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ABSTRACT

The advent of federally funded programs to promote career development within the regular school curriculum has posed the problem of identifying or developing instruments which provide valid and reliable information to assess the effects of these programs. This study investigates the relationship between a number of noncognitive variables and the cognitive content (career information) of a career development project. A variety of instruments were administered on a pilot basis to a sample of 80 seventh and eighth graders. A revised form of the original instruments was administered to a sample of 122 students from the same school the following year. The samples consisted primarily of low socioeconomic blacks and represented the school's composition. Results indicate that there are substantial and apparently stable correlations between control of environment, acceptance of responsibility for choice, and the amount of career information that students acquire in a career education program. There was an absence of correlation between program assessments by students and the other variables although such assessments were solidly positive, suggesting strongly that student assessment of the program is not a reflection of student maturity or cognitive success in the program. (Author/CJ)

Control of Environment, Acceptance of Responsibility for Choice, and Planning Orientation in Relation to Career Information *

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Since Ginzberg and his colleagues (Ginzberg, Ginsberg, Axelrad and Herma, 1951) proposed that vocational choice is a developmental process which spans the period from late childhood to early adulthood, there has been an increasing emphasis on the description of those behaviors which constitute normal career maturation. Until recently the results of this work has been largely directed toward counselors in their work with individuals. The advent of federally funded programs to promote Career Development within the regular school curriculum under the broad umbrella of Career Education (Marland, 1972) has posed the problem of identifying or developing instruments which provide valid and reliable information to assess the effects of these programs. The present study investigates the relationship between a number of non-cognitive variables and the cognitive content (career information) of a Career Development project.

The earliest and in many ways the most comprehensive attempt to operationalize the developmental approach is presented in the research carried out by Super and his associates. The behavioral scale of Career Development delineated and defined as part of the Career Pattern Study (Super, 1955), a longitudinal investigation of Career Development from the ninth grade to mid-life, relied heavily on the time consuming process

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of interview analysis. The analysis of the Career Pattern Study (Super and Overstreet, 1960) concluded that a general factor, planning orientation, accounts for the largest portion of variance in career maturity. The specific indices which loaded most heavily on this general factor include content oriented measures (e.g. specificity of information about job requirements), process oriented measures (e.g. specificity of planning), as well as attitudinal measure (e.g. acceptance of responsibility for choice).

Crites (1973) has reorganized and revised the dimensions of the Career Pattern Study and has developed an instrument which assesses two broad dimensions; vocational choice competencies, and vocational choice attitudes. The Career Maturity Inventory represents an attempt to devise a content free instrument which provides a norm referenced estimate of maturation of career choice attitudes and skills, but eliminates for obvious reasons the measurement of knowledge about specific careers of personal interest to students. The advantages of an objective and generalizable estimate of Career Development are obvious, the danger of course is that these estimates might become merely career related artifacts of general school achievements. Crites points out, however, that it is likely that attitudinal and competency factors will be related, especially in early adolescence. He hypothesizes that the vocational choice attitudes mediate the use of vocational choice competencies in ultimately choosing an occupation.

As educators involved in the development and implementation of programs to provide experiences which promote Career Development, the search for appropriate intervening or outcome variables should include those which plausibly effect career maturity. The investigation of correlates of

career maturity suggests that many of the sources of information available in school records are related to career maturity. In various combinations of operational definitions, intelligence, school grades, and socio-economic status have been reported as significant correlates of career maturity. Career attitudes have been reported as significant correlates of general adjustment status (Hollender and Schaflon, 1965) and personality characteristics (Bartlett, 1968).

Siegelman reported significant intercorrelations between locus of control, vocational maturity and course grades. Coleman (1966) reported that control of environment (locus of control) was one of the few variables which significantly improved the predicition of academic achievement for black students when socio-economic status was controlled.

The selection of appropriate measures for the evaluation of an innovative project includes the collection of data on the program outside of a research framework. At an unsophisticated level, this feedback from participants on surveys or attitude scales can provide useful information for planning and trouble shooting the implementation effort. Such an instrument was administered in the present study to obtain feedback in two areas; student assessment of program outcomes and student assessment of the program implementation.

Sample

The instruments were administered on a pilot basis to a sample of 80 seventh and eighth grade students in the project junior high school in Cincinnati, Ohio. The revised form of the original instruments was administered to a sample of 122 students from the same junior high school during the following school year. The sample was stratified to represent the racial and SES balance of the school. A majority of the students were

black and come from low socio-economic neighborhoods.

Instruments

The three items used by Coleman to measure control of environment were used in the present study. The items were coded using the scoring methods presented in the Equal Educational Opportunity Survey. Locus of control has been described as an expectancy variable that describes the perception of personal control that one has over the reinforcements that follow his behavior.

Acceptance of responsibility for choice was assessed with a four item scale designed to parallel the comparable index in the Career Pattern Study (Index IVF). Student responses were elicited to a series of open ended statements about student behavior while selecting courses. Statements from this group were then rated on the three maturity constructs reported by Super (1960) in the scoring manual for the Career Pattern Study. Within each of the four items, action is considered more mature than inaction, acceptance of responsibility is considered more mature than rejection of responsibility, ~~and the use of competent help is considered more mature than rejection of responsibility~~, and the use of competent help is considered more mature than completely independent action. Within each item statements were arranged on a less mature to more mature continuim. Students were asked to select within each item the statement "most like" their own position. A rough estimate of the validity of the total scale was obtained by asking students in the pilot group to indicate the statement "least like" what they would say. The correlation between the total scale score for the "most like" and "least like" selections ($r = -.71$) indicated that the scale discrimination was satisfactory for our purposes.

Planning orientation was assessed with a ten item Likert type scale based loosely on the behaviors detailed in the Career Pattern Study. These items did not use career planning as a referrent, but were worded to obtain attitudes toward planfullness in general.

The program variables were assessed with a simple questionnaire which allowed students to respond on a five point extent scale (e.g. very often vs. not at all). The items were grouped into two categories: assessment of Career Development outcomes (4 items), and assessment of program outcomes (5 items). In the first category, for example, students were asked to assess the extent to which "I have thought about choosing a career this year." In the second category they were asked the extent to which "you have received any information in school to help you choose a career." The two subscales were scored as the sum of the response scores on the items involved.

The criterion measure was a sixty item career information test developed by asking subject area departments in the school to identify basic elements of career information which would be included in the instruction of all teachers within the department. This procedure was used to maximize the validity of the instrument as a measure of the programs cognitive content. The resulting item pool was edited to include the most discriminating items included on the pilot test.

Results

The intercorrelations among variables for the data from the pilot test are presented in Table 1. A multiple regression prediction of career information scores utilizing all of the non-cognitive variables as predictors yielded a statistically significant prediction ($R = .66$). The results indicated that acceptance of responsibility for choice,

planning, and control of environment were significantly intercorrelated and significantly correlated with career information. On inspection of the pilot test results, we suspected that two items in the planning scale were functioning as control of environment items. These items were replaced for the second testing.

The intercorrelation among variables for the second testing are presented in Table 2. The modifications in the planning instrument reduced the correlation with control of environment, acceptance of responsibility for choice, and the criterion variable. The multiple correlation utilizing all variables was comparable to that obtained from the pilot data (R = .59). The contributions of the individual variables to the stepwise regression are presented in Table 3. It is interesting to note that the program variables are not related to the career information scores in either case.

Discussion

The results indicate that there are substantial and apparently stable correlations between control of environment, acceptance of responsibility for choice, and the amount of career information that students acquire in a career education program. The possibility remains of course in any correlational study that we are dealing with concomitants or consequences of the cognitive scores rather than causes. The important question of course is whether these non-cognitive variables represent valid outcomes of a school based career education program, outcomes which are susceptible to experimental or manipulative intervention.

Nowicki and Strickland (1970) indicated that control of environment can be affected by a summer camping program. In our own study we found that the scores of the eighth grade students were significantly more internal than those of the seventh grade students. This raises the fascinating possibility that the change from elementary school to junior high school has a temporarily negative effect on control of environment. The evidence that a sense of control of environment is mutable opens the possibility that career related activities which strengthen the relationship between a student's behavior and the reinforcements which follow can significantly contribute to mature behavior patterns, and goal achievement.

The surface relationship between acceptance of responsibility for choice and career program decision making is more direct. The question of "course optioning" or in Super's works, "pre-vocational choice" is not a theoretical construct in most schools. This annual decision point could easily become the focus of the career education programs effort to

foster acceptance of responsibility for choice. The differences in career maturity in the student body further suggests the career education program must be flexible enough to deal with a wide spectrum of student needs.

The modest correlations of the planfullness scale with the other variables probably indicates a failure in the instrument to successfully operationalize the original construct.

The absence of correlation between the program assessments by students and the other variables was, from a program evaluation viewpoint, a positive finding. The absolute assessment made by students was solidly positive. The results provide evidence that student assessment of the program is not a reflection of a student's maturity or cognitive success in the program.

Assuming that Career Development is viewed as both a cognitive and affective process, the present study supports the interrelationship between these constructs in facilitating vocational maturity. Our experience in the program has shown that teachers are more likely to assimilate the cognitive aspects of career education, and need assistance with facilitating vocational maturity, such as planfullness, responsibility for choice, etc. The choice of valid operational definitions of desired changes in non-cognitive behavior should be the starting point for the training of staff and development of classroom activities for an educational program emphasizing Career Education and the overall maturation of students.

Table 1 -- Correlation Matrix of the non-cognitive Predictors with Career Information (criterion score), pilot group.

	1	2	3	4	5	6
1. Program Outcomes	--					
2. Program Implementation	.03					
3. Acc. of Responsibility for Choice	.27	.12				
4. Planning	.34*	.09	.38*			
5. Control of Environment	-.07	.06	.31*	.56*		
6. Career Information	.06	.21	.43*	.49*	.40*	--

Table 2 -- Correlation Matrix of the non-cognitive Predictors with Career Information (criterion score), second Group

	1	2	3	4	5	6
1. Program Outcomes	--					
2. Program Implementation	.26*	--				
3. Acc. of Responsibility for Choice	-.03	-.07	--			
4. Planning	-.30*	-.16	.23*	--		
5. Control of Environment	-.13	-.12	.28*	.14	--	
6. Career Information	-.14	-.12	.41*	.25*	.49*	--

Table 3 -- All Five Variables as Predictors of Career Information

Variable	Multiple R	Correlation with Criterion
Control of Environment	.49*	.49
Acc. of Responsibility for Choice	.57*	.41
Planning	.58	.25
Program Outcomes	.59	-.14
Program Implementation	.59	-.12

*P < .01

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