

A STUDY OF LOCUS OF CONTROL WITH ADULT STUDENTS

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Abstract

This study investigated the relationship between locus of control and achievement, and the relationship of locus control and attrition with adult students in an upgrading program. The subjects were acquired from the Alberta Vocational Centre, in Calgary, Alberta, Canada. Rotter's I-E Scale was administered to 86 students. After five months, no significant difference was found between internal and external students in age, intelligence, last grade completed or achievement. A significant difference was found between the internal and external groups in attrition with the internal individuals demonstrating a greater degree of persistence in the program. Implications of the results and suggestions for further research were discussed.

Résumé

Cette étude porte sur le lieu de contrôle et ses liens avec le rendement et l'abandon des cours chez des étudiants adultes. Les sujets proviennent du Alberta Vocational Centre de Calgary au Canada. Un total de 88 étudiants répondent à l'Echelle I-E de Rotter. Cinq mois plus tard, on ne décèle pas entre les étudiants internes et externes de différence significative quant à l'âge, à l'intelligence, au dernier niveau d'étude complété non plus qu'au rendement. On observe toutefois une différence significative en termes d'abandon du cours: les sujets internes persévèrent davantage dans leurs études que les sujets externes. Les auteurs dégagent les implications de ces résultats et suggèrent des pistes de recherche à poursuivre.

Research on locus of control and achievement has tended to focus on grade school children or college students, evading other populations such as adults in upgrading programs. Locus of control is a construct derived from Social Learning Theory (Rotter, 1954) which is based on the generalized expectancy concerning the control one can exert over the consequences of his behavior. The central concept of locus of control theory is that individuals differ in the degree to which they believe reinforcements are contingent upon their own behavior (internal) or outside forces (external). This allocation of responsibility for an outcome affects the strength of

the generalized expectancy of reinforcement with a greater degree of expectancy occurring when a reinforcement is seen as contingent upon one's own behavior (Rotter, 1966). There are two poles on the locus of control continuum and as a general principle internal control refers to the perception of events as being a consequence of one's own actions and thereby under personal control. Whereas, external control refers to the perception of events as being unrelated to one's own behaviors and therefore beyond personal control (Rotter, Seeman, & Liverant, 1962). Rotter (1966) feels that a logical extension of internal-external control is that: "Those at the internal end of the scale would show more overt striving for achievement than those who felt they had little control over their environment" (p. 21). This contention is

substantiated by research in which a relationship between locus of control and achievement has been found (Rotter, 1966; Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York, 1966; Lessing, 1969; Lefcourt, 1976). Arguments such as defensive externality (Rotter, 1975), cultural roles (Duke & Nowicki, 1974), and weaknesses in Rotter's I-E scale (Joe, 1971) have been offered as explanations for the sometimes inconsistent findings. However, in general, it appears that an internal locus of control is positively related to achievement.

A continuing problem in most adult education programs is the high percentage of student dropouts. Persistence and the ability to delay gratification is reported to be characteristic of internal individuals (Rotter, 1966; Lefcourt, 1976; Phares, 1976). Research on this aspect of locus of control with adults in upgrading programs has not been reported. If indeed there is a relationship between locus of control and program completion, it would then seem possible to identify individuals who potentially could have problems in persisting through an upgrading program. Perhaps appropriate counselling programs or other remedial strategies could be established in an attempt to help these students be successful.

In the present study it was hypothesized that internality would be related to achievement and program completion in an upgrading program given that locus of control is independent of intelligence, age, and last grade completed.

Method

Sample

The students used for this study were derived from the Alberta Vocational Centre, in Calgary, Alberta, Canada. These students were enrolled in the Basic Level 3 Program (grades 7-9) for a 5-month period. There were 86 students at the onset of the investigation with 21 individuals dropping out before completing the program, and 17 students accelerating into the grade 10 level. Ages ranged from 17 to 51 and the last grade completed ranged from grades 6 to 12. Of the total sample there were 50 women and 36 men.

Instruments

Two instruments were employed in this study: (1) Raven's Progressive Matrices and

(2) Rotter's I-E Scale. Raven's Progressive Matrices was developed by Raven and Penrose (1938) as a measure of Spearman's "g" factor. It consists of 60 matrices each of which has a part missing and the subject chooses the missing part from 6 or 8 alternatives. Reliability and validity of the test is substantial. Retest reliability varies approximately between .70 and .90 in groups of older children, moderately homogeneous in age (Burke, 1958; Anastasi, 1976).

The I-E scale was developed by Rotter (1966) to assess generalized expectancies for internal vs external control of reinforcement. It is a forced-choice test which consists of 29 items, 6 of which are filler items intended to disguise the purpose of the test. Despite criticisms (Gurin, Gurin, Lao, & Beattie, 1969; Joe, 1971; Levenson, 1973) the scale is supported by considerable evidence of reliability and construct validity (Rotter, 1966; Phares, 1976; Anastasi, 1976).

Although Rotter (1966) reported that correlations between the I-E scale and the Marlowe-Crowne Social Desirability Scale ranged from -.07 to -.37, Joe (1971) contends that recent findings in this area are contradictory and suggests that the I-E scale is not free of social desirability to the degree claimed by Rotter. However, Phares (1976) explains that it is important to remember that such correlations are not independent of the situation under which the testing is carried out. Therefore the relationship between I-E scores and social desirability can change with different testing conditions.

Procedure

Both instruments were administered to all subjects at the beginning of their program. A median split of I-E scores was used to determine locus of control with a score of 10 or less determining internals and a score of 11 or more determining externals. The independent *t* test indicated no significant differences between the internal and external students in age, intelligence, or last grade completed. Because of the questionability of parametric assumptions a non-parametric *t* test was used (Edgington, 1979). Since no prediction of direction was made, a two-tailed *t* test was conducted with a level of .05 being considered acceptable.

The statistical technique of the chi-square (X^2) test of significance was performed to

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determine whether the observed and theoretical frequencies between locus of control and attrition differed. A significance level of .05 was again considered acceptable.

Overall achievement was determined by calculating the arithmetic mean of the assigned ranked scores for Mathematics and English grades. A list of individuals who either dropped out of the course or who were accelerated into the next level was provided by Alberta Vocational Centre, Calgary, at the end of the program.

Results and Discussion

No significant difference was found between the internal and external groups in terms of age, intelligence and last grade completed (see Table 1). Therefore, it was hypothesized that if the two groups differed in their achievement or attrition rates the difference could possibly be explained in terms of their locus of control orientation.

TABLE 1
Means, Differences Between Means, and Levels of Probability

Variable	Groups		$\bar{X}_I - \bar{X}_E$	Probability of Difference
	Internal L of C	External L of C		
	N = 50	N = 36		
Last Grade Completed	8.83	9.16	.94	.14
Age	24.56	23.28	1.28	.44
Raven's P.M.	40.80	39.22	1.58	.26
G.P.A. in Math and English*	7.43	6.00	1.43	.08

* Grade point was calculated on the following basis:

A = 10; A- = 9; B+ = 8; B = 7; B- = 6; C+ = 5; C = 4; C- = 3; D+ = 2;

D = 1.

The mean achievement scores of internal vs external students were subjected to the independent *t* test with the significance of *t* determined following Edgington's procedure. There was no significant difference between the two groups although the internal students did achieve a slightly higher mean score than the external students (see Table 1). Further analysis of the data seemed to indicate that internality was significantly related to achievement for men. The internal men achieved significantly higher scores than did external men ($p < .01$). It also appears that external women achieved significantly higher grades than did external men ($p < .01$). These results suggest three things: (1) Rotter's I-E scale is not free of sex differences and that in fact there may be an interaction between sex and locus of control; (2) externality is related to

achievement for women; (3) the concept of "defensive externality" (Rotter, 1975) is operating for females since there was no significant difference between internal and external females in achievement. These results substantiate the cultural-role interpretation suggested by Duke and Nowicki (1974), whereby females adopt an external orientation in order to be congruent with the expected female role of passivity. Women, who in reality possess an internal locus of control may verbally express externality as a defensive action or as a result of a "fear of success." This finding has implications for adult educators in that programs should be presented in a manner whereby women may retain feminine characteristics positively related to achievement without fear of recriminations. The results also suggest a need for further research investigating sex differences as they relate to locus of control.

An important finding of this study was that a significant relationship was found between attrition and locus of control, with external students demonstrating a higher dropout rate than internal students. Sixty-two percent of the students who dropped out were external and 38 percent internal.

TABLE 2
Relationship Between Variables
(Contingency Coefficients)

Variable	Contingency (ϕ)	χ^2	Level of Sig.
L of C and Attrition	.23	4.59	.05
L of C and Acceleration	.30	7.90	.005
L of C and Program Stream	.45	9.86	.005
Program Stream and Sex	.30	2.05	.05

Contingency coefficients indicating the relationship between locus of control and other variables are presented in Table 2. The contingency coefficient is a correlation and therefore provides an estimate of the variance in the criterion which can be accounted for or postulated by the predictor variable. Hence a contingency coefficient of .23 between locus of control and attrition would suggest that locus of control can account for 5% of the variance in attrition. However, about 95% of variance in attrition cannot be predicted by locus of control and must be explained by other factors such as personal and financial situation, interest, aptitude, and motivation. Many students in this program are required to attend classes if they are to receive financial assistance from social service

agencies. Some of these students lack ability which results in frustration and eventual withdrawal from the program. Several personal problems leading to withdrawal, including sick children, baby-sitting problems, and threatening husbands have been identified. Some students are required to withdraw due to poor attendance. It also should be noted that although locus of control can account for 50% of the variance in attrition we may not assume on the basis of our evidence that a causal relationship exists between the two variables. If a causal relationship does exist however it will have considerable relevance for adult educators because locus of control can be altered (Reimanis, 1971; Masters, 1970). Since attrition is one of the major problems in adult education, we suggest that locus of control be considered among other indicators of potential dropout.

It will be noted from Table 2 that locus of control is even a better predictor of program stream and acceleration within the program. It can account for about 90% of the variance in acceleration and about 20% of the variance in program stream. Assuming a causal relationship between locus of control and the variables in Table 2, pre-entry counselling programs could possibly be designed to alter locus of control and thus reduce attrition, increase acceleration and modify choice of program stream.

Analysis of the distribution of program status revealed that a significantly greater number of internal vs external students were accelerated (88.24%) and were in the academic program (76.92). Individuals who show above-average progress are placed into the next program level, which in this case, is grade 10. Grade 10 is broken into academic and pre-commercial streams. The Chi-square results substantiates these relationships as shown in Table 2. Both of these findings confirm Rotter's (1966) contention that internal individuals place a greater value on skill or achievement reinforcements. Counselors could possibly consider this finding to enhance their client's motivation. If students feel like they have more control over their own future they might choose more appropriate goals rather than whatever seems to come their way.

Further analysis of the program status distribution indicated that the academic stream contained significantly more men than women. Conversely, more women than men were

found in the pre-commercial stream. The academic stream had an equal distribution of internal men and women. However, in the pre-commercial program 66% of the women and only 33% of the men indicated an external locus of control. These results are once again congruent with the passive role model of Duke and Nowicki (1974), and Burlin's (1976) findings that women who choose traditional careers like secretarial work are most typically external in their locus of control orientation. These findings along with the finding that internality is associated with higher academic aspirations have implications for counsellors and other individuals involved in the orientation of potential upgrading students. A more thorough search of possible careers should be attempted with applicants so that individuals who would otherwise enter a stereotypical vocation will examine their choices more closely (especially women entering an upgrading program). All possible alternatives should be explored so that individuals may choose a career on the basis of their own aspirations, and not imagined expectancies or erroneous feelings of inadequacy. The feeling of being "out of control" is not uncommon for adult students. Counselors must take the responsibility to show their clients that it is possible to take positive control of their own lives. The problems of daycare, money, and numerous other obstacles of adult students should not take precedence over career aspirations. Counselling towards a more internal orientation should lead an individual to a more successful experience with his or her education.

In conclusion, this study fails to support the assumption that locus of control and achievement are related. The differences between males and females and the relationship between locus of control and achievement suggest that more complex models need be adopted taking into consideration the concept of defensive externality or other similar mediating variables. Further research in the area of locus of control and attrition needs to be pursued in order to more accurately determine the specific variables which cause internal individuals to persist through a program more often than external individuals. This study also suggests internality is associated with higher academic aspirations. Lastly, this study indicates that women still seem to enter stereotypical vocations and need to overcome the yoke of expected cultural roles.

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