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ASSESSMENT OF CAREER SKILLS AT THE HIGH SCHOOL LEVEL

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Abstract

An instrument containing 50 items, ten items in each of the five skill-areas of self-evaluation and development, career-awareness, career decision-making, employment-seeking, and work-effectiveness was administered to 939 grade 12 students from two large school boards. The results indicated that performance in both school boards was similar: females obtained significantly higher mean scores than males on three of the five subtests; and the Advanced Level students obtained significantly higher mean scores on all five subtests than the General Level students.

Résumé

Un groupe de 939 élèves de 12e année provenant de deux commissions scolaires populeuses a répondu à un instrument comportant 50 énoncés également répartis quant aux cinq types d'habiletés suivantes: évaluation et développement de soi, conscience vocationnelle, prise de décision vocationnelle, recherche d'emploi et efficacité au travail. Les résultats dénotent une performance semblable au niveau des deux commissions scolaires: les filles ont des scores moyens plus élevés que ceux des garçons à trois échelles sur cinq; aux cinq échelles les élèves des classes enrichies ont des scores moyens plus élevés que ceux des élèves des classes régulières.

Career education is considered an important area of concern in the Ontario Ministry of Education guidelines (1977, 1978, 1984) for guidance services in secondary schools. These guidelines place significant emphasis on the need for those services in schools which would help students to prepare them for the world of work. As a result, schools in Ontario are being encouraged to introduce career development courses, organize career days, and provide work-study programs. It is hoped that these activities will aid in developing

students' knowledge and skills in areas such as self awareness, values clarification, career awareness, decision-making, and job search.

Previous studies in Canada have mainly dealt with students' educational and career intentions, psycho-social factors in career planning, and sex-role stereotyping (e.g. Anisef, 1975; Anisef, Paasche, & Turrutin, 1980; Breton, 1972; Cassie, Ragsdale, Burns, & Robinson, 1980) utilizing mainly questionnaires and/or interviews as vehicles for data collection. It seems that no attempts have been made to develop instruments for measuring career knowledge and skills for use in Canadian high schools. Information from such instruments could be useful in evaluating existing career education programs and adapting them

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to meet the needs of high school students. This paper describes the results of a survey of career knowledge and skills of high school students using a newly developed instrument. In addition, program and sex differences in career knowledge and skills are also examined.

Method

Sample

The sample for this study was drawn from two large school boards in Ontario; one located in Metropolitan Toronto (Board A) and the other a short distance from Metropolitan Toronto (Board B). Four hundred and eighty grade 12 students (246 males and 234 females) from ten secondary schools in Board A participated. The sample from Board B included 459 grade 12 students (241 males and 218 females) enrolled in seven secondary schools. Students were also classified in terms of the level of their programs of study (Advanced/General). Students classified as Advanced were those who took most of their courses at the college preparatory level, thus preparing themselves for grade 13 and university education. Students classified as General took most of their courses leading only to high school graduation. This classification is a part of the formal educational structure in the province. It resulted in 263 students in the Advanced category and 217 in the General category in Board A and 312 students in the Advanced category and 145 in the General category in Board B (two students did not respond to the question on Program level).

Instrumentation

The general theory of career development recognizes the need for an individual to acquire career-relevant knowledge, develop positive feelings and attitudes toward work, and undertake some reality testing. Our concern in this study was limited to the cognitive domain of career development, that is, the measurement of career-relevant knowledge which is necessary for effective functioning in the world of work.

An instrument, called *Career Development Survey*¹, containing 50 multiple choice items, was developed to assess career skills in the following five areas: self-evaluation and development skills, career-awareness skills, career decision-making skills, employment-seeking skills, and work-effectiveness skills. Each area contains ten items. These areas are similar to those covered in the Career Skills Assessment Program (College Entrance

Examination Board, 1978) and correspond well to the major career guidance components in the Ministry of Education guidelines. The items for this instrument were especially written to reflect the social and economic environment of Canada. Each of the five areas is briefly described below and sample items are given in the Appendix.

1. Self-evaluation and development pertains to such things as understanding and accepting individual differences, recognizing individual characteristics and their relationship to life and career goals, and locating and interpreting information about self.

2. Career awareness includes such skills as relating abilities, values, and societal needs to career selection and recognizing the importance and relevance of school programs to the requirements for occupations.

3. Career decision-making relates to selecting and applying problem-solving techniques to career choices and decisions.

4. Employment-seeking pertains to such things as undertaking systematic career planning, selecting appropriate job-search techniques, describing appropriate appearance and behaviors in job interviews, and relating one's abilities and interests to the job one is considering to enter.

5. Work-effectiveness relates to the identification of employer-employee responsibilities to each other, development of effective work habits and interpersonal skills, planning for job change and managing work situations to enhance personal satisfaction.

Data Collection and Analysis

The counsellors in each schools assisted with data collection. The analyses of the data included item analysis, descriptive statistics, and analyses of variance.

Results

The item analyses were done for the *Career Development Survey*. The difficulty levels (p values) of items in the instrument were distributed over a wide range in both school boards thereby indicating items of varying difficulty in each subtest. All biserial correlations of the items with the respective subtest scores were in the .30's to .90's range. The item analysis results indicated that most of the items in the *Career Development Survey*

¹The instrument is available on request from the authors.

were of acceptable difficulty levels and yielded a sufficient number of high biserial correlations thus indicating adequate validity of items in each area.

The Hoyt's estimates of reliability for the five subtests ranged from .35 to .58 in Board A, with a median reliability coefficient of .54, and from .22 to .52 in Board B, with a median reliability coefficient of .43. Although the reliability coefficients are somewhat lower than one would desire, they might be considered acceptable due to the fact that there are only ten items in each subtest. The reliability estimates for the total Survey were .82 and .75 for Board A and Board B respectively. The intercorrelations among the five subtest scores range from .37 to .56 for Board A and from .22 to .42 for Board B. One would expect the five subtests to be positively correlated due to the fact that they purportedly measure different aspects of career development.

Means and standard deviations of each of the five subtest scores by sex for Board A and Board B are given in Table 1. The patterns of performance are similar in both school boards; students obtained the lowest mean score on career decision-making skills subtest and the highest mean scores on the

work effectiveness skills subtest. It is evident moreover that in both school boards, females obtained higher mean scores than males on all five subtests. However, the differences are significant in three areas for each school board: career decision-making skills and work effectiveness skills for both school boards; employment-seeking skills for Board A and self-evaluation and development skills for Board B.

Means and corresponding F-ratios for program variable for both school boards are given in Table 2. Results by program show a significant difference in each of the five subtest scores for both school boards. Students enrolled in the Advanced level program obtained significantly higher mean scores than students enrolled in the General level program.

Discussion

The fact that the advanced students have significantly higher scores than the general students probably indicates a relationship between academic ability and the knowledge component of career skills. Similar results have been reported in the literature indicating a strong relationship between academic orientation or ability and performance on

Table 1
Means and Corresponding F-ratios for Five Area Scores
by Sex for School Board A and School Board B

Area	Board A			Board B		
	Male (n=246)	Female (n=234)	F-ratio	Male (n=241)	Female (n=218)	F-ratio
1. Self-evaluation and development skills	6.3	6.7	3.79	6.7	7.3	11.74**
2. Career awareness skills	6.5	6.8	3.31	6.9	7.0	0.48
3. Career decision-making skills	5.2	5.6	4.13*	5.5	6.0	7.95**
4. Employment-seeking skills	6.6	7.1	10.24**	6.7	6.9	3.27
5. Work effectiveness skills	7.6	8.2	39.53**	7.9	8.3	9.98**

* $p < .05$; ** $p < .01$; Board A, $df = 1,478$; Board B, $df = 1,457$.

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Table 2

Means and Corresponding F-ratios for Five Subtest Scores by Program for School Board A and School Board B

Area	Board A			Board B		
	General (n=217)	Advanced (n=263)	F-ratio	General (n=145)	Advanced (n=312)	F-ratio
1. Self-evaluation and development skills	5.9	7.0	35.12**	6.0	7.4	55.67**
2. Career awareness skills	6.3	6.9	13.09**	6.4	7.2	24.91**
3. Career decision-making skills	5.0	5.8	23.76**	5.0	6.1	38.30**
4. Employment seeking skills	6.5	7.1	26.32**	6.5	7.0	8.76**
5. Work effectiveness skills	7.4	8.2	30.84**	7.4	8.4	40.11**

**p < .01; Board A, df = 1,478; Board B, df = 1,455.

career skills and career development tests (Grandy, 1979; Herr & Enderlein, 1976; Westbrook & Rogers, 1980). Significant differences between males and females on three of the five subtests are consistent with the findings reported in other studies (Alvi and Khan, 1983; Herr & Enderlein, 1976; Lawrence & Brown, 1976).

An analysis of the mean scores indicates that students, in general, received their lowest scores on career decision-making skills subtest and highest scores on work effectiveness skills subtest. During the course of development of the Career Skills Assessment Program, the College Entrance Examination Board (1978) found a similar pattern of mean scores on the various tests. Somewhat parallel are the findings on The Competence Test of the Career Maturity Inventory (Crites, 1978). Alvi and Khan (1983) reported that students in grade nine through twelve of an Ontario high school had lowest mean scores on the Problem-Solving part of the Competence Test and the next lowest scores on the Planning and Goal Selection subtests. These three subtests involve many of the same mental processes which are required for decision-making. Similar results are reported for the standardization sample

of the Career Maturity Inventory (Crites, 1978).

The results of the present study tend to have the following implications for future research and practice in career education and career counselling.

1. The performance of students in the General program (non college preparatory) is significantly lower than the performance of students in the Advanced program (college preparatory). Further research is recommended to determine whether more emphasis on teaching career skills and providing opportunities for adequate career counselling to students enrolled in the General program would improve the level of their career knowledge and skills.

2. While it would be desirable for career education programs to be sufficiently broad to cover all major aspects of career development, there is a particular need to emphasize the teaching of career decision-making skills. In times of budgetary constraints, the schools should find out whether they can reorder their priorities to put more emphasis on teaching decision-making skills.

3. The study shows that the Career Development Survey has potential for assessing knowledge aspects of career skills. As there is dearth of well-designed instruments for assessing needs and outcomes of career education, this instrument might be considered as an appropriate tool for evaluation of career education programs. Further improvements in the subtest reliabilities are possible by increasing the number of items in each subtest. In addition, this instrument may be used in other parts of Canada in order to develop a Canada-wide data base to see if the results would be similar to those obtained in the Ontario setting.

References

Alvi, S.A., & Khan, S.B. An investigation into the validity of Crites' career maturity model. *Journal of Vocational Behavior*, 1983, 22, 174-181.

Anisef, P. *The critical juncture: Realization of the educational and career intentions of grade 12 students in Ontario*. Toronto: Ministry of Colleges and Universities, 1975.

Anisef, P., Paasche, J.G., & Turrutin, A.H. *Is the die cast*. Toronto: Ministry of Education and Ministry of Colleges and Universities, 1980.

Breton, R. *Social and academic factors in the career decision of Canadian youth*. Ottawa: Manpower and Immigration, 1972.

Cassie, J.R.B., Ragsdale, R.G., Burns, G.E., & Robinson, M. *Sex role stereo-typing: Incidence and implications for guidance and counseling of students*. Toronto: Ministry of Education, 1980.

College Entrance Examination Board. *Career Skills Assessment Program*. New York: College Entrance Examination Board, 1978.

Crites, J.O. *Career Maturity Inventory*. Monterey, Calif: CTB/McGraw Hill, 1978.

Grandy, J.E. *An investigation into the construct validity of three career skills exercises*. Princeton, N.J.: Educational Testing Service, 1979. (RR-79-9)

Herr, E.L., & Enderlein, T.E. Vocational Maturity: The effects of school, grade, curriculum and sex. *Journal of Vocational Behavior*, 1976, 8, 227-238.

Lawrence, W., & Brown, D. An investigation of intelligence, self-concept, socio-economic status, race, and sex as predictors of career maturity.

Journal of Vocational Behavior, 1976, 9, 43-52.

Ministry of Education. *Guidance: Senior Division*. Toronto: Ministry of Education, 1977.

Ministry of Education. *Guidance: Curriculum guideline for the Intermediate Division*. Toronto, Ministry of Education, 1978.

Ministry of Education. *Guidance 1984: Curriculum Guidelines for the Intermediate and Senior Divisions*. Toronto: Ministry of Education, 1984.

Westbrook, B.W., & Rogers, B. Career Skills Assessment Program: Test review. *Measurement and Evaluation in guidance*, 1980, 13, 107-115.

Appendix

Sample Items from the Five Areas of Career Development survey

1. Self-Evaluation and Development Skills

Sharon likes to tinker with small appliances and gadgets in the house. She is always eager to fix them whenever the need arises. Which one of the following do you think had the GREATEST effect in the development of her mechanical interests?

- *A When still very young, Sharon liked to watch her father in his basement hobby shop and occasionally assist him.
- B In elementary school, Sharon often went on field trips to the Ontario Science Centre.
- C She likes to watch space and electronic-age shows on the TV.
- D Science is her favourite subject in school.

2. Career Awareness Skills

What do the jobs of dentists, garment designers and surveyors have most in common?

- *A Ability to recognize the relationships between objects in space (3-dimension).
- B University-level education and training for entry.
- C Ability to relate well with other people.
- D Uncertain income level.

3. Career Decision-Making Skills

Claire has received four job offers. She is equally interested in (1) high starting salary (2) high prospects for advancement and (3) financial stability of the company. On these three criteria, these jobs compare as follows:

Job	Starting Salary	Advancement Prospects	Financial Stability of Company
1	\$13,500	Second best	Third best
2	\$13,000	Best	Second best
3	\$13,000	Third best	Best
4	\$13,500	Fourth best	Fourth best

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Which of the four jobs offers the BEST combination of the criteria she has set?

- *A Job 2
- B Job 1
- C Job 3
- D Job 4

4. *Employment-Seeking Skills*

Before appearing for a job interview, which of the following is LEAST important for you to be concerned about?

- *A Whether the company plans to expand its operations.
- B That you are appropriately dressed for the interview.
- C How well your qualifications correspond with the company's requirements?
- D Whether you can do the job.

5. *Work Effectiveness Skills*

Helen and Sharon work in the assembly department of a small appliances manufacturing company. Helen has been with the company for two years and is thus experienced. However, Sharon has joined the assembly department only recently. Noticing that Sharon has some difficulty with a part of the job, Helen makes some helpful suggestions to her. Which of the following is the BEST way for Sharon to respond?

- A Tell Helen to mind her own business.
- B Look for an opportunity to find fault with Helen.
- *C Thank Helen for her suggestions and try them out.
- D Just ignore Helen.

*Keyed response

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