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ABSTRACT

To change a conventional, academically oriented general education school system into one whose curriculum reflects concepts of career education at all grade levels in harmony with existing teaching/learning processes, Project VIGOR staff held a teacher orientation workshop to introduce the career education concept as envisioned by Oregon's Career Education Program, which is basically a program of vocational cluster courses for junior and senior high students. Project VIGOR has had two major directions of thrust; the first has been the inclusion of cluster courses in food service, child service, industrial mechanics, and general business into their most closely existing high school departments. The second aspect of the project is the orientation of administration and staff of the total school system to the career education goals. An awareness of career education as a part of the general curriculum is a major accomplishment, and this awareness has been stimulated through news releases, advisory committee activities, and orientation of professional staff through workshops, meetings, special projects, and others. In 1970-71, 142 students enrolled in the vocational cluster courses and 531 pre-registered for 1971-72. It was recommended that the project be continued with additional staff orientation and involvement and increased articulation. (SB)

FIRST INTERIM REPORT

Project No. 0-361-0055
Contract No. OEC-0-70-5187(361)

PROJECT VIGOR: Vocational Cluster Education, Integrated and Articulated Grades 7 through 14 with Guidance Services, Occupational Exploration and Work Experience Relevant to General Education

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

Omer McCaleb
David Douglas Public Schools
1500 S. E. 130th Avenue
Portland, Oregon 97233

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SUMMARY

A. Time Period Covered

The first interim report for Project VIGOR covers a period from July 1, 1970, to June 30, 1971.

B. Goals and Objectives of Project VIGOR

Through Project VIGOR the David Douglas Public School System is addressing itself to the objective of changing a conventional academically oriented general education school system into one whose curriculum reflects the needs of all students regardless of the level of entry into their chosen vocation. Simply stated, the Project goals for career education in the David Douglas District are as follows:

PRIMARY - Every child will see the world of work as a part of his developing self and will learn some career classifications (jobs) by name.

INTERMEDIATE - Every child will be able to identify the relationship between his school courses and the world of work and will learn to group employment classification into job families. Every child will see the world of work as a significant part of his developing self and will learn the names of many jobs.

MIDDLE - Every student will be able to relate a knowledge of his own characteristics to known occupational requirements and will be able to locate detailed information about specific job requirements.

JUNIOR - Every student will explore chosen occupations and select courses supportive to his broad career field choice. Each student will demonstrate a knowledge of the relationship between his developing education and his emerging vocational being.

SENIOR - Every student will elect a combination of courses specifically designed to meet needs of students having chosen his career area. Every cluster student seeking entry level skills will develop those qualities necessary to obtain employment in his chosen occupational area.

POST HIGH SCHOOL - The school will provide follow-up contact service for former Douglas students and placement assistance, where possible, for youth of this community. Compatibility of programs for students advancing from David Douglas to an institution of higher education will be maintained.

Each of the goals applies to all successive grade levels and is intended to be sufficiently flexible to apply to students' individual characteristics and levels of maturation.

The Project is intended to introduce significant concepts of career education at all grade levels within an existing public school system without traumatically upsetting those existing teaching/learning processes which have already been established as basic to general education.

We see career education as a framework for building tomorrow's society today.

We have defined career education as that portion of general education which is purposefully designed to provide an environment for developing attitudes by which an individual approaches decisions concerning services which he will exchange for the goods and services that he will receive from his community and vocational education as that part of education which prepares a person for a given area of employment. Insomuch as our entire school curriculum is relevant to general education, it must also specifically and deliberately provide such environment as best meets the developmental needs of each individual in terms of career education goals.

C. Procedures Followed

A highlight of our 1970 teacher orientation workshop was a presentation made by Dr. Dale Parnell, Oregon's State Superintendent of Public Instruction. Dr. Parnell's address, together with a slide/tape presentation prepared by members of the Oregon Board of Education, presented the career education concept as envisioned by The Oregon Way, Oregon's Career Education Program, basically for junior and senior high school students. These included food service, child service, industrial mechanics, and general business through a model simulated insurance office. Vocational education is specifically provided through cluster courses offered generally for the eleventh and twelfth grade student.

Cluster instructors have been working during the summer to prepare facilities and curriculum for David Douglas High School's first attempt at vocational education. During the course of the year, in addition to a continuous following of the cluster course program, various conferences and meetings were held with members of the school's administration, including directors, supervisors, and building principals, so that arrangements could be made for meetings with various building staffs or with departments. These meetings resulted in a great deal of discussion concerning career education and ideas for involving career concepts within their current instructional procedures.

Project VIGOR has had two major directions of thrust. The first and most visible of which is the institution of cluster courses as defined in the Oregon Board's Plan for Career Education entitled The Oregon Way. These cluster courses have been taken into the high school system within their most closely related existing high school departments; for

example, the model office, or the clerical cluster, is a functioning part of the business education department of the high school. Additional schedule changes make possible the attendant work experience programs accompanying the cluster courses.

Departments which have been most noticeably affected by the institution of cluster courses so far have included business education, homemaking, and industrial education.

During the early stages of Project VIGOR we expect to see some reduction of the size of classes in other courses related to the clusters, followed later by an increase in the enrollment of those courses within a department which are supportive and pre-requisite to admission of students to the clusters. Eventually we would expect to see a general increase in enrollment in those departments which are identified as having several of the vocational clusters, as the effect of counseling and orientation procedures at the middle school level begin to become evident in more extensive student planning for their high school courses.

The less visible, but perhaps more important, aspect of the career education portion of Project VIGOR is the orientation of administration and staff of the total school system, including teachers from grades 1 through 12. Other than the pre-school orientation referred to earlier, there has been only one mandatory orientation period for all of the staff. This orientation was held in a one-day workshop conducted in February by the administration of Project VIGOR. Responsibility for achievement of career education goals within each building of the district has been placed in the hands of that building's principal.

Many of the buildings are developing career interest programs which are elective on the part of students but which offer a broad range of exposure to several aspects of career fields, including an opportunity for hands-on experiences with the various media available for awareness and exploratory activities on the part of primary and intermediate students. Leadership in these programs is generally assumed by a school counselor. The middle school, or seventh and eighth grade, programs have thus far focused on exploratory experiences for students relative to themselves as people developing a greater understanding of their own capacities, interests, skills, motivation, abilities, and job requirements in various occupational fields.

College courses in exploratory education have been offered to all interested staff members, with a major emphasis being placed on the language arts-social studies block teachers who are taking responsibility for presenting a course to all students in occupational exploration and self-understanding. These, too, are under the general supervision of the counselors in those buildings.

D. Results and Accomplishments

The accomplishments of Project VIGOR occur largely in terms of an awareness of career education as a part of the general curriculum. This awareness has been stimulated within the community by news releases and

activities of the advisory committees. The professional staff has been oriented by district in-service workshops, faculty meetings, individual contacts, and special projects described throughout the body of this report.

There were 142 students enrolled in vocational cluster courses during the 1970-71 school year, with 531 students pre-registered in cluster courses for the 1971-72 school year.

The experimental orientation program conducted at Gilbert Middle School involved approximately 800 students for a nine-week period. Results from this program will be shown in subsequent evaluation reports.

Advisory committees have involved fifty-five lay community members, twenty-eight certificated staff members, and ten students. These committees have been a first step toward community involvement other than school board and budget committee for this District. The committees have proven such a valuable addition to the planning and implementation of Project VIGOR that serious consideration is being given to formation of additional committees for various departments and grade levels throughout the School District.

Implementation of a plan to involve district teachers in career curriculum planning through bids submitted for projects of their own design has stimulated a great deal of activity in independent research and planning since school closed June 11, 1971. A subsequent report will give full details of that program and what it produced.

E. Evaluation

Evaluation is an ongoing operation within the Project and a responsibility of the Project administration. Third party evaluation is the contracted responsibility of Teaching Research, previously described in the body of this report. Copies of Teaching Research's first year, 1970-71, evaluation will be attached as Appendix E to those copies of this interim report going to those governmental agencies under whose supervision Project VIGOR operates.

Appendix D is the proposal submitted by Teaching Research for evaluating Project VIGOR for the fiscal year July 1, 1971-June 30, 1972. This appendix is included to give you an overview of the services performed by the third part evaluator.

F. Conclusions

Project VIGOR is a guidance-oriented curriculum project whose visibility exists through changes in student behavior. We are trying to change the entire curriculum in those ways which will make most likely those student experiences which result in a total alumni capable of engaging effectively with the world of work on a continuing basis.

In terms of the above-stated objective, the Director of Project VIGOR considers the first project year successful.

Course content, teaching methodology, staffing patterns, personnel interaction, materials and equipment are coordinated into a total school curriculum which might pass as "conventional" until examined in terms of post high school results.

Implications of this Project should favor an educational design appropriate for implementation by any other school system with similar aspirations for its graduates without imposing an expensive or disruptive reorganization program.

The Project management recommends a continuation of established direction, reinforced by additional staff orientation and involvement, and increased articulation with total community including students, staff, administration, parents, taxpayers, business and industry representatives.

End of Summary of the Report

A. PROJECT VIGOR PROBLEM AREA

It is a fact that large sums of money are being spent in public school systems which provide quality education experiences for only one-half of our students. The emphasis on the teaching of skills and knowledges which prepare students for continued academic study only is having a tragic effect on student attendance, motivation to succeed in school, students dropping out of school, and their insertion into the work force without salable skills or viable work attitudes. With this serious lack of commitment to their present education it is small wonder they have developed a resistance to post high school training.

In his study of Perceptions of Non-College-Bound Vocationally-Oriented High School Graduates, Betz coordinated in-depth structured interviews of 309 high school graduates judged to be "non-college bound" exploring perceptions of their (1) educational experiences, (2) vocational experiences, (3) self-concepts and (4) family relationships. Interview data was compiled two years after high school graduation from subjects residing in urban "rurban", and rural environments in four mid-central states. Content analysis of written reports of subjects' perceptions resulted in four major conclusions: (1) employment bound, non-college oriented students perceive the school, the counselors and other personnel within the school as "favoring" the college bound student, (2) counselors were not perceived as being "helpful" in assisting employment bound youth to satisfactory vocational decisions, (3) subjects were unable to articulate "meaningful" concepts of self, and (4) generally, they did not perceive parents as being at all "helpful in resolving personal, educational, and vocational problems.[1]

Such students react to this irrelevancy by "dropping out" or by being a "drop in", a student moving aimlessly through a general curriculum with little motivation or purpose.

The problem is more specifically addressed in the following:

--The American society is undergoing such dramatic changes that we have a new environment in which we must live and work.

--The accelerating rate of social and technological change challenges the effectiveness of our traditional social arrangements and institutions, including--if not in particular--our system of public education.

--Education and work are now directly related for virtually all individuals, not just those who seek higher education and careers in the professions.

--Manpower training needs in a technological society can be met only through education.

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1. Perceptions of Non-College-Bound Vocationally-Oriented High School Graduates, by Robert L. Betz, and others, Western Michigan University, Kalamazoo, Publishing Date 1968, 17 p.

--If education is to be made relevant to the lives of all it claims to serve, occupational education must become an integral part of total education.

--In such a setting, the American education system must provide:

*education that is socially and economically relevant to the needs of the individual and to the manpower requirements of the nation;

*occupational education for youth who will be entering the labor force and for adults who seek to improve their occupational competencies or learn new skills;

*a broad scope of occupational education accessible to all students in all grades and in a variety of educational settings;

*quality instructional programs which are suited to the occupational goals of people, and to occupational requirements;

*comprehensive curriculums which relate both general and occupational education to the occupational objectives of students;

*maximum utilization of all personnel--administrative, supervisory, teacher education, research, and guidance--in the achievement of occupational education objectives;

*systematic and continuing evaluation of occupational education to assure its relevance to a dynamic and changing world of work;

*continuous guidance of students to provide for proper placement in occupational education programs.[1]

If we have accurately read the conditions and syptoms of our times and if we are current in our thinking, the need to offer vocational education in our secondary schools appears obvious. At least it is obvious to the Federal Government (355 million dollars, 1968-69), to the Governor of the State, to the State Superintendent of Instruction, and to the majority of the educators in the David Douglas School District.

Vocational Education is not a bandwagon--it is an opportunity--educationally the need for this extension of our curriculum is well documented. The most powerful issue in learning is the student self-concept--the way in which he sees himself as a person and as a student. Herein lies potential answers to the eternal questions of motivation, self-discipline, goal setting, self-actualization. We know a great deal about the self-concept; we've done less to improve it.

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[1] The Challenge of Change, The Role of Occupational Education in Oregon; State Advisory Council for Vocational Education, 1968, p. 4,5

A person's self-concept is basically developed in three areas:

a. Modeling - those adult figures (parents, teachers, etc.) whom the youngster admires or after whom he would like to pattern himself.

b. Interaction with environment - the day-by-day experiences, the successes and failures a student has that help him mold an image of himself, either positive or negative.

c. Coping Skills - the degree of understanding the youngster has of his ability to cope with society and to become a successful, contributing member of his community.

It is in this last area that the school should play the most important role. A student needs to see the real application that his education has to his future--whether it will better enable him to cope with that future. The knowledge that he possesses skills which will be needed and sought after, even paid for by the community, can be a powerful influence on the student's concept of himself and his ultimate success.

We would present the case that as long as the school curriculum remains oriented to the written word and the college bound student, transfer of learning is discouraged.

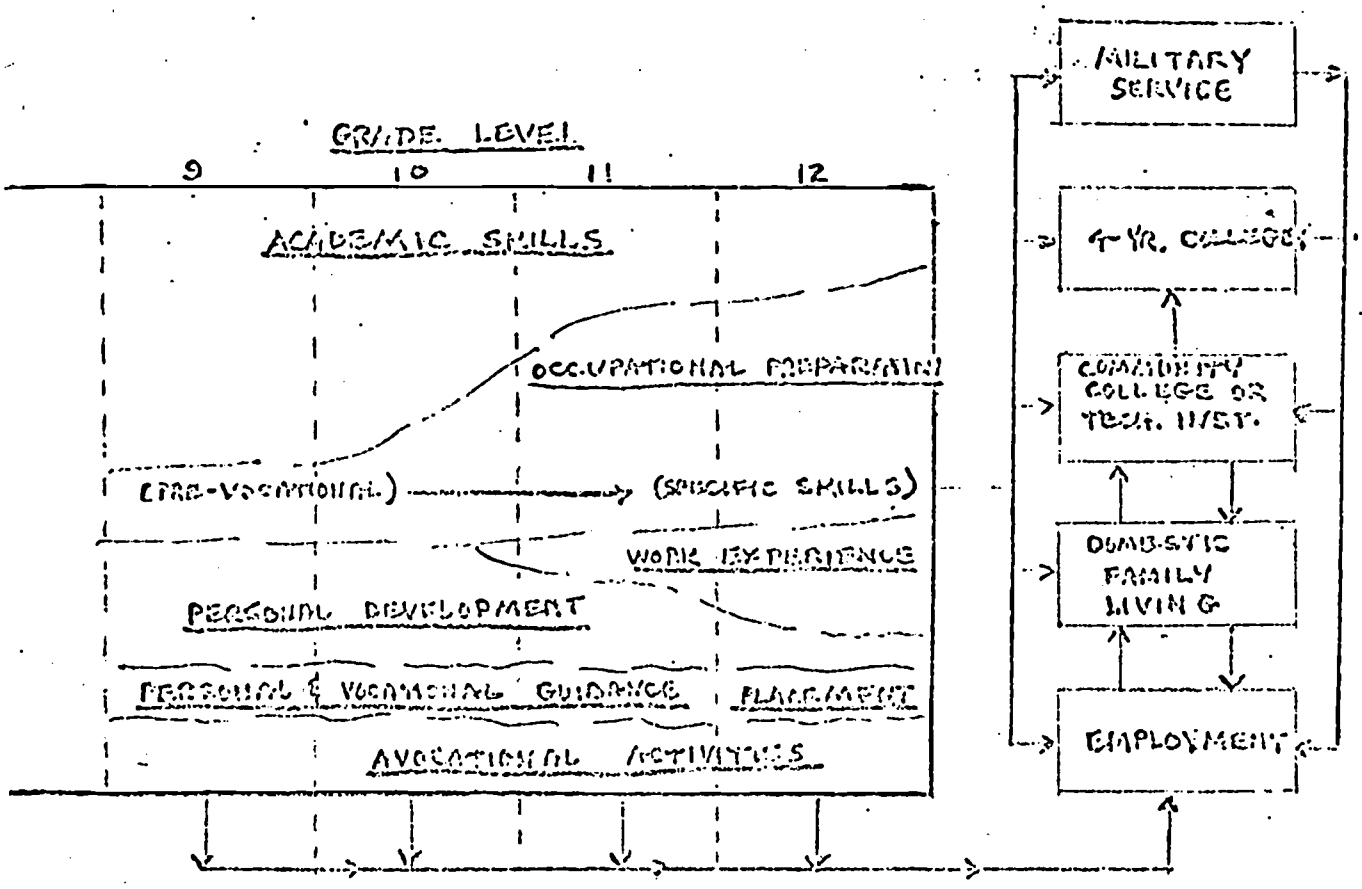
The ultimate dream of providing education for all of the children of all the people can be realized. The question has been asked, "Should the comprehensive high school offer vocational education?" An answer might be another question, "Is a school comprehensive unless it offers vocational education?"

Most experts have come to agree with a position taken at David Douglas years ago--education is total for the total person and no separation of vocational education from the general curriculum can be tolerated. General curricular offerings such as math, science, and English should be taught as they relate to the vocational goals of the student.

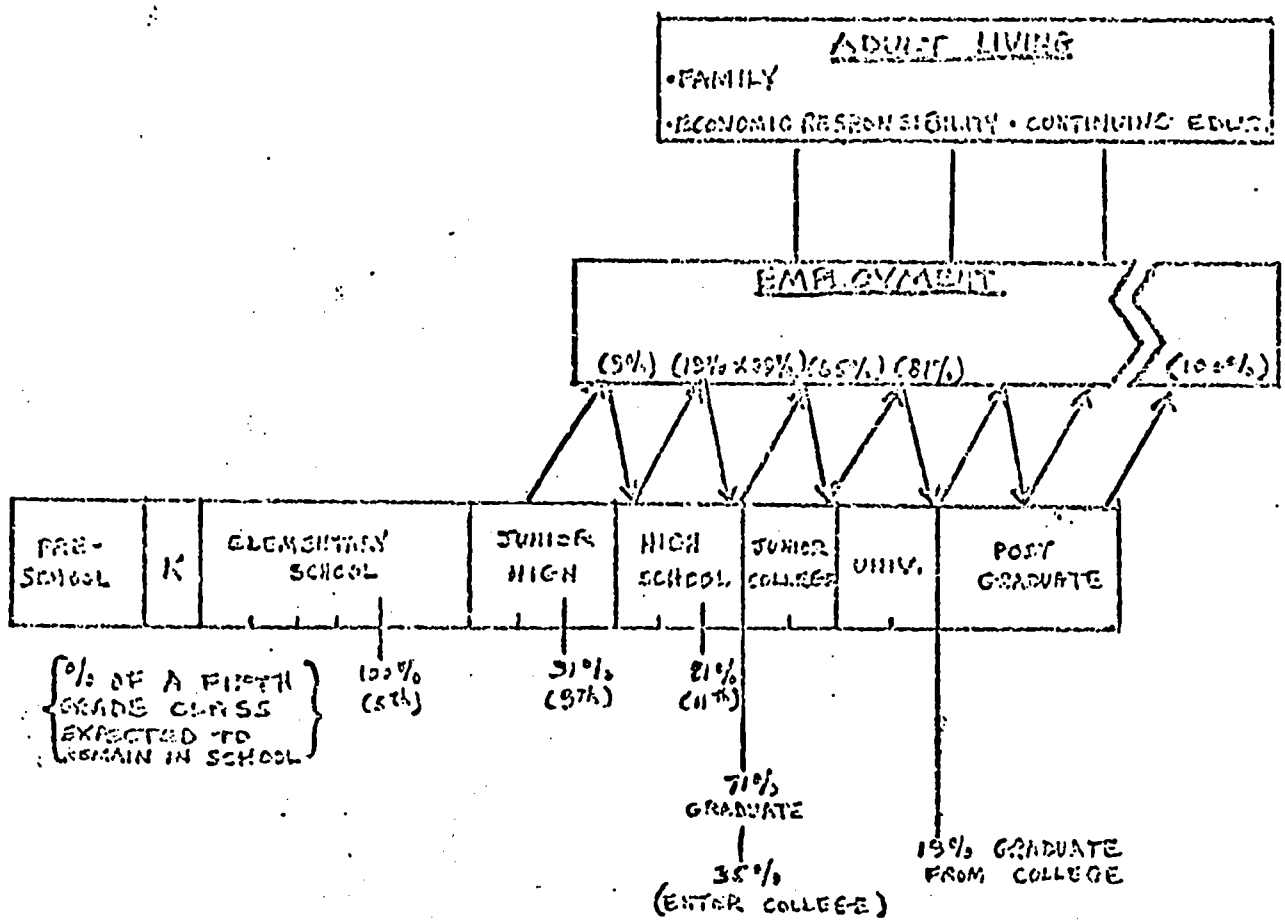
The comprehensive high school can provide only one door of entry and five of exit. All students matriculate from the elementary program, but some slip out other doors at the opposite end. Four-year college preparation, community college or techincal training, immediate job placement, military service, or domestic home life are the only acceptable paths after graduation. To drop out before then or to aimlessly move through unproductive programs can no longer be accepted by the community.

These doorways, however, should not hold individual levels of status--each is a positive goal for young people and the total curriculum should prepare young people for them. A program for any youngster ought to be as

follows:



On a national level student matriculation parallels the following chart:*



*Designing an Organic Curriculum, Robert M. Morgan and David S. Bushness, Bureau of Research, U.S. Office of Education, November, 1966

From these figures the role of the comprehensive school becomes more clear. If only 19% of the total student population is to complete a four-year college program, the school program must be broad enough to provide a relevant experience for all other students.

Student motivation at the present time is an abstract thing. We ask them to take math, science, social studies, and English with the promise that it will be beneficial in their future. For the college-bound student these skills and concepts will be used and he knows it.

Motivation, the understanding of the effect of today's experience on his future, is easy for him. But what of the student who cannot see the relationship of these courses to his interest and future in auto mechanics, food processing, horticulture, and secretarial service? For him there must be vocational relevance; the relevance that the general curriculum has to the vocational goals of youngsters.

The total thrust of this program is to make public education central to a student movement from formal education to earning a living.

The school now becomes a center of involvement with public agencies committed to manpower placement, development and training. These relationships will effect the conditions and learning experiences in all aspects of a student's educational program.

This thrust will tell students and parents in no uncertain terms that occupational aspirations are not only appropriate but necessary and that opportunities are present. We agree that, "at the very heart of our problem is a national attitude that says vocational education is designed for somebody else's children. This attitude is shared by businessmen, labor leaders, administrators, teachers, parents, students. We are all guilty. We have promoted the idea that the only good education is an education capped by four years of college. This idea, transmitted by our values, our aspirations and our silent support, is snobbish, undemocratic, and a revelation of why schools fail so many students."[1]

Such a program must consider students of all backgrounds, abilities, aspirations, race heritage, and physical characteristics. It must anticipate their needs and provide reasonable individual experience. This can only be accomplished through coordination of all agencies and resources supported by strong guidance practices.

Project VIGOR emphasizes the concurrent development and implementation of several innovations. The innovative and exemplary thrust is demonstrated in the way several concepts are implemented in the framework of existing public schools.

All of the materials and programs to be implemented have been developed over an extensive period of time, and have been tested. An intricate network of Federal, state and local funds resulted in authentic research and

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[1] First Annual Report of the National Advisory Council on Vocational Education.

development. Our efforts will provide an interrelated program demonstrating a model worthy of consideration by every other public school system in the country. While these innovations have been tested singly in different settings, this program will be the first to include them all.

The components of the program are organized in units of 10. When program implementation begins, sub activities can then be noted an concurrent tasks. (Example Component 10 is Vocational Exploration and tasks within the component are 12 In-service, 14 Materials, 17 Curriculum, etc.)

Though some of the components by name have been employed across the country for years (example work experience) current directions and research in these fields have been noted in the development of this project.

Component 10 - Vocational Exploration

A specific course in vocational exploration will be taught to all 8th grade students -- a model for such a course is SUTOE: Self Understanding Through Occupational Exploration. "SUTOE" is a course developed under the leadership of the Community Colleges and Vocational Education Division and Guidance Services Section, Oregon Board of Education, in cooperation with the Division of Continuing Education and local school districts. SUTOE provides a broad scale classroom approach to assisting students with educational and career planning via self appraisal and examination of jobs in relation to the date-people-things conceptual framework of the D.O.T. (Dictionary of Occupational Titles). Occupational, general education, and guidance programs are linked together in this effort to enable students to take greater advantage of available opportunities and to ascertain and reach career goals. The course consists of ten units, each of which has several identified behavioral objectives. A wide variety of in-class and out-of-class suggestions for implementation are offered under each objective.

The SUTOE course will form the backbone of the educational exploration program but other materials, especially simulation games[1] will also be evaluated .

A special exploratory work experience program has been funded through exemplary monies allocated by the U.S. Office of Education, Department of Health, Education and Welfare, to the Oregon Board of Education for exemplary projects. An outline of that program will be found in Appendix B.

Underlying basic assumptions for vocational exploration are:

"1. All students should have an opportunity to explore the broad total of the world of work.

2. All students should have opportunity to develop a self concept.

3. All students should have experiences in meaningful decision making and in accepting responsibility for their own decisions.

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[1] Varenhorst, Barbara R., Innovative Tool for Group Counseling, The Life Career Game, The School Counselor, 1968, p. 15.

4. The junior high school years are a time of high potential for developing an awareness of relevant factors to be considered in decision making.

5. Career choice and its implementation is a developmental process.

6. A challenging experience-centered course that stimulates creative individualism is valid for junior high school students in that they become more aware of both strengths and weaknesses, and reflect more positive interests.

7. A program that provides opportunity for acquiring self-understanding and knowledge of the world of work, in combination, will contribute much toward helping youth prepare for their place in a complex socio-economic world of reality.

8. More adequate educational goals and tentative career choices may be established by students, as a result of the experiences provided through an organized classroom approach."[1]

Such assumptions are supported by the Final Report of the Education Improvement Advisory Commission, State of Oregon, 1966, which stated: "Groups and individual guidance about occupations should begin during the junior high school years to facilitate wise occupational choice by assuring that every youngster becomes familiar with the different types of work that exist."[2] Draper, Feldman, and Venn* also support this philosophy.[3,4,5]

We are in substantial support of further findings of Mrs. Nancy Sloan under contract CG 4000002 with the U.S. Office of Education, entitled Orientation Approaches to Increase Student Awareness of Occupational Options, wherein it is stated:

Why is Such Orientation Needed?

1. A desired orientation shows how work reflects one's integration into the community. Children need to understand how adults achieve a place in society and develop a life style.

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1 Teacher's Guide to: Self Understanding Through Occupational Exploration (SUTOE)State Department of Education, Division of Community Colleges and Vocational Education.

2 Final Report of the Education Improvement Advisory Commission, State of Oregon, 1966, p. 61.

3 Draper, Dale C., editor of NASSP Publication, Educating for Work, and Staff Member of San Francisco State College.

4 Feldman, Marvin J., Program Officer of the Ford Foundation and author of Making Education Relevant.

5 Venn, Grant, editor of Man, Education, and Work and Associate Commissioner of Adult and Vocational Education, U.S. Office of Education.

2. Through occupational orientation, children develop a personal sense of their present and future worth. They become aware of the complexities and possibilities within the world.

3. An occupational orientation program can help a student perceive himself and the options open to him more accurately. Career choice involves an appraisal of self matched to knowledge about occupations. Research shows that the most realistic career choices are made by those with the greatest exposure to valid information about work and the greatest opportunity for self evaluation.

4. Our present culture deprives most youth of prevocational experiences, yet class-associated attitudes about work and careers are acquiring in early years. Attitudes and concepts are influenced by family, teachers, and other role models. Such concepts may be based upon lack of experience, partial information, or misinformation.

5. Well-planned occupational services in the elementary school broadens the range of possible choices at all stages. Students are asked to choose courses of study or make other educational decisions before most of them are aware of the career opportunities available.

6. A background of accurate information and an awareness of options helps avoid an occupational choice made because of immediate circumstances. The decision-making becomes a process in which some career areas are rejected as others are selected as possibilities.

7. Research indicates that the aspiration of a student often differs from the career he actually expects to choose. A wide range of careers may be acceptable and satisfying to him, but he does not consider them as his aspirations.

An occupational outlook program which begins in the early years and continues through high school affords the individual opportunity to appraise himself, to recognize the many career choices available, and to understand the process and end-result of occupational decision-making.[1]

We are especially sensitive to the findings of Robert L. Darcy under a grant from the U.S. Office who reported on An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes, Final Report. We quote from his conclusion: ". . . Students enrolled in the experimental course reflected more interest in school and a lower dropout rate."[2]

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[1] Orientation Approaches to Increase Student Awareness of Occupational Options, U.S. Office of Education, Mrs. Nancy Sloan, CG400002.

[2] ED 022056 Darcy, Robert L., An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes. Final Report, Ohio University, Athens Center for Economic Education.

In a speech given to the Ohio School Counselors Association, January of 1969, Dr. Richard C. Nelson emphasizes the need to"open new vistas to children through career explorations" and more reasons for offering such experiences are offered as well as nine additional points as to how this exploration should be conducted. In summary they are:

1. Exploring careers help children develop a personal sense of present and future worth.

2. Exploring careers helps children to develop a feeling of place their society.

3. Exploring careers helps children see how adults achieve the place they have.

4. Exploring careers injects the elementary school into a meaningful on-going process.

5. Exploring careers helps children see the value and significance of all honest work.

6. Exploring careers helps children develop enthusiasm about the whole prospect of work as a way of life.

7. Exploring careers helps counteract the physical and/or psychological absence of male working role models upon attitudes toward work.

8. Exploring careers helps children develop a concept of life as a reality extending through several interrelated-and-interdependent phases.

9. Exploring careers with elementary school children is consistent with good learning theory.

Exploration is successful when:

1. Effective career exploration is action oriented.

2. Effective career exploration emerges from questions important to children.

3. Effective career exploration at the elementary school level stresses wide-ranging exploration and minimizes choice making.

4. Effective career exploration is not given letter grades on report cards and evaluation is kept to an absolute minimum.

5. Effective career exploration starts with the jobs and positions held by parents of the children involved.

6. Effective career exploration expands outward from parents' jobs and from other jobs in the immediate vicinity to include jobs of relevance in the city, state, and nation.

7. Effective career exploration brings children into meaningful contact with a variety of workers at their jobs.

8. Effective, career exploration relies more on occupational briefs prepared by children than upon commercial materials.

9. Effective career exploration is not overweighted in favor of amassing and digesting occupational information.[1]

Component 20 - Guidance

Guidance has always been an integral part of any vocational program. Project VIGOR emphasizes the articulation of guidance efforts, grades 1-14. Vocational exploration at the early years, the follow-up program, provision of vocational information, in-service of teachers and counselors, and group and individual efforts with students will all have guidance implications and characteristics.

We have reviewed the summary and most of the research cited in Intensive High School Occupational Guidance Approaches for Initial Work and Technical School Placement, compiled by Juliet V. Miller, under contract to the U.S. Office of Education and find that the Summary of Guidance Services needed for youths speak directly to much of our program. For instance:

1. "These youth need early vocational exploration experiences which will help them understand themselves and the world of work" is a direct reference to our Component 10-Vocational Exploration, previously reviewed.

2. "These youth need the opportunity to test occupational realities before they make occupational decisions. Programs should be developed which enable the student to engage in real or simulated work experience" speaks directly to our Component 50 - Work Experience.

3. "The total school experience of these students needs to be made more occupationally relevant. One guidance function can be to provide feedback to other members of the school staff which can facilitate curriculum revision" will be the direct thrust of Component 30 - General Curriculum (and its vocational relevancy).[2]

We are cognizant of the report of Task Force II, Articulation and Coordination of Occupational Preparatory Curriculum From the High School Through the Community College, a study done in this state as a part of the Occupational Preparatory Curriculum Articulation -- Coordination Project undertaken by the Oregon Board of Education, Oregon State Systems of Higher Education, Oregon Department of Employment, and others.

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1 Nelson, Dr. Richard C., Opening New Vistas to Children Through Career Exploration, Purdue University.

2 Intensive High School Occupational Guidance Approaches for Initial Work and Technical School Placement, U.S. Office of Education, Juliet V. Miller, CG400003.

Guidance considerations are described as follows:

"Students, educational administrators and teachers must realize that occupational education is not a one-shot preparatory route, but a life-long process."

"Counseling personnel must be aware and make it their mission to prepare young people to cope with the profound changes they are certain to encounter during their lifetime."

Those in guidance and counseling must consider where we are not and what short run changes are needed to equip our young people to cope with the world in which they will live. But anything they attempt as a present solution should not detract from the infinitely more difficult and more basic task of designing new programs which will transform our schools into institutions capable of preparing students to live in a complex technological society. And, while they are at it, they should not lose sight of the fact that technology will bring with it more leisure, therefore guidance must:

1. Prepare young people to use this leisure wisely and creatively, and

2. Apply influence on those concerned specifically with curriculum articulation to produce a well-rounded program which orients the student for the work world, balanced with readiness to enjoy or wisely utilize leisure time or pursue avocational interests.

Also, in considering the design of a sound program of vocational education, they need to think about some interrelated problems:

1. How can we make sure that every student receives the basic education necessary for occupational preparation?

2. How can we provide each youngster with the information and experiences that he needs in order to make intelligent decisions about his life's work?

3. How can we provide occupational education that is appropriate to the needs, interests, and abilities of young people so that we can enter gainful employment, progress on the job, and cope with changing technology effectively?[1]

A counselor needs to be aware of his own bias and/or limitations of experience which affect the impressions or climate he may create in the guidance program.

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[1] Articulation and Coordination of Occupational Preparatory Curriculum From High School Through the Community College. Report of Task Force II, 1969, Dale Parnell, Superintendent of Public Instruction, Oregon Board of Education, Salem, Oregon.

Component 30 - General Curriculum

An innovation with great promise has to do with this component.

Each department of the central "general" curriculum, that is, math, science, social studies, English, will design and write experiences which make these courses "vocationally relevant". After specific in-service experiences (presentations by articulate leaders in the business and labor fields, exploratory visits to industrial complexes, interviews with ex-students, review of literature, and material available), courses, which through their selection of materials and experiences will relate to vocational applications, will be written. These courses will stress relationships to the world of work; relationships to student identified vocational goals; relationships to the skills taught in the vocational cluster and related courses; and relationships to the civic and national role both labor and industry play.

Two such courses have already been developed at David Douglas High School. The district felt so strongly about the potential of this relevancy that it supported in-service and staff development of Project Math, a math class for ninth and tenth graders, and English for Vocations, an elective English course for eleventh and twelfth graders (all 11th and 12th English selections are elective semester courses, although the equivalent of two full years must be completed).

Project Math - This course was first initiated with Title I ESEA funds and is made up of packages or 'projects'. Each project has as its content vocational experiences of interest to the students selecting them. Each also demands utilization of all of the math concepts taught in more traditional courses. After three years, all evaluations are positive. Student achievement is up, transfer of concepts to other problem solving areas is up, student attendance is up, and students are moving to other math electives, whereby previously they dropped further math study.

English for Vocations - Concern as to whether students would elect this course was quickly dispelled on the first year it was offered. The basic thrust is to develop language skills (clarity in writing, reading for retention and detail, speaking positively with clarity, and listening for instruction) as they relate to vocational interests and requirements. It provides for student use of language in interviews, technical writing, technical reading and others. Emphasis is on such skills as directness, brevity and coherence. Three teachers are involved in teaching the course and neighboring school districts have shown strong interest in it.

Both courses, and others already being developed in science and social studies, maintain standards of accountability as determined by student performance. The concepts and tool skills are of such breadth so as to allow a student the opportunity to move into and out of these experiences and still have many doors open to him as a graduate. The fact is, the relevancy of such experiences will retain students in the math and science sequence for a longer period whereas presently too many students complete their one year requirement in these areas and then move away from further study.

Every teacher in the district has participated in the preparation of a list of vocational applications for specific concepts presented within that teacher's discipline and grade level. These applications are designed to demonstrate the relevancy of each subject to the student's future life of work without interrupting the instructional format which is most comfortable to the teacher.

The second portion of this component is the organization of elective courses in the areas of home economics, industrial education, business education and others. Such courses would be analyzed as they relate to vocational cluster curriculum and will be recommended to students in patterns which relate to their cluster interest. Each of these courses will relate to more than one cluster and are not to be confused in any way with "tracks". We are proposing a guidance strategy which will allow for a smooth transition from general to specific vocational training. Students will be encouraged to move into and out of such patterns as their interests and goals change. We agree with the program recommendations of the First Annual Report of the National Advisory Council on Vocational Education which says: "Within high schools the student should have multiple choices. A separate vocational school or a distinct vocational track should be exceptions, not rules, in a technical and changing society. Communication and computation skill become relevant in a context that relates them to an employment objective. All students must be allowed to move into and out of vocational-technical programs and to select mixtures of vocational, technical and academic courses."[1]

Component 40 - Vocational Clusters

A vocational cluster is a family of occupations composed of recognized job titles which are logically related because they include identical or similar teachable skills and knowledge requirements. A cluster is general enough to allow maximum flexibility of choice as far as future preparation or job commitment is concerned. It avoids the training of a student for narrow work specialty. It provides the student with the opportunity to identify a general area of interest, a family of job skills, if you will, and then to relate his general curriculum choices (math, science, English, etc.) to this interest. Motivation through perceived relevance is our goal here.

It is this cluster experience which will form the background or base for specific training at the community college, military, or industrial level. That, plus the relevancy of the general curriculum, should alter extensively the involvement of up to 60% of our student body.

More simply summarized, the cluster concept will, then, develop in the student entry level competencies in a related variety of jobs and provide flexibility in terms of occupational, educational, and geographic mobility.

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[1] First Annual Report of the National Advisory Council on Vocational Education.

To have any impact on the total student population every cluster which can be offered and supported by student interest should be provided. Priorities on cluster offerings should be determined by employment opportunities in the local community. An understanding of the economic conditions and employment mobility of the community is essential.

Experience in a single cluster is reserved until the 11th and 12th grade years. This experience will consist of two or three hour laboratory exposures each day during these two years, supplemented by involvement in related work experience in the community.

Well before the specific cluster experience each student will have extensive exposure to occupational exploration through a unit of instruction which is a part of the language arts-social studies course in the middle schools at the 7th and 8th grade levels. During the 9th and 10th grade years selections from the general curriculum can be almost totally related to the anticipated cluster choice.

While the term cluster is not new to vocational education the program implemented here is the product of extensive development in the State of Oregon. An intricate network of involvement of Federal finances, State Department of Vocational Education, the Oregon Board of Education, Oregon State University, the University of Oregon, community colleges, the State Advisory Council for Vocational Education, various committees from business and industry, lay persons, secondary school personnel and the Department of Employment have developed this concept to a point of implementation.

The Oregon Statewide Study of Systematic Vocational Education Planning, Implementation, Evaluation, a study completed by the Bureau of Educational Research and Bureau of Business and Economic Research, University of Oregon, under contract with the Division of Vocational Education, Oregon State Department of Education completed the basic study in 1965. This study was funded by the Vocational Education Act.

Sophisticated data collection devices were developed and a projection of major occupational groups for the State during years 1965-70 was developed. An analysis of the Oregon economy was completed and the vocational cluster concept was clarified. Steps to development were:

1. A committee of three members appointed from the staff of the Division of Community Colleges and Vocational Education was assigned the tasks of defining the characteristics and minimal requirements for designation of a cluster and making a tentative identification of the clusters to be included. Working from generally accepted occupational data and applying the best available information, i.e., The Dictionary of Occupational Titles and occupational information developed by the State Department of Employment, the committee identified twelve tentative clusters.*

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* Minimum numerical requirements adopted by the committee for inclusion of a tentative cluster were present employment in Oregon of 10,000 workers and a forecast need for 2,000 workers by 1970.

2. The tentative clusters were then submitted to supervisors within the Division of Community Colleges and Vocational Education and other consultants for further anaylysis and recommendations. Neither the procedures used nor the clusters developed received unanimous approval; there was, however, consensus that the clusters identified should be accepted and incorporated in the Guide.

3. Following identification of the occupational clusters to be included, the immediate problem became development of illustrative curriculum content for each. This task involved, as did the cluster identification, analysis of occupations to determine required skills and knowledge. In this state, however, the occupations concentrated upon were the key ones selected for inclusion in each of the clusters.

The procedures followed in content development were:

1. Determination of the skills and knowledges required in the key occupations in each cluster. These were developed for the most part from analyses made by specialists from the Oregon State Department of Employment.

2. Identification of teachable elements inherent in the skills and knowledges determined through analysis of the key occupations.

3. Organization of the identified elements into proposed courses in sample curriculum patterns. This phase of the development was accomplished by small work-groups composed primarily of state staff personnel and other vocational educators. In addition, reactions and recommendations concerning the proposed courses and curriculums were obtained from industrial and labor representatives, as well as from instructors in related subject areas.[1]

Component 50 - Work Experience

Work experience programs of differing thrusts are known over this country. We will relate our work experience program to the cluster interest and preparation of our 11th and 12th graders. This on-the-job experience, in addition to the laboratory, in-school experience, will make a total contribution to student vocational preparation. In addition to cluster related experiences we will require our work experience coordinators to place school dropouts or potential dropouts in short term, highly concentrated vocational training. The community college and existing night school programs will be used for this purpose. Facilities developed for daytime cluster preparation will also be made available for other manpower programs.

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[1] Guide to Structure and Articulation of Occupational Education Programs, State Department of Education, Division of Community Colleges and Vocational Education, Salem, Oregon, 1968.

We will expand our existing program of job placement and cultivate our relationship with other youth-oriented programs (i.e. Job Corps, Neighborhood Youth Corp, etc.).

A summary or work experience programs include:

A. Kinds

1. Exploratory Work Experience Education - an extension of the classroom for credit, not to exceed two semesters.

2. General Work Experience Education - provides students with a maturing experience through part-time employment, either during or after school. Minimum wage requirements must be met.

3. Cooperative Work Experience Education - employs students within the occupation for which their school courses are preparing them. Students receive either pay or credit or both.

B. Common Characteristics

1. Usually open to juniors and seniors in occupations approved by the school.

2. Supplemental vocational information is offered by the school in related classes or laboratories.

3. Employment is in conformity with local, state and Federal laws, avoiding exploitation.

4. Instructor coordination time is equal in both areas with extended contracts for summer.

5. Enrolled students have a declared occupational goal, receive credit, and usually are dismissed early in the day.

C. Starting a Program

1. Factors to consider:
   a. Compatibility of existing school philosophy and work experience programs, including attitudes of students, administration, and faculty.
   b. Comparison of community need, employer attitude, and availability of training stations.
   c. Financial arrangement.

2. Steps to take:
   a. Determine supervisory, clerical, and instructional personnel.
   b. Relate instructional orientation to skills, knowledge, and understanding.

c. Establish an advisory committee with stated objectives and understanding.
d. Develop operational plan.
e. Present to Division of Vocational Education.

D. Responsibilities of School Coordinator

1. Location of work stations.

2. Training agreement - student, school, community, and employer.

3. Student selection, interest, and evaluation.

4. Starting and termination procedures.

5. Instigation and maintenance of good public relations.

E. Employer Responsibility

1. Provide necessary training.

2. Provide necessary supervision.

3. Provision for mobility from within.

4. Evaluation and understanding of student.

F. Legal Responsibilities

1. Conformity with Federal, State and local laws -- in both letter and spirit.

2. Maintain insurance protection and a legal reference file.

Our review of the literature relating to work experience has brought to our attention the problem inherent in such a program. Material and procedures developed by the Los Angeles City Schools and reviewed on Eric microfiche have drawn our interest, especially in the areas of staff responsibility and procedure.

Component 60 -- Articulation

While in most vocational programsarticulation would be a process and not a separate component, it is so crucial to our design that we will give it specific program development. The key to this entire project rests not entirely in the component programs but in the fashion in which they are related one to another and from one institution to the next. The fact that each program will have effect on all students enrolled and that directions for future planning will be clear, is the strongest portion of our approach.

Articulation will mean that all parties involved(elementary, middle,

and high schools, community college, lay advisory personnel, public agencies) will develop components with the benefit of cooperation, advice, resources and representation of each of the other groups.

The Oregon Board of Education developed two task forces to determine ways that Oregon can reach the largest possible number of students with meaningful occupational preparation. The Report of Task Force II resulted in the report, High School - Community College Curriculum Articulation. This report emphasizes the need for articulated vocational education and suggests models in each of the cluster areas. The task force also designated roles for the secondary and community college programs and pinpointed ways in which program consistencies can be accomplished. Their final recommendations are listed here and the result of each action is available to us as we develop our program, grades 1 through 14.

1. An articulation committee be established in each community college district.

   a. Members of the district articulation committees include:
      (1) Representation from each secondary school district within the community college district.
      (2) Representation from the respective community college.

   b. When more than one community college is readily available to students (such as in the Portland Metropolitan Area), provision should be made for:
      (1) A committee which encompasses all community colleges and secondary school districts, or
      (2) Coordination of a separate committee as established in 1.a above.

   c. A priority function of the articulation committee of each community college district be to develop and execute:
      (1) A plan of articulation of secondary and community college curricula.
      (2) A plan for educational placement of occupational students in the community college.

2. A statewide articulation-allocation committee be established.

   a. Members of the statewide articulation-allocation committee include:
      (1) Representation of one person from each community college.
      (2) Representation of one person from the secondary school districts within each community college district.
      (3) Representation from the Oregon Board of Education.

   b. Community college and secondary representatives of the statewide articulation-allocation committee be members of their respective community college articulation committees.

3. The Oregon Board of Education established a statewide data collecting, recording, and disseminating system for both secondary and post-secondary schools.

   a. The existing Oregon Board of Education titled reports be retained, but revised to coincide with the system devised.

   b. The data be comparable to that of other agencies concerned with the needs of and training for the world of work.

   c. Within this statewide system, there be defined "A vocational student" which is common for all secondary programs and which is compatible with the definition used at the community college level.

4. The cluster approach, developed in the Oregon Board of Education's Guide to Structure and Articulation of Occupational Education Programs, 1968, be implemented by the Oregon Board of Education as the basis for articulation of Oregon's curriculum in secondary schools.

5. Oregon State University develop and implement programs of preservice and in-service teacher education in all the cluster areas defined in the above-mentioned "guide" as one part of a comprehensive plan for preparing occupational education personnel.

6. Oregon Board of Education and Oregon State University establish seminars and workshops to familiarize counselors with the world of work and occupational programs in the secondary schools and community colleges of Oregon.[1]

We will consider all of these recommendations and apply products of statewide programs. In our program no decision which affects direction of the program is made without representation from all levels and institutions involved. The implementation and results of all components will be shared, grades 1 through 14.

Component 70 - Follow-up Evaluation

The final component has two functions: A follow-up study of graduates and the evaluation of the entire program.

We will conduct a follow-up study of an adequate sample of graduates and others for a period of six years after leaving school. The design of such a study would be accomplished after a review of existing follow-up instruments and programs and contacts with interested institutions and agencies. Oregon State University will be contacted as a possible partner in the implementation of this study. Results will be used to determine the proportion of students electing any one path after leaving the program, need for program change and expansion, and outcomes as related to the objectives of the program.

[1]Articulation and Coordination of Occupational Preparatory Curriculums from High School Through Community College. "Report of Task Force II", Dale Parnell, Superintendent of Public Instruction, Oregon Board of Education.

Evaluation procedure is designed and accomplished cooperatively by a third party, Teaching Research.

The Teaching Research Division, Oregon State System of Higher Education, is an organization of highly specialized researchers engaged full time in research and development of the teaching process at all levels. The Teaching Research staff is located on the campus of Oregon College of Education, but it is organized and operated as a separate administrative unit of the Oregon State Board of Education.

The first year interim evaluation report is attached to this report.

B. GOALS AND OBJECTIVES OF PROJECT VIGOR

The general objective of Project VIGOR is:

To develop a comprehensive vocational education program for grades 1 through 14.

Specific objectives are for students to:

1. Demonstrate characteristics of a viable work attitude.
2. Identify themselves and their personal characteristics in relationship to their future as wage earners.
3. Use resources of vocational information constantly in the process of vocational goal setting.
4. Recognize the relevancy of general curriculum experiences (English, math, science, social studies) to future employment.
5. Demonstrate skills and knowledges accrued from courses which relate to vocational education at later grades.
6. Demonstrate skills and knowledges demanded for entry employment in jobs which have common characteristics and which belong to a family of vocations. (Vocational clusters)
7. Transfer general curriculum tool skills (reading, writing, computation, scientific concepts, etc.) because of a recognition of their relevancy to vocational experiences.
8. Elect further vocational training after high school.
9. Perform satisfactorily in the community, under school supervision, work experience assignments related to classroom instruction.
10. Complete at least four years of high school by not dropping out.

Task objectives necessary for program implementation are:

1. To provide awareness and exploratory opportunities, and demonstrate school's relativity to life programs for students in grades 1 through 6.

2. To provide a specific class experience, grades 7 through 9, enrolling all students which will clarify the role of the worker, employer, government and community in the world of work and which will present sources of vocational information.

3. To provide an integrated vocational guidance program, grades 1 through 14.

4. To provide specific courses in the general curriculum which emphasize their relevancy to future vocations and job needs by identifying activities and materials which emanate from student vocational goals and objectives.

5. To organize patterns of related courses which if elected by students will provide basic understanding and skills necessary for more specific vocational training.

6. To develop program, staff, training models, facilities for vocational cluster experiences by the end of three years for approximately 800 eleventh and twelfth graders each year.

7. To articulate all program components through the community college level.

8. To provide meaningful on-the-job work experiences which relate to vocational interests and training for approximately 800 high school students.

9. To create, design, and implement a follow-up study of high school graduates for continued program improvement and expansion as well as evaluative data.

GOALS OF PROJECT VIGOR AS ADOPTED BY DAVID DOUGLAS SCHOOL DISTRICT - FEBRUARY 9, 1971

PRIMARY - Every child will see the world of work as a part of his developing self and will learn some career classifications (jobs) by name.

INTERMEDIATE - Every child will be able to identify the relationship between his school courses and the world of work and will learn to group employment classification into job families. Every child will see the world of work as a significant part of his developing self and will learn the names of many jobs.

MIDDLE - Every student will be able to relate a knowledge of his own characteristics to known occupational requirements and will be able to locate detailed information about specific job requirements. Every student will be able to identify the relationship between his school courses and the world of work and will learn to group employment classification into job families. Every student will see the world of work as a significant part of his developing self and will learn the characteristics of many jobs.

JUNIOR - Every student will explore chosen occupations and select courses supportive to his broad career field choice. Each student will demonstrate a knowledge of the relationship between his developing education and his emerging vocational being. Every student will be able to relate a knowledge of his own characteristics to known occupational requirements and will be able to locate detailed information about specific job requirements. Every student will be able to identify the relationship between his school courses and the world of work and will learn to group employment classification into job families. Every student will see the world of work as a real part of his developing self and will be able to list many jobs by name.

SENIOR - Every student will elect a combination of courses specifically designed to meet needs of students having chosen his career area. Every cluster student seeking entry level skills will develop those qualities necessary to obtain employment in his chosen occupational area. Every student will explore chosen occupations and select courses supportive to his broad career field choice. Each student will demonstrate a knowledge of the relationship between his developing education and his emerging vocational being. Every student will be able to relate a knowledge of his own characteristics to known occupational requirements and will be able to locate detailed information about specific job requirements. Every student will be able to identify the relationship between his school courses and the world of work and will learn to group employment classification into job families. Every student will see employment as a real part of his developing self and will be able to describe many jobs within his chosen career area.

POST HIGH SCHOOL - The school will provide follow-up contact service for former Douglas students and placement assistance, where possible, for youth of this community. Compatibility of programs for students advancing from David Douglas to an institution of higher education will be maintained.

Career Concepts from the Philosophy of Project VIGOR

David Douglas School District 40

Career education is that portion of general education which is purposefully designed to provide an environment for developing attitudes by which an individual approaches decisions concerning services which he will exchange for the goods and services that he will receive from his community.

Concepts included within the philosophy of career education are:

(1) All people contribute something to other people in exchange for their psychological and physiological requirements.

(2) The organization of learning (called teaching) about that adult portion of life called vocation (job, work, profession, employment) belongs in all areas and groupings of education (as do other concepts of general education such as responsibility, reasoning, and self-direction).

(3) Career education must prepare an individual to deal psychologically with both anticipated and unexpected changes in environmental requirements.

(4) Vocational selection is an individual right (as is religion, marriage, or recreation).

(5) Level of position (skilled, technical, managerial, professional) within a vocational area (medical, mechanical, educational, food service, etc.) is determined by competency and desire based on education, experience, and effort.

(6) Vocational education (that part of education which prepares a person for a given area of employment; i.e. apprenticeship, school of education, trade school, law school, medical school) is offered by society to help an individual meet his vocational ambitions.

(7) Vocational education should be available in terms of the needs of society (people) which is composed of individuals whose readiness for some aspect of vocational education may range from childhood to senior citizen.

(8) Career education fits into the affective (attitude) domain - vocational education deals largely with the cognitive (knowledge) and psychomotor (physical) domains.

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C. GENERAL PROJECT DESIGN

Oregon's fifth largest school system, David Douglas is organized on a 6-2-2-2 basis, with eleven elementary schools, two middle schools, and a campus-style high school. There are approximately 7,000 students in grades 1 through 8 and more than 3,000 high school students. The certified staff numbers 500, with 300 additional employees. The curriculum has been traditionally college-oriented.

Project VIGOR is an implementation of an educational philosophy calling for those changes in instruction which will best prepare all students for decision-making in terms of life work.

Component 30 - General Curriculum

The Project is operating in grades 1 through 14, including awareness, orientation, instruction, exploration, preparation, and placement.

Awareness of people on jobs is a major thrust of the primary grades. The students are encouraged to look at adults as people who have jobs to do in society and are helped in forming understandings of the functions of these jobs.

A concerted effort to help students see the relationship of their school courses and the jobs which they will one day have is begun in the primary grades and carried all through school. Projects at all grade levels are being tested in terms of relating course work to the world of work.

Component 20 - Guidance

Guidance is regarded as the central nervous system of career education, with all counselors becoming increasingly aware of their unique role with respect to student preparation for the world of work. Oregon Board of Education Guidance Specialists are providing leadership in the evaluation of this expanded guidance concept.

Component 10 - Exploration

Occupational exploration has its formal center at the middle school level. During the 1970-71 school year all 7th and 8th grade language arts-social studies teachers received instruction on the Oregon Board of Education's SUTOE course, and a nine-week unit was field tested at the Gilbert Middle School. All 8th grade students will receive SUTOE instruction during the 1971-72 school year, and all 7th and 8th graders will receive instruction the following year. Multnomah County career education and testing specialists have assisted with the development and evaluation of this program.

A special exploratory work experience program will be introduced during the 1971-72 year and will extend into the summer. See Appendix B.

Component 40 - Cluster Curriculum

The Project started with the 1970-71 school year by adding four cluster courses to the 11th and 12th grade selections. Four more cluster courses have been added for the 1971-72 school year. The following table shows actual enrollment for 1970-71 and pre-registration for 1971-72.

CLUSTER COURSE ENROLLMENT AT DAVID DOUGLAS HIGH SCHOOL

Course Title	Department	1970-71	1971-72	Increase	% Increase
Child Services	Home Econ.	13	85	72	554
Food Services	Home Econ.	13	50	37	285
Clerical	Bus. Ed.	58	62	4	7
Diversified Occupations	Bus. Ed.	0	73	73	-
Health Services	Science	0	22	22	-
Ind. Electronics	Ind. Ed.	0	27	27	-
Ind. Mechanics	Ind. Ed	58	194	136	234
Ind. Metals	Ind. Ed	0	18	18	-
	TOTALS	142	531	389	274

These cluster courses form the heart of vocational education within Project VIGOR and provide at least job entry level skills for each enrolled student.

Our proposed target enrollment of 50% of the 11th and 12th graders, or approximately 800 students, would appear to be attainable by the end of the three year Project period.

Component 50 - Cooperative Work Experience

Although many students have been placed on jobs with excellent instructional value, dimensions of the cooperative work experience program have not met Project expectations.

With counsel from the Oregon Board of Education Career Education Specialists, we have revised and re-staffed our work experience program. We expect these changes to facilitate a greater student-community involvement with the employment aspects of the Project.

Our work experience program will benefit from the expertise of each cluster instructor and will occupy a major attention from our work experience supervisor, our exploratory work experience coordinator, and

each cluster instructor and will occupy a major attention from our work experience supervisor, our exploratory work experience coordinator, and our instructor of diversified occupations. We will also draw heavily upon the advisory committees for help in establishing effective components of the work experience program.

Component 60 - Articulation

Articulation is being achieved through personal contact and through advisory committee activities. Greater visibility will be sought through the use of brochures now in the development stage and more newspaper coverage through greater activity at the public relations level.

At the suggestion of Mrs. Joyce Dechman, U.S. Office of Education, Health, Education, and Welfare Exemplary Projects Representative, plans are being made for establishing effective articulation with the District elementary program. Oregon Board of Education Exemplary Projects Specialist Tom Williams assists with the opening of communication channels within the state.

Component 70 - Follow-up and Evaluation

Through the Oregon Board of Education this school uses the VERIFY system for follow-up of students. A local supplementary follow-up program is being designed to serve needs beyond the scope of the VERIFY program. Particular attention is paid to the needs of the handicapped graduate, in order to assure him/her of a support structure for subsequent employment or counseling needs. Close contact with the Oregon State Division of Vocational Rehabilitation is maintained for those students having special problems in the school-work transition.

D. RESULTS AND ACCOMPLISHMENTS OF THIS PROJECT

The accomplishments of Project VIGOR occur largely in terms of an awareness of career education as a part of the general curriculum. This awareness has been stimulated within the community by news releases and activities of the advisory committees. The professional staff has been oriented by District in-service workshops, faculty meetings, individual contacts, and special projects described throughout the body of this report.

The table on Cluster Course Enrollment on page 30 indicates results in terms of student participation in vocational courses.

The experimental orientation program conducted at Gilbert Middle School involved approximately 800 students for a nine-week period. Results from this program will be shown in subsequent evaluation reports.

Advisory committees have involved fifty-five lay community members, twenty-eight certificated staff members, and ten students. These committees have been a first step toward community involvement other than school board and budget committee for this District. The committees have proven such a valuable addition to the planning and implementation of Project VIGOR that serious consideration is being given to formation of additional committees for various departments and grade levels throughout the School District.

Appendix C gives a format for a Problem Solving Workshop for Advisory Committee Members. The workshop served not only as an introduction to a problem solving model, but also as a quick introduction to effective group process for various committees.

Implementation of a plan to involve District teachers in career curriculum planning through bids submitted for projects of their own design has stimulated a great deal of activity in independent research and planning since school closed June 11, 1971. A subsequent report will give full details of that program and what it produced.

E. EVALUATION OF THE PROJECT

Evaluation is an ongoing operation within the Project and a responsibility of the Project administration. Third party evaluation is the contracted responsibility of Teaching Research, previously described in the body of this report. Copies of Teaching Research's first year, 1970-71, evaluation will be attached as Appendix E to those copies of this interim report going to those governmental agencies under whose supervision Project VIGOR operates.

Appendix D is the proposal submitted by Teaching Research for evaluating Project VIGOR for the fiscal year July 1, 1971 - June 30, 1972. This appendix is included to give you an overview of the services performed by the third party evaluator.

F. CONCLUSIONS

Project VIGOR is a guidance-oriented curriculum project whose visibility exists through changes in student behavior. We are trying to change the entire curriculum in those ways which will make most likely those student experiences which result in a total alumni capable of engaging effectively with the world of work on a continuing basis.

In terms of the above-stated objective, the Director of Project VIGOR considers the first project year successful.

Course content, teaching methodology, staffing patterns, personnel interaction, materials, and equipment are coordinated into a total school curriculum which might pass as "conventional" until examined in terms of post high school results.

Implications of this Project should favor an educational design appropriate for implementation by any other school system with similar aspirations for its graduates without imposing an expensive or disruptive reorganization program.

The Project management recommends a continuation of established direction, reinforced by additional staff orientation and involvement, and increased articulation with total community including students, staff, administration, parents, taxpayers, business and industry representatives.

APPENDIX A

BIBLIOGRAPHY

BIBLIOGRAPHY

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APPENDIX B

EXEMPLARY WORK EXPERIENCE OUTLINE

EXEMPLARY WORK EXPERIENCE OUTLINE

I. A project to place boys and girls between the 8th and 10th grades into full day on-the-job observations of people working within career areas of interest to the individual student.

Our school system makes no provision to reduce horizontal job mobility through pre-preparatory job environment exploration. We in no way assist the student to feel-smell-touch-or-hear the job or jobs of his indicated interest. Our assistance to him is only in the written or spoken word or the "quick look" field trip exposure.

Courses taken as prerequisite to given cluster areas - health, mechanics, food, etc. and which are subsequently changed prevent adequate sequential preparation for the final job area selected by the student. We allow the student to select prerequisites to certain cluster areas without exposing him to any true "job environment".

II. Objectives -

A. Outcome:

1. Students having an exploratory work experience will undergo fewer vocational area changes than other students.

2. Students having an exploratory work experience will select career cluster areas for secondary courses earlier than other students.

3. Students having an exploratory work experience will demonstrate through performance a greater motivation within career cluster courses than other students.

B. Activity:

1. Each student in a SUTOE class will identify three or more vocational areas which hold some interest for him; i.e., metalwork, construction, business, accounting, etc.

2. Each SUTOE student will compare his characteristics with known occupational requirements.

3. Each student will have an opportunity for an exploratory work experience before entering a cluster course.

4. Each exploratory work experience student will be exposed to the environment, including time, space, sound, smell, social atmosphere, and general appearance of an ongoing job within each of three different vocational areas.

C. Involvement:

1. The local adult community will have direct involvement with career education by providing exploratory work situations.

C. Involvement, continued:

2. Each exploratory work experience student will be exposed to the time and effort required to earn a living in various career areas.

III. 8th grade SUTOE teachers will help students determine major areas of practical interest. A counselor coordinating the SUTOE project will supervise the preparation of staff, students, parents, employees, and employers for the exploratory experience. Clerical staff will process information and facilitate scheduling and transporation arrangements. School administration will make time provisions. District administration will authorize fiscal considerations. Oregon Board of Education specialists will assist in correcting program in terms of evaluation interpretation and implementation.

IV. A full time counselor-coordinator will direct the project and provide liason between SUTOE, community, and secondary course selection.

Sixteen middle school SUTOE teachers will help students prepare for the exploratory work experience.

Clerical staff will be employed as required for information dissemination, data collection and processing.

Secondary school counselors will help program students into courses with career implications.

V. Students from Columbia Christian Academy, Portland Union Academy, and Portland Christian High School will be invited through their adminstrators.

VI. Cooperation between labor, apprenticeship council, employment service will be sought through the advisory committee.

VII. A search for similar programs will be made, and sponsoring agencies contacted for articulation.

VIII. Teachers of special achievement students will participate in the planning and operation of the program.

IX. In district evaluation for management will be provided by district staff.

Third party evaluation will report level of objective attainment. The Teaching Research Division of Oregon System of Higher Education has been retained by contract to evaluate Project VIGOR and will be approached in the evaluation of Project G.O.A.L.

X. Guidance counselors will assist students in the interpretation of their experiences for purposes of effective course selection with vocational implications.

XI. Separate accounting will permit identification of federal and matching funds.

XII. Conditions specified in H.E.W. Form 315 covering equal employment rights, non-discrimination, etc., have been adopted by our school board.

APPENDIX C

PROBLEM SOLVING WORKSHOP FOR CAREER EDUCATION

ADVISORY COMMITTEE MEMBERS

PROBLEM SOLVING WORKSHOP FOR CAREER EDUCATION
ADVISORY COMMITTEE MEMBERS
DAVID DOUGLAS SCHOOLS
NOVEMBER 19, 1970

TWO METHODS WORKING TOGETHER

A. Teamwork trio approach
B. Force Field Analysis

WORKSHOP FORMAT

1. Awareness of a concern.
2. Problem identification and goal setting.
3. Determination of significant and workable forces.
4. Exploration and selection of appropriate action.

WORKSHOP CONTENT
(Consultant will pace group)

AS SOON AS YOU GET A FOLDER, READ THE PAPER "CHANGE DOES NOT HAVE TO BE HAPHAZARD"

I	1.	Read paper "Persons in Organizations"
LG	2.	Form trios (with other members of your advisory committee)
I	3.	Read paper "Four Guidelines for Writing a Problem Statement"
I	4.	Write a problem statement
LG	5.	Paraphrase input - 1/2 sheet
I	6.	Refer to paper "The Helping Trio"
△	7.	Trio round robin paraphrase problem statement
I	8.	Read first two pages of the "Force Field Diagnostic Techniques"
LG	9.	Group exercise in listing "forces for and forces against"
I	10.	Individual list "forces for and forces against" for their own problem statements (Use page 3 of Force Field Diagnostic Techniques)
△	11.	Trio round robin on individual force fields
I	12.	Read page 4 of Force Field Diagnostic Techniques
LG	13.	Ranking & Rating exercise on group problem (demo)
I	14.	Rank and rate forces on individual force fields

BREAK - 10 minutes

I	15.	Select force (from 14 above) which you will try to change
LG	16.	"Brainstorm" input exercise.
I	17.	Read "Principles for Brainstorming"
△	18.	Brainstorm action alternatives for force (from 15 above)
I	19.	Select best action alternative (from 18 above)
I	20.	Read paper "The Helping Relationship"
△	21.	Paraphrase and clarify each person's action alternative (from 19 above) in terms of problem
I	22.	Do a force field on forces for and against taking first action step (from 19 above)

APPENDIX D

A Proposal For

DAVID DOUGLAS PROJECT VIGOR EVALUATION PLAN

Project Year July 1, 1971 - June 30, 1972

DAVID DOUGLAS PROJECT VIGOR EVALUATION PLAN

A Proposal For
A plan to evaluate the David Douglas exemplary project in vocational education entitled Project VIGOR: Vocational Cluster Education, Integrated and Articulated Grades 1 through 14 with Guidance Services, Occupational Exploration and Work Experience Relevant to General Education.

Project Year July 1, 1971 - June 30, 1972

Submitted by Teaching Research, a Division of
the Oregon State System of Higher Education
Monmouth, Oregon

June 10, 1971

The rationale for the evaluation of the David Douglas Project VIGOR has been articulated in the Evaluation Plan of December 31, 1970 presented by Teaching Research Division. In this continuing Evaluation Plan it is emphasized that evaluation is a service to the project administration. Consequently, the evaluation plan will continue to acquire the data and information which will be of service to the project administration in on-line and in-process decisions affecting the efficacy of the project, while also providing accountability to the sponsoring agency and providing useful and objective dissemination of project information to the educational community and other concerned publics.

The essentially summative evaluation conducted by Teaching Research in the first year of Project VIGOR provides the basis and impetus for a more formative evaluation in the continuation of the project. Specific activities have been initiated on various grade levels within the school district during the first year. On the basis of the data and information gathered during the first year of operation of the project, some further evaluation activities are suggested. Some of these are similar to first year activities, some are modifications, and some are additions.

I. In cooperation with project staff, further assessment will be made relative to the capabilities and practicability of utilizing project staff for evaluation data-gathering activities. This will be implemented by Teaching Research Evaluation staff presence at summer workshops and consultation with project administration.

II. Assessment will be made of possibilities for training of project staff to carry on evaluation activities. Plans will then be

made to implement such training within the time and resource constraints of the project and project staff.

III. Results of I. and II. will indicate what redefinition is necessary in roles and responsibilities of evaluation and project staff.

IV. Articulation of project objectives and indicators will include explication of processes and outcomes as indicated in Figure 1.

V. Teaching Research, in cooperation with project staff, will identify and/or construct instruments for gathering data relative to both formative and summative evaluation.

VI. The process of providing evaluation information through interim reports for formative purposes will be developed through the cooperation of the evaluation team and Project staff. A suggested time line is included in Figure 2.

VII. The final project year report (summative) will include:

A. A description of the evaluation design and activities as intended at the beginning of the project year.

B. A description of the evaluation design and activities as actually implemented, explaining departures from intents.

C. A description of the utilization of project staff in evaluation activities.

D. The evaluator's description of how the information obtained was actually used, and its influence on project management and staff.

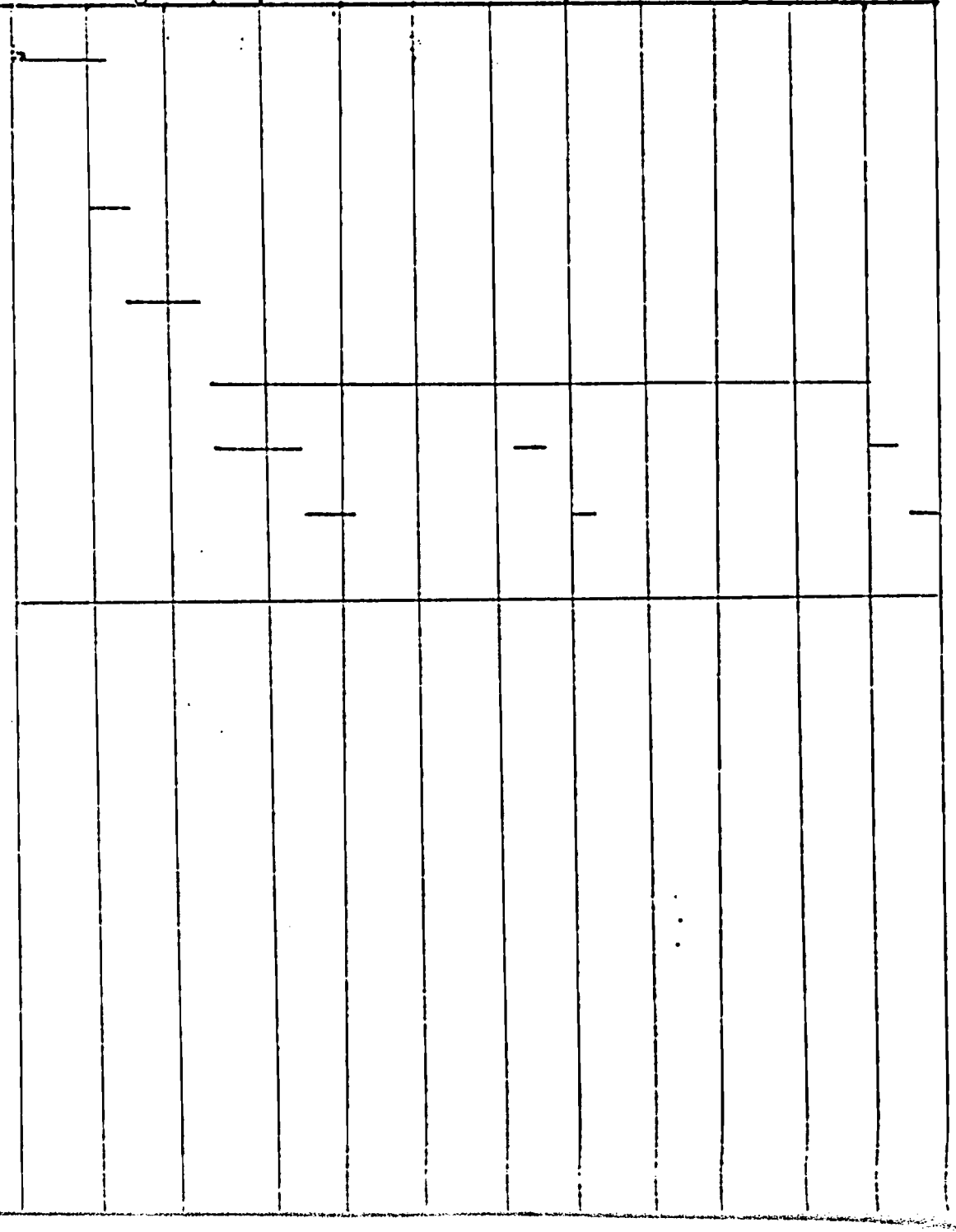
E. Samples and explanations of instruments used in data gathering.

Figure 1. Model of Evaluation Activities Planned For 1971-72

	Components	Target Audience	Indicators: Objectives	Formative	Summative
Educational	1. General Curriculum		Processes	Process	Process
	2. Vocational Exploration		Outcomes	Outcome	Outcome
	3. Vocational Clusters				
	4. Work Experience				
	5. Placement and Follow-up				
	6. Guidance				
Management	7. Orientation				
	8. Articulation				
	9. Administration				
	10. Evaluation				

Figure 2

Tasks	Estimated Days or TR Time
1. Describe objectives for each project component by level or function and arrange sequentially where possible.	1.8
2. Identify or specify the indicators or criteria for each objective.	2.4
3. Construct instruments and describe data collection procedure.	3.10
4. Collect data	4.2
5. Reduce and interpret data.	5.6
6. Provide reports, including a final report.	6.5
7. General consulting services and on-site visits.	7.7



F. A summary of evaluation conclusions and recommendations to satisfy the ultimate accountability and dissemination requirements of the project.

VIII. Item VII. F. will provide the information to be used in a formative manner for planning of continuing career education in the David Douglas school district.

IX. Because the limited budget for evaluation cannot meet the evaluation needs of the project, a periodic report of expenditures will be provided by Teaching Research to the Project Director. This will enable changes in evaluation procedures to be made when warranted by need and resources.

Evaluation Budget

July 1, 1971 - June 30, 1972

Salaries	$ 6,300
Benefits at 10%	633
Overhead at 40.29%	2,538
Travel and perdiem	133
Other services	366
TOTAL	$10,000

APPENDIX E

Evaluation Report

for

Project VIGOR, David Douglas School District

1970-71

Evaluation Report for
Project VIGOR, David Douglas School District
June, 1971, by
Personnel of the Teaching Research Division,
Oregon State System of Higher Education.
Gerald Gage, Evaluation Consultant

Evaluation Report for
Project VIGOR, David Douglas School District
June, 1971, by
Personnel of the Teaching Research Division, Oregon State System of Higher Education. Gerald Gage, Evaluation Consultant.

Evaluation activities related to Project VIGOR, David Douglas Schools, began on January 28, 1971, with contract negotiations between representatives of the school and of the Evaluation Program of Teaching Research (TR). The first evaluation planning meeting was held on February 8th.

WORKDAY

At that time the most pressing activity confronting VIGOR staff was organizing for a teacher workday, February 26, at which time one-half day would be spent on activities designed to orient teachers to the VIGOR project and its underlying philosophy and concepts. It was crucial that this be a positive learning experience for the staff if the Project was to receive acceptance and support.

In response to that challenge Omer McCaleb and Stanley Gaumer, of the VIGOR administrative staff, and Casper Paulson, Jr., Dale Hamreus and Gerald Gage, of the TR staff, developed plans for a workshop. The general procedure employed is described in Appendix A. From this plan, which had been used by TR with a different group in a different context, McCaleb and Gaumer developed a program which involved all teachers at all grade levels in the David Douglas system.

The workday exceeded the expectations of directors and evaluators. An introduction to VIGOR philosophy was provided in a large group session. At that time speakers from the David Douglas administration, VIGOR Advisory

Board, board of Education and VIGOR staff addressed the faculty. (See Appendix B for a copy of the workday program.) Following that session, and using the materials described in Appendix C, twenty-eight groups of teachers, usually working in groups of three or four, described over 100 activities which could be employed to relate career implications and regular classroom instruction.

In order to obtain some appraisal of the affective climate in which this work was being conducted, Gage and Hamreus visited several groups and made counts over five minute intervals of the numbers of responses which seemed supportive or nonsupportive of the program activity or of the VIGOR concept. In observing three five-minute periods in three different groups, Gage reported 58 positive responses and 1 negative response. The latter was in the form of non-involvement by a single teacher who was largely ignored by others in the group. Hamreus reported no negative observations. His record that day also notes the following observations: Small groups were functioning within 10 minutes following dismissal from the large group. No one was loitering in the halls. No cars were observed leaving the parking areas.

Most of the evaluation activity in the next two months consisted of:

1) Discussions between the staffs of Project VIGOR and TR in attempts to identify particular problems and to clarify objectives in relation to specific project components and levels of students. The difficulty of stating objectives in a form so that criteria for measuring them are clearly indicated continues to remain the most obtuse problem in Project evaluation. Yet such activity is essential to establishing contingencies of events in program management. It is also essential to other assessment activities. Many dozens of objectives have been written.

Attempts to organize them into an expedient form for purposes of Project management and for evaluation have, to date, been largely futile.

2) Training Project staff in evaluation activities. Much of this has been by means of supplying books, journal articles and other printed materials for study by the staff. Input about evaluation was also provided during planning sessions. Counsel was provided in establishing criteria for curriculum development contracts to be awarded and implemented this summer. A workshop is planned for June 17th (after submission of this report) which will provide help to these developers in setting objectives and in designing and constructing measurement materials.

3) Developing instruments for data gathering and guiding data collection. It should be noted that, as of June, evaluation plans for this Project have not been adequately implemented. Primarily this has been because of the complexity of the VIGOR Project and its proposal statement which provides little indication of criteria for assessment. In part this has been a consequence of the time of funding to implement the Project. A new Director, not the developer of the proposal, was placed in the position of having to organize Advisors, employ staff, and implement a program and evaluation <u>during</u> the school year. This summer should see most of the evaluation hangups related to the Project resolved.

<u>Site Visit</u>

An attempt was made to obtain some data which would not again be retrievable, or which was accessible only because of certain fortuitous events. One such event was a site visit on May 30 by 17 X-terns enrolled in a gradute program in career education. The interview guide shown in Appendix D was designed, distributed to all X-terns, and they were asked

to use it in the visits in the David Douglas schools. Table I shows the incidence of visits reported on these forms according to grade level.*

Table I: Number of Interviews or Visits by Grade Level

Grade Level	Number of Interviews or Visits
1 - 6	3
7 - 8	13
9 - 10	6
11 - 12	24
Total	46

* Differences in numbers of interviews or visits in the various tables is due, in part, to failure by X-terns to complete some of the blanks on the Interview Guides. Thus, while 52 Different sites were reported visited, only 46 of those reports also had a grade-level indication. This is also reflected by variations in total numbers of respondents to various items.

Table II shows the number of visits to various building sites within the David Douglas District.

Table II: Number of Interviews by Site Visited

Site Visited	Number of Interviews
Senior Building	22
Junior Building	8
Floyd Light	4
Gilbert	10
Administration Bldg.	4
Lincoln Park	3

These interviews provided considerable evidence that the staff at David Douglas is aware of VIGOR and of activities related to the Project (Table III). Fifty-five persons were interviewed. Four of these were students. The others were teachers, administrators or services staff.

Forty-nine of these indicated they were aware of VIGOR and forty-one indicated a generally favorable opinion of the Project. Thirty-four identified his speciality with the Project and 35 could cite at least one activity related to VIGOR.

Table III: Responses to Questions About VIGOR

Question Area	Yes	No
Awareness of VIGOR	49	5
Favorable Opinion	41	3
Can identify his specialty with VIGOR	34	11
Can cite an activity oriented to VIGOR	35	8

Many of the X-terns wrote comments about VIGOR. A tape recording was made of their verbal reports, this has been summarized and given to McCaleb along with the tape. A summary tabulation has also been made of written comments and this has been given to McCaleb. As is characteristic of site visit evaluations, comments tended to be critical. Ommissions were more frequently cited than commissions. The comments and recommendations were a valuable source of information, however, both as to what appears to be program deficiencies and for recommendations as to how they can be eliminated. Recommendations which seemed to be supported by the greatest number of comments from those interviewed were: 1) There needs to be more faculty time to work on VIGOR. 2) There needs to be improved communication. This was expressed by such comments as: "More information is needed." We need help and direction from VIGOR leaders." "There is need for greater staff involvement."

Questionnaire-Opinionnaire Survey of Seniors

On May 28th, seniors in attendance at David Douglas were asked to fill out one of the opinionnaires shown in Appedix E. One form was used

for 33 students enrolled in the Vocational Work Experience Program (VWEP), one for the 62 enrolled in a Cluster Program but not in VWEP, and one for 368 students in neither VWEP or Cluster programs. These are referred to in this report as General students. This survey served three purposes. The first was to obtain information which might be useful in a later follow-up study. The second was to obtain some baseline data regarding the career orientation of David Douglas school programs. The third was to make a first cut at developing instruments for obtaining baseline data in the fall of 1971-72.

The instruments themselves proved more powerful than had been anticipated. Errors in construction reduced their usefulness somewhat. For example, the section related to intents during the first year following graduation should have been administered separately and contained identification of individual students. Items were omitted from one scale or the other which should have been included on all of them. In spite of these deficiencies, the information was useful, especially in terms of indicating the kind of instruments and the kind of data analysis which will be possible. Data are reported in Table IV. These are summary and descriptive. One of the obvious indications is that these data can be examined in terms of interaction analysis if individual scores are used. This will be important for studying the three main effects shown here, i.e., sex, grade point average, and type of program. It may also be useful for studying effects not considered before an indication of how discriminating the instruments used was known.

As might have been predicted, a student's academic success, in this instance reflected by an estimated g.p.a., proved a powerful correlate

TABLE IV:
MEDIAN RATINGS, CLASSIFIED BY SEX, TYPE OF EDUCATIONAL PROBLEM AND GRADE-POINT AVERAGE, OF THE RESPONSES OF DAVID DOUGLAS SENIORS, OR ITEMS REFLECTING OPINIONS OF SCHOOL.

ITEM	TOTAL	SEX		PROGRAM			GRADE-POINT		
		M (57)	F (79)	GENERAL (41)	CLUSTER (62)	V.W.E.P. (33)	-2- (8)	2-3 (81)	3+ (47)
EFFECTIVENESS OF SCHOOL PROGRAM									
1. Maintained interest in school and appreciation for education	3.45	3.36	3.63	3.39	3.88	2.85	2.00	3.38	3.91
2. Motivated better work in school	3.12	2.77	4.10	2.85	3.53	3.18	1.50	3.11	3.71
3. Helped in vocational or career decisions	3.40	3.18	3.82	2.60	4.08	5.00	2.50	3.65	3.32
4. Helped in preparation for a vocation or career	3.43	3.00	4.54	2.75	3.53	4.76	3.25	3.85	3.23
5. Encouraged obtaining further training or education	3.61	3.33	3.93	3.15	3.86	3.65	2.00	3.64	4.00
6. Prepared for further education or training	3.19*	--	--	2.96	--**	3.58	--**	--**	--**
7. Helped in self understanding	3.39	3.03	3.60	2.88	2.98	2.81	2.50	3.43	3.28
8. Helped in preparation for lif in general, a "better" or the "good" life	3.20	2.95	3.91	2.69	3.53	3.16	2.25	3.47	3.16
9. Taught about business and industry	2.95	3.39	4.37	2.92	4.46	4.46	4.00	4.10	3.65
10. Related to other school work	--**	--**	--**	--**	3.71	--**	--**	--**	--**
11. Relevant to life plans	--**	--**	--**	3.09	--**	--**	--**	--**	--**
HELPED IN PLANNING OR PREPARING FOR A VOCATION OR CAREER	X	X	X	X	X	X	X	X	X
12. Counselors	2.44	2.18	2.65	3.00	2.04	2.67	2.17	2.32	3.75
13. Teachers	3.69	3.11	3.93	4.55	3.47	4.14	2.00	3.40	4.03
14. Relatives	2.98	3.09	3.00	2.69	3.25	2.38	3.00	2.93	3.43
15. Extracurricular activities	1.29	1.31	1.31	1.39	1.28	1.21	1.07	1.28	1.44
16. Academic subjects	2.87	2.71	3.08	3.13	2.39	2.20	1.30	2.63	4.40
17. Non-academic areas	2.14	2.20	2.09	2.85	1.79	1.41	1.17	2.11	1.45

ITEM	TOTAL	SEX		PROGRAM			GRADE-POINT		
		M (57)	F (79)	GENERAL (41)	CLUSTER (62)	V.W.E.P. (33)	-2- (8)	2-3 (81)	3+ (47)
18. Vocational areas	4.88	3.29	3.96	2.11	4.13	4.81	3.00	4.31	3.15
19. Service function	2.84	2.51	3.16	1.88	3.19	3.67	1.50	3.08	2.95
GRADE LEVEL AT WHICH SCHOOL WAS RECOGNIZED AS USEFUL TO CAREERS	***	9.4	10.6	10.07	10.10	10.65	**	10.76	9.39

* No students in VCP only, were included in this total.

** Appropriate item was not used with that group, was used with a very small N or was not responded to by the students in that group.

*** Was not completed.

with his perception of the positive benefits obtained from his educational program. Students with reported g.p.a.'s below 2 generally reflected negative perceptions of the educational program they had experienced at David Douglas. In terms of maintaining their interest in school, motivating them to do better work, encouraging them to seek further training, or helping them to prepare for life in general, they rated their school program as high as students with better grades rated theirs. There was one area of incongruence. Students with low grades gave a low rating to the extent their program helped them make career decisions, yet ranked their program quite high in terms of its help in preparing them for a vocation or career. All groups gave a statement in the latter category about the same rating.

For students with low g.p.a.'s, relatives outranked either counselors or teachers as helpers in planning or preparing for a vocation or career. This information might serve as a useful topic of discussion for a faculty meeting. Certainly students obtaining low grades at David Douglas do not see either the staff, nor most of the curricula except in vocational areas, as helpful in planning for or preparing for a vocation or career. Is this perception an accurate reflection of existing conditions? Is there a cause-effect relationship between the correlates of g.p.a. and perception of school? This is excellent baseline data and points to the VIGOR an obvious criterion for measuring the success of their program. If the perceptions of students in terms of the values, relevance or usefulness of their education to what they intend to do with their lives or to their lives outside of school, can be improved, VIGOR will have had an important impact on David Douglas.

All students indicated that extracurricular activities made little contribution to helping them plan or prepare for a career. This suggests that questions related to how students preceive the benefits of school might be broken out by curricular areas. The perceptions of various groups toward the contribution of particular programs might be assessed in relation to a number of broad educational intents.

TABLE V:
NUMBERS AND PERCENTS OF STUDENTS CLASSIFIED BY SEX, TYPE OF EDUCATIONAL PROGRAM AND GRADE-POINT AVARAGE, WHO INDICATED PLANS FOR THE NEXT YEAR. (NOT MUTUALLY EXCLUSIVE)*

ITEM	TOTAL	SEX		PROGRAM			GRADE-POINT		
		M (57)	F (79)	GENERAL (41)	CLUSTER (62)	V.W.E.P. (33)	-2- (8)	2-3 (81)	3+ (47)
1. Intend to enroll in a 4-year college.	13 (23)	12 (15)	13 (32)	8 (13)	4 (12)	0 (0)	6 (7)	19 (40)	
2. Intend to enroll in a 2-year or community community college	25 (44)	29 (37)	14 (34)	26 (42)	14 (42)	3 (38)	32 (40)	19 (40)	
3. Intend to attend a business, technical or trade school	10 (18)	13 (16)	5 (12)	14 (23)	4 (12)	3 (38)	15 (19)	5 (11)	
4. Intend to become an apprentice in a trade or engage in other "on-the-job" training	18 (32)	15 (19)	9 (22)	14 (23)	10 (30)	6 (75)	18 (22)	9 (19)	
5. Take a full-time job	11 (19)	24 (30)	9 (22)	17 (27)	9 (27)	3 (38)	24 (30)	8 (17)	

* %'s are enclosed in parentheses. Since marking one item did not exclude marking another, total %'s may exceed 100.

** ( ) number of respondents in each classification

While vocational areas were perceived by students as making the highest contribution to helping them plan or prepare for a vocation or career, various groups certainly assigned different weights to such a perception. Students closest to vocational training in the school. and students in the middle range of grades, were the most positive proponents of this perception. No one gave a very high rating to non-academic areas as helping them plan or prepare for a vocation or career. Only those students with g.p.a.'s above 3 indicated that subjects in the academic areas had vocational usefulness.

The data in Table IV seem to provide some support for the necessity of intervention in the educational programs of David Douglas by a program with a philosophy similar to that of VIGOR. If much of the education is perceived by students as irrelevant to later vocations and careers, the question must be asked, "Is much of the education at David Douglas of little value in terms of career development, or is it so perceived as either a desirable outcome of education, or procedure for integrating or focusing education, many students at David Douglas do not perceive it as successful.

Table V reflects data that were intended as bases for later follow-up studies. Of particular interest is that the percent of males intending to pursue some further training or education of almost any type exceeds that of females. Woman's liberation has not impacted David Douglas. As would be predicted, the lower the g.p.a. the less ambitious the educational plans of the students. The inferior design and administration of this instrument seriously reduced its usefulness.

Recommendations

Recommendations related to intents or management of VIGOR are not forthcoming from the data reported herein. Evidence is provided that a project with VIGOR's orientation is needed. VIGOR management was already aware of communication problems and of the need to just "get something started". Additional cluster programs and the curriculum development contracts of this summer will help in this regard. Obviously additional emphasis is needed at the elementary levels. One of the biggest problems is that of evaluation itself.

Whether VIGOR is or is not successful will not be known unless 1) more of the Project intents can be organized in terms of criteria. 2) procedures can be developed for obtaining baseline data. These problems are interrelated. They are the focus for recommendations related to the evaluation efforts of 1971-72.

Strength of specific objectives for Project VIGOR is mitigated by the fact the needs assessment is based on broad research, statewide and national, rather than on the specific needs of the David Douglas School District constituency. Procedures are now underway for clarifying VIGOR objectives by function and level and realting them to specific Project program components. By fall this should be largely completed and instruments should be designed for obtaining data as to where David Douglas stands in relation to each objective. Obtaining this baseline data will provide a basis for both evaluation judgments and management decisions. Where the gap between what exists at David Douglas and a program goal is large or pervasive or crucial, immediate attention must be given to reducing that gap, to establishing the necessary contingencies to seeing that it is reduced. It is therefore recommended that evaluation efforts next year be focused on such a description of needs.

APPENDICES

APPENDIX A

Appendix A

Impact Evaluation Example
Behavioral Objectives Workshop

Primary Purpose:

General group assessment of post-workshop skills in writing, critiqueing, and modifying behavioral objectives.

Auxiliary Purpose:

Provide timely, informative and corrective feedback to participants regarding the correctness and adequacy of their post-workshop ability.

Procedure:

1. Divide participants into small, odd-number groups, perferably of 5 or 7. (Odd number groups function better in decision making and problem solving. Three may be too small, and 9 too large.) Consideration may be given to homogeneity with respect to subject matter or grade level.
2. Provide each group with two clear transparencies, grease pencils, and working paper for each member.
3. Provide them with work locations where they won't interfere with each other.
4. Assign each group the task of writing at least one objective that manifests all the desirable characteristics they have been taught, and none of the undesirable characteristics.
5. Further instruct them to write each of the objectives they have prepared near the top of the transparency but large enough to project readably.

6. Allow from thirty minutes to one hour for completion. If time is short or completion is unusually difficult, wait until all but one group have finished.

7. Assemble into one large group, with overhead projector and screen available. Collect transparencies.

8. Presenting each objective in turn, allow an arbitrary but fixed amount of time (example: five minutes) for critical comments from any and all members of the large group. Allow one brief rebuttal from members of the authoring group. Then allow time similar to the above for revision suggestions from the large group. Write revised objective on bottom portion of transparency. Observing time limits as announced, and allowing less time than participants seem to want, is important. They should feel that the procedure is too brief, not too long, and the sense of time urgency stimulates participation.

9. Appoint an observer to note the number of separate contributions to discussion that are initiated, and the total number of individuals initiating comments. It would also be desirable to tape record the session, but the above should be done "live" regardless, because such data is difficult to get off the tape.

10. After, but only after, the group critique is completed, a knowledgeable instructor, who may also have served as moderator, should give his own critique and comment on the critiques of the group. Feedback to the group should be quite candid, rigorous, and discriminating.

11. For purposes of workshop evaluation, however, much coarser data will suffice. Each comment of criticism or revision may simply be rated dichotomously, plus or minus. The question of concern is quite simple. would this comment, made in a real task force group with no "expert" present, have contributed to the quality of the objective produced? Neutral comments are rated negative, as they serve as static in the problem solving effort.

12. Ratings may be applied to each comment as it occurs, particularly if the rater is not otherwise occupied as moderator, or they may be made using notes, including those made on the transparencies, or on the basis of a taped record.

13. The initial efforts, before revision, of each group, in the form of the transparency as presented for discussion may be judged by criteria as taught in the workshop.

14. Thus data collected include the judged merit of the initial objectives, the +, - ratings of group comments, and the number and dispersion of those comments.

15. Usually a simple descriptive summary of the data will suffice. Where appropriate, groups can be compared on the +, - data by use of a sign test.

Advantages of the Procedure:

1. It is highly isomorphic with the ultimate training objective.
2. It permits rapid and timely, informative and corrective, feedback to participants, which is usually not possible in a post evaluation.
3. The time and cost demands for data collection, processing, and interpretation are extremely low. Usually the costs are much higher in at least one of the three areas, but the costs are usually hidden.

4. The activity will likely be seen by the participants as of instructional value, and not an imposition on their time, as many value, and not an imposition on their time, as many evaluation activities are perceived.

Disadvantages:

The procedure provides incomplete and not too useful data on the achievement of individuals. However, for evaluation of the workshop this is not necessary, and there is some question about the desirability of individuals developing real objectives in isolation, except when solely for their own instructional purposes.

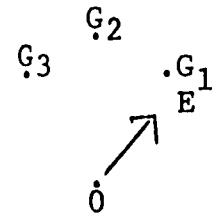
Summative Evaluation of Mediated Instructional Programs

Five major areas of evaluation concern will be discussed in general terms, each followed by a brief discussion with practical examples for implementation.

I. Relevance

A primary consideration in evaluating an instructional program or component is the relevance it possesses in terms of the relationship between its demonstrable learning effects and the scope and sequence of curricular objectives of the school or district, and/or the specific diagnosed need of an individual learner.

Virtually every instructional system has some behavioral effects, and every user has some kind of goal. Relevance is not an attribute of the system itself, but of the relationship between the system and a given goal or set of goals. For example, let G_1, G_2, and G_3 represent the respective goals of three potential users, a vector ($\longrightarrow$) represent the change introduced by the system, "0" represent the original condition, and "E" represent the end effect.



The change introduced by the system represents some concurrent change in status with respect to each of the three goals, but the most significant and desirable change with respect to goal 1.

The actual change is also a significant approximation to goal 2, though slightly less relevant. With respect to goal 3, the change introduced may actually have been harmful.

Relevance may be assessed initially by a rational inspection and comparison of the demonstrated effects of instructional program to the desired effects, in terms of local curriculum objectives or diagnosed student needs. Comparing objectives of the program to one's own objectives is more risky, because the objective statement may represent only a wish or intent, and be little related to the actual effect produced.

Another approach, usually illegitimate in summative evaluation, is to apply a test developed from the user's own objectives, which he may have used formerly with his own mode of instruction, to assess the effects of the proposed program. This test may well deviate or be totally unrelated to the developer's objectives, but it is the user, not the developer, whose needs are to be served.

II. Strength

As mentioned before, virtually every instructional program porduces some change. The ability of a program to change students is a separate question from the desirability or "relevance" of that change, and should be treated separately. Strength is more a matter of the psychological impact of the methodologies employed that of the content of the instruction. While a strong program may produce changes other than those desired, it is important to know that the methodologies were effective. It may be possible to modify the content, or imitate the methodologies, and thus produce a program that is both strong and relevant. Similarly, a weak program will always be inefficient unless the methodologies are changed.

It is usually advisable to use the developer's objectives, and even his criterion test, to assess strength. It is assumed that the developer's choice of strategies, methodologies, and media were based on his prudent

judgment on the best way to achieve his objective, and that the results are primarily attributable to these choices. Serendipitous effects are often more difficult to interpret. Unless the agent responsible can be identified with some confidence, the findings are usually "chancy" and difficult to duplicate.

Unless a pre-test score of zero can safely be inferred, a pre-test will usually be required. (See the discussion on pre-tests, "Evaluation of Instructional Systems," pp. 28-30.)

One estimate of strength is simply mean gain, with pre-test means establishing the point of origin and post-test means the point achieved. Another alternative is to determine the relationship between actual gains and the desired criterion. Theoretically, it would be desirable for all students, regardless of where they begin, to achieve the criterion defined by a set of behavioral objectives. The ration between actual gaoin and possible gain may be called a "g-ratio," which may be calculated for individuals or groups. The calculation is as follows:

$$g = \frac{\text{post-test score} - \text{pre-test score}}{\text{perfect score} - \text{pre-test score}}$$

For example, a student scoring 20 on a pre-test and 60 on a post-test, with a total of 100 possible, would have gained 40 of a possible 80 points:

$$g = \frac{60 - 20}{100 - 20} = \frac{40}{80} = .5$$

III. Reliability

Particularly from the point of view of administrators and instructional planners, it is important to know not only the mean or average effects produced by a program, but the real variability of those effects around

that mean. Two programs may have the same mean effect, but one may be very consistent, having the same effect on nearly everyone, while the other may work miracles for some and be useless for others.

Reliability should be assessed in a controlled situation, where the program is used with the type of people it was specifically designed for, and in the intended manner.

Two different approaches may be used to assess this kind of "reliability," depending largely on the use of decisions for which the data is collected. The first, which may be called point-achievement reliability, is most useful when mastery is important, as in some aspects of first-aid training, and when the desired criterion level is readily definable. In this case, reliability is simply defined as the probability that a given student from a defined population will achieve the criterion level; or the proportion of students from that population that may be expected to reach criterion.

A second approach may be called increment-achievement reliability. In cases where a single instructional program is directed at a heterogeneous population of students, it is hardly reasonable to expect that all or a major proportion will reach a given criterion level. Such grouping may be justified, however, if one can assume that the program will have some beneficial effect for all students, that regardless of the various entry and exit points most students will experience some gain in the dimension or parameter set of the objectives.

An estimate of the consistency of gains may be achieved by using each student's gain score (the difference between his pre-test and post-test score) as his raw score, and calculating the standard deviation, variance, or other estimate of dispersion of raw gain scores around the mean.

A more graphic picture may be obtained by dividing gain scores into quartiles and determining the mean for each quartile.

IV. Robustness

One of the facts of life in education is that few developed instructional programs are consistently implemented as they were intended to be and with the initially intended population. It is important to know the extent to which these deviations may have harmful effects upon mean achievement, or upon the reliability of that achievement.

Appendix A-1

Impact Evaluation Example
Behavioral Objectives Workshop

Primary Purpose:

General group assessment of post-workshop skills in writing, critiqueing, and modifying behavioral objectives.

Auxiliary Purpose:

Provide timely, informative and corrective feedback to participants regarding the correctness and adequacy of their post-workshop ability.

Procedure:

1. Divide participants into small, odd-number groups, preferably of 5 or 7. (Odd number groups function better in decision making and problem solving. Three may be too small, and 9 too large.) Consideration may be given to homogeneity with respect to subject matter or grade level.

2. Provide each group with two clear transparencies, grease pencils, and working paper for each member.

3. Provide them with work locations where they won't interfere with each other.

4. Assign each group the task of writing at least one objective that manifests all the desirable characteristics they have been taught, and none of the undesirable characteristics.

5. Further instruct them to write each of the objectives they have prepared near the top of the transparency but large enough to project readably.

6. Allow from thirty minutes to one hour for completion. If time is short or completion is unusually difficult, wait until all but one group have finished.

7. Assemble into one large group, with overhead projector and screen available. Collect transparencies.

8. Presenting each objective in turn, allow an arbitrary but fixed amount of time (example: five minutes) for critical comments from any and all members of the large group. Allow one brief rebuttal from members of the authoring group. Then allow time similar to the above for revision suggestions from the large group. Write revised objective on bottom portion of transparency.

Observing time limits as announced, and allowing less time than participants seem to want, is important. They should feel that the procedure is too brief, not too long, and the sense of time urgency stimulates participation.

9. Appoint an observer to note the number of separate contributions to discussion that are initiated, and the total number of individuals initiating comments. It would also be desirable to tape record the session, but the above should be done "live" regardless, because such data is difficult to get off the tape.

10. After, but only after, the group critique is completed, a knowledgeable instructor, who may also have served as moderator, should give his own critique and comment on the critiques of the group. Feedback to the group should be quite candid, rigorous, and discriminating.

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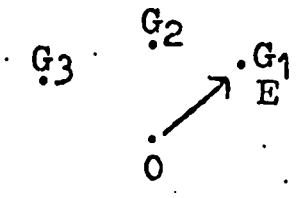

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APPENDIX B

Workshop Instructional Objective

Every teacher will recognize general education as valuable for everyone and career education as a part of general education.

What is YOUR objective?

* *

P R O G R A M

Career Education Workshop - February 26, 1971

8:30 am	Coffee	-Junior Building Gym Foyer
9:00 am	Introductions	-Mr. Wayne A. Olsen Assistant Superintendent
		-Dr. Marvin L. Evans Assistant Superintendent
	Welcome	-Dr. Howard F. Horner Superintendent
	Community	-Mr. Duane Randall Chairman, Citizen Advisory Council Project VIGOR
	A Dimension of Purposefulness	-Mr. Omer K. McCaleb Director, Project VIGOR
10:00 am	Directions	-Mr. Stanton E. Gaumer Assistant Director, Project VIGOR

Project VIGOR
David Douglas School District 40
2900 S.E. 122nd Avenue
Portland, Oregon 97236

student will elect a combination of courses specifically designed-Every student will explore

Oregon's Exemplary Project in

CAREER EDUCATION

A Framework for Building Tomorrow's Education Today

PARK-EARL BOYLES-FLOYD LIGHT ... E-GILBERT MIDDLE-GILBERT HEIG... ILBERT PRIMARY-LINCOLN P

WHAT IS CAREER EDUCATION?

WHO SHOULD GET CAREER EDUCATION?

WHAT IS VOCATIONAL EDUCATION?

WHO SHOULD TEACH CAREER EDUCATION?

WHERE SHOULD CAREER EDUCATION BE TAUGHT?

WHEN SHOULD CAREER EDUCATION BE TAUGHT?

WHY SHOULD I TEACH CAREER EDUCATION?

HOW SHOULD CAREER EDUCATION BE TAUGHT ?

WHERE SHOULD I PIN MY HANG-UPS?

ICHERS report to room as indicated by grade level and school.

OOL	1	2	3	4	5	6
erry Park rl Boyles lbert Heights lbert Primary st Powellhurst	Room 2 L - Wilkins R - D. Miller	Room 1 L - S. Bakke R - Girod	Room 5 L - Chalmers R - Wirtz	Room 6 L - E. Young R - Ide	Room 7 L - O'Neill R - Gernhart	Room 18 L - V. Cook R - Evans
incoln Park enlo Park ill Park orth Powellhurst ussellville entura Park	Room 3 L - Nydegger R - Horner	Room 4 L - Pickens R - Utz	Room 10 L - Zeal R - Anderson	Room 9 L - Olsen R - Jacklin	Room 8 L - Roehm R - Martini	Room 17 L - Duncan R - Shaw

All Music teachers go to Room 45.

All P.E. teachers go to Room 38.

All Art teachers go to Room 15.

All Librarians go to Room 25.

"The Project presented or reported herein was performed pursuant to a contract from the U.S. Office of Education, Department of Health, Education, and Welfare. The opinions expressed herein, however, do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred."

EACHERS report to room as indicated by major subject area and school.

CHOOL	Art	Bus. Ed.	For. Lang.	H.Ec.	Ind. Arts	Lang. Arts	Library	Math	Music	P.E.	Sci.	S.S./ ASSC
loyd Light Middle	Room 15 L - Kleven R - Hahn	Room 19 L - A. Bakke R - J. Barger	Room 15 L - Kleven R - Hahn	Room 20 L - Kennedy R - G. Cook	Room 32 L - Winchell R - Edwards	*	Room 25 L - Peck R - Engebretsen	Room 26 L-R.Fields R-Hodgson	Room 48 L - Petrasso R - Wells	Room 38 L - C. Miller R - W. Olsen	Room 40 L-Iverson R-Lewis	*
unior Building						Room 31 L-Allen R-Doss						Room 42 L-Spires R-Ross
ilbert Middle						**		Room 27 L-K.Martin R-Lelinski			Room 33 L-S.Johnson R-Palermini	**
enior Building						Room 29 L-Fields R-Cosby						Room 35 L-Janes R-Stone

* All Floyd Light Middle Building Language Arts & Social Studies teachers report to Room 22.
* All Gilbert Middle School Language Arts & Social Studies teachers report to Room 24.

APPENDIX C

Appendix C.

Instructions to participants.

You will be working in groups of 3 or 4 people. Each group should develop as many activities as possible for relating career implications to regular classroom instruction. Refer to the examples supplied on a separate sheet. The idea is to suggest activities which can be used in your classroom and that can be described in a sentence or two.

You are not being taken over by a "Martian VIGOR". Classes will be as ususal, but with an occasional dash of seasoning to keep kids reminded of what you already know; namely that your class is relevant to things which each student will be doing in his adult life. Today's exercise is designed to let you share ideas about course content career implications with other teachers with comparable classes.

(1) Read the sheet.

(2) Read the example sheet.

(3) Appoint a member of your mini-group to record ideas.

(4) Start with one idea - maybe just read an appropriate example from the example sheet.

(5) Keep going with more ideas; don't stop to expand or argue an idea.

(6) Cover several areas such as reading assignments, writing assignments, room career education chairman who may give a report every _____? Newspaper clippings, bulletin boards.....go, kid, go...

(7) When the leader calls time, ask your mini-group recorder to quickly read the list of ideas from your group.

(8) Each member select one idea, and write a paragraph describing how it could best be implemented in his class.

(9) Each mini-group will select one idea for presentation to the total group. Write it on newsprint with felt pens.

(10) Each mini-group presents its selected idea to total group.

(11) Hand list of ideas and paragraphs to the room recorder.

(12) Discuss in small group unanswered questions and ideas that you would like some follow-up from.

EXAMPLES of classroom activities for people. Activities should refer to a specific application, not a generalization.

(1) Today we are learning to compute the volumes of rectangular solids. If you were a cement contractor, you would need this skill to determine the amount of concrete needed to pour cement footings and walls.

(2) A real estate salesman would need the knowledge of computing the area of irregular geometric figures which you are presently studying. Instead of these small dimensioned figures you are looking at on your paper, he would be computing areas of various shaped plots of land.

(3) A newspaper reporter must be able to locate reference material quickly and accurately in order to meet his editor's deadline.

(4) An attorney needs library skills to locate information important to a legal case.

(5) A secretary needs library skills in finding information needed by her boss in the preparation of a report or a speech.

(6) Knowledge of Spanish, especially, is valuable in insurance claims - the claimant knows no English - there should be an adjuster or a

claims person who can understand. The insurance person must know time, location, use of proper ending of verb to indicate the person involved in a given situation.

(7) In the field of shipping - loader, secretary, etc. - knowledge of weights, manner of packaging, reading of bills of lading, the knowledge of foreign language is essential. Spanish, French, German are our main import countries (also export).

(8) Can you name a work situation in any field which requires careful attention to safety for the protection of others as well as the worker himself?

(9) A homemaker, a chef, or a dietician must have skill in menu planning to make sure that all ingredients are on hand when needed.

(10) A husband and wife cannot maintain a comfortable relationship without good communication. When one person thinks that he knows what the other person is saying, but doesn't, trouble often develops.

(11) In addition to identifying component parts, the individual must be able to locate the part of its proper relationship in the circuit, according to its design from the schematic diagram.

(12) An electrician must be sensitive to many colors because a color coding system is used to identify the many different wires used in a complicated piece of equipment.

(13) A salesman must know the esthetic qualities of his merchandise because a color coding system is used to identify the many different wires used in a complicated piece of equipment.

(14) Civil service jobs usually involve the preparation of job descriptions, which makes it desirable for the student to write clear, meaningful sentences.

(15) In field involving humaan interaction, from being a gas station attendant to selling bridges, a wide vocabulary is desirable for both understanding of requests to being able to explain at the listener's level, what you want him to know. Therefore, an awareness of the existence of various types of vocabulary, as well as constant addition to one's own fund of words, is valuable.

(16) All careers require physical fitness in varying degrees. Personal good health and hygiene are essential to pursuit of practically any career. Physical strength is essential to logging, farming, any endurance-type job. Coaching and participation in professional sports are built upon principles taught in health and P.E. Careers in medicine, dentistry, dietetics, nursing, health education, recreation, professional sports, etc., are dependent largely upon the principles and skills taught in health and physical education as a basic foundation.

(17) The Subtotal key is used to keep a running balance on an account following daily transactions - the process the biller uses when he is preparing a statement of account. This same running balance, employing the Subtotal key, can be used in preparing a bank statement of a checking account.

(18) The ability to write clear description is essential to many careers: newspaper reproter, medical pathologist, advertising of all types (real estate, commercial), interior decorating, repair work (auto machanic, etc.). Knowledge of mechanical skills of writing (spelling punctuation, sentence structure) are used in: secretarial work, reports in all fields, personal letter writing, etc.

(19) Map reading is a skill used by truck drivers, astronauts, policemen, surveyors. Can you name some other jobs which may require map reading skills?

(20) Name as many government jobs as you can.

(21) Name several production jobs.

(22) Name several service jobs.

(23) Cooks need to know about bacterial action in foods so they can keep food in good condition.

(24) A farmer needs some understanding of bacteriology so he won't lose, seed, feed, or crops.

(25) A medical technician must read instruments with great precision.

(26) An engineering technician must be able to measure with accuracy to insure the correct results.

(27) A medical doctor must develop a good sense of rhythm in order to detect deviations in heart sounds.

(28) A mechanic needs to distinguish sounds in order to "tune" a machine for best performance.

(29) A banker must understand percentages in order to prepare loans for people.

(30) A waitress must know how to count so she can serve the right number of meals to her customers.

(31) A lawyer needs to know the alphabet so he can find things in his law books.

(32) A bricklayer needs to know how to multiply so he can order the right number of bricks.

(33) A cook needs to be able to divide so he can use a big recipe to prepare a small meal.

APPENDIX D

EXTERN EVALUATION VISIT TO PROJECT VIGOR, DAVID DOUGLAS SCHOOLS 4/30/71

(Do not fill out this form during the interview. Please turn in all notes to Project VIGOR.)

AREA VISITED _____

Cluster _____ Subject _____ Grade _____

Building _____ Person _____

Expressed opinion toward Project VIGOR:

Aware of VIGOR _____Yes _____No. Favorable _____Yes _____No.

Can identify his specialty with Project? _____Yes _____No.

Can cite an activity in his area which is directly oriented toward the Project? _____Yes _____No. Please identify the activity. _____

_____

_____

_____

_____

_____

Career materials (books, charts, displays, equipment) available in room

_____ Teacher made _____ Student made _____Commercial

Please describe materials: _____

_____

_____

Any other observations which seem relevant to VIGOR _____

_____

_____

_____

_____

Inferences & Recommendations

_____

_____

_____

_____

_____

APPENDIX E

DAVID DOUGLAS PROJECT VIGOR

Student Questionnaire-Opinionnaire, Spring, 1971

We are attempting to obtain some information about relationships between your work at David Douglas and what you plan to do upon graduation. Your opinions are very important to us, so please respond to the following items as accurately as you can. In most instances you can respond by making a check mark in the space provided or by circling a number.

If you have any questions about how to respond, ask your teacher.

Thank you very much for your help

---

1. Indicate whether you are male or female. Male____. Female____.

2. Estimate your grade point average at the time of graduation. ____.

3. What Vocational Cluster program are you in?
   ____ Food Services
   ____ Child Services
   ____ Mechanics
   ____ Model Office

4. How much has your Vocational Cluster course: (circle the number best expressing your opinion.)

a. helped you maintain your interest in school?	(none)	1	2	3	4	5	(much)
b. motivated you to do better work in school?	(none)	1	2	3	4	5	(much)
c. helped you decide upon a vocation or a career?	(none)	1	2	3	4	5	(much)
d. helped prepare you for a vocation or a career?	(none)	1	2	3	4	5	(much)
e. helped prepare you to live a better life?	(none)	1	2	3	4	5	(much)
f. encouraged you to get some type of further education or training?	(none)	1	2	3	4	5	(much)
g. helped you to better understand yourself?	(none)	1	2	3	4	5	(much)
h. taught you some things about business and industry?	(none)	1	2	3	4	5	(much)
i. seemed to be related to other work in school such as math, English, and social studies?	(none)	1	2	3	4	5	(much)

5. Rate each of the following in terms of the help they have given you in planning or preparing for a vocation or career:

a. school counselor(s)	(none)	1	2	3	4	5	(much)
b. teacher(s)	(none)	1	2	3	4	5	(much)
c. relative(s)	(none)	1	2	3	4	5	(much)
d. friend(s)	(none)	1	2	3	4	5	(much)
e. other(s) (please explain) _____							

6. Rate each of the following in terms of its help to you in planning or preparing for a vocation or career:

a. extracurricular activities such as athletics or band.	(none)	1	2	3	4	5	(much)
b. academic subjects such as math, English, and social studies.	(none)	1	2	3	4	5	(much)

6. Rate each of the following in terms of its help to you in planning or preparing for a vocation or career: (continued)

c. non-academic areas such as art, music, and physical education. (none) 1 2 3 4 5 (much)

d. vocational areas such as vocational clusters and work experience. (none) 1 2 3 4 5 (much)

e. service functions such as educational or vocational guidance. (none) 1 2 3 4 5 (much)

7. Circle the grade level at which you think you became aware that your school work might be useful to you in planning or preparing for a vocation or career.
(circle one) 1 2 3 4 5 6 7 8 9 10 11 12

8. Within the next year do you intend to

a. enroll in a 4-year college? ____yes, ____no. (If "yes", what school?) _____

b. enroll in a 2-year or community college? ____yes, ____no. (If "yes", what school?) _____

c. attend a business, technical, or trade school? ____yes, ____no. (If "yes", what school?) _____

d. become an apprentice in a trade or engage in other "on-the-job" training? ____yes, ____no. (If "yes", what kind of trade or job?) _____

e. take a full-time job in a vocation you intend to work at for two or three years? ____yes, ____no. (If "yes", what kind of job?) _____