

Title: Self-efficacy and Views about Work and Training: Report on a Current Pilot Study in Ontario

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INTRODUCTION

According to a recent Canadian government report, one of the most critical factors in the labour market experience of young adults is the smoothness of the process of transition from school to permanent employment. Many young people in Canada now encounter some difficulty in making this transition (Employment - Immigration Canada, 1983). The need to develop education and training policies to facilitate the transition from school to work is perceived as important in view of the changes that are occurring. Coupled with this accelerated change are the structural barriers confronting young people. Many unskilled entry-level jobs have been obliterated due to technological advances and international competition. This means that more people are now competing for fewer jobs and specialized fields of work.

The United Kingdom is currently facing similar problems of high youth unemployment and seeking ways of achieving more effective integration of young persons into the work force. An interest in understanding and comparing the various experiences of young people and initiatives to ease the transition to steady employment prompted a four month study visit, by Dr. Maurice Taylor, to the University of Surrey, in 1987. A focus of the study visit was participation with the Swindon Research Team in the 16-19 Adolescent Identity Formation Project. This longitudinal study is investigating ways in which educational and occupational experiences influence adolescent identity and how this, in turn, affects economic and political values and behaviours in the age group of 16-19.

The current situation of Canadian youth appears, on the face of it, to have many parallels with the situation of young people experiencing the transition to adult life in Britain and Western Europe. But, as Ashton (1988) points out, there are some fundamental differences in the structures of the respective youth labour markets which need to be considered. One point of contrast lies in the age of labour market entry and level of educational credentials. In Canada, most young people continue in high school education to 12th grade, usually reached at around the age of 18. Those who do not proceed to the 12th grade ('high school drop outs') have very restricted employment chances. A difference in opportunity structure is also identified by Ashton, in that the route of entry by apprenticeship and training schemes leading to skilled worker status is a minor one in Canada. As far as regional differences are concerned, labour markets vary from region to region as they do in the U.K., but the differences we argued to be of greater significance in Canada.

According to the Report of the Special Senate Committee on Youth (1986) young people from poorer families and remote regions, have high drop out rates from schooling. In the Atlantic provinces and the West, youth underemployment and unemployment are continuing difficulties. In Central Canada, the growth of new technology industries and the service sector appears to be creating more and labour market openings for young people. Yet even in this region, a recent study by the Ontario Manpower Commission (1987) reported that a considerable proportion of out-of-school youth are experiencing difficulties in making successful transitions from school to work. The high incidence of labour force turnover and unemployment particularly among those with a high school education or less, has strengthened the case for continued and strengthened counselling, up-grading and work experience programs so that these youth acquire the skills they need to compete effectively in the labour market. The report also demonstrated that the out-of-school youth, who consist largely of young people between the ages of 20-24 with high school education, experience considerable difficulty in maintaining steady employment. Out-of-school youth have a very high probability of experiencing some unemployment during the course of a year, one in two in the case of 15-19 year olds and one in three in the case of 20-24 year olds. (p. 35) Involvement in schemes of part-time employment/part-time study is common among 18-24 year olds.

In a study of the characteristics of Canadian youth, Goldfarb (1983) identified that having a steady job, being successful and having a stable, fulfilling family life were important aspirations for over 80% of the sample. But

despite the high ratings given to traditional work-related values, Baker (1985) found that many youth expect to start at the top, or at least closer to it than they have done historically. Boys seem to be more realistic than girls when it comes to employment expectations, although they too are surprisingly optimistic given the current rate of unemployment. Girls seem to feel that movement in and out of the labour market for child rearing and family responsibilities presents no major problems when, in fact, job re-entry is a major obstacle for a large number of Canadian women. Dryden (1986) reports that studies of employers and their attitudes to youth also suggest a somewhat problematic youth profile. For entry level jobs of various categories such as general labour, skilled labour, managerial, professional and technical, employers placed the greatest value on attitude and commitment to work and personal characteristics. Yet in applying these standards to youth in general, employers were only moderately satisfied with youth attitudes and personal skills. (p. 13)

In this context it appeared that certain variables central to the 16-19 Adolescent Identity Formation Project would be informative both theoretically and in policy terms, for the provision of training and support for young Canadians about to enter the world of work. Variables which were of interest included (1) attitude towards training for new technology (2) economic locus of control - the application of the locus of control concept to economic behaviour (3) self efficacy - measuring belief in one's ability to perform successfully: expectation of personal mastery and success (4) self-estrangement - the psychological component of alienation. Earlier studies in the United Kingdom suggested that these variables were related to problems of young people hoping to enter the work force (Breakwell, 1985; Breakville, Fife-Schaw and Devereux, 1987; Breakwell and Fife-Schaw, 1987 a; Breakwell and Fife-Schaw, 1987 b).

PERSONAL AND CAREER DEVELOPMENT

The theoretical interests of the Canadian team, drawn from the Psychopedagogical Concentration in the University of Ottawa, lie in the exploration of relationship between career development and personal development, and their implications for the design of educational interventions.

Super's work (1957, 1980, 1983, 1985) establishes the link between personal development and career development. Career development is a process, not an event, he argues. Individual self concepts, personal history and the psychological environment of the individual are major determinants of the process of career development.

Self-efficacy is an element of identity formation which could be expected to involve evaluation of the likelihood of success in the options available. Self-efficacy theory states that behaviour changes, and therefore decisions made, are mediated by expectations of efficacy - expectations or beliefs that one can perform a given behaviour.

Young people cannot set aside their past experiences when considering their ability to perform tasks. Indeed if several occupations have been successively taken up and then abandoned, it is likely that the young person will harbour doubts about chances of success in others. Bandura (1977) emphasizes that it appears possible to increase self-efficacy as a result of various types of 'treatment' and intervention.

Similarly, estrangement may arise when young adults feel inadequately equipped to establish their place in society or when they have not been able to show, in any significant way, what they really are and what they can achieve (Keniston 1965). It is of interest to educationalists to discover how far it might be possible to reduce estrangement through interventions of different kinds.

If a young person believes in his/her own capacity to shape life chances, the task of adjusting to and entering the labour market becomes a task of self-appraisal and negotiation (seeking out of opportunities) taking into account the reality of the context. Economic locus of control is therefore likely to be a determinant of successful integration, as is the ability to take into account realistically the socio economic climate of society. Finally, that socio economic reality demands that a proportion of young people will have to commit themselves to new technology training if they wish to secure their desired occupations. Motivation and the ability to sustain it in the face of difficulty is also likely to be an important determinant of successful integration in this domain.

The pilot study was prompted by an interest in exploring these four constructs in the Canadian context of education and training.

PURPOSE

In 1988 a research team at the University of Ottawa initiated a small scale pilot study designed to examine the relationships between some beliefs and attitudes of young Canadians soon to enter the workforce and their educational/training 'settings'. The aim of the pilot has been:

- (a) to validate four subscales (relating to New Technology Motivation, Efficacy, Estrangement and Economic Locus of Control) for use in the Canadian context.
- (b) to make an initial exploration of relationships between those four psychological constructs and type of educational/training setting, age, sex and length of time in programme.

The overall intention of this work (still in progress) is to develop hypotheses and test instruments for a larger scale Canadian study. The longer term aim is to establish a study with potential for direct comparison with the UK identity formation study, through use of common instruments.

METHOD

The research subjects were 121 vocational and general high school students, 113 trainees from community college training program for young people with employment difficulties and 25 students from programs for potential dropouts.

The educational settings were as follows:

- Secondary School-Academic. Students were enrolled in these schools in general or advanced level courses. They choose their level depending on their self-assessment in consultation with staff.
- Secondary School-Vocational. The program includes basic academic skills and training in a specific vocational field.
- Co-operation Education Program. This program is provided for students in many of the secondary schools. The student takes regular course work and also gains on the job experience.
- FUTURES. This is a provincially funded program for young adults (up to age 25) to provide basic academic and life skills combined with substantial work experience through job placements. This program is provided at Algonquin College.
- Transitional Program. This program is quite similar to FUTURES. However, it is conducted for high school aged dropouts at the Parkway School in Ottawa. This program is supported by the Ottawa Board of Education.

For the purpose of this study, students were grouped into nine categories, each reflecting a different type of training or educational setting. These categories were:

0. The Futures Program - Ottawa (trainees with a grade 12 diploma)
1. The Futures Program - Ottawa (trainees who did not complete a grade 12 diploma)
2. The Futures Program - Perth, Hawkesbury, Renfrew satellites (trainees are a mixture of grade 12 graduates and high school dropouts)
3. Transitional Program
4. High School (Vocational) - Basic Level students - grade 12
5. High School (Academic) - Grade 12 General students
6. High School (Academic) - Grade 12 Advanced students
7. High School (Academic) - Co-op - General students
8. High School (Academic) - Co-op - Advanced students

MEASURING INSTRUMENT

A pilot questionnaire was constructed to incorporate 34 Likert items from the 16-19 Initiative 1987 (T1) questionnaire. Of these, 20 items were taken from the 'Views about Self' section. These included efficacy items drawn from Sherer (1982) estrangement items from the Hammond (1984) scale together with some items designed to identify any effects of social monitoring/comparison. Four items relating to attitudes to new technology training and 9 economic locus of control items were drawn from the 'Views about jobs and training' section. The new technology items were drawn from the Breakwell and Fife-Schaw (1986) scale and the ELC items were developed from Furnham (1986).

The 34 items were presented to a group of instructors in the Futures Programme in order to modify terminology for young people in a Canadian context. After modification and addition of questions to elicit respondents' age, sex and length of time in the particular educational/training programme, the instrument was piloted with a group of Futures trainees, for readability and comprehensibility.

DATA COLLECTION

The questionnaire was administered to students in the four high school programmes 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 researcher met with teachers and instructors to review administration procedures. Testing in the training environment was completed in February 1988, and in the high school programmes in March, April and May 1988.

SUMMARY OF RESULTS FROM PRELIMINARY ANALYSIS

Factor analysis (PC, Varimax) and internal reliability analysis confirmed the existence of four interpretable subscales with varying internal reliability estimates. The subscales mapped closely onto those generated by the UK analysis in the cases of Attitude towards Training for New Technology (TECH), Self-efficacy (EFF), and Self-estrangement (EST)*.

* Details of these subscales are given in papers presented by Chris Fife-Schaw and Glynis Breakwell.

In the case of Economic Locus of Control, the reliability estimate was increased to .59 by deletion of 2 of the original Furnham items - a substantial improvement on the best reliability estimate obtained in the UK. Reliability estimates are summarized in Table 1 and compared with those obtained on the UK data.

Table 1

Comparison of Reliability Estimates

	Tech	Econ	Econ**	Self-Eff	Self-Eff*	Self-Est
N	244	243	243	242	242	243
Canadian Data	.52	.49	.59	.67	.70	.72
UK Data (best reliability estimates)	.66	.48		.63		.74

* with one item deleted

** with two items deleted

Table 2

Correlation Among Variables

	Tech	Econ	Self-Eff*
Econ		.274	
Self-Eff	.125	.220	

* Low scores indicate high estrangement

One-way analyses of variance were undertaken with educational/training setting as independent variable and TECH, ECON, SELF-EFF and SELF-EST scores as dependent variables. Results in Table 3 indicate that no two groups were significantly different on the Attitude to New Technology measure using the Tukey HSD test post hoc. However, groups 0, 1, 2 (Futures Training Programme) as compared with Groups 5-8 (High School General, Advanced and Co-operative Programmes) were significantly different, with the Futures trainees apparently more 'protechnology' than their high school counterparts. No significant differences were found on the Economic Locus of Control, Self-Efficacy and Self-Estrangement variables.

One way analyses of variance were undertaken with age as independent variable and TECH, ECON, SELF-EFF and SELF-EST as dependent variables. Using the Tukey HSD test, a significant difference was found between those in the age group 21-24 as compared with those aged 15-17 and 18-21 respectively, on the Attitude to New Technology variable with the 21-24 age group apparently more protechnology. Again, no significant differences were found on the ECON, SELF-EST and SELF-EFF measures.

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. Significant differences were obtained for both group and sex on the variable Attitude to New Technology. The analysis did not include data from Group 4 (Transitional Programme) because of its small cell size. Group accounted for 9.2% of the variance, while sex accounted for 2.2%, with males apparently more motivated than females. Again, no significant differences were found on the ECON, SELF-EFF and SELF-EST variables.

A number of additional analysis were performed. No significant differences were found on the 4 measures between co-op student and non co-op students (groups 7, 8 vs groups 5, 6). No significant difference was found between general and advanced level students (groups 5, 7 vs. groups 6, 8). One-way analysis of variance of number of weeks in the programme for Future trainees was performed. No significant difference was found. A two-way analysis of variance on groups from Futures and number of weeks in programme yielded no significant difference. Three-way analysis of variance by group, sex and age on Futures trainees produced no significant differences.

DISCUSSION

Interpretations of these initial findings have yet to be offered by the Canadian team, given the recency of the analyses. However, comparison of these initial results with the UK findings enable some tentative observations to be made at this stage.

1) Efficacy and estrangement

The pilot Canadian Study has confirmed that the efficacy and estrangement subscales in use in the 16-19 Initiative are valid for use in the Canadian context.

UK results from multiple regression analysis (using background variables of sex, age, social class, educational performance, race, labour market status and geographical area as independent variables and efficacy/estrangement as dependent variables have been reported elsewhere - Glynis Breakwell's paper) are disappointing in the sense that little of the variance in the self scores appears to be accounted for by these variables, some of which have traditionally been held to be major sources of self-esteem.

The results of this more limited Canadian pilot are similarly disappointing. While school performance and trajectory were the only variables contributing independently to variance in the self scores (2.2%) in the UK study, no such effect is suggested by the Canadian analysis, where educational/training setting did not contribute significantly to variance in the estrangement and efficacy scores. A problem here is that educational/training settings are not comparable with the UK career trajectories (in particular, there appears to be nothing to parallel the YTS/Unemployed trajectory in the Canadian work). However, from a theoretical standpoint, it could be expected that the Futures trainees, most of whom have a history of employment difficulties, would be significantly less efficacious and more estranged than their academic counterparts. Cultural differences may have a part to play (Ashton observes that young Canadians appear to have the expectation of continued self development and are generally more positively orientated towards further education and training than their British counterparts -- there is little to parallel the UK phenomenon of anti-school street culture in Canada). An area effect may also be involved here - the Canadian pilot study was conducted only in the relatively affluent and expanding labour market context of Ottawa. While this is little more than speculation, it does highlight some of the questions which will need to be addressed in the design of any larger scale Anglo Canadian Study.

2) New Technology

The results on this scale are generally problematic in view of the low reliability estimate. On the face of it sex, age and participation in the Futures programme appear to contribute to motivation towards new technology training. UK findings are not directly comparable but have shown that new technology motivation appears to be predicted principally by previous academic choice and performance. Given that Futures trainees are generally held to be lower educational achievers, the differences in these results are difficult to explain at this stage. A possible factor here may be the nature of the Futures programme. A possible factor here may be the nature of the Futures programme, which actively engages many of the participants in the use of new technology in their work experience and course programmes.

3) Economic Locus of Control

The improved reliability estimate obtained on this measure in the Canadian context is encouraging, in view of the decision to retain the (initially unscalable) Economic Locus of Control items in the UK questionnaire - this on grounds that a stronger dimension might emerge on these items at a later stage in the study.

CONCLUDING REMARKS

The purpose of this paper has been to inform workshop member about the interest of the University of Ottawa team in linking with the 16-19 Initiative, and to make a preliminary report on outcomes of pilot work. The results, while

somewhat disappointing, at least verify that the self measures are useable in the Canadian context, and the exercise has indicated some of the factors which would need to be taken into account in any more substantial comparative study. The Ottawa team will review these outcomes and decide the direction of any future work. Given the motivation of this Canadian team to continue work linked with the Initiative (as it relate to their interests as educationalists) advice is sought from workshop members on directions which might usefully be pursued.

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Table 4

One-Way Analysis of Variance for Attitude Toward Training and Age

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB
BETWEEN GROUPS	2	50.43	25.22	3.80	.02
WITHIN GROUPS	244	1618.58	6.63		
TOTAL	246	1669.01			

GROUP	COUNT	MEAN	STANDARD DEVIATION
Grp 1 (15-17)	87	14.52	2.17
Grp 2 (18-20)	114	14.47	2.78
Grp 3 (21-24)	46	15.65	2.75
TOTAL	247	14.71	2.61

Table 5

Two-Way Analysis of Variance for Attitude Toward Training, Group and Sex

SOURCE OF VARIANCE	SUM OF	DF	MEAN	F	SIG
MAIN EFFECTS	185.96	8	23.25	3.96	.000
GROUP	138.81	7	19.83	3.37	.002
SEX	32.97	1	32.97	5.61	.02
2-WAY INTERACTIONS	71.58	7	10.23	1.74	.10
GROUP SEX	71.58	7	10.23	1.74	.10
EXPLAINED	238.23	15	15.88	2.70	.001
RESIDUAL	1275.33	217	5.88		
TOTAL	1513.56	232	6.52		

Table 6

Cell Means for Two-Way Analysis

GROUP	0	1	2	3	5	6	7	8
	15.67	15.79	15.03	13.73	14.31	15.16	13.75	13.53
	(33)	(34)	(37)	(22)	(55)	(19)	(16)	(17)
	SEX 0 (FEMALE)		SEX 1 (MALE)					
			14.35	15.10				
			(109)	(124)				

	SEX	
	GROUP 0 (FEMALE)	1 (MALE)
0	15.67 (12)	15.67 (21)
1	16.67 (12)	15.32 (22)
2	14.90 (21)	15.19 (16)
3	13.30 (10)	14.08 (12)
5	13.55 (22)	14.82 (33)
6	15.00 (11)	15.38 (8)
7	12.63 (8)	14.88 (8)
8	12.77 (13)	16.00 (4)