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ABSTRACT

Recognition of the need to teach decision making skills led to the development of a program designed to improve high school students' career decision making skills. The research provided a process verification of a newly designed Mini Course based on Blau's model of occupational choice and the Jackson-Egner (J-E) Decision Making Model. Positive results from trial use led to a study to assess the effectiveness of the program with eleventh grade academic and nonacademic students in six high schools. An experimental control, pre-posttest design was used. In each school two groups were assigned to the Curriculum and two acted as a control (24 groups, N=337). A career Decision-Making Questionnaire (CDQ) was developed to measure career decision making and maturity prior to and after completion of the course. Analysis of covariance showed program significance at .001 level on career maturity. Posttest decision making scores increased, significance was noted with one academic and three nonacademic groups. Females scored significantly higher on career maturity, decision making, educational and occupational aspiration. Increased self understanding, occupational exploration, and positive evaluation of the Model and Mini Course support program effectiveness. (Author)

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PROCESS VERIFICATION OF A CAREER COUNSELING PROGRAM

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Career counseling traditionally has emphasized career decision making, that is, the process of obtaining and identifying useful information for judging and selecting from two or more career alternatives. Today's student is bombarded with marketplace information, training and education requirements, self-assessment and values clarification techniques, and job performance mandates. There is no lack of "useful information". The deficiency in career counseling has been a lack of attention to developing the skills of decision making (Kroll 1970, Dinklage 1966, Kosuth and Miltenberger 1972). Specifically, there is a need to teach career decision making skills in order to use effectively the knowledge, values and information that students acquire as they cope with the complex problems of career choice.

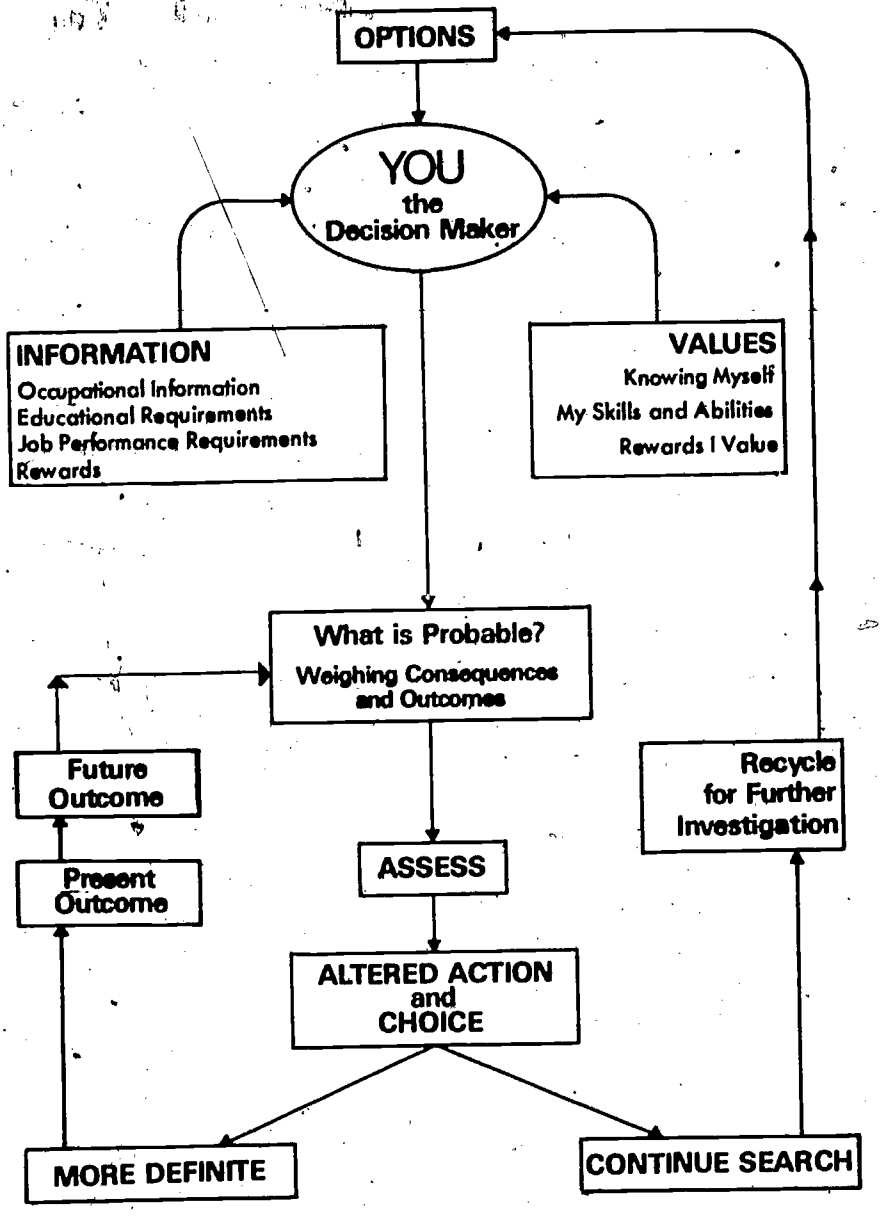
Recognition of the need to teach decision making skills led to the development of research reported in this paper. The research was designed to identify the component skills of decision making, to organize these skills in a process

model, to translate this model to a curriculum, and to secure learner verification of the curriculum.

Blau's model of occupational choice served as the organizing framework for the research (Blau 1956). Blau identified eight factors influencing occupational choice. Four factors pertain to the occupation: 1) formal opportunities, the demand for new members in an occupation; 2) functional requirements, technical qualifications for best job performance; 3) non-functional requirements, occupational characteristics that affect job selection; and 4) rewards, those occupational conditions that are desirable and hold potential rewards (advancement, salary, prestige). The additional factors are associated with individuals: 5) occupational information, general knowledge a person has about occupations; 6) technical qualifications, the technical skills an individual possesses; 7) social role characteristics, those individual characteristics that may influence hiring (sex, race, accent); and 8) reward-value hierarchy, the relative significance of occupational rewards to an individual. Conceptual utility of the Blau eight factor framework was tested in junior and senior high school and college occupational choice settings. (Jurica 1973, Russell 1973, and Rubin 1973).

Using redefined Blau factors and components of other decision making models (Gelatt 1962, Clarke, Gelatt, Levine 1965, Hoyt 1972, Stufflebeam 1971, Martino and Stein 1969) plus the unique aspects of adolescents and their decision making (Holland 1968, Ginzberg 1951, Erikson 1969, Dinklage 1966, Super 1960) a new career decision making model was developed (Jackson 1974).

Jackson-Egner (J-E) Career Decision Making Model



The Jackson-Egner (J-E) decision making model emphasizes individual decision makers, their values, and information they know about occupations. As users link and weigh values and information, a probability strategy emerges. Assessment of consequences and outcomes of the probability strategy are followed by altered action and flexible choice. The choice may be a tentative decision that would lead to continued search and recycling or a more definite decision leading to an immediate outcome which generates future alternatives. These alternatives supply another set of probabilities to set the decision making system in another cycle of action.

DESIGN AND INSTRUMENTATION

Translating the J-E model to a curriculum to teach career decision making skills required development of curriculum materials consistent with the theoretical

framework identified. A three unit learning packet (values, occupational information, decision point) with fifteen learning capsules was designed to test pragmatic utility of the J-E decision making model (Jackson 1974).

Trial use of the decision making program in a city and rural school system yielded positive feedback from users and data indicated that career maturity was increased. These successful results raised additional questions about the utility of the decision making program with a larger and more diverse sample.

The next stage in process verification was a piloting and evaluation study in six high schools to assess the effectiveness of a career counseling program in improving eleventh grade academic and nonacademic students' career decision making skills. Research questions in process verification were: What are the effects of the treatment and control groups, academic and non-academic groups, school, IQ, grade point average (GPA), sex, socio-economic status (SES) and aspiration level on the dependent variables of career maturity and career decision making? Does pupil work experience, and/or mother working have an effect on decision making ability? What does student self-evaluation of the course reveal?

Four groups of eleventh grade males and females were selected in two city, two suburban and two rural high schools of New York State (24 groups, N=337). Sample selection criteria were size and location of school, students' program of study, students' interest, commitment to the program and their schedule of study hall assignments. The voluntary nature of the group precluded securing a representative, random sample. In each of the six schools, one group of students in the academic program and one group in the nonacademic program were assigned to the Mini Course Curriculum and the other two groups served as the

control. All students were pretested and posttested. Counselors, after attending a workshop in decision making, values clarification and use of curricular materials, taught the decision making course for two class periods for each of ten weeks.

A Career Decision-Making Questionnaire (CDQ) was developed to determine students' career decision making skills prior to and after completion of the course. The instrument consisted of personal data; career decision making, career maturity and attitudinal items; and a self-evaluation section. The untimed instrument could be completed in one 40 minute class period.

Independent variables tapped in the CDQ were selected from research associated with decision making. Most research reviewed showed inconsistent findings regarding the relationship of decision making and: sex (Dilley 1965, Smith and Evans 1973, Barber 1970, Hollender 1971, Jepsen 1974, Mathewson 1963, Putnam and Hansen 1972) ability (Dilley 1965, Barber 1965-69, Jepsen 1974, Mathewson 1963, Vriend 1969) aspiration level (Dilley 1965, Vriend 1969, Wolf 1966, Bruteyn 1966) students' work experience (Jepsen 1974, Lyon 1963, Vriend 1969) and academic or vocational class placement (Jepsen 1974, Mathewson 1963). Consistent findings were noted relative to the relationship between decision making and: career maturity (Dilley 1965, Holland 1975, Crites 1973, Mathewson 1963, Jepsen 1974) socio-economic status (Jepsen 1974, Goldstein 1974) and grade point average (Barber 1970, Jepsen 1974). Additional independent variables were included in the CDQ but for the purposes of this paper only those variables cited will be used to report findings.

Career decision making skill, the dependent variable, is the ability to use a decision making process and strategy to make tentative, flexible career decisions

and to assess various career choice situations. Four key decision components: 1) awareness of options, values, and information; 2) alternatives; 3) anticipated actions and outcomes; and 4) action and choice assessment were identified from the Jackson-Egner Career Decision Making Model. Problem situations were designed to tap the four decision components of the model upon which the Mini Course Curriculum was based. A pretest and posttest decision making score was obtained by a weighted summation of responses (choices) to a particular course of action or alternatives in the decision items.

The Crites Career Maturity Inventory (CMI) Attitude Scale was incorporated into the CDQ to measure maturity of students' attitudes in regard to realistic career choice. Students' career maturity is reflected in emerging career awareness, career exploration and decision making (Jackson 1974). A career maturity pretest and posttest score was obtained by a weighted summation of correct responses on the items.

A matrix sampling concept was used in instrument development and administration which had the advantages of economy of time, money, personnel, and of sampling more items in a shorter period of time. Sirotnik states that it is "not necessary to give every item to every student if one desires to estimate the performance of a group of students on a group of items" (Popham 1974).

A sample of eleventh grade students of diverse ability served as a trial group in the instrument development process. Four forms were constructed and distributed randomly with the different forms being divided equally among groups. Some of the items from each section of the questionnaire appeared on all forms. A balance in the number, type and level of difficulty of items was maintained on the four forms. After completing the questionnaire, students were interviewed

to determine readability and understanding of questionnaire items. All items were subjected to item analysis.

From the trial, two pretest forms emerged. The pretest was subjected to further scrutiny for development of the final posttest form. Criteria used for item selection throughout development were: 1) those items receiving the highest correlations; 2) face, content and construct validity; 3) balance in test sections, career maturity and key decision making components; and 4) efficiency in length and administration.

Nunnally's domain sampling model was employed to assess the common core of pretest items with the decision making scale. The r_{kk} formula was used to calculate internal reliability of the measure which was r = .80. (r_{kk} is the reliability coefficient for a k-item test determined from the intercorrelations of items on the test, Nunnally 1967).

RESULTS

One way analysis of variance and the multiple range test were used to determine the differences that existed between groups before the course began. Analysis of covariance and multiple classification analysis were performed to determine the significant effects of the career counseling program and other variables on post career decision making and post career maturity. Pretest scores were used as a covariate. Multiple regression and step-wise regression were used to study the relationship of the variables to decision making. Percentage frequencies on a Likert 1-5 scale described students' self-evaluation of the program.

One-way analysis of variance on the pretest showed that there were no significant group mean differences between the academic experimental and control and between the nonacademic experimental and control group. Significant

differences did exist between the academic group mean and nonacademic group mean.

Analysis of covariance showed the treatment with both academic and nonacademic groups, was significant at .001 level on the dependent variable of career maturity. Students' mean scores made a significant improvement from pretest to posttest. Sex made a significant difference at .001 level with females scoring higher on career maturity. With the nonacademic group, school made a significant difference at the .01 level. Pupil work experience and mother working were not significantly related to career maturity.

Both academic and nonacademic groups increased their post decision making scores. The Career Counseling Program made a significant difference with three nonacademic groups out of six and with one academic group but the total treatment group did not score significantly higher than the control. Analysis of covariance showed that there was a significant difference at .001 level between academic and nonacademic groups, and school made a significant difference at .01 level. Sex made a significant difference at .02 level with females scoring higher on career decision making. Both pupil work experience and mother working did not contribute significantly to decision making ability.

Analysis of covariance on job aspiration indicated a significant difference by treatment group at .03 level and by academic group at .001 level. Educational aspiration was not significant by treatment group but was significant at .001 level with academic group. Sex made a significant difference on both educational and occupational aspiration levels, at .03 level with females scoring higher.

Pearson correlation coefficients were computed. Four variables were moderately related to post decision making (PDM): (IQ = .54, GPA = .45, post

career maturity (PCM) = .45 and academic group = .47) with the pretest decision making (DM) scores related to PDM .60. While three variables (IQ, GPA, academic group) were related to PCM their relationship was lower (IQ = .31, GPA = .33, academic group = .23) with pretest career maturity (CM) related to PCM .49. SES had a low relationship to both career decision making, .14, and career maturity, .03.

Step-wise multiple regression indicated that the variables of: pretest decision making, IQ, academic group and school made a significant contfibution to posttest decision making. The interaction of academic group and treatment group indicated that the effect was about the same for both groups as the significance level was .10. In addition, step-wise regression revealed that when IQ and GPA were entered together they shared 31% of the common variance which was significantly high enough, F = 28.99, .001 level, to predict posttest decision making. Step-wise multiple regression indicated that pretest career maturity, GPA, treatment group, interactions of academic group and treatment group, and academic group and IQ contributed significantly to posttest career maturity.

Students' evaluation of the J-E Model and Mini Course revealed that after the course they knew how to: See more occupational choices than before the Mini Course (62%), Go about getting information (73%), Recognize their values and use them in making decisions (76%), Consider and rank alternatives according to the ones that are best for them (68%), Go about making some career decisions (82%), and See that their first and second occupational choice may not be the best for them (33%). Sixty-two percent felt fairly well to very well about using the J-E Decision Making Model for future occupational and college choices.

DISCUSSION

The career decision making course seemed to be more effective with nonacademic groups. Significance of the treatment, on the dependent variable of decision making, was noted in three nonacademic groups and one academic group. Reasons why overall significance was not obtained could be due to a number of factors. At the time of the research, no available validated career decision making instrument had been developed. While the internal reliability of the CDQ was relatively high, it may not be assessing all components of decision making. Since both career maturity and IQ had a moderately high relationship to decision making, some decision making improvement might be expected for students in the academic control groups on the basis of student ability and maturation.

On the dependent variable of career maturity the treatment was significant at the .001 level with both academic and nonacademic groups. Career maturity is related to career decision making; therefore, one could extrapolate that the treatment contributed significantly to improving career decision making ability. Increase in self understanding, occupational exploration, and positive evaluation of the decision making model and Mini Course lend additional support for program effectiveness.

The Career Decision Making Model and Mini Course provide a strategy and teaching materials that can aid senior high school students in making career choices. The program can be used in a variety of ways in school schedules. For example, it may be offered as an elective for one-half to one full semester or it may be infused in an English, Social Studies, Health, Sociology, Psychology or Human Relations course.

The research provided a step by step process verification of a newly developed

career counseling program. Student and counselor participation in use and evaluation of the model and Mini Course helped complete the process through learner verification. The learner verification findings have been used to modify the decision making program, Planning Ahead for Career Choice (Jackson 1976). The Mini Course Curriculum is designed to teach career decision making skills. These skills are necessary for students to use knowledge, values and information in making career choices.

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