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AN EXPERIMENT IN TEACHING DECISION-MAKING.
BY- YABROFF, WILLIAM W.
CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO
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TWO HUNDRED FORTY-EIGHT NINTH-GRADE STUDENTS WERE GIVEN 4 WEEKS OF DAILY INTENSIVE GROUP GUIDANCE ON VOCATIONAL AND EDUCATIONAL PLANNING PRIOR TO EXPERIMENTAL TREATMENT. STUDENTS WERE RANDOMLY DIVIDED INTO THREE ABILITY GROUPS AND THREE TREATMENT GROUPS. THE CONTROL GROUP RECEIVED NO FURTHER TREATMENT. GROUP 1 RECEIVED TRAINING USING LOCAL PROBABILITY DATA (EXPERIENCE TABLES). GROUP 2 RECEIVED INSTRUCTION IN DECISION-MAKING USING GENERAL PROBABILITY DATA SIMILAR TO THAT PRESENTED IN THE FIRST 4 WEEKS. GROUP 1 SCORED SIGNIFICANTLY HIGHER (BEYOND .01 LEVEL) THAN GROUPS 2 AND 3 AT ALL ABILITY LEVELS IN (1) KNOWLEDGE ABOUT THE PROCESS OF DECISION-MAKING, (2) AWARENESS OF HIGH SCHOOL AND COLLEGE ALTERNATIVES, AND (3) KNOWLEDGE OF THE PROBABILITIES INVOLVED IN THESE ALTERNATIVES. NO SIGNIFICANT DIFFERENCES BETWEEN SEXES WERE FOUND. THIS EXPERIMENT SUGGESTS THAT IN HELPING NINTH-GRADE STUDENTS LEARN DECISION-MAKING, LOCAL PROBABILITY DATA CAN BE MEANINGFUL TO STUDENTS AT ALL ABILITY LEVELS, EQUALLY EFFECTIVE WITH BOYS AND GIRLS, AND MORE EFFECTIVE THAN GERNERAL DATA OR STRUCTURED GUIDANCE UNITS ON GENERAL INFORMATION. THE AUTHOR SUGGESTS THAT USING LOCAL DATA AND ALLOWING THE STUDENT TO MAKE HIS OWN TENTATIVE INTERPRETATION MAKES THE DATA MORE PERSONAL AND STIMULATES INTENSIVE GROUP DISCUSSION ABOUT EDUCATIONAL PLANS AND PERSONAL VALUES. (JH)

RESEARCH BRIEF

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AN EXPERIMENT IN TEACHING DECISION-MAKING

William W. Yabroff
Palo Alto Unified School District

The Broad Challenge

Our culture demands that young people begin to make decisions that help shape their future at a time in life when many are neither prepared for nor concerned about tomorrow. These decisions begin in junior high school. They involve courses, personal and social plans. They also involve goals and values. The choices made appear simple, but in reality are complex and critical.

> What am I really working for in high school? What career should I consider? What kind of college should I plan for? Should I go to work or continue school?

Such choices are among those which affect the student's life for many years and have an influence unknown to him at the time the choice is made.

Counselors are concerned with helping students make wise decisions. The task is not easy. In the 9th grade, when the series of important decisions begin, students have had little experience and no training in how to make a decision. Many guidance programs attempt to supply the students with information which, hopefully, will guide them in making choices. Such programs communicate test scores, general college requirements, the broad aspects of high school course education in job advancement, and so forth. Are these programs and this kind of information sufficient to effect realistic planning?

Purpose

For the past four years, the Palo Alto schools have conducted a series of studies concerned with evaluating secondary guidance programs, sponsored by NDEA. Such programs, and the theories of guidance involved, seemed inadequate to help students in this critical choice period. Therefore a new approach to guidance was sought which had as its major goal the improvement in the quality of educational-vocational decision-making by all students. A concentrated effort was made to gather and organize information from follow-up studies of local graduates, which included analysis of their performance in high school and beyond. One of the purposes of this experiment was to provide evidence on the helpfulness of this kind of local research to students faced with making choices. We were concerned with the question:

> Is it more meaningful to develop local follow-up information and probability data about students than using general data? Which would be more effective in a guidance program where the emphasis is upon educational and vocational decision-making?

Since emphasis upon educational and vocational choices is common in many California schools, it was felt that evidence upon the type of information needed for such programs might be of more than local interest. It might also provide

some direction to the kind of follow-up studies which would provide vital assistance to counselors.

More specifically, this experiment was designed to test possible effects of teaching decision-making to ninth grade students. We used locally developed probability information for part of the students (local experimental group, or Group I), general probability data available from government and publishing house statistics (general experimental group, or Group II), and a control group (or Group III) receiving no additional information beyond their regular four-week group guidance program. The criteria selected to reflect possible effects were:

1. Knowledge about the process of making decision.
2. Awareness of high school and college alternatives.
3. Knowledge of the probabilities involved in these alternatives, that is, the chances of success.
4. Student satisfaction with the guidance received using the two types of data (i.e., local versus general data), and
5. Realistic educational plans made after the special programs (the criterion being chance of success in courses chosen based on local data.)

The first three criteria were chosen on the basis of what writers in the field of decision-making have agreed upon as the conditions necessary for a "good" decision. The last two criteria were added as practical considerations that might provide added depth to the over-all consideration of using local versus general probability data.

Research Background

No major studies can be cited that are specifically germane to this research. The study grows out of the general theoretical framework concerning the developmental and interactional nature of vocational choice (Ginzberg, 1952; Super, 1957; Tiedeman, 1960). Super points out that most of the literature on counseling is concerned with the clinic or college counseling centers and is[1] "..... not indigenous and easily adapted to the school counselor's work." Super goes on to say, "In my judgement, research in the process of decision-making (educational and vocational) counseling is one of the two great research needs in our field; the other is vocational development, to which a number of people are now bending their energies."

In Palo Alto a study in 1963 used local probability data developed in the NDEA research project to influence college choice. The results of that study are reported elsewhere.[2] Generally, the findings supported the position that local probability data are more effective in bringing about more realistic college choices by tenth graders than are generalized type data about national groups of students.

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[1] Super, Donald. "Book Reviews. Comments on Current Books and Passing Scene." Journal of Counseling Psychology, Vol. 8, Spring 1961, pg. 190

[2] Gelatt, H. B. The Influence of Outcome Probability Data on College Choice. Unpublished Ed. D. Dissertation, Stanford University, 1964

Procedure

The present experiment involved 248 ninth grade students who were given four weeks of daily intensive group guidance on vocational and educational planning prior to the experimental treatment.* This four week program utilized the best general information available to counselors in these areas and included a specially prepared TV series, outside speakers, extensive library work, special testing, etc.

Following the group guidance program the students were randomly divided into three ability groups, high, middle, and low and into three "treatment" groups, as shown in Table I. Group I (Local Data) received one additional week of training in decision-making using local probability data. Group II (General Data) received training (three additional class periods) in decision-making using general probability data similar to that presented in the previous four-week program. Group III (Control Group) received no further information. Table I shows the number of students in each ability and treatment group.

TABLE I

Number of Students in Each Treatment and Ability Group

Ability	Group	No. in Group	Mean SCAT Score
High	I (Local Data)	25	
	II (General Data)	27	293
	III (Control)	28	
Middle	I (Local Data)	34	
	II (General Data)	40	281
	III (Control)	38	
Low	I (Local Data)	19	
	II (General Data)	19	268
	III (Control)	18	
	Total Number	248	

All three groups were evaluated immediately following their respective programs. A 45-minute criterion test and questionnaire using sentence completion, Likkert, and multiple choice formats was given. Also, eight weeks following the experiment, the high school course choices of all students were analyzed.

*A complete report of the present experiment will be available in the Fall of 1964 at the Palo Alto School District Information Services Center.

Manner of Presentation

The local probability data used in this project were based on ninth grade academic grade point average. Previous findings showed the ninth grade g.p.a. to be the best predictor of academic success in high school. Performance in high school courses, overall high school grades, and performance in post high school activities were reported in the form of "experience" tables.[3] The experience tables, along with materials on the process of decision-making, were included in a 21-page workbook entitled "Design for Decision." Audio-Visual materials illustrating the experience tables and other concepts discussed in the workbook were prepared. These materials were pretested in two pilot studies and further revised before use with the experimental sample.

The workbooks, along with the students' present academic grade point average, were distributed in class to Group I (local data). View graphs illustrating the concepts taught were presented immediately prior to the students completing the appropriate part of the workbook. Three tape recordings of interviews with selected Palo Alto school graduates were played to illustrate decision-making processes used by former students. Although the experience tables stimulated questions and discussion among the students, this was held at a minimum to allow completion of the workbook within the designated treatment period.

Results

Group I (local data) scored significantly higher than Group II (general data) and Group III (no data) at <u>all ability</u> levels in:

1. Knowledge about the process of decision-making
2. Awareness of high school and college alternatives
3. Knowledge of the probabilities involved in these alternatives

The mean scores obtained were significantly higher beyond the .01 level. No significant differences were found between Group II and III on these variables. Also, no significant differences were obtained between boys and girls (with a few exceptions at the .05 level).

All students in Groups I, II and III scored high on items measuring positive feelings toward the information received. However, Group I expressed significantly stronger positive feelings than the other groups.

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[3] The term "experience" table was used instead of "expectancy" table because the data showed what had happened to other students in the school district or the experience of previous students who had similar g.p.a.'s. The more familiar term "expectancy" table might convey the impression that the data would definitely forecast the future.

At the end of the experiment all of the students were asked to develop a projected three-year high school program. Statistical analysis showed that Group I selected more realistic high school programs than did Groups II and III.[4] However, two months later when the students signed up for their sophomore courses the differences between the groups were not statistically significant, although the means were in the direction of more realistic planning on the part of the students in the experimental group. The range of choices offered in the sophomore year is limited.

Implications and Discussion

The results of this experiment suggest that:

(a) It is both feasible and helpful to train ninth grade students in decision-making using locally developed probability data.
(b) This method of using local data was more effective than training students in a similar manner but using general probability data.
(c) The local data also proved more effective than a well-planned structured guidance unit based on general information alone.
(d) It also appears that local probability data can be meaningful to students at all ability levels, and equally effective with boys and girls.

An unanticipated finding of this study was revealed through scoring sentence completion and essay questions on the basis of factual vs. general or vague responses. It was found that Group I (local data) consistently used factual responses to questions even when the questions did not specifically ask for this kind of response.

For example, in response to the question:

"The thing that helped me most was _____"

students in Group I (local data) would cite such facts as the percent of students who went to San Jose State College with their grade average, or, the number of students like them (referring to others with the same grade average) who raised or lowered their grades in high school. In contrast, students receiving general information only cited the medium by which general facts were presented, such as the TV series, the pamphlets in the library, or outside speakers. This finding suggests that local probability data (about other-students-like-you-in-this-school) is assimilated by the student so that it becomes useable to him in a way that is not characteristic of general data.

The overall positive effect of using locally relevant probability data with 9th grade students leads to some further speculations. Possibly talking about

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[4] Realistic is defined as greater probability of success in courses chosen for high school. Differences between means were significant at the .05 level of confidence.

other-students-like-you-in-this-school makes the data more personal and vital. Also the manner in which the material is presented, i.e. allowing the student to make his own tentative interpretations, might be important in the success of a decision-making guidance program.

We observed that students in the local data groups (Group I) were stimulated to engage in rather intensive group discussion about educational plans and personal values. The questions which stirred these discussions came from responses to the experience tables themselves rather than cues from the discussion leader. If the local data continues to be highly provocative, the kind of training counselors might need to present this type of material and take full advantage of its possible impact upon the student, would be an important consideration.

In summary, perhaps one of the greatest contributions this experiment might make is to provide a method of implementing training in decision-making aimed at assisting all students. It provides an operational model for gathering and presenting local research for those concerned with the critical problems of choice-making. The value of doing local research as an undergirding for this type of approach is strongly supported by the findings of this study.