
Variables Related to the Transition of Youth from School to Work

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Abstract

The purpose of the study was to determine the reliability and validity of a British measure of attitude toward training for new technology, economic locus of control, self-efficacy, and self-estrangement for a Canadian adolescent population. In addition, the relationship between educational settings and beliefs and attitudes of 255 young Canadians soon to enter the work force was examined. The results from the Canadian data were comparable to results from the United Kingdom. Significant differences were obtained for educational settings on the variable of attitude toward training for new technology. Males had significantly more positive attitudes than females toward training for new technology.

Résumé

Le but de cette étude était de déterminer la fidélité et la validité des instruments de mesure de quatre variables, développées en Grande Bretagne, à propos de la formation de l'identité à l'adolescence. Ces quatre variables sont: disposition à une formation qui prépare à une nouvelle technologie, critère de référence qui tient compte de la réalité économique, croyance dans sa possibilité de succès, sentiment d'aliénation. De plus, la relation entre le type d'éducation et les attitudes de 255 jeunes canadiens sur le point d'entrer sur le marché de travail, fut examinée. Les résultats ont montré que, en ce qui regarde la fidélité et la validité de l'instrument, les données canadiennes sont comparables à celles de la Grande Bretagne. Selon le type d'éducation cependant, des différences significatives son apparues quand il s'agit de la variable disposition à une formation qui prépare à une nouvelle technologie. Toujours à propos de cette même variable, les garçons ont significativement démontré des attitudes plus positives que les filles.

INTRODUCTION

One of the most critical factors in the labour force experience of adolescents and young adults is the transition from school to employment. The need to develop appropriate education and training policies to facilitate this passage is important in view of the significant changes occurring in the industrial, technological, and communication fields.

Recent Canadian studies have tended to focus on parental occupations, economic conditions, and the developmental process involved in understanding work concepts. For example, in order to determine the ways in which parents might contribute to children's learning about the occupational world, Piotrkowski and Stark (1987) surveyed 88 families with school aged children. Respondents included parents who were em-

ployed in either blue-collar or service occupations and the children themselves. Results indicated that children are fairly accurate in their perceptions of their parents' job satisfaction and working conditions. They concluded that the family is important in helping children learn more about occupations and working conditions; however, their research did not address how the information children acquire affects the development of self-identity or shapes decisions related to the world of work.

Pautler and Lewko (1987) believed that prevailing economic conditions were more likely to exert influence on children's perceptions of the world of work than family life. They surveyed 1106 students from grades 6, 9, and 12 during an economic recession in Northeastern Ontario. In order to determine whether employment status of the father and the general negative economic climate influenced student attitudes toward work, the authors compared results with a representative sample of students from a positive economic climate in Alberta. Results suggested that direct exposure to unemployment did not have an overwhelming influence on student views toward the world of work. However, adolescents living in a negative economic climate had little confidence in their ability to get a job and to be successful. They indicated that young people from a negative economic climate held views that were consistent with a change in thinking away from the traditional work ethic.

Santilli and Furth (1987) considered a "relational-developmental" approach to determine young people's knowledge and understanding of work relative to employment and unemployment. For concepts of work, career, and occupation, results revealed a trend towards greater understanding with age for boys while girls tended to have a better understanding at an earlier age. It was suggested that sex-role socialization may have contributed to these differences. They concluded that perception and understanding of work varies across age and, to a lesser extent, level of formal reasoning for adolescents.

Industrialized countries facing problems of high youth unemployment are now recognizing the need for more effective integration of young people into the workforce (OECD, 1985). Various strategies have been undertaken. In a longitudinal study in the United Kingdom (U.K.), career paths of young people and initiatives to ease the transition to steady employment are being investigated. The purpose of this four-year study is to identify ways in which educational and occupational experiences influence adolescent identity and how this, in turn, affects economic and political values and behaviours in this age group (Bynner, 1986). It appears that certain of the variables central to the U.K. study would be useful in identifying the training and support needed by young Canadians about to enter the world of work. Variables which were of

interest included attitude towards training for new technology, economic locus of control, self-efficacy, and self-estrangement.

Variables Under Investigation

Technological changes over the last decade have influenced the labour market in which young people find themselves upon leaving school. The recent free trade pact with the United States will likely escalate the need for and development of technological skills with even further implications for young people preparing to enter the world of work. However, provincial policies to create a technologically skilled work force often assume that young people can make the transition from school to work as long as training and education are provided. Such assumptions fail to consider the importance of attitudes towards training for new technologies. According to Breakwell and Fife-Shaw (1987) young people's attitudes towards training for new technology are largely pragmatic rather than evaluative and are strongly related to psychological factors as well as to education and familial background. If we are to understand young people's approaches to work and their integration into the labour market, then the way they relate to new technology will become increasingly important as retraining initiatives are implemented.

During adolescence young people break away from the relative security of family and school and enter the more uncertain and sometimes confusing adult world. They become increasingly aware of the need for and the difficulty entailed in obtaining financial independence. Economic locus of control, a belief in control over one's reinforcements (Furnham, 1986), may help us to better understand exactly how young people feel about having to cope with an economy that will determine their own lives. If training schemes and educational courses are to be effective in preparing the job-entry workforce, it is important to know what young adults think about their actual economic reality.

Self-efficacy theory has proposed that two types of expectancies exert powerful influences on behaviour: outcome expectancies, the belief that certain behaviours will lead to certain outcomes, and self-efficacy expectancy, the belief that one can successfully perform the behaviour in question (Maddux, Sherer & Rogers, 1982). The self-efficacy expectancy variable is being investigated in this study. According to Bandura (1977), expectancies of self-efficacy are the most powerful determinants of behavioural change. These determinants are the initial decision to perform a behaviour, the effort expended, and persistence in the face of adversity. This variable has many implications for identity processes and may have some explanatory power as to how young people assess skills and competencies in their social context.

Researchers have shown that the late adolescence period is one during which "a major reduction of contact between youth and their parents

takes place” (Sprinthall & Collins, 1988, p. 509). Keniston (1965) introduces the concept of alienation to illustrate the distance that temporarily separates youth from their families and from the society in general. In fact, alienation may be a threatening reality especially if young people do not feel adequately prepared to get involved in society. Moreover, society at large is not always a welcoming one for those who have not yet demonstrated who they are and what they can effectively accomplish. It is in those circumstances that the feeling of alienation or self-estrangement emerges in young people who have to go through a precise transition. This is what Keniston means when he says that “the estrangement of youth entails the feeling of resolution, unreality, absurdity and disconnectedness from the interpersonal, social and phenomenological world” (1965, p. 637).

These four variables should be useful in explaining the process through which an individual becomes aware of the realities and meanings of his/her own existence and how this awareness influences career development. For most young people the successful movement into the labour force is an important transition from adolescence to becoming an adult. The extent to which this transition occurs has some influence on the formation of the self-identity. These variables when taken into account may help explain how young people experience and perceive a changing world of work.

METHODOLOGY

There were two purposes for the study. First, there was a need to determine reliability and validity of measures of the four variables for use with a Canadian sample. Attitude towards training for new technology, economic locus of control, self-efficacy, and self-estrangement were developed for use in U.K. studies of adolescent identity formation. A second purpose was to explore the relationship among educational settings and the four variables.

Research Subjects

Research subjects were from nine different educational settings in Eastern Ontario. They included three community college groups and six high school groups. The community college trainees were enrolled in the Futures Program which provides course work on basic academic and life skills combined with work experience. Two of these groups were from an urban area, one with a Grade 12 Diploma, one without. The other group was from a rural area with a mixture of students with and without Grade 12 Diplomas. Of the six high school groups, four were from an academic high school; Grade 12 General Level and Grade 12 Advanced Level groups were further divided into those participating and those not participating in a Cooperative Education Program. General Level stu-

dents take courses designed for employment after graduation or entry into community college programs. Advanced Level students take courses designed for entrance into post-secondary institutions. Cooperative Education students take courses which combine classroom studies with work experience for credits. Another group of high school students was from a vocational school and received training in basic academic skills and specific occupational fields. The sixth high school group, Transitional Education, was made up of potential dropouts who followed a program similar to the Futures Program.

Measuring Instrument

The 35 items in the measuring instrument were taken from the questionnaire adapted and developed in the United Kingdom: 16-19 Adolescent Identity Formation Initiative. Validity and reliability studies have been conducted on these items and subscales (Bynner, 1986). The four subscales Attitude Toward Training for New Technology (TECH), Economic Locus of Control (ECON), Self-Efficacy (SELF-EFF), and Self-Estrangement (SELF-EST), were presented to a group of high school teachers and to a group of instructors in the Futures Program in order to adapt terminology for young people in a Canadian context. In the modified instrument, 4 items measured TECH, 10 items measured ECON, 9 items measured SELF-EFF, and 12 items measured SELF-EST. There were five options per item ranging from 1 (strongly agree) to 5 (strongly disagree). The final version of the instrument after modification was piloted with a group of Futures trainees for readability and comprehensibility and proved to be satisfactory.

Data Collection

The measuring instrument was administered to students in the high school programs by teachers during a regular class period. Instructors in the community college administered the instrument to trainees during a life skills session. Prior to test administration, the researchers met with teachers and instructors to review administration procedures. Testing with the college trainees was completed in February 1988, and with the high school students in March, April and May of the same year.

RESULTS

To establish the reliability of the modified instrument, reliabilities of the four subscales were estimated using the alpha coefficient. They were .51 for TECH, .54 for ECON, .67 for SELF-EFF and .72 for SELF-EST. For ECON, reliability increased to .60 when items 5 and 8 were deleted. Reliability for the SELF-EFF subscale was increased to .70 when items 21, 22 and 23 were deleted. For SELF-EST reliability increased to .74 when

item 26 was deleted. These reliabilities compare quite favourably with those reported for the United Kingdom data, as shown in Table 1.

It is interesting to note the selection of items making up the subscales. In the U.K. and Canadian final subscales certain items were deleted. These decisions were made on the basis of increased reliability and the factor analyses described below.

Correlations among the four variables appear in Table 2. The two subscales, SELF-EFF and SELF-EST, are rather highly related ($r = -.58$). The other variables have little variance in common.

TABLE 1

Alpha Coefficients of the Four Variables for Canadian and United Kingdom Subjects (N = 255)

Variable	Items	Reliability
TECH-CDN	1-4	.51
TECH-UK	1-4	.66
ECON-CDN	5-14	.54
ECON-CDN	6, 7, 9-14	.60
ECON-UK	5-12	.48
SELF-EFF-CDN	15-23	.67
SELF-EFF-CDN	15-20	.70
SELF-EFF-UK	15-20, 25	.63
SELF-EST-CDN	24-35	.72
SELF-EST-CDN	24, 25, 27-35	.74
SELF-EST-UK	24, 26-35	.74

TABLE 2

Correlations among TECH, ECON, SELF-EFF, and SELF-EST (N = 255)

	TECH	ECON	SELF-EFF
ECON	.21	--	---
SELF-EFF	.16	.30	---
SELF-EST	-.14	-.27	-.58

To examine validity, a varimax principal component factor analysis of the 35 items specifying a four factor solution was done. This type of analysis was done to make it comparable to the U.K. analysis. The four factors accounted for 32.6% of the variance. Results appear in Table 3.

SELF-EFF and SELF-EST both seem to be part of Factor 1. Factor 3 also seems to have elements of both SELF-EFF and SELF-EST as well as ECON. SELF-EST items loaded negatively on Factors 1 and 3 while all but one SELF-EFF item had positive loadings on these two factors. This is certainly consistent with the negative correlation between these factors.

Factor 2 appears to be ECON and Factor 4 is TECH. Overall the factor analysis seems to support dropping items 5, 8 and 26 as they do not load on any factors. In addition, items 21-23 load on Factor 3 and not on Factor 1 as the other SELF-EFF items did.

Means for each dependent variable in each educational setting are shown in Table 4. The total subscale means were divided by the number of items so that one may compare across variables. It is interesting to note that for each group the SELF-EST mean was lowest and the SELF-EFF mean was highest.

To provide information relative to the second purpose, two-way analyses of variance were performed using group and sex as independent variables and TECH, ECON, SELF-EFF and SELF-EST as dependent variables.

A significant difference was obtained for groups, $F(8,235) = 2.90$, $p < .01$, and sex, $F(1,235) = 5.48$, $p < .05$, on TECH. Males ($M = 3.79$) scored significantly higher than females ($M = 3.58$). Using a Tukey HSD post hoc, no two educational groups differed significantly. In a further anal-

TABLE 3

Factor Loadings* of the 35 Item Scale Based on a Principal Components Analysis and a Varimax Rotation

Variable Item No.	Eigen Value			
	5.216	2.419	2.076	1.697
TECH	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
1	--	--	--	.63
2	--	.41	--	.38
3	--	--	--	.47
4	--	--	--	.74
ECON				
5	--	--	--	--
6	--	.63	--	--
7	--	.49	--	--
8	--	--	--	--
9	--	.41	--	--
10	--	.54	--	--
11	--	.36	.41	--
12	--	.49	--	--
13	--	.57	--	--
14	--	--	.43	--
SELF-				
EFF				
15	.36	--	--	--
16	.57	--	--	--
17	.59	--	--	--
18	.61	--	--	--
19	.50	--	--	--
20	.45	--	--	--
21	--	--	.70	--
22	-.36	--	.33	--
23	--	--	.63	--
SELF-				
EST				
24	-.63	--	--	--
25	--	--	-.54	--
26	--	--	--	--
27	-.59	--	--	--
28	-.46	--	--	--
29	-.64	--	--	--
30	-.45	--	--	--
31	-.51	--	--	--
32	-.40	.30	--	--
33	-.49	--	-.35	--
34	-.63	--	--	--
35	--	--	-.30	.31

* Only loadings of .30 or larger are included.

ysis it was found that the three Futures groups scored significantly higher than the four academic high school groups. No significant differences were found for group or sex on the other three subscales.

TABLE 4

Mean Item Scores by Group for Each of the Four Dependent Variables

<u>Group</u>		<u>Variables</u>			
	N	TECH	ECON	SELF-EFF	SELF-EST
<u>College Trainees</u>					
Urban					
Grade 12 Diploma	64	3.87	3.56	3.98	2.56
No Grade 12 Diploma	35	3.94	3.75	4.01	2.51
Rural					
With/Without Diploma	39	3.75	3.70	3.93	2.49
<u>High School</u>					
Academic					
General Level Regular	56	3.60	3.67	3.96	2.56
Advanced Level Regular	19	3.79	3.72	3.97	2.46
General Level Coop	16	3.44	3.79	3.83	2.81
Advanced Level Coop	17	3.38	3.46	4.10	2.49
Vocational					
	11	3.98	3.52	4.08	2.44
Transitional					
	24	3.42	3.54	3.73	2.70

DISCUSSION

Based on the results of this study, reliability estimates of the four subscales compare quite favourably with those reported in the United Kingdom. As well, the validity of the modified instrument is comparable to data reported in the U.K. As with the U.K. results, it would appear that TECH is the most meaningful variable in describing transitional school to work perceptions.

As indicated earlier, Self-Efficacy and Self-Estrangement are highly negatively related. They also loaded on the same factors in the factor analysis. It would appear then that SELF-EFF and SELF-EST may be measuring the same construct. In the development of their identity, it is reasonable to expect youth high in Self-Estrangement to be low in Self Efficacy and vice versa. Further testing is required perhaps using different instruments that measure SELF-EFF and SELF-EST.

One of the interesting findings in the study was that trainees from the Futures Program differed significantly from students in an academic high school program on their attitudes towards training for new technology. One common characteristic of all trainees in the community college Futures Program is that they have been out of the educational system for more than a year and probably have applied for some form of employment requiring knowledge and skill of the new technology. Having been unsuccessful in obtaining this job-entry employment, these trainees may have developed certain beliefs and attitudes about the importance of technical training. These attitudes may be quite different from those of high school students who are still preparing for the world of work. However, no difference was found between the trainees with or without a Grade 12 Diploma, nor between those in a rural or an urban program setting. As well, no difference was found between students in the Cooperative Educational Program and students in the traditional high school program. One may have speculated that students who have chosen the cooperative education option would have had the opportunity to view the many facets of work and the importance of technical training and, therefore, formed attitudes different from regular stream students. This was not the case in the study.

As reported above, males scored significantly higher on the TECH variable than females. It may be that female high school students and college trainees still view technical training as a more appropriate job preparation step for males. As well, youth may have been socialized over a span of ten years in the education system to believe that computer operators, computer analysts, and computer technicians were male-dominated professions. Further research on sex attitudes towards technical training is required.

One of the objectives of the Transitional Program is to integrate student learning and work information in order to ease the eventual transi-

tion from school to employment for a potential dropout population. No differences were found between this student group and college trainees or traditional students on their attitudes towards technological training.

It was indeed surprising, however consistent with the U.K. study findings, that no significant differences were found among educational settings for ECON, SELF-EFF, and SELF-EST. Related to ECON, one could perhaps conclude that individuals in college retraining programs experience a temporary sense of financial security afforded by government/program subsidies. For the variables, SELF-EFF and SELF-EST, it is possible that high school students may not have experienced the feelings of frustration and failure in seeking employment while for those enrolling in educational retraining programs, the feelings of powerlessness and alienation may be counteracted. In addition, King and Hughes (1985) noted that “. . . young people will likely have a greater motivation for education the second time around because of their experiences in the world of work” (p. 16). Thus, it may be reasonable to assume that young people who make a conscious decision to change their situation in life by upgrading their education and skill level, may have already resolved some of their feelings of powerlessness and alienation.

As Pautler and Lewko (1987) suggest, community wide economic conditions can play a major role in influencing adolescents' views of the world of work. In this study, data were collected from eastern Ontario which is characterized by a positive economic climate. Additional research is required investigating the attitudes and beliefs of young people in different geographic locations and economic circumstances. Is the transition from school to work the same for young adults in different regions of Canada? This also raises the issue of a need to develop instruments that would measure these variables among French-speaking adolescents and young adults.

References

- Bandura, A. (1977). *Social learning theory*. Englewood, NJ: Prentice-Hall.
- Breakwell, G. M., & Fife-Shaw, C. (1987). Young people's attitudes toward new technology: Source and structure. In J. Lewko (Ed.), *New directions for child development*. San Francisco: Jossey-Bass Inc.
- Bynner, J. (1986). *ESRC 16-19 initiative: Research design*. Unpublished paper, the Open University, United Kingdom, 46 pages.
- Furnham, A., (1986). Economic locus of control. *Human Relations*, 39(1), 29-43.
- King, A., & Hughes, J. (1985). *Secondary school to work: A difficult transition*. Research Committee of the Ontario Secondary School Teacher's Federation. Toronto, Ontario.
- Keniston, K. (1965). *The uncommitted: Alienated youth in American society*. New York: Harcourt, Brace & World.
- Maddux, J., Sherer, M., & Rogers, R. (1982). Self-efficacy expectancy and outcome expectancy. *Cognitive Therapy and Research*, 6, 207-211.
- Organization for Economic Co-operation and Development (1985). *New policies for the young*. Paris.

- Pautler, K., & Lewko, J. (1987). Children's and adolescents' views of work world in times of economic uncertainty. In J. Lewko (Ed.), *New directions for child development*. San Francisco: Jossey-Bass Inc.
- Piotrowski, C., & Stark, E. (1987). Children and adolescents look at their parents' jobs. In J. Lewko (Ed.), *New directions for child development*. San Francisco: Jossey-Bass Inc.
- Santilli, N., & Furth, H. (1987). Adolescent work perception. In J. Lewko (Ed.), *New directions for child development*. San Francisco: Jossey-Bass Inc.
- Sprinthall, N., & Collins, A. (1988). *Adolescent psychology: A developmental view*. New York: Random House.

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