the State and, from time to time, within the Upper Midwest Region.

2. To stimulate research and development activities.

3. To provide clearinghouse services for occupational education research and development efforts.

4. To provide technical consultation in the creation and conduct of relevant research and development projects.

5. To encourage, conduct and facilitate long and short-term education programs for persons preparing for or engaged in occupational education research.

6. To conduct some of the significant basic and applied research needed.

This report contains information about the organizational structure of the Unit, listing two co-directors, three full-time and four part-time research fellows, and a clerical staff of seven. When speaking of the Unit's location in a university setting, the report mentions the value of having ready access to computer installations and libraries, consultants from education and related disciplines, and various research organizations.

"But perhaps the greatest resource is advanced graduate students" the report states. "They not only serve the Unit as staff members; they are among the principal beneficiaries of its operation."

The summary of results of the Minnesota Research Coordinating Unit has been organized under the six principal purposes which have been established. In each case, there is a substantial body of evidence which would indicate that this agency is a viable and significant phase of research activity in the state of Minnesota.

North Dakota Coordinating Unit

9:2 "ESTABLISHING A VOCATIONAL RESEARCH COORDINATING UNIT" BY ELWYN H. NAGEL. UNIVERSITY OF NORTH DAKOTA, GRAND FORKS, N. D. (PROJECT # 5-0098) 1967. ERIC # ED 012 333. MF $0.25 HC $0.88. 22 PAGES.

The Center for Research in Vocational and Technical Education, University of North Dakota, was established as an RCU on June 30, 1965. It began with the full cognizance, on the part of the activating officials, "of the primary purpose of vocational education—which is to provide the skills and knowledge which people must have for gainful employment."

The North Dakota Center is responsible to the State Board for Vocational and Tchnical Education. A six-member advisory committee, which includes University faculty and administration, the state director of vocational education, and local school administrators, provides direction in identifying problems and developing plans for conducting needed research. The Center staff is composed of one full-time director, two full-time principal researchers, four part-time research assistants, consultants, one full-time secretary, one part-time secretary, and one data processing assistant.

Nine objectives were established for the Center. For each, a number of activities are listed which illustrate the nature and degree of compliance. The objectives for the North Dakota RCU are:

1. Build an atmosphere within a State that commits itself to research and is receptive to it—especially with state staff, school leaders and legislators.

2. Stimulate projects, ideas and understanding of research.

3. Provide leadership in research-related activities, including seminars and conferences.

4. Coordinate state education re-

search efforts in state agency and with other state government and professional agencies and professions.

5. Serve as consultants on research ideas and projects that forward vocational education.

6. Disseminate research information that enables others to utilize recent research findings.

7. Identify research training needs and personnel.

8. Work toward the identification of basic problems needing research.

3. Develop long-range plans for conducting research.

The report contains a complete listing of 17 research proposals developed by the Center as well as 13 studies coordinated by the RCU, which were directed primarily by graduate students and vocational educators.

Mississippi Coordinating Unit

9:3 "THE ESTABLISHMENT OF THE MISSISSIPPI RESEARCH COORDINATING UNIT FOR VOCATIONAL AND TECHNICAL EDUCATION" BY JAMES E. WALL. MISSISSIPPI STATE UNIVERSITY, STATE COLLEGE, MISS. (PROJECT # 5-0099) 1967. (VT # 001-638) 16 PAGES.

Four main purposes were given for the Mississippi RCU, which was established in June 1965. These are to: *stimulate* persons in Mississippi to conduct research; *coordinate* vocational and technical research within the State in order to avoid overlap and duplication; *implement* research projects under the direct supervision of the RCU staff, and *disseminate* research information that has been derived within the State and which has been obtained from regional and national sources.

The first step toward accomplishing these purposes was the coordination of two advisory committees: the Mississippi State University Committee for Vocational-Technical Research and the Mississippi State Committee for Vocational-Technical Education Research. Membership in the former was comprised of administrative department heads, deans, directors, coordinators, and other University officials. The latter committee of advisers included the state director and vocational research coordinator of the State Department of Education. Additional members of this statewide committee included vocational teacher-educators and representatives of the State Employment Security Commission.

Citing the various activities which the RCU accomplished, including the stimulation of five research projects, the report makes specific recommendations for further efforts. When speaking of the need for new and broader forms of graduate training, the Mississippi report makes a strong statement which bears repeating:

"Good education does not occur through the use of tricks or tools, but through well-prepared teachers and other educational personnel. It is estimated that such innovations as computerized classrooms are almost here; but the most pressing current problem is that teachers and schools just are not changing fast enough, and technology is changing too fast. To get teachers and schools to change will require *experts in educational change*. . . ."

California Coordinating Unit

9:4 "A PROPOSAL FOR THE ESTABLISHMENT OF A STATE COORDINATING UNIT FOR OCCUPATIONAL RESEARCH AND DEVELOPMENT" BY EVERETT D. EDINGTON. STATE DEPARTMENT OF EDUCATION, SACRAMENTO, CALIF. (PROJECT # 5-0100) 1967. (VT # 004-198) 25 PAGES.

The California RCU, because of problems encountered in recruiting staff, did not begin operations until June 1, 1966. The original proposal listed 15 specific activities which the Unit would perform to accomplish the functions of coordination, dissemination, consultation, and stimulation.

After the Unit was in operation, the proposed activities were further analyzed to determine which should be given top priority during the initial year of operation. Based on this analysis, major emphasis was given to eight activities:

1. Act as a liaison with State agencies, labor groups and others interested in research related to vocational education.

2. Work with institutions of higher education in initiating and conducting such research.

3. Encourage school districts to design and conduct research projects.

4. Provide consultative services for institutions or groups conducting research in vocational education.

5. Locate completed research which is related to vocational education.

6. Disseminate findings of research in vocational education.

7. Aid school districts and institutions in obtaining funds to conduct research in vocational education.

8. Sponsor inservice training in research methods and design for those interested in research related to vocational education.

The California RCU is located in the State Department of Education and is directly responsible to the state director of vocational education. The staff includes the coordinator of research, two research and evaluation consultants, a stenographer, and other part-time professional and clerical help. An advisory council was organized to help identify problem areas and establish priorities for occupational research.

The report contains information about the accomplishments of the Unit as they apply to the previously stated objectives. Included are listings of school districts, junior colleges, colleges and universities, and private organizations which had received consultative services; a tabulation of 31 research projects that the RCU had assisted in planning and developing, many of them concerned with the disadvantaged; descriptions of dissemination activities and inservice training programs, and RCU liaison activities between various agencies and organizations interested in research in vocational education.

Idaho Coordinating Unit

9:6 "THE ESTABLISHMENT OF A STATE OCCUPATIONAL RESEARCH AND DEVELOPMENT COORDINATING UNIT" BY KENNETH M. LOUDERMILK. UNIVERSITY OF IDAHO, MOSCOW, IDAHO. (PROJECT # 5-0102) 1967. ERIC # ED 010 854. MF $0.25 HC $0.92. 23 PAGES.

The State Occupational Research Unit in Idaho was initiated on June 1, 1965. Since its inception, the Unit has been a joint effort between the College of Education, University of Idaho, and the Idaho State Board for Vocational Education. The purposes and objectives were to: conduct occupational research; coordinate research by other agencies, organizations, and individuals; stimulate new research, and provide research consulting services.

Fifteen specific activities performed by the Unit during its first 21 months of existence are presented in this report. These include: clearing house functions, training of graduate assistants, the conduct of surveys, and the identification of issues and problems relating to vocational education.

The Unit found that comparatively

little research in vocational education had been done in Idaho. "Consequently, there have been few occasions when the Unit could provide consulting services for ongoing research projects."

It was decided that the Occupational Research Unit should engage directly in research activities. However, the report states that a limited staff and travel problems peculiar to Idaho have rendered the conduct of several important studies virtually impossible. "Consequently, the studies completed to date are not necessarily representative of those which should receive top priority. The real need which continues to exist is for the employment of research personnel in different areas of the state whose *main interest and responsibility* is research in the vocational-technical area."

New Mexico Coordinating Unit

9:7 "THE ESTABLISHMENT OF THE STATE RESEARCH COORDINATING UNIT FOR THE STATE OF NEW MEXICO" BY GENE SCHRADER. STATE DEPARTMENT OF EDUCATION, SANTA FE, N.M. (PROJECT #5-0103) 1967. ERIC # ED 012 347. MF $0.25 HC $0.92. 23 PAGES.

The following major activities were established for the New Mexico RCU: (a) complete the occupational survey of New Mexico; (b) work closely with the research division of the State Department of Education; (c) accept, in cooperation with the State Research Division, responsibility for the statewide coordination of all vocational education research; (d) work cooperatively in coordination of college occupational research activities; (e) assist in the implementation of developmental and experimental research programs, and (f) assist in any occupational research program growing out of the Manpower Development and Training Act, Area Redevelopment Act, Economic Opportunity Act, or Elementary and Secondary Education Act.

The New Mexico RCU report contains information as to the various ways in which it has sought to accomplish its objectives. Included is a list of 43 agencies and institutions contacted, details about dissemination of data for a statewide occupational survey, and evidence of cooperation with the Research Office of the State Education Department. Research activities of the Unit are described in the appendix section.

Among the recommendations of this report is a statement that methods need to be developed to implement known research into existing programs. It was here suggested that demonstration programs in selected schools would be appropriate.

Oregon Coordinating Unit

9:8 "VOCATIONAL EDUCATION RESEARCH AND DEVELOPMENT COORDINATING UNIT FOR THE STATE OF OREGON" BY T. A. RYAN. OREGON STATE UNIVERSITY, CORVALLIS, ORE. (PROJECT # 5-0104) 1967. ERIC # ED 012 391. MF $0.50 HC $2.76. 68 PAGES.

The developmental plan for the Oregon RCU was based on the assumption that a primary purpose of vocational education is to prepare youths and adults for gainful employment. Reflecting the philosophy that efficient educational planning in an industrial-urban society in a period of rapid change cannot proceed on a trial-and-error basis, the report proposes that efficient curriculum decisions in vocational education are made on the basis of considered information about human resources, occupational opportunities and educational development.

Established June 1, 1966, the Oregon Unit defines four major aims: (a) to identify researchable problems and issues and establish research priorities; (b) to generate quality research and upgrade research competencies of vocational educators; (c) to develop and implement effective strategies and procedures of information dissemination, and (d) to facilitate implementation of research in innovative programs of training and education.

Located at Oregon State University, the Unit is a cooperative undertaking of the State Department of Education and the State System of Higher Education. A statewide network of seven advisory panels was established, with a central advisory group serving as a steering committee for the Unit.

Major activities of the RCU during the first 18 months of operation are included in this report. To some extent, each of the four aims was achieved. Of special interest was an evaluation of the RCU's effectiveness. Using a questionnaire survey technique, the Unit found that Oregon educators had several suggestions for improvements:

—Facilitate exchange of ideas among individuals representing education, labor, industry, and government.

—Conduct surveys to identify priority problems in vocational education.

—Report regularly in nontechnical language on pertinent research.

—Provide demonstrations and consultative services.

—Relate to development of innovative programs.

—Maintain and operate a dissemination center.

—Provide for information retrieval and dissemination.

Nebraska Coordination Unit

9:9 "RESEARCH AND COORDINATION UNIT IN THE AREA OF OCCUPATIONAL NEEDS RESEARCH COORDINATION IN NEBRASKA" BY JAMES T. HORNER. UNIVERSITY OF NEBRASKA, LINCOLN, NEB. (PROJECT # 5-0105) 1966. ERIC # ED 010 617. MF $0.25 HC $0.46. 10 PAGES.

The Nebraska RCU's initial obligation has been to assume the leadership for the development and stimulation of research which affects policy making and program operation. The main endeavor has been the organization and testing of a system for projecting needs for vocational and technical education.

The report states that one of the most significant accomplishments completed by the Unit is a pupil data enrollment bank, which has magnetic tape files of student enrollments by course and grade. Other accomplishments include the assistance given to regional educational service units, an economic opportunities study for the

State, and developmental work for a community model program.

Among the conclusions of the Nebraska RCU report is the statement that the State is typical of others in the Mid-Plains: although unemployment is relatively low, underemployment poses a considerable problem.

Colorado State Center

9:10 "A PLAN TO PROVIDE AN OCCUPATIONAL RESEARCH CENTER AT COLORADO STATE UNIVERSITY" BY DOUGLAS SJOGREN AND DAVID SHEPPARD. COLORADO STATE UNIVERSITY, FORT COLLINS, COLO. (PROJECT # 5-0107) 1967. ERIC # ED 010 612. MF $0.25 HC $0.76. 11 PAGES.

This report discusses the 12 objectives of the Colorado RCU in terms of the specific activities that had been undertaken. These activities include the initiation of research; various coordination and cooperative services; the stimulation of research activities in other agencies, and the dissemination of research-related information. Of these, the report states that the Unit has been concerned mostly with stimulation of seven research efforts and initiation of two major studies.

Research stimulation efforts reported include work with education, business and economics departments of the University of Colorado, and with the various school systems in the State. Also, a survey of high school guidance programs in Colorado, sponsored by the State Board for Vocational Education, has been assisted by the RCU. The two major research projects conducted by the Colorado RCU are the 1963 High School Graduates Follow-up Study and an analysis of electronics industry occupations.

Washington State RCU

9:11 "RESEARCH COORDINATING UNIT FOR VOCATIONAL EDUCATION IN WASHINGTON STATE DEPARTMENT OF PUBLIC INSTRUCTION" BY GEORGE P. PILANT. STATE DEPARTMENT OF PUBLIC INSTRUCTION, OLYMPIA, WASH. (PROJECT # 5-0108) 1967. (VT # 004-758) 29 PAGES.

The Research Coordinating Unit for Vocational Education is operated by the Department of Public Instruction in Washington State. Since beginning operations June 1, 1965, the Unit has been engaged in four basic activities:

1. Coordinate local, State, Federal and private vocational education research activities.

2. Design state research projects and activities to assist schools in the improvement of vocational education programs.

3. Serve as a statewide clearinghouse of vocational research information for state staff and local district vocational educators.

4. Provide skilled research consultant service.

The greatest deterrent to full realization of the Unit's potential was the inability to locate staff. "Not until September 1966 was a full-time coordinator hired. For two-thirds of the 21 months that the RCU existed . . . trained personnel could not be found."

Nonetheless, several projects were carried out under the guidance of the Unit. Six of these were forms of contract research, whereby the Unit provided limited financial resources to individuals or agencies who had proposed an acceptable plan.

These studies were:

—A follow-up system using data processing techniques.

—A needs survey for Oceanography technicians.

—Development of an innovative, introductory program for Distributive Education.

—A cooperative training program involving the airplane industry.

—Development of a programed instruction innovation in agricultural education.

It was further reported that a major research project undertaken by the RCU was a cost analysis of vocational education in Washington State.

Montana Coordinating Unit

9:12 "PROPOSAL FOR ESTABLISHMENT OF PROTOTYPE OCCUPATIONAL AND RESEARCH DEVELOPMENT COORDINATING UNIT" BY JAMES F. WATKINS. MONTANA STATE DEPARTMENT OF PUBLIC INSTRUCTION, HELENA, MONT. (PROJECT # 5-0109) 1967. ERIC # ED 012 330. MF $0.25 HC $0.84. 21 PAGES.

Established in August 1965, the Montana RCU is operated under the authority of the State Department of Public Instruction. The Unit has undergone three major stages of development during its first 19 months of operation: Period of Organization; Establishment of Professional Relationships, and Conduct of Activities.

The operational framework of the Unit provides for four main functions:

1. An educational research retrieval and dissemination center.

2. A consulting service for local school districts in planning and implementing vocational and technical programs.

3. A research unit to gather, analyze, synthesize and report relevant research findings.

4. A source of aid in initiating and drafting proposals.

Seven related objectives are given: to initiate, assist, coordinate, conduct, disseminate, establish, and apply research activities.

The report states the Research Coordinating Unit has revealed certain basic weaknesses in the State's total vocational program. "The most serious deficiency seems to be a lack of a well-developed and coordinated State plan for expanding area vocational schools. A second major problem is the lack of communication between industry and vocational education leaders on the local and state levels."

Iowa Coordinating Unit

9:14 "ESTABLISHMENT OF AN OCCUPATIONAL RESEARCH AND DEVELOPMENT COORDINATING UNIT FOR THE STATE OF IOWA" BY KENNETH M. WOLD AND DONALD G. GREEN. STATE DEPARTMENT OF PUBLIC INSTRUCTION, DES MOINES, IOWA. (PROJECT # 5-0111) 1967. ERIC # ED 010 613. MF $0.50 HC $3.28. 82 PAGES.

The Iowa RCU report points up the fact that the state is in a period of transition and growth. "The annual value of industrial production in Iowa surpassed that of agriculture about 1955. In 1965 the value of industrial production was more than twice its four billion dollar value in 1955, and was three times that of agricultural production in 1965."

The impact of rapid industrial expansion, as well as the development of new area vocational schools, has stimulated activity to encourage, coordinate and conduct research on employment opportunities and development of human and educational resources.

Operated by the State Department of Public Instruction, the Unit staff includes a director, an associate director, an agency research coordinator, and an assistant for review and publication. This staff developed a set of 10 specific objectives:

1. To collect and disseminate information on employment opportuni-

ties, human resources, and educational programs.

2. To stimulate and encourage research on employment opportunities, human resources and educational programs.

3. To identify issues and problems which require study through research.

4. To establish and maintain working relationships with agencies, institutions, and organizations which are concerned with employment, human resources and education.

5. To provide support for line personnel in the Division of Vocational Education.

6. To assist in the planning and development of secondary and post-secondary educational programs, facilities and staff.

7. To assist in the development of a statewide computer-based system of vocational-technical education information.

8. To assist in the evaluation of vocational and technical education programs.

9. To promote vocational and technical education.

10. To coordinate activities and exchange information with selected states.

An interesting section of this report is a comparison of RCU activities with RCU objectives. A total of 47 activities were identified and analyzed to determine to what extent they satisfied the objectives.

Connecticut Coordinating Unit

9:15 "THE ESTABLISHMENT OF THE RESEARCH COORDINATING UNIT IN THE CONNECTICUT STATE DEPARTMENT OF EDUCATION" BY HERBERT RIGHTHAND AND OTHERS. STATE DEPARTMENT OF EDUCATION, HARTFORD, CONN. (PROJECT # 5-0132) 1966. ERIC # ED 010 614. MF $0.25 HC $1.52. 38 PAGES.

The Research Coordinating Unit in Connecticut is located in and operated under the Bureau of Vocational Services, State Department of Education. Initiated in June 1965, this Unit has seven specific objectives—to initiate and conduct studies of:

—Research staffing needs of the State Department of Education.

—Methods of collecting and disseminating research results.

—Techniques for coordinating research activities.

—Occupational education needs of the State.

—Application of data processing techniques to research.

—Occupational trends and emerging occupational fields.

—Staff participation in conferences, meetings and seminars.

The main body of this report presents a topical accounting of the Unit's activities as they relate to the objectives. The 35 research activities and their value are used to justify the expansion of the Connecticut RCU with continued support of federal funds. Among the seven recommendations are those advocating automated reporting procedures, more research at the local level, and a continuation of research seminars and conferences.

Michigan Coordinating Unit

9:16 "A PROPOSAL FOR THE ESTABLISHMENT OF A STATE VOCATIONAL EDUCATION RESEARCH COORDINATING UNIT IN MICHIGAN" BY CHARLES L. LANGDON. STATE DEPARTMENT OF EDUCATION, LANSING, MICH. (PROJECT # 5-0134) 1967. (VT # 004-762) 40 PAGES.

Although authorized to begin operations on June 1, 1965, the Michigan Research Coordinating Unit was not established until late October of that year. Activities of the Unit were largely guided by the broad objectives set forth in the first national meeting of RCU directors, held in Washington during July 1965.

The stated purpose of the Michigan Unit was to stimulate and encourage occupational education research and developmental activities in the State Department, local school districts, colleges and universities, and other appropriate organizations. Operated by the State Department of Education, the RCU established 10 principal activities, all related to stimulation, coordination and dissemination of research.

In the concluding remarks, the report states that major emphasis should be given to the areas of curriculum development, teacher preparation, guidance, evaluation, instructional materials, and special needs. "The primary intent of this commitment is to reduce the existing time lag between research and practice."

Arizona Coordinating Unit

9:18 "ESTABLISHMENT OF A STATE OCCUPATIONAL RESEARCH AND DEVELOPMENT COORDINATING UNIT" BY ARTHUR M. LEE. NORTHERN ARIZONA UNIVERSITY, FLAGSTAFF, ARIZ. (PROJECT # 5-0136) 1966. ERIC # ED 010 637. MF $0.25 HC $1.04. 26 PAGES.

"In Arizona 83 percent of the working force are employed in occupations requiring vocational or technical education, yet only 20 percent of Arizona high school students are enrolled in courses developing basic occupational skills and knowledge. Scientific and technical progress is forming changes in the patterns of vocational education, and these changes will increase. Educators must anticipate and prepare for new needs of the future; must develop new curricula; must search for new and better ways to train more students for the world of work."

This statement of need for vocational education research in Arizona provides the rationale for establishing a Research Coordinating Unit. The objectives of this Unit were to:

—Plan, implement and coordinate occupational research in the educational institutions and departments of the state.

—Locate research personnel and assist them in developing occupational research projects.

—Train students and vocational education personnel in the methods of research.

Perform other functions of research development, evaluation and coordination that contribute to the progress of vocational education.

Special emphasis has been given to these areas: (a) building a climate of vocational research in Arizona; (b) obtaining institutional cooperation in vocational research; (c) technical assistance in proposal design; (d) writing proposals for submission to founding agencies, and (e) liaison with federal and other funding agencies.

The accomplishments reported include: research development activities; research participation by individuals and groups; examples of interagency cooperation; coordination and dissemination functions, and some limited efforts to train researchers.

The report, when speaking of the new RCU operation as an experimental program, candidly notes that some of the energy and resources expended have resulted in disappointment and frustration. Among these have been the number of research suggestions brought to the staff's attention but not developed, and the research proposals which were begun but not finished.

Florida Coordinating Unit

9:19 "Establishment of a State Vocational Studies and Experimental Programs Coordinating Unit" by G. W. Neubauer. Florida State Department of Education, Tallahassee, Fla. (Project # 5-0138) 1966. ERIC # ED 010 596. MF $0.25 HC $0.84. 21 pages.

The purposes of the Florida Vocational Program Research Coordinating Unit are to coordinate, encourage and assist in the preparation of studies needed to improve vocational education in Florida. To accomplish these purposes, seven activities are listed: *Compile* summaries of vocational research; *identify* resources available for conducting vocational-technical studies; *assist* in developing additional resources; *encourage* concentration of resources in these areas; *field test* innovations, and *disseminate* results.

The Florida Unit, like a number of other RCUs, was delayed in its initial operations due to an inability to recruit competent research personnel. Although approved in June 1965, the first full-time researcher was not employed until September of that year.

Analysis of the activities described in this report reveals that the Unit staff worked to accomplish six main functions:

—Compile summaries of vocational studies and experimentation in progress.

—Identify resources available for conducting vocational-technical studies and assist in developing additional resources.

—Identify vocational-technical problem areas needing study and encourage concentration of resources in those areas.

—Field test innovations through pilot programs.

—Disseminate results.

—Program administration.

In the concluding statements of this report is a recommendation for giving added emphasis to four broad functions as the continued activity of the Unit takes place. These four are:

—Field testing of promising programs and methods through the setting of demonstration schools.

—Expanding efforts to include a comprehensive evaluation of vocational-technical education in the state.

—Establish an inservice training program in research.

—Assist in establishing a planning unit for gathering information on a continuous basis to expand and improve vocational-technical programs.

Oklahoma Coordinating Unit

9:20 "Oklahoma Vocational Research Coordinating Unit" by William Stevenson. Oklahoma State University, Stillwater, Okla. (Project # 5-0139) 1966. ERIC # ED 012 343. MF $0.25 HC $0.80. 20 pages.

The Oklahoma RCU report deals with the organization of that office under the joint sponsorship of the State Board for Vocational Education and Oklahoma State University, and with the various activities that have been undertaken since its inception.

The main objectives of this Unit were to coordinate research, generate new ideas, assist researchers, and disseminate results. Beginning operations July 15, 1965, the staff grew from one position to six by the following year.

The report lists the names of persons serving on the RCU advisory committee, and the consulting committee. These groups have representation from organized labor, manufacturing, business, agriculture and health occupations, and various academic disciplines and divisions of vocational education.

When reviewing the various activities performed by the Oklahoma Unit, the report considers several priorities for improved services:

1. Greater assistance to the State Department of Vocational Education in obtaining information necessary to evaluate programs efficiently.
2. Increased role as coordinator of research through more effective communication of current, relevant research findings to researchers, leaders and teachers in vocational education.
3. Increased involvement of vocational teachers in applicable phases of the research process.
4. Increased involvement of researchers from the other disciplines toward the solution of problems in vocational education.
5. More effective translation of research findings into guidelines which will result in changed and improved programs of vocational education.

North Carolina Center

9:21 "The Center for Research, Development and Training in Occupational Education" by Selz C. Mayo and John K. Coster. North Carolina State University, Raleigh, N.C. (Project # 5-1005) 1967. ERIC # ED 012 344. MF $0.25 HC $1.64. 41 pages.

The North Carolina Center for Research, Development and Training has been organized as an integral unit of North Carolina State University at Raleigh. Originally, it was designed to converge, focus and integrate resources of the Schools of Agriculture and Life Sciences, Education, and Liberal Arts on the program of the Center. In addition, close liaison has been maintained with the Graduate School, especially with regard to the appointment of graduate research assistants and research instructors to the Center staff.

Once the proposal for the establishment of the Center was approved, rapid progress was made to institute a program. On August 1, 1965, the staff consisted of a full-time equivalent of 3.8 senior staff members. At the time of this report, the Center had a complement of 13.25 senior staff positions, 4 research instructors, 6 full-time equivalent graduate research assistants, and 10.5 FTE secretaries.

Two main activities of the Center have been the initiation of a core program of research and development in six project areas of occupational education, and a program to upgrade training and education through conferences and short courses for vocational education personnel, researchers and lay leaders. The six topics selected for the program are:

—Occupational adjustments in the South.

—Shaping flexble vocational behavior in youth.

—Policy, organization and finance for occupational education.

—Professional personnel.

—Evaluation of occupational education.

—Occupational education in areas of economic transition.

The main body of this report is devoted to descriptions of the core research projects, and the various institutes and seminars which have been carried on by the North Carolina RCU. One of the studies reported, which should be of general interest, is "Shaping Flexible Vocational Behavior in Youth." In this investigation, the main hypothesis tested was that students' vocational behavior may be a function of social and economic conditions in the school community.

Kentucky Coordinating Unit

9:22 "Structuring of a Program of Research and Development for Kentucky Designed To Bring Together all Available Research Resources To Support a Continuing Program of Vocational Education" by Carl F. Lamar. University of Kentucky, Lexington, Ky. (Project # 6-3024) 1967. (VT # 004-656) 64 pages.

The Kentucky Research Coordinating Unit is centered in the College of Education at the University of Kentucky. It was authorized by the State Board of Education. The Unit's director is jointly responsible to the assistant superintendent of public instruction for vocational education and the dean of the College of Education, University of Kentucky.

The primary Unit includes a director, five associate research specialists, four research assistants, three secretaries, and student help when needed. In addition, the RCU involves 54 representatives selected from all professional levels and all program fields in vocational education, six representatives from the state employment service, a state research advisory committee, and special consultants as needed.

The location of the Unit at a University setting makes readily accessible many resources which facilitate research and training activities. These include the Computing Center; the University, college and departmental libraries on campus, and a staff of competent consultants in the related disciplines.

"A strong feature for the setup for the Coordinating Unit is the way that the Division of Education is organized in the College of Education. The Division includes all of the vocational education fields. Thus, the teacher education programs in all fields of vocational education are closely associated with the Research Unit."

Another strong argument in favor of locating an RCU in a University is the availability of graduate students. "A resource of great potential value to the Unit is the college student. . . . The students can serve as graduate or research assistants to the Unit's staff in conducting research and related activities. The Unit provides the students with opportunities for valuable research experience."

As was reported by many other RCUs, the recruitment of a professional research staff was a major problem. However, the fact that many graduate students were used was considered to have some benefits. "The atmosphere engendered by a staff which is largely striving to complete its academic preparation and which is seeking new experiences in research is, to say the least, stimulating."

When assessing the value of the Kentucky Unit, the report states that there has been scant evidence that research has yet made an impact on local program operation. "Undoubtedly, progress toward the use of research in the solution of vocational education problems on the local level will remain an arduous task until the value of research can be demonstrated to the teachers in the local school districts and specifically in the teaching situation."

Illinois Coordinating Unit

9:23 "Illinois Vocational Education Occupational Research and Development Coordinating Unit "by V. E. Burgener. State Board of Vocational Education and Rehabilitation, Springfield, Ill. (Project # 6-3030) 1967. ERIC # ED 011 981. MF $0.50 HC $2.64. 66 pages.

A research and statistical division of vocational education was in operation in Illinois more than 20 years ago. From this beginning has come the Research Coordinating Unit, which was established as one of the 24 in the nation approved prior to July 1, 1965.

Operating under the authority of the State Board of Vocational Education and Rehabilitation, the Illinois RCU has a chief of research, two research and training supervisors, three program supervisors, a fiscal and statistical officer, and two secretaries. A planning committee with an advisory function has been active in the development of recommendations for the Unit.

When speaking of research and experimental activities developed by the RCU, the report states that Illinois has been among the leaders in total 4(c) grants received under the Vocational Act of 1963. "Great emphasis has been placed on providing assistance to agencies and individuals to investigate and field test new ideas and techniques which are designed to broaden and enrich vocational education for youth and adults. . . . Illinois has become widely recognized for generating an unusually large number of experimental programs in local schools."

The report also presents information about workshops and conferences conducted, the development of a data processing system for information and records, and 10 RCU publications relating to the dissemination of results. In the appendix, which contains listings of the various research projects conducted, there is impressive evidence that the Illinois RCU has been instrumental in generating much research that is directly concerned with the vocational teaching process.

TOPIC TWO: Seminars and Workshops

Developing Research Abilities

9:25 "The Further Development of Research Competencies of Personnel in Vocational Education Research and Development" by Charles W. Hill. Cornell University, Ithaca, N.Y. (Project # 5-0164) 1966. ERIC # ED 010 503. MF $0.50 HC $4.20. 105 pages.

The series of Vocational Education Research Seminars conducted since 1963 are testimonies to the efficacy of committee effort. They illustrate, in most impressive terms, the prinicple that the organizational committee which has a clear purpose and dedicated workers can produce valuable results.

In 1961, the Research Committee of the American Vocational Association was alarmed by the scarcity of well-qualified individuals to do research and by the limited funds available for projects. It recognized that researchers in vocational education needed greater administrative and financial support. Therefore, the AVA Research Committee chose, as its major objective, to encourage a positive acceptance of the need for research and to promote the desire and ability of individuals to engage in research activities.

The first step toward the achievement of this objective was a one-week vocational education research seminar

in the spring of 1963. Planned and conducted by the Research Committee, together with U.S. Office of Education and Purdue University staff, the seminar gave primary concern to research design.

In 1964, a series of three one-week vocational education research seminars was conducted. One seminar, at Penn State University, dealt with research design; a second, which emphasized the contributions of social sciences, was conducted by the University of Illinois. Ohio State University was the site of the third seminar, which was planned to generate interest and increase involvement on the part of state directors and university department heads.

Again in 1965, there were seminars on vocational education research conducted at various university settings. A major difference was the significant financial support made available through Section 4(c) funds.

The main body of this report consists of the details of six federally sponsored seminars held in 1966. Responding to a request by the AVA Research Committee, Cornell University took the initiative in the preparation of a proposal for federal assistance and, subsequently, for cooperative planning with each University.

The Ohio State seminar on Research Coordinating Units was planned and directed by Robert E. Taylor and Virgil Christensen. The eight major presentations focused upon the role and policies of RCU staff, the structuring and organization of RCUs, efficient and effective operations and management, selection of research problems and development of proposals, and dissemination of research information.

The curriculum development seminar at the University of Georgia was designed to help researchers in vocational education acquire better knowledge and more ability to undertake research in curriculum development. Major emphasis was placed upon the participants gaining a more complete understanding of the existing research methods believed to be useful in controlling curricula variables and in designing curricula development projects.

The Tests and Measurements seminar at Colorado State University was largely attended by persons who had been to sessions in previous years. The report states that three major factors contributed to the success of the seminar: (a) inclusion of adequate time for questions and discussion after each presentation; (b) the workshop on developing attitude scales and tests, and (c) provision of time for participants to engage in discussions.

The North Carolina State seminar on occupational mobility and migration was opened with a speech by Rupert Evans of the University of Illinois entitled, "The Need for Research and Its Utilization in Local, Regional and State Systems of Education." A second preparatory paper, "Manpower Adjustments and Occupational Education," was given by E. Walton Jones of North Carolina State University.

The Research Design seminar, held at Cornell University, employed the good features of three preceding programs. Special emphasis was given to experimental design. Two consultants, Krathwohl and MacEachern, focused major attention on experimental research and proposal writing, and on statistical tools and analysis of variance. Four selected research proposals were studied in small group sessions. The final activity of the Cornell program was a review of research proposals submitted by participants.

Curriculum Evaluation was the theme of the research seminar conducted at the University of Illinois. This program followed a rigid pattern: the presentation of seven major papers, with one to three individuals giving responses. The content served to review curricular research and development projects. It was reported to be "scholarly, philosophical, theoretical and academic. Easley's presentation on curriculum development and evaluation was a highlight in the program, as it showed much relevance to curriculum development and evaluation in technical education."

National Research Seminars

9:26 "NATIONAL SEMINARS FOR RESEARCH IN VOCATIONAL EDUCATION" BY WILLIAM J. SCHILL. UNIVERSITY OF ILLINOIS, URBANA, ILL. (PROJECT # 5-0199) 1965. ERIC # ED 003 489. MF $0.50 HC $2.84. 71 PAGES.

The 1965 series of national seminars for research in vocational education is the subject of this report. The study's specific function is the presentation and analysis of data collected in order to evaluate the four seminars.

The beginning seminar was held at the University of Minnesota, May 3 to May 7. Howard F. Nelson, Department of Trade and Industrial Education, served as host director. Formal presentations by Donald MacEachern constituted the main part of the program. His topics included, "Analysis of Variance as a Statistical Tool in Research" and "Sampling and Associated Problems in Research." The seminar also provided for small group workshops and discussions. It was attended by 36 people, who were primarily concerned with teacher education.

The intermediate seminar, held at the University of Nebraska from April 11 to April 16, had John Coster, College of Agriculture and Home Economics, as host director. This seminar was devoted to studying the resources in the social sciences as they relate to vocational education. The highlight of the formal presentations was a speech by Edmund Gordon on "The Field of Culturally Deprived Youth." During a series of small group workshops, selected topics and proposals submitted by participants were discussed.

The intermediate seminar attracted 34 persons, most of whom were concerned with teacher education. Twenty-seven members of this group held doctorate degrees, 15 of which were earned during the past six years. The areas of home economics, industrial education, agriculture education, and business education were represented.

The advanced seminar was held at the Michigan State University in April. It was hosted by H. Paul Sweany, College of Education. The general purpose of this seminar was to discuss paradigms for evaluation of education programs and to offer constructive criticism on research proposals brought in by participants.

Major presentations made at this seminar were:

—"The General Nature of Experimental Studies, Their Qualities and Limitations," David Krathwohl, director, Bureau of Educational Research, Michigan State University.

—"Common Patterns of Survey-Type Studies," and "Improving Interview Techniques and Questionnaires," William C. Eckerman, Institute for Social Research, University of Michigan.

—"The Nature of Action and Demonstration Proposals," and "Initiating and Conducting Demonstration Re-

search," Everett M. Rogers, Department of Communications, Michigan State University.

—"Psychological Elements in Proposed Studies," and "Psychological Factors that Should be Emphasized in Vocational Education Studies," Robert Guion, Industrial Psychologist, Bowling Green University.

—"Review of Studies with Some Special Social Emphasis," and "Sociological Questions That Might Be Investigated in Vocational Education Research," Irwin Dietscher, Department of Sociology, Syracuse University.

—"Economic Elements of Research Proposals," Albert Blum, School of Labor and Industrial Relations, Michigan State University.

Group conferences afforded participants the opportunity to concentrate on an area of individual concern. The topics included: experimental research, survey research, action-demonstration research, psychology, sociology, and economics.

The seminar on Administration of Research was held at Ohio State University, May 24 to May 27. The host director was Robert E. Taylor, director, The Center for Research and Leadership Development in Vocational and Technical Education.

This seminar was devoted to studying effective methods of initiating, funding, reporting, and disseminating research proposals. Eight major presentations were made. As was the case in other seminars, the program included small group discussions and workshop sessions. Nearly all 33 participants were in administrative positions, mainly in state offices of vocational education.

The conclusions and recommendations of this report, based on all four of the national seminars held in 1965, indicate the need for improvements in subsequent programs. It was suggested that consultants should prepare their papers in advance, thus assuring a more coherent program. It was also recommended that main speakers should be available throughout the duration of a seminar for informal group and individual consultations. Other recommendations urged the involvement of more qualified vocational education researchers, modifications in small group work, and improvement of data collection and evaluation procedures.

TOPIC THREE: Vocational Program Evaluation

Adult Education Evaluations

9:28 "ANALYSIS OF RESEARCH ON SELECTED ASPECTS OF EVALUATION IN ADULT EDUCATION" BY ELIZABETH W. SUTTON. FLORIDA STATE UNIVERSITY, TALLAHASSEE, FLA. (PROJECT # 5-8268) 1966. ERIC # ED 003 520. MF $1.50 HC $13.56. 339 PAGES.

The purpose of this study was to evaluate the quality of reported research dealing with the evaluation of adult education. The objectives were to identify, critically analyze and evaluate the reported research conducted under the auspices of specified institutions. These institutions are: Cooperative Extension Service, University Extension, Evening Colleges, Community or Junior Colleges, Public Schools, and the Great Books Foundation. The specified adult education functions are: Occupational Education, Liberal Education, Related Education, and Literacy Education.

The research involved three different procedures: those used to identify, select and obtain the research studies; critical analysis and evaluation of each piece of accepted research, and procedures used to summarize and report findings.

A carefully outlined plan for library research was followed to identify the evaluation research studies. The final bibliography, derived from investigations of some 50 sources, included a selected list of 220 evaluation research studies which had been conducted under the auspices of six institutions.

Of the 220 studies listed, 202 were conducted through the Cooperative Extension Service. These were organized into three sections: (a) "behavioral change," including 61 studies conducted primarily to determine how participants changed in attitudes, skills or practices; (b) "effectiveness of method," including 43 studies to determine the effectiveness of a method or to compare two or more methods for disseminating information, and (c) "adoption diffusion studies," consisting of 98 studies to ascertain kinds of personal, social or situational factors which affect the acceptance and diffusion of agricultural innovations.

A set of criteria was developed and used to select a sample of 22 studies from those which had been conducted under the auspices of the Cooperative Extension Service. These, together with the 18 studies conducted by other institutions, were analyzed and evaluated. Thus, this investigation examined 40 studies as indicated in Figure I.

For each of the 40 pieces of evaluation research, a digest was written. Each study was appraised on the basis of technical quality and its importance as a contribution to practice, or as a contribution to knowledge.

The analyses and evaluation of the 40 research reports revealed that they all fell into one of three research designs:

1. Descriptive studies of single programs;
2. Comparative studies of two or more programs or treatments;
3. Comparative studies of outcomes of the same program on two or more populations.

In concluding, the report states that the status of evaluation research may be summarized as follows:

—The majority of studies are highly localized and whatever value they possess is limited to the program studied; ie., are not generalizable.

—Many are severely limited by weakness of design and of sampling,

FIGURE I

Functions	Coop. Extension Service	University Extension	Evening Colleges	Jr. or Community College	Public School Adult Education	Great Books
Occupational	202	5	2	1	2	
Liberal	18	1			3	3
Relational	220	1				
Literacy		7				

inadequacy of the data, and inadequacy of the analysis of the data that were obtained.

—There are some, about 20 percent of those reviewed, with findings that could be generalized.

—There are some, approximately 20 percent of those reviewed, that may well serve as models directly, or with minor remediation, for evaluative research in Adult Education.

—There are few, not more than 15 percent of those reviewed, that made fundamental contributions to the general theory of adult learning behavior and to its evaluation.

"The critical examination of the evaluation research covered in this study underscored the fact that adult education is inherently complex. As a totality, it draws upon a number of basic disciplines among which are psychology, learning theory, and one or another of any number of content areas, and educational methodology. . . . The weaknesses noted throughout this study are probably attributable to the fact that the investigator did not have at his disposal the full array of competencies needed. It therefore seems that evaluation research in this field should employ the team approach, associating scholars in the pertinent fields in the total effort. It also seems that financial resources far exceeding those apparently available to most investigators will be required for the basic and comprehensive research which is needed."

Follow-Up Studies

9:29 "THE USE OF FOLLOW-UP STUDIES IN THE EVALUATION OF VOCATIONAL EDUCATION" BY LAURE M. SHARP. BUREAU OF SOCIAL SCIENCE RESEARCH, INC., WASHINGTON, D.C. (PROJECT # 5-8461) 1966. ERIC # ED 010 072. MF $0.25 HC $1.68. 43 PAGES.

"In the opinion of many, the acid test of quality in the vocational education program is placement of students in the occupations for which they received instruction." This statement in the 1962 Panel of Consultants Report, *Education for a Changing World of Work,* is illustrative of the long-standing position among vocational educators—that productive employment is a basic element in program evaluation. Because the Bureau of Social Science Research investigation into the various approaches to making follow-up studies deals with this major point of view, it should be of general interest.

Objectives of the study were to:

—Identify and describe available follow-up studies pertaining to students of vocational education.

—Evaluate the extent to which this information is related to specific vocational education programs, and thus serves as one measure of program effectiveness.

—Reveal information gaps and research needs, and establish a basis for making recommendations.

Procedures consisted essentially of surveying and classifying various forms of follow-up studies. From these, a bibliography of 54 sources, organized as descriptive studies, explanatory studies and background references, was developed.

The results of the survey indicate that follow-up studies demonstrated their usefulness as tools in the evaluation of training. They were recommended for use in future program assessment. "Follow-up efforts were found to be common in the evaluation of vocational education programs in specific areas of the country to the exclusion of other areas and to have included some programs and omitted others. The most serious gap is the lack of follow-up information at the post-high-school level. . . ."

Recommendations were made for systematic nationwide coverage for all levels of vocational education. Although this should not be the only method of evaluation, it was felt that employment outcomes of those who have been trained should be available in all situations.

The report states that probably the most important advance in vocational follow-up research is the current concern with the total system—the training process, the characteristics of the graduate, the employment situation. "The most productive follow-up design for nationwide, comprehensive follow-up studies was found to be a combination of trend and cohort study."

By matching vocational graduates in a given year with nonvocational graduates and conducting follow-up studies at different times, researchers would be able to assess differences due to training. They would also have a clearer picture of the effect of training over an extended period of time. Furthermore, it was reported, there is a continuing need for intensive, small-scale studies of particular areas, programs and factors. The need was also expressed for study in the area of labor market requirements, employer preferences and behavior.

Behavioral Objectives

9:30 "THE DEVELOPMENT AND TESTING OF AN EVALUATION MODEL FOR VOCATIONAL PILOT PROGRAMS" BY BRUCE W. TUCKMAN. RUTGERS—THE STATE UNIVERSITY, NEW BRUNSWICK, N.J. (PROJECT # 6-8355) 1967. (VT # 003-562) 106 PAGES.

"The purpose of a pilot program is defeated if it is not adequately evaluated. If a program is established on a test basis, it does not serve as a test unless some sort of evaluation procedure is applied to the program. . . . Thus, evaluation must be an integral part of a pilot program. In designing the program, evaluation must be designed in. It must come not as an afterthought to an already existing program but as a basic part of the program itself."

In this statement is the rationale for the project to develop and test an evaluation model for vocational pilot programs. The specific objectives of the study were to:

1. Develop an evaluation model which is general enough to apply to pilot programs, developmental programs and new curricula in vocational-technical education.

2. Evaluate the evaluation model by selecting two on-going pilot projects and attempting to evaluate them using the model.

3. Conduct a clinic in which the ideas contained in the model will be conveyed to others, particularly those responsible for the evaluation of pilot programs.

A review of related literature revealed that the ideal of built-in evaluation with behaviorally significant objectives is complicated and difficult.

"First, objectives which are initially stated in behavioral terms might be too narrow in their scope to include all the significant learning experiences offered during a course. This narrowness of scope might serve to stifle the creativity of the pupil (Eisner, 1966). Furthermore, it is understandably difficult to anticipate and operationally define all objectives at the outset of a program; since programs are dynamic, the objectives of which might change considerably over time, resulting in the by-passing of subse-

quently recognized important goals. (Ausubel, 1966; Eisner, 1966)."

Other related studies were reported: the need to consider the various purposes of evaluation-prediction, diagnosis of deficiencies, as a criterion measure for research (Hurt, 1966; Ryans and Frederiksen, 1951); the difficulty of controlling course content, pacing of instruction, teaching practices and quality of teaching, and the course objectives themselves (Ausubel, 1966); and, finally, the difficult problem of task samplings and the need to identify behavior which is reliable, simple and, at th same time, general (Angell, 1964; Breadfield and Moredock, 1957; Ryans and Frederiksen, 1951).

The evaluation technique proposed for this study was designed to surmount a majority of these problems. Based on the work of Gagne, it includes the following procedures:

—The identification of the final task or final objective of an educational program or curriculum stated in behavioral terms.

—The identification of sub-tasks or competencies which are prerequisite to satisfactory performance on the final task (these must be stated in behavioral terms).

—The development of a test containing one or two items written to assess the learning of each of the sub-tasks identified above as well as the final task.

—The development of a hierarchy which shows all the prerequisite subtasks and their relation to the final task in schematic form.

—Administration of the above test to students enrolled in a pilot program.

—Evaluation of the performance of these students by comparison to a second tested group made up of students taking a different but related program or of students taking the "same" program at a different location (if neither of the above are available arbitrary standards can be generated).

Two pilot subject areas were chosen, agri-business and data processing. Within the overall agri-business curriculum, the unit subject of *clerical record keeping* was selected for purposes of the study. *Keypunching* was the phase of the data processing curriculum studied.

After reviewing both areas, a list was made of all sub-tasks and the final task involved in each case. Following this step, curriculum hierarchies of course knowledge were developed. Test items were generated in each area to measure each sub-task and the final task of the hierarchies.

There were four critical procedures in the evaluative process for each course of study:

1. Determine the final objectives of the course of study and cast these objectives in behavioral terms.
2. Analyze the final objectives into essential sub-tasks which incorporated all the knowledge and skills prerequisite to the final objective.
3. Develop representative test items for each sub-task upon which the final objective is based.
4. Test administration.

The major result of the project's activities was the development of "*A Manual For Evaluating Educational Programs: The Check Technique.*"

The Manual presents a plausible, if not completely convincing, argument that long-range studies of vocational graduates' job success have limited value. Because of procedural difficulties, especially the time lag before assessments of vocational program success can be made, the use of achievement tests which are based on behavioral objectives is recommended.

To facilitate the construction of behavioral objectives, the Manual presents 10 key definitions—action words to be used as operational guides. These action words are: *identifying, distinguishing, constructing, naming, ordering, describing, stating a rule, applying a rule, demonstrating,* and *interpreting.*

It is encouraging to find that the job analysis approach to instruction and evaluation, so long an integral part of vocational education, is now receiving the benefit of additional scientific investigation. There is no question that a good part of the vocational program can be strengthened by accurately measuring in behavioral terms what the student actually can do. It is hoped, however, that the time never comes when all learning and understanding are equated to overt behavior. The development of attitude, appreciation and understanding, although extremely difficult to translate into common patterns of behavior, are still legitimate goals of education.

TOPIC FOUR: Guidelines for Research

Priorities in Office Education

9:31 "CONFERENCE TO ESTABLISH GUIDELINES FOR RESEARCH IN OFFICE EDUCATION" BY J. E. GRATZ. SHIPPENSBURG STATE COLLEGE, SHIPPENSBURG, PA. (PROJECT # 5-1202) 1966. ERIC # ED 010 394. MF $0.50 HC $3.36. 84 PAGES.

A research conference was held at Shippensburg State College for a one-week period to establish guidelines and priorities for needed research in office education, office work and office teacher education. Conference leaders, speakers and participants were drawn from state departments of vocational education, institutions, labor, business management, and the U.S. Office of Education.

Authorities in the fields of business education, management and labor met in three work groups to establish research guidelines and research utilization on the questions and objectives proposed for this project.

The business education work group gave priority to two research proposals: knowledge and skills in data processing needed by office workers; and study to determine whether work experience is of sufficient value to be required in the certification of business and office occupations teachers.

Management listed 12 research topics and gave first priority to a depth analysis of office jobs. This group was also interested in determining actual performance standards for initial employment of the office worker.

The labor group also indicated 12 possible research topics which were divided into three general headings: (a) labor relations; (b) office occupations and training, and (c) research on trends in office occupations. Labor relations instruction, and factors which influence the successful mobility of office employees within job clusters, were given as items of special importance.

The guidelines established through this conference should receive the attention of teachers and supervisors of office education, as well as researchers and persons with administrative responsibilities. Of special importance is the fact that recommendations of labor and management are included along with those of office educators.

Center at Ohio State

9:32 "CENTER FOR RESEARCH AND LEADERSHIP DEVELOPMENT IN VOCATIONAL AND TECHNICAL EDUCATION AT THE OHIO STATE UNIVERSITY, COLUMBUS, OHIO. (PROJECT # 5-0212) 1967. (VT # 001-557) 166 PAGES.

This report concerns The Ohio State University Center for Research and Leadership Development in Vocational and Technical Education and its activities during the initial funding period. The original proposal for the Center was approved for an 18-month period, beginning March 1, 1965. The following year, the proposal was amended to set up an ERIC Clearinghouse on Vocational and Technical Education. Because the Center's operations have been renewed for a five-year period extending through October 15, 1971, the material presented may be viewed as a progress report.

The Center was established with a consideration of its potential long-range impact on significant problems in vocational and technical education. Its major areas of concentration are in research, development, leadership development, and dissemination, utilizing its affiliation with ERIC."

The report contains a statement of the Center's objectives, its administrative organization and relationships, staffing patterns, procedures, and early accomplishments.

The objectives of the Center are:

1. To provide continuing reappraisal of the role and function of vocational and technical education in our democratic society;

2. To stimulate and strengthen state, regional and national programs of applied research and development directed toward the solution of pressing problems in vocational and technical education;

3. To encourage the development of research to improve vocational and technical education in institutions of higher education and other appropriate settings;

4. To conduct research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;

5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and inservice education program;

6. To provide a national information retrieval, storage and dissemination system for vocational and technical education linked with the Educational Research Information Center located in the U.S. Office of Education;

7. To provide educational opportunities for individuals contemplating foreign assignments and for leaders from other countries responsible for leadership in vocational and technical education.

Description of the administrative organization of the Center reveals that it has been established as an independent unit within the University's structure. It operates under the University Board of Trustees, with the director responsible to the University provost and vice president for academic affairs.

A National Advisory Committee of 19 recognized leaders, representing vocational education, supporting disciplines, and the world of work, assist the University and Center staff. In addition to this permanent advisory committee, the staff frequently engages specialized consultants and ad hoc groups.

The basic approach followed in staffing the Center was to seek persons who were not narrow specialists. The staff represents a central core of vocational and technical education specialists complemented by supporting and visiting specialists and other supporting staff. In a majority of cases, vocational staff members have had state staff experience, either in a department of education or university, or in other institutions or agencies relating to vocational and technical education.

In keeping with the interdisciplinary approach to the Center program, the report indicates that staff members employed as supporting specialists have abilities, training and experience in those related disciplines which can augment, complement and supplement the competencies of the vocational and technical staff. Among this group are persons with backgrounds in sociology, psychology, library work, and research.

"PLAIN TALK"

TWENTY OF THIS issue's reports describe the organization and function of State Research Coordinating Units. Others discuss the establishment of guidelines for conducting research or summarize the proceedings of national research training seminars. Three studies were found that gave some attention to the evaluation of vocational education.

The RCU reports may not provide much new information for persons engaged in research. But to teachers and administrators not directly involved with Coordinating Units, this material should help them know what these organizations do, especially as their activities relate to the improvement of vocational teaching.

Although all of the Units were established on a common organizational pattern with virtually identical main objectives, there has been a surprising variation in practice, one state to another. In some locations, RCUs have concentrated their attention on the actual conduct of research. In contrast are those Units which coordinate the research efforts of other agencies, but handle few investigations themselves.

There has also been a considerable difference in the type of research typically produced by various Units.

Within the texts of RCU reports are clues to some difficult problems and controversial issues. All of the Units appeared to have experienced initial staffing problems—a clear indication that very little vocational research had previously been in motion. Some of the other questions raised were: which is better, having the RCU in a university setting, or located in the state vocational education office; who controls research—educational management, or the research organization itself; how can research results penetrate the schools; when special financial support for pilot programs is discontinued, what measures can be taken to prevent their immediate collapse; and, finally, how can the teacher education program be improved, especially at the undergraduate level, to better prepare teachers for active participation in research work?

Guidelines for Office Education

Teachers of vocational business subjects will find Gratz' report on guidelines for research in office education to be especially illuminating. Recommendations were solicited from three groups—business educators, office management and organized labor. The guidelines established should be known by business teachers and teacher educators. Among the high priority items were recommendations for further research in data processing skills required by office workers, occupational experience for teachers, and the development of job analysis techniques for making behavioral objectives.

The report on national seminars for research in vocational education cites the outstanding contributions of the AVA Research Committee. In the period prior to the passage of P.L. 88-210, it was this group which identified the great need for expanded activities. Supporting the organization of research units within each state, along with much greater federal programs of research, the AVA Research Committee may be best known for its series of training seminars, which were initiated long before the advent of federal support.

Evaluation of Vocational Education

According to the regulations of Public Law 88-210, "evaluation of the program of instruction will be made periodically at the state level and continually on the local level with the results being used for necessary change and improvement."

Four years later, is it not reasonable to ask, whatever happened to this provision? Not only do suitable criteria still need to be developed, but also a general system must be produced—one which is appropriate, complete, and up to date—that may be applied to any type of vocational education program, regardless of its institutional setting.

The trouble with the forms of evaluation now extant is that they all tend to concentrate on the institution: the high school, technical institute or community college. What they fail to assess thoroughly is how well the various educational offerings provide a meaningful program for all persons who should be served—the rejects and dropouts, and those who never knew the school existed.

A case in point is the evaluation for accreditation of the two-year college, in which all programs are viewed from a collegiate perspective. The common indices used are books in library, faculty with advanced degrees and net worth of physical plant. What is typically not considered are provisions for individualized instruction, the number and kind of opportunities available for out-of-school youths and adults, and the degree of cooperative participation that is solicited from advisory groups comprised of management, labor and the lay public.

Two studies reported in this issue are valuable sources of information concerning the use of performance measures for evaluating vocational education. These are Sharp's survey of follow-up studies and Tuckman's developmental study, in which a manual for evaluating vocational pilot programs is produced. Care should be taken, however, not to confuse a device for a system of evaluation. What is still needed is a thorough investigation into all possible approaches to evaluation, to be followed by a period of systematic experimentation and analysis.

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9:24 "Appendix of Interim Research Reports for Projects in Research and Development in Vocational and Technical Education: Non-Metropolitan Areas" by Mahlstede, John P. Iowa State University, Ames, Iowa. (Project # 5-0045) 1966. ERIC # ED 011 069. MF $0.50 HC $2.76. 256 pages.

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