Career Maturity in Relation to Differences in School Curriculum

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Résumé

Deux études ont examiné les differences de maturité vocationelle. L'échantillon comprenait quatre groupes suivant des programmes differents: académique, affaires, technique et général. Dans l'étude I on a donné test Crites de la maturité vocationnelle à des étudiants de la neuvième à la douxième année, tandis que dans l'étude II on a donné un test de dévelopment vocationnel à des étudiants en douzième année. Les résultats de ces deux études montrent que le groupe académique a les scores les plus élevés.

Abstract

Two studies were undertaken to examine differences in career maturity among four curriculum groups: academic business, technical, and general. In Study I, Crites' Career Maturity Inventory was administered to students in grades nine through twelve. In Study II, a specially developed measure of career development was administered to students in grade 12. Results of both studies indicated that the academic group scored higher than the other three groups.

The expectation that career maturity increases with age and grade level suggests that career maturity is related to academic learning and general maturation. However, individual differences in career maturity as well as academic learning and achievement also arise within the same age or grade levels. Could these differences be attributed to the kind of students attracted by the various curriculum programs? Recent studies provided evidence of differences in career maturity in relation to differences in grade and program levels. Alvi and Khan (1983) reported that students in higher grades obtained significantly higher career maturity scores than students in lower grades. In addition, Khan and Alvi (1984) found that the Advanced Level students obtained significantly higher scores than the General Level students in the same grade. (The Advance Level students in the province of Ontario typically enroll in university preparatory programs while the General Level students usually terminate studies at the end of grade 12, though some may go on to community colleges.)

Since the program variable (Advanced versus General) yielded significant differences in career maturity, it seemed logical to consider a further breakdown of the program variable into specific curriculum groupings such as academic, business, technical, and general for further investigation. Assuming that high ability students are attracted to the

Advanced Level program and curricula with an academic focus, it would be reasonable to hypothesize that students enrolled in curriculum programs with an academic focus will obtain higher career maturity scores than students enrolled in programs with a non-academic focus. The review of literature turned out one study (Herr & Enderlein, 1976) in which differences in career maturity in relation to curriculum were examined. That study employed the Attitude Scale of the Career Maturity Inventory and reported significant differences for the curriculum factor; students enrolled in curriculum programs with an academic focus receiving significantly higher mean scores.

The purpose of the present study was to investigate differences in career maturity as a function of curriculum choice involving both the Attitude and Competence parts of the Career Maturity Inventory (Crites, 1978a, 1978b, 1978c, 1978d). In addition, a specially developed instrument measuring the knowledge component of career skills and maturity in a Canadian setting was also used. If ability is a significant influence on the choice of curriculum programs, then the knowledge aspect of career maturity should be an appropriate criterion, in addition to the attitudinal aspect of career maturity. It is important to identify the various sources which contribute to variation in career maturity in order to better understand and utilize the construct of career maturity in counselling and career education. This report is based upon the results of two studies both of which aimed at elucidating the construct of career maturity. While one study was done in a single school in different grade levels employing a standardized instrument, the other study was done in different schools at a single grade level utilizing an instrument developed for the Canadian setting. The reason underlying the use of different samples and instruments was to be able to examine the relationship between career maturity and curriculum from two quite different sources of data and look for any convergence of the results.

METHOD

Sample

The subjects of the first study (Study I) were students enrolled in grade 9 (n = 101), grade 10 (n = 66), grade 11 (n = 63), and grade 12 (n = 34). Grade 12 students (n = 459) from seven high schools participated in the second study (Study II). The number of students from each school ranged from 45 to 92.

Instruments

Study I employed Crites' Career Maturity Inventory (CMI). This inventory consists of the Attitude Scale and the Competence Test. The Attitude Scale contains 50 statements and the students respond to each statement as true or false. The Competence Test includes five subtests:

(1) Self-Appraisal, (2) Occupational Information, (3) Goal Selection, (4) Planning, and (5) Problem Solving. Each subtest has 20 statements describing hypothetical situations, followed by a question to which five alternatives are provided. Students are asked to select the alternative that they consider to be the best. Technical information on CMI can be found in Crites (1978a) and Alvi and Khan (1983).

The Career Development Survey[1] (CDS) is patterned after the Career Skills Assessment Program (College Entrance Examination Board, 1978). The items in the instrument were developed to reflect the Canadian milieu and environment. It consists of fifty multiple choice items, ten in each of the following five areas: (1) Self-Evaluation and Development Skills, (2) Career-Awareness Skills, (3) Career Decision-Making Skills, (4) Employment-Seeking Skills, and (5) Work Effectiveness skills. The alpha internal consistency estimates of reliability for the ten-item scales ranged from .35 to .58. The reliability estimate for the total survey was .82. Although the reliability estimates of individual subtests are not as high as one would desire, they might be considered acceptable in view of the small number of items in each subtest. The use of the total score on CDS instead of the individual subtests because of their somewhat lower reliabilities might obscure the multidimensional aspect of career maturity. Further information on CDS is available in Khan and Alvi (1984).

Procedures

For the purpose of identifying curriculum groupings, the students in both studies were asked to indicate the *main focus* of their curriculum program by choosing one of the four categories: academic, business, technical, or general. The academic curriculum includes subjects such as science, mathematics, physics, history, geography, languages, biology, chemistry, and other subjects in the sciences and humanities. The technical curriculum consists of subjects such as shop courses, industrial arts, wood work, metal work, automotive mechanics, electronics, welding, etc. The business curriculum contains such courses as typing, accounting, secretarial skills, shorthand, stenography, business law, etc. Courses in the general curriculum category may be any number of courses from the above three categories, though at a lower difficulty level.

Analysis

Means and standard deviations of CMI and CDS scores for each curriculum group (within each grade level for CMI) were obtained. The analysis of variance technique was used to analyze the data. Where the F statistic was significant, the means were compared by using the Scheffé test.

[1] The instrument is available on request from the authors.

RESULTS

Study I

Analysis of CMI scores by grade level produced only one significant *F*-ratio for grade 11 group on the Self-Appraisal subtest. The mean of the academic group was significantly higher (ratio = 2.93 $p < .05$) than the mean of the technical group. The mean scores were 15.89 and 12.00 respectively. This prompted us to combine the sample for an additional analysis. The results of this analysis are presented in Table 1. The *F*-ratio for the attitude part of the CMI is not significant. All of the *F*-ratios for the five competence subtests are significant beyond the .05 level.

Table 1
Results of ANOVA and Scheffé Test for Curriculum Focus Factor and CMI

CMI Subtests	*Curriculum Group*	*n*	$\bar{X}$	*SD*	*F*	*Significant Contrasts*	*Ratio*[1]
The Attitude Scale	Academic	113	33.2	4.2			
	Business	58	32.2	4.8	.82		
	Technical	18	33.2	3.6			
	General	75	32.8	4.4			
The Competence Test							
Self-Appraisal	Academic	113	14.4	2.9			
	Business	58	13.2	3.7	2.82*		
	Technical	18	12.6	2.6			
	General	75	13.6	3.4			
Occupational Information	Academic	113	16.3	2.4		Acad. vs. Bus.	3.25
	Business	58	14.8	3.1	4.68**		
	Technical	18	14.8	3.1			
	General	75	15.2	3.1			
Goal Selection	Academic	113	13.7	2.6		Acad. vs. Bus.	3.07
	Business	58	12.3	3.0	5.30**	Acad. vs. Gen.	3.49
	Technical	18	13.0	3.0			
	General	75	12.3	2.7			
Planning	Academic	113	12.9	3.5		Acad. vs. Gen.	3.33
	Business	58	12.3	3.4	4.56**		
	Technical	18	10.9	3.5			
	General	74	11.2	3.5			
Problem Solving	Academic	113	11.0	2.7			
	Business	58	10.1	3.1	3.46*		
	Technical	18	9.3	2.1			
	General	74	9.7	3.5			

[1] Ratio has to be greater than 2.79 in order to be significant at $p < .05$.

* $p < .05$
** $p < .01$
df = 3,259

Although the *F*-ratios for Self-Appraisal and Problem-Solving subtests are significant, none of the pair-wise comparisons of means resulted in a significant difference. For the subtests of Occupational Information and Goal Selection, the mean scores of the academic curriculum group are higher than the mean scores of the business curriculum group. Also, for Goal Selection and Planning subtests, the mean scores of the academic curriculum group are higher than the mean scores of the general curriculum group.

Study II

Table 2 includes the results for the Career Development Survey. All *F*-ratios for the curriculum focus factor and the five subtests are significant. Four contrasts are significant for the Self-Evaluation and Development Skills subtest. The academic curriculum category mean is significantly higher than the individual means for business, technical, and general categories. There is also a significant difference between the means of business and technical categories. Three contrasts each are significant for the Career-Awareness Skills subtest, Career Decision-Making Skills subtest, and Work-Effectiveness skills subtest. On Career-Awareness Skills and Work-Effectiveness skills subtests, means for the academic curriculum category are significantly greater than the individual means for the business, technical, and general curriculum categories. For the Career Decision-Making Skills subtest, the academic curriculum mean is significantly greater than the individual means for the technical and general curriculum categories. There is also a significant difference between the means of the business and technical curriculum categories. None of the pair-wise comparisons was significant for the Employment-Seeking Skills subtest.

DISCUSSION

The results of Study II involving the newly developed instrument, namely, Career Development Survey, at the grade 12 level are more clear-cut than the results of Study I involving CMI at grades nine through twelve. The non-significant *F*-ratio for the Attitude Scale of CMI is contrary to the findings of Herr and Enderlein (1976). It may well be that differences in curriculum programs relate more to differences in the cognitive rather than the affective components of career maturity. For the Competence subtests, two significant *F*-ratios are not associated with any significant pair-wise mean differences; however, the mean scores of the academic group are higher than the mean scores of the other curriculum groups. The reasons for the weak results in Study I could be attributed to either the lack of clear curriculum focus at the lower grade levels or to the lack of discriminating power of CMI. The second reason seems more plausible because analysis by curriculum

Table 2
Results of ANOVA and Scheffé Test for Curriculum Focus Factor and Career Development Survey

CDS Subtests	*Curriculum Group*	*n*	$\bar{X}$	*SD*	*F*	*Significant Contrasts*	*Ratio*[1]
Self-Evaluation and Development Skills	Academic	179	7.7	1.7		Acad. vs. Bus.	3.67
	Business	111	6.9	1.8	18.19**	Acad. vs. Tech.	6.28
	Technical	63	6.1	1.8		Acad. vs. Gen.	5.56
	General	99	6.5	2.1		Bus. vs. Tech.	3.02
Career-awareness Skills	Academic	178	7.5	1.5		Acad. vs. Bus.	4.87
	Business	111	6.6	1.6	12.00**	Acad. vs. Tech.	3.63
	Technical	64	6.7	1.7		Acad. vs. Gen.	4.70
	General	100	6.6	1.7			
Career Decision-making Skills	Academic	179	6.3	1.7		Acad. vs. Tech.	5.50
	Business	109	5.9	1.7	13.41**	Acad. vs. Gen.	4.54
	Technical	64	4.8	1.6		Bus. vs. Tech.	3.80
	General	100	5.3	1.9			
Employment-seeking Skills	Academic	179	7.1	1.3			
	Business	111	6.6	1.2	2.65*		
	Technical	63	6.7	1.5			
	General	100	6.8	1.3			
Work-effectiveness Skills	Academic	179	8.6	1.3		Acad. vs. Bus.	4.41
	Business	111	7.8	1.5	17.33**	Acad. vs. Tech.	6.67
	Technical	64	7.2	1.6		Acad. vs. Gen.	3.92
	General	100	7.9	1.5			

[1] Ratio has to be greater than 2.79 in order to be significant at $p < .05$.

* $p < .05$
** $p < .01$
df = 3,448

groups involving CMI at the grade twelve level did not yield significant differences.

If students who pursue an academic curriculum and intend to continue their education beyond high school have more knowledge and vocational readiness than students who are enrolled in non-academic types of curricula, does it follow that tests of career skills and maturity measure constructs which are not distinctly different from general ability and school achievement? This question has been of concern to several investigators (Grandy, 1979; Westbrook, Cutts, Madison, & Arcia, 1980). Grandy (1979) reported that although the Career Skills Assessment Program (CSAP) included tasks which require basic reading

and reasoning skills, CSAP does not simply consist of reading comprehension exercises. According to Grandy, a significant proportion of variance in CSAP scores is not accounted for by reading and reasoning tests. On the other hand, Westbrook, Cutts, Madison, and Arcia (1980) concluded that the Competence Test scores of the Crites' Career Maturity Inventory share more common variance with intelligence, reading ability, and language ability than with the CMI Attitude Scale score.

One would expect a moderately positive correlation between general ability and career maturity tests, especially those involving the cognitive skills. Alvi and Khan (1982) reported a nonsignificant correlation between the CMI Attitude Scale and an overall Grade Point Average (GPA) and a significant correlation between a simple sum of the five Competence subtests of CMI and GPA ($r = .45$, $df = 52$, $p < .01$). It would indeed be quite disconcerting if the correlations of the cognitive aspects of career maturity with measures of general ability and academic achievement are found to be low.

If curriculum focus is a proxy for ability, then our studies have shown that high-ability students performed significantly better on career maturity and career development tests than low-ability students. It is thus reasonable to think that the relationship between curriculum focus and career maturity is moderated by the ability of students similar to a g-factor. However, to suggest that tests of career maturity are identical to ability tests and measure the same traits would be quite unwarranted.

Career education is becoming an important part of the high school curriculum in North America. We do need quality instruments to be able to evaluate the outcomes of career education in addition to using them in career guidance and counselling. It will be unfortunate if the relationship between ability and career maturity, which is not unexpected, leads us to undervalue the importance of the measurement of the construct of career maturity. Similarly, it will be inappropriate to conclude that career maturity and general ability tests measure the same psychological trait and are thus interchangeable.

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