DOCUMENT RESUME

ED 038 666 CG 005 210

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TITLE Occupational Information as an Integral Strand in the PLAN Social Studies Curriculum.
INSTITUTION American Educational Research Association, Washington, D.C.; American Institutes for Research, Washington, D.C.
PUB DATE 2 Mar 70
NOTE 16p.; Paper presented at American Educational Research Association Convention, Minneapolis, Minnesota, March 2-6, 1970

EDRS PRICE EDRS Price MF-$0.25 HC-$0.90
DESCRIPTORS *Career Planning, Decision Making, *Decision Making Skills, Educational Objectives, *Individualized Curriculum, *Individualized Instruction, Individualized Programs, Instructional Programs, Personal Growth, *Vocational Education

ABSTRACT

Project PLAN, a system of individualized education designed to adapt the curriculum to the specific needs of each student, has as one of its principal objectives the assistance of young people in exploring and reaching tentative decisions about long range occupational goals. PLAN charges each student with the responsibility for formulating his personal goals, for making decisions and plans with respect to his educational development, and for the management of his learning in such a manner that his goals will be achieved. Through the economics strand in the social studies curriculum, PLAN provides students with a broad program of occupational education. The program consists of approximately 30 individualized learning units distributed across all levels of instruction. The primary level is the introduction to work, the intermediate covers practice in decision making, the secondary level concentrates on exploration and making specific post high school plans. (KJ)

Occupational Information As An Integral Strand in the PLAN Social Studies Curriculum

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A Paper Presented at the Annual Meeting of the American Educational Research Association, Minneapolis, Minnesota, March, 1970

One of the major trends in American Education is toward individualizing educational programs. Project PLAN, a system of individualized education designed to adapt the curriculum to the specific needs of each student, has as one of its principal objectives the assistance of young people in exploring and reaching tentative decisions about long range occupational goals. PLAN charges each student with the responsibility for formulating his personal goals, for making decisions and plans with respect to his educational development, and for the management of his learning in such a manner that his goals will be achieved. Through the economics strand in the Social Studies curriculum, PLAN provides a broad program of occupational education to aid students with their tentative long-range goal formulation and with their decision making at specific choice points.

The Problem

Making choices among educational and occupational options is a developmental process that extends over many years. There is no single point at which individuals decide upon one out of all possible careers. Rather, there are many crossroads at which their lives take decisive turns that place constraints on the range of future alternatives; thereby influencing the ultimate choice of an occupation. In the present American educational system, there are certain times when it is customary for students to make decisions about given courses of action that have to be taken in order to

attain their occupational goals. These choice points typically include a range of decisions from whether to focus on college or non-college, often considered while still in the seventh or eighth grade, to such problems as whether to change a job when an individual has been out of school and/or college several years. Although such choice points are identifiable, most current educational systems also provide some opportunity for students to alter their goals. For example, while students should begin to make some tentative decisions about a college or non-college emphasis during their seventh or eighth grade, it is usually possible to modify that decision as late as the 10th or 11th grade.

An important point to keep in mind is that a student's decisions about academic subjects, or kinds of schools, for the immediate future influence his long-range occupational goals. That is, his short term decisions affect subsequent opportunities by decreasing his chances for some options while increasing his probabilities for others. Taking many high school English and foreign language courses, for example, might keep a variety of college or occupational options in the humanities open to the student. Consequently, he might not be able to take as many courses in math and science, thus limiting the educational/vocational alternatives open to him in those areas.

A student's long-range goals, however, even though they are tentative, will help to determine what immediate choices he makes. For example, a low achieving eighth grader who has estimated his chances for completing a four year college program as low and has set a tentative goal of entering a junior college electronic-technician program, would probably avoid the alternative course of action of taking a heavy program of college preparatory subjects.

An individual has at least three major needs when he confronts a particular educational/occupational choice point. He needs to assess himself in

terms of his developed abilities, interests, values and personal characteristics; to acquire information about educational and occupational alternatives; and to apply a strategy for processing this information into goals, plans, and actions.

A student should know his present developmental status with respect to his abilities, interests, values, and physical and social characteristics, relative to educational/occupational alternatives. Just to know that his score on a test of quantitative ability places him at a certain percentile rank, according to national norms, does not in itself help a student very much in making a decision about a high school course or a post-high school occupational training program. In order to make the data meaningful, he must be able to connect such items of information with some of the available alternatives open to him and make thoughtful interpretations of their predictive powers (Katz, 1966). Students need accurate information on the patterns of individual differences that are predictive of career choice, information which longitudinal studies such as Project TALENT are beginning to provide. Expectancy tables should be developed for a large number of occupations and occupational families, showing the likelihood of an individual with certain characteristics entering each of the various occupations.

Secondly, students need specific and current information, obtained from reliable sources, relevant to the many and varied high school and post-high school options that are available to them; as well as a prardigm for evaluating those options and making wise decisions (Clark, Gelatt and Levine, 1965). Students can then relate an appraisal of their own abilities, interests, values and other personal characteristics to information about such aspects of educational/occupational opportunities as requirements, conditions of work and study, and personal and social consequences.

In the past, students typically have had few opportunities to acquire personally relevant information about educational/occupational alternatives. The information they have obtained often has been based on myth and stereotype. Lacking good information, students often have either delayed setting tentative long term educational/occupational goals, or have made them based on contacts limited to such people as members of their immediate family, relatives and friends. As McDaniels (1968, p. 242) has said, "youtn are not too young to choose, only too poorly prepared to make choices."

Finally, students need to become proficient in the problem-solving skills which enable them to process information about themselves, in relation to various educational/occupational opportunities, into specific goals and plans of action. A choice between various possible courses of action can be viewed in terms of two interrelated sets of factors: the individual's appraisal of his chances of being able to achieve each of the alternatives, and his valuation of the probable consequences resulting from the different alternatives.

Predictive data organized into expectancy tables, rather than a prescription for success, should provide a frame of reference for decision making. If a student is not like people in a particular occupation or not like people who have been accepted at a certain college, he has the option of changing to be more like those people (in terms of the measurement date), changing his occupational or educational goal, or going ahead toward the same goal with the knowledge, at least, of some of the odds.

Students need to make their own value systems explicit as to what kinds of educational and occupational experiences would be most satisfying to them. Combining predictive information with personal information about the desirability of various educational and occupational options marries objective probability with subjective utility (Katz, 1969). If an individual proceeds through a personal problem-solving process wisely, personal values influence

the subjective probabilities of success and the statements of personal desirability that he will assign to the various alternatives he considers. In the final analysis a viable alternative is one in which a student has a likely chance of success as judged by the student himself. He controls those motivations and efforts that might substantially alter the probabilities of success which were computed on the basis of the achievement of other students (Yabroff, 1969).

These estimates of chances and valuations are acquired through and altered by a student's social experience. Both are viewed as roughly ordered in hierarchical fashion for each individual, that is, a hierarchy of expectancies and a hierarchy of valuations (preferences). The course of action that an individual decides to take will thus reflect a compromise between his preferences for particular outcomes and his expectancies (Blau, et al., 1956).

Sequencing CAREER Information in PLAN

Information about educational and occupational opportunities, and about the world of work in general, is presented as an applied economics strand in PLAN Social Studies. Hence, the study of occupations is closely interwoven with the study of economics and contemporary problems. This permits using occupational information in connection with such subjects as ecology, urban problems, and industrial development. The program consists of approximately 30 individualized learning units distributed across all levels of instruction.

Primary Level: Introduction to the World of Work

In the primary grades (1-4) there are approximately 25 objectives that emphasize: (1) the nature and variety of work in some of the specific occupations that are usually visible to young students such as community and personal services, (2) the patterns of interaction with other persons in

job settings that differentiate work from other social roles, (3) work, both as a means of making a living and as a means of attaining personal satisfaction, (4) the roles that various occupations play in fulfilling social and economic needs, and (5) the general ways that people prepare for occupations (Gross, 1967). These objectives are incorporated in regular Social Studies learning units that utilize a variety of economics materials.

Intermediate Level: Trends in the Labor Force and Occupational Families

At the intermediate grades (5-8) approximately 15 learning units introduce the changing nature of the American labor force, the concept of occupational families, and information about some 100 occupations grouped within major occupational families.

In particular, PLAN students will study such labor force trends as: (1) the age groups that comprise the largest percentage of workers in the labor force, the largest percentage of unemployed workers, and the largest percentage of female workers; (2) the relationship between the occupations in greatest demand projected over the next 10 years and the amount and kind of education required to enter them; and (3) the trend that, while growing numbers of women enter the labor force prior to the age of 25, many of them leave their jobs to raise families and return to full time employment only after they no longer have family responsibilities.

A wide variety of occupations are presented to PLAN students according to a system of broad occupational families. A set of 12 groups of occupations has been developed using the test results and follow-up data from the 440,000 students included in the Project TALENT survey of 1960 (Flanagan, 1965). Approximately 100 occupations, that a reasonably large number of Project TALENT students reported plans to enter, were initially sorted into these 12 families on the basis of the amount of education required and the kind of work performed in each

occupation. Occupational families that would represent a wide range of occupations in terms of educational and training requirements were selected (Quirk, 1969).

The titles of these 12 occupational families are:

1. Engineering, Physical Science, Mathematics, and Architecture
2. Medical and Biological Sciences
3. Business Administration
4. Teaching
5. Humanities, Social Science, Behavioral Science, Law
6. Fine Arts, Performing Arts
7. Technical Jobs
8. Business, Sales
9. Mechanics, Industrial Trades
10. Construction Trades
11. Clerical Jobs
12. General, Commercial Service

These occupational families were validated in two ways. First, test results from 17 Project TALENT variables were examined for similarity within each of the a priori clusters of specific occupations. Occupations were re-classified where it seemed appropriate. This procedure produced associative relationships between test profiles of high school students in the TALENT sample and their membership in various occupational families (Melnotte, 1969). Second, the 100 occupations were checked against a list, compiled by the Bureau of Labor Statistics, of the most promising occupations for the decade 1966-1975. The list included occupations for which there probably will be the greatest number of openings based on growth in the industry and replacements due to death and retirement.

There are several advantages to presenting clusters of related occupations in an occupational education curriculum. First, when a PLAN student learns about an occupation that is representative of a particular occupational family, he is learning generalizations that apply to a number of other related occupations within the family. For example, when a student learns about the educational and training requirements for a mechanical engineer, the information probably would apply to numerous other kinds of engineers. Second, when a student begins to plan toward a general occupational goal, he is meeting requirements for a number of related occupations as well; any one of which may eventually become a primary goal contingent upon a minor change in his plans. A student, for example, might set a goal to become a medical doctor. This goal would require certain educational decisions starting him off on many years of college and professional training. If along the way he decided to alter his goal of becoming a medical doctor, his chances would still be very good for finding a satisfying occupation in a related field, such as the life sciences. Learning about families of occupations permits flexible and alternate planning on the part of students.

Although the occupations that are sorted into each of the 12 families have some similar characteristics, the same occupations can differ in a variety of ways. PLAN students will learn how to compare occupations across families according to such variables as major tasks performed on the job, working conditions, educational requirements, the various training paths, pay, and personal and social consequences.

Intermediate Level: Practice in Decision Making

PLAN students continue their intermediate level occupational education program by learning about measurement profiles of students in the TALENT sample who either have completed or are in the process of completing

requirements for an occupation in one of the 12 occupational families. Practice decision-making exercises are being considered in which PLAN students will be given the measurement profiles of anonymous members of the TALENT sample, and will be asked to predict the occupational family containing the occupations for which the individuals are probably best suited. PLAN students will compare their own predictions with a criterion based on the actual outcomes for these TALENT people.

Other kinds of planning and decision making exercises that also utliize TALENT data are under development. For example, PLAN students may be presented with case studies of TALENT students whose measurement profiles and long-range occupational goals were discrepant. PLAN students will then be asked to do two things. First, they will be encouraged to identify alternative long-range goals that have previously been related to TALENT profiles more closely resembling the student profile in the exercise. Second, PLAN students will be asked to suggest activities for the student in the exercise which might enable him to change his measurement profile so that it would more closely resemble the profile of the typical TALENT individual who sought and achieved similar occupational goals.

Practice in planning and decision making, employing data from Project TALENT test profiles and follow-up data on selected TALENT individuals, is designed to prepare PLAN students for choosing their own tentative primary and secondary long-range educational/vocational goals from among the 12 occupational families. These tentative decisions will influence what learning units will be included in the individual's program of studies throughout his secondary years. A student, for instance, who initially selects the medical and biological sciences for a long-range educational/vocational goal will be likely to take more science learning units than will a student who chooses the humanities and social sciences.

Although the occupational family that a PLAN student selects at the end of his intermediate program as his tentative long-range goal is not the sole determiner of the learning units most important for him, it plays an important role in the selection procedures that are used. In addition to the long-range goal selected by the student, use is made of other information concerning his abilities and interests in generating a data-suggested long-range goal. The student-selected and data-suggested long-range goals are then used in assigning a program of studies for the student (Dunn, 1969).

Secondary Level: Exploration

The secondary level occupational education program stresses exploratory activities leading to modification of individual long-range goals, if necessary, and to the formulation of specific individual plans following high school.

After PLAN students have been assisted in setting some long term educational/vocational goals at the end of their intermediate program, they continue to conduct a variety of exploratory activities related to these goals. Activities include such techniques and sources of information-seeking as (1) observing occupational films, film-loops and film strips; (2) reading occupational texts, pamphlets, work simulation kits (Krumboltz and Bergland, 1969; Hamilton and Krumboltz, 1969) and accounts by individuals engaged in particular occupations; (3) listening to audio tapes, and visitors who describe occupations and their reactions to various jobs in those occupations; (4) talking to teachers, counselors and visiting speakers; and (5) writing letters to admissions offices at colleges and/or training schools.

Such exploration, however, is not limited to classroom and other within

school types of activities. Secondary level PLAN students experience learning units encouraging them to engage in exploratory activities outside their schools such as: (1) visiting places of employment to observe workers on their jobs and to question them about their reactions to the work, as well as (2) visiting college campuses and/or vocational training schools in order to investigate the capacity of each option to furnish results relevant to each individual's goals; (3) looking into work-study opportunities; (4) interviewing for part-time or summer jobs that relate to a student's occupational goals; and (5) investigating part-time non-paying work opportunities that would enable a student to gain direct experience in occupational roles.

Secondary Level: Making Specific Post-High School Plans

The secondary level occupational education program emphasizes student behaviors involved in applying for post-high school employment in an entry level job, or for acceptance into a college or vocational training program. Learning units present information on the following illustrative types of post-high school programs that prepare students for occupations: (1) apprenticeship; (2) specialized schools that offer occupational training; (3) Federal Government programs (e.g., Manpower Development and Training Act programs, Neighborhood Youth Corps programs); (4) technical institutes; (5) junior colleges; and (6) four year colleges. Students with long term occupational goals requiring education and/or training beyond high school are required to obtain information about several institutions or programs that offer preparation relevant to their goals, and to fill out and submit application forms to them. Additional units present information on sources of financial assistance for post-high school occupational preparation programs and on the kinds of information typically included on financial-aid applications.

Secondary level PLAN students practice performing interview behaviors

appropriate for an applicant to a post-high school occupational preparation program as well as to an entry level job. Students alternate in the roles of admissions officer and personnel manager in these simulated interviews. They practice filling out application forms for jobs (part-time or full-time), or for post-high school educational/training programs, whichever is most appropriate to their long term occupational goal. Each student then arranges and has an interview with one of the following people: (1) potential employer (regarding part-time or full-time job), (2) admissions official with a post-high school occupational preparation program, or (3) school counselor or teacher (regarding post-high school plans).

Optional learning units will be available on occupations that are just beginning to be visible in the world of work, that is, occupations so new that standard governmental, industrial, and commercial sources have not yet included them in their publications. Secondary level PLAN students will have opportunities to learn how such developments as space explorations and the ever-expanding uses made of computers will create new occupations in the 1970's and 1980's (Lecht, 1969). Computer applications in the simulation of human performance, for example, are helping to create new occupations, such as bio-medical engineering, where a variety of human functions are artificially duplicated to assist in the training of medical personnel. Other employment areas covered range from undersea farming to the maintenance of trains that travel on air; from the manufacture of ultrasonic dishwashers to the harvesting of various fruit crops by machine.

Finally, information will be available on post-high school activities that do not relate directly to students' long term occupational goals. For example, they will receive information on the current draft obligations, and the probable consequences of taking steps to evade the draft. Such post-college programs as the Peace Corps and VISTA, along with other essentially

volunteer type activities, that are available to students as an alternative to entering or preparing for an occupation immediately upon finishing high school, also will be explained.

Conclusion

Occupational information is an integral part of the PLAN curriculum. The PLAN student learns about occupations through active participation in the occupational education portion of the Social Studies program. He must learn to set goals in the light of relevant and accurate information, as well as to update decisions and modify plans on the basis of his reactions to concrete, career relevant situations. Nothing less can be expected of a truly individualized educational program.

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