Factors Related to Enlarged Perspectives among the Students of an Ontario Teachers' College

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L'ouverture d'esprit plus ou moins grande de l'enseignant joue un rôle important dans l'apprentissage des élèves puisqu'ils sont ouvertement ou plus discrètement influencés par les vues de leur enseignant. Cette étude cherche à cerner les variables qui sont associées à l'ouverture d'esprit des élèves-maîtres d'une école normale de l'Ontario. On a constitué un échantillon important et on a isolé un certain nombre de variables indépendantes: l'âge, le sexe, le milieu socio-économique, l'instruction et la pratique religieuse. Les résultats font ressortir que l'ouverture d'esprit se rencontre davantage chez les enseignants plus âgés dont le niveau d'instruction est plus élevé et qui ont pris leur distance vis-à-vis de l'orthodoxe religieuse.

It is generally agreed that teachers should be as broadminded as possible. The teacher who holds enlarged perspectives is regarded more highly than the teacher whose views tend to narrow perspectives. It seems likely, moreover, that children will be influenced in turn to view things in a way that coincides with their teachers' views. This applies not only to formal curriculum material but also to concepts and attitudes developed in social relationships, moral and religious views, and value judgments. The matter of attitudes and the formation of values has been of great concern to educators during the past decade, and considerable research has been directed towards an understanding of what factors tend to shape and influence one's attitudes or perspectives. The problem in this study was to discover what variables were related to enlarged perspectives among students in an Ontario teachers' college.

The academic qualifications for elementary teachers in Ontario have been gradually increased from grade 13 in 1971 to the present requirement of a recognized university degree. One of the obvious questions that arises from this change is whether or not an increase in formal education will be reflected in enlarged perspectives, and thus hopefully in increasingly mature and socially responsible teachers.

Tumin, Barton, and Burrus (1958) wrote, in reference to the impact of formal education upon behavior:

For the literature is rich with suggestions that as formal education increases there tend to occur noticeable shifts from:

(a) nationalism to internationalism, in political point of view;
(b) traditionalism to secularism, in general social philosophy;
(c) common sense to science, as acceptable evidence;
(d) punishment to reform, in penological theory;
(e) violence and direct action to law, as agents of policy;
(f) rigidity to permissiveness, in child rearing;
(g) patriarchy to democracy, in spouse relationships;
(h) anesthesia to creativity, in patterns of recreation.

A common feature of these changes is that they imply the development of an awareness by the individual that there are: (a) other places than his own locality; (b) other times than the immediate present; (c) persons other than himself and his immediate primary group; and (d) other aspects of his self. In brief, the individual who experiences these changes has enlarged his perspectives on time, place, person, and values. This enlargement, the literature suggests, occurs somehow as a result of prolonged exposure to formal education. In other terms, it is apparently through this process of enlargement of perspective that formal education produces the changes cited. [Tumin et al., 1958, pp. 41–42]

In order to test the above statement in relation to prospective teachers, the following hypothesis was formulated:

Hypothesis I

There is a positive relationship between increased levels of formal education and enlarged perspectives. In specific contexts enlarged perspectives will be revealed through a preference for:

(*a*) internationalism over nationalism, in political point of view;
(*b*) secularism over traditionalism, in general social philosophy;
(*c*) science over common sense, as acceptable evidence;
(*d*) reform over punishment, in penological theory;
(*e*) law over direct action and violence, as agents of policy;
(*f*) permissiveness over rigidity in child rearing;
(*g*) democracy over patriarchy, in spouse relationships;
(*h*) creativity over anesthesia, in patterns of recreation.

Other factors, in addition to formal education, no doubt contribute to broader perspectives. One might expect to find salient such factors as age, sex, religious attitudes, and family socio-economic background. In order to test the individual relationships of these factors to enlarged perspectives, and also to discover their interaction with education, the following additional hypotheses were formulated:

Hypothesis II

Since enlarging perspectives make it increasingly difficult to accept traditional and dogmatic answers to the great mysteries of the universe and our own existence, there will be a positive relationship between the rejection of traditional orthodox religions and enlarged perspectives. It is further

expected that students identifying with a religious position of moderate orthodoxy will have broader perspectives than students who identify with a religious position of relatively higher orthodoxy.

Hypothesis III
Since students from professional (or equivalent) families will have had a broader experience through contact with a greater variety of people, cultural activities, travel, and literature, there will be a positive relationship between professional (or equivalent) family background and enlarged perspectives.

Hypothesis IV
Since increasing age usually brings an increase in experience, and contact with ideas and concepts held by those beyond one's immediate family or social group, a positive relationship will be found between age and enlarged perspectives.

Hypothesis V
Since traditional stereotyping of male and female roles has inclined female interests in the direction of family and social relationships, and male interests in more general directions, a positive relationship is expected between males and enlarged perspectives.

INDEPENDENT VARIABLES

Measures of the independent variables were obtained from a set of five items at the end of a standardized, fixed-alternative questionnaire.

1. *Level of formal education* referred to the amount of university education a student teacher had. This variable was obtained in response to the questionnaire item: "Do you have any university subjects or degrees beyond Grade 13? —— If 'yes' answer (a) or (b): (a) Degree, if any ——; (b) Number of university subjects ——." For convenience, responses were in most cases divided into three levels: "no university," "some university," and "B.A." For some purposes this variable was dichotomized into "university graduates" and "non-graduates."

2. *Religious orthodoxy* referred to agreement with established religious doctrines and ideas. Measures of religious orthodoxy were obtained in response to the following questionnaire item: "Religion: Protestant ——; Roman Catholic ——; Jewish ——; Agnostic or Atheist ——; Other (Please state) ——."

This variable was separated into three levels of religious orthodoxy: "high religious orthodoxy" representing a "Roman Catholic" response, "moderate religious orthodoxy" representing a "Protestant" response, and "non-orthodox" representing all other responses. ("Jewish" was not a classification, as no respondents indicated that category.) The "non-orthodox" level consisted of 14 "Agnostic or Atheist" responses and 11

"Other" responses with clarifying notation of "none," "my own," "personal," "undecided," "pantheistic," or "Unitarian."

The above ranking of religious orthodoxy was consistent with an empirical study by Gerhard Lensky (1961), which revealed the religious orthodoxy of respondents in a Detroit probability sample of 750 families. Respondents in Lensky's study were classified as orthodox when believing in a God who watches over one as a Heavenly Father, who answers prayers, and who expects weekly worship; in Jesus as God's only son; and in punishments and rewards in a life after death. Respondents were classified as unorthodox when unbelieving, disagreeing, or uncertain on any of the foregoing items. Following these criteria, Catholics were found to be 62% orthodox, Negro Protestants 38% orthodox, and White Protestants 32% orthodox (Lensky, 1961, p. 51).

It must be stressed that in the present study religious orthodoxy ratings referred only to relative levels of orthodoxy within the student group tested and were derived from the students' identification with, or failure to identify with, the two major religious orientations in our society.

3. *Socio-economic background* was based on the occupation of the head of the student's childhood home. This information was obtained in response to the questionnaire item: "Occupation of head of childhood home: Professional, Businessman, etc. ——; Clerical, Sales, etc. ——; Craftsman, Farmer, etc. ——." This variable was dichotomized into two levels: "Professional (or equivalent)" and "Other."

4. *Age* was obtained from responses on the questionnaire item: "Age: 20 or under ——; 21–29 ——; 30–39 ——; 40 or over ——." Since only one respondent was 40 or over, this variable was divided into three levels: 20 or under, 21–29, and 30 or over. For some purposes it was dichotomized into 20 or under and 21 or over.

5. *Sex* was obtained in response to the questionnaire item: "Sex: Male ——; Female ——."

DEPENDENT VARIABLE

Tumin et al. illustrated the concept of enlarged perspectives through the presentation of eight sets of values. For the purpose of this study these value sets were incorporated into a questionnaire of eight pairs of questions, each pair yielding a score of from 2 to 10 points.

Set a — *Internationalism vs. nationalism, in political point of view*

Two statements were presented; agreement with the first was assumed to indicate a high level of internationalism, agreement with the second a low level of this attribute, and an "undecided" response an intermediate level between internationalism and nationalism. "Internationalism" was quantified by applying a score of 5 (Agree), 3 (Undecided) or 1 (Disagree) to the student's response on the standardized fixed-alternative

questionnaire item. It was assumed that students who agreed with Item 1 were those who held an internationalistic point of view, while students agreeing with Item 2 were more strongly nationalistic.

Item 1 — "I would like to see the powers of the United Nations strengthened so that it could, as rapidly as possible, evolve into a responsible world government."

Item 2 —"Since the strengthening of the United Nations and other international organizations may tend to weaken Canadian sovereignty, Canada should concentrate on strengthening her own economy and defence, rather than channelling money and military aid into foreign countries through international agencies such as the U.N."

The student's total score on the above set was referred to as his "Enlarged Perspectives Score" (EP Score) for the nationalism vs. internationalism value. The sum of a student's EP scores for Sets *a* to *h* was taken to indicate his general level of enlarged perspectives. This score was converted to a percentage for ease of interpretation.

The second statement in each pair was scored the reverse of the first statement. A contradictory response on the two halves of the set resulted in the equivalent of an "Undecided" response on both halves. That is, "Agree" 5 plus "Agree" 1 equals 6, the score the respondent would have received for "Undecided" plus "Undecided" (3 plus 3).

It was assumed that a student scoring 10 on Set *a* would be internationalistic in his attitudes, and possibly in his behavior, whereas a student scoring 2 would be comparatively lacking in internationalistic feeling and possbly even feel somewhat antagonistic toward this value. On the other hand, it was assumed that he would have strong nationalistic sentiments that on occasion would find expression in word or action, or both, particularly in an environment such as that provided by the elementary school classroom.

A pattern similar to the above was followed in operationalizing each of the other seven sets of values.

Set b — *Secularism vs. traditionalism in general social philosophy*

Item 3 — "What this world needs is to get back to the old religious values and traditions. Recent innovations in religious services and new interpretations of the Bible and the Church's teachings weaken religion and make it less attractive."

Item 4 — "What matters most is *this* world and *this* life. We should concern ourselves with finding ways to make this a better world and our present lives happier, rather than relying on God or the Church to give us rules to follow and counting on a life after death."

Set c —*Science vs. common sense, as acceptable evidence*

Item 5 —"When a new scientific finding contradicts some common-sense

belief that people have held for a long time, it is best to keep the common-sense belief and wait and see whether the new scientific finding becomes accepted through time."
Item 6 —"No matter how high in state, church, or society an individual may be who makes a pronouncement on any subject, one should ask what evidence there is for his statement. If we can find no scientific evidence, we should not pay much attention to the pronouncement. If evidence *is* produced, we should examine the evidence."

Set d — *Reform vs. punishment in penological theory*
Item 7 —"In order to curb rising crime rates, the Canadian government should bring back the death penalty and stop protecting delinquents and criminals."
Item 8 — "The primary purpose of the Canadian penal system ought to be rehabilitation rather than punishment."

Set e — *Law vs. direct action and violence, as agents of policy*
Item 9 — "In attempting to solve problems or eliminate injustices in our society, one should limit one's actions to legally prescribed means such as making use of the courts, keeping in close contact with one's Member of Parliament, voting in elections, and taking an active part in the political life of one's community."
Item 10 — "The most effective way of getting rid of inadequacies and injustices in our society is through direct action such as strikes, sit-ins, and demonstrations even though this may occasionally involve the use of violence."

Set f — *Permissiveness vs. rigidity in child rearing*
Item 11 — "In child rearing, one should allow the child as much freedom as possible, restraining him only in matters where he might harm himself or others."
Item 12 — "Children should be taught to obey their parents without questioning whether they are right or wrong; and when a parent has made a decision on some matter, he should resist the child's attempts to persuade him to change his mind."

Set g — *Democracy vs. patriarchy in spouse relationships*
Item 13 — "In marriage the husband should be the head of the family. Any decisions involving the whole family should ultimately be up to him."
Item 14 —"A husband and wife should share equally in family responsibilities and decision making, with neither playing a more dominant role."

Set h — *Creativity vs. anesthesia, in patterns of recreation*
Item 15 —"Recreation, for me, means creative activities such as making or building something, or working on an interesting hobby or project."
Item 16 — "Recreation, for me, means forgetting my worries, such as

having a drink on the week-ends, or dozing in front of a relaxing T.V. show, or lying in the sun on the beach getting a good tan."

SCORING OF QUESTIONNAIRES

Each "undecided" response was given a score of 3. 5 points were given for "agree" and 1 point for "disagree" on items 1, 4, 6, 8, 9, 11, 14, and 15. Conversely, 5 points were given for "disagree" and 1 point for "agree" on each of the remaining items; that is, 2, 3, 5, 7, 10, 12, 13, and 16. The highest possible raw score was 80 (5 × all 16 items); the lowest possible was 16 (1 × all 16 items). Scores were converted to percentages for ease of interpretation.

DESIGN OF THE SAMPLING PROCEDURE

The sample consisted of 183 students out of the total teachers' college population of 545. The college consisted of 18 classes designated as Class A, Class B, Class C, etc. Every third class was selected for the sample, beginning with Class A. The sample thus consisted of Classes A, D, G, J, M, and P, 33% of the total enrolment. While a more random method may have been preferable, it was unlikely that the method used introduced bias. Classes were loosely organized according to the geographical area in which students wished to do their practice teaching, a factor that probably had little relationship to the variables with which the study was concerned. The high proportion of the sample to the total population of the teachers' college would largely eliminate sampling error.

Of the 183 students asked to do the questionnaire there was only one refusal. Four questionnaires were unusable because the information at the end of the questionnaire (the independent variables) was not completed.

STATISTICAL ANALYSIS AND INTERPRETATION

In this study the measure of ordinal association used was gamma, defined as $(Ns - Nd)/(Ns + Nd)$.[1] A perfect association would be + 1.0. However, in studies of this nature high levels of association cannot be expected, especially when working with populations as homogeneous as that of a teachers' college. The value of the scores lies in their use as comparative measures of association within the study itself.

For simple fourfold tables, such as table 5, Yule's Q has been used to indicate the coefficient of association between variables: $Q = (ad - bc)/(ad + bc)$. Again, a perfect association would be + 1.0.

The chi-square test has been applied to assess the significance of the difference between observed frequencies and the frequencies that would be expected were there no relationship: $p < .01$ indicates that the probabilities of the frequencies observed occurring by chance are fewer than once in a hundred times.

Generally, figures in the tables indicate numbers of students. However, where percentages add to the interest and ease of interpretation of the tables they have been included also.

Hypothesis I — Formal Education and Enlarged Perspectives

The first hypothesis was supported by the data. As formal education increased, EP scores tended to increase also:

Mean EP score of total sample of 178 students 76
Mean EP score of the 71 students with no university 74
Mean EP score of the 38 students with some university 76
Mean EP score of the 69 students with B.A. degrees 78

As table 1 indicates, a positive association between education and EP scores resulted in a gamma score of .25. Note that when religion was controlled, a much higher association between education and EP scores was revealed for students of non-orthodox religious views than for those with orthodox views. Apparently the less orthodox the student's religious views, the greater the association between education and enlarged perspectives. This result will be more fully discussed under the second hypothesis.

Table 1 / Number of Students Achieving EP (Enlarged Perspectives) Scores above, in, and below the 70s, According to Educational Level ($n = 178$)

	Education		
EP Scores	B.A.	Some Univer.	No University
80–100 (>70s)	35 (51%)	13 (34%)	18 (25%)
70–79 (70s)	21	19 (50%)	34 (48%)
0–69 (<70s)	13	6	19
		$p < .02$	$\gamma = .25$
Controlled for religion			
Non-Orthodox ($n = 25$)			
>70s	10 (66%)	3 (50%)	1 (25%)
70s	4	2	2
<70s	1	1	1
			$\gamma = .46$
Moderately Orthodox ($n = 98$)			
>70s	18 (51%)	8 (35%)	11 (27%)
70s	11	12	19
<70s	6	3	10
			$\gamma = .28$
Highly Orthodox ($n = 55$)			
>70s	7 (37%)	2 (22%)	6 (22%)
70s	6	5	13
<70s	6	2	8
			$\gamma = .11$

The hypothesis that education is positively related to enlarged perspectives for eight specific values was supported by questionnaire results on only four of the values; that is, university graduates scored higher than non-graduates on Set *b* (secularism), Set *c* (science as acceptable evidence), Set *d* (reform in penological theory), and Set *g* (democracy in spouse relationships). No difference was found between the scores of graduates and non-graduates on Sets *a* and *f* (internationalism and permissiveness). University graduates scored *lower* than non-graduates on Set *e* (law as agent of policy), and slightly lower on Set *h* (creativity in pattern of recreation).

Validity Check

In order to determine whether bias existed in the wording of the questionnaire, the test was re-administered to two classes (44 students). This time, instead of using the original 16 items, whose wording may have been a source of bias, students were asked to rate themselves on a continuum from one to ten for each of the eight values.

An agreement of .82 was found in the ratio of continuum to questionnaire scores. When continuum scores were compared with questionnaire scores for each set, a ratio of over .90 was indicated for Sets *d*, *e*, and *h*; and ratios of .73, .74, and .84 for Sets *b*, *a*, and *g*. The lowest ratio was .69 for Sets *c* and *f*. Set *h* was the only set on which continuum scores were higher than questionnaire scores. It was assumed that the wording of Set *h* on the questionnaire had somewhat biased respondents' answers. Continuum scores supported Hypothesis I for Set *h* (creativity in patterns of recreation), indicating a higher score for graduates than for non-graduates in this value.

As on the questionnaire, continuum scores for graduates were higher than for non-graduates on Sets *b*, *c*, *d*, and *g*. Continuum scores were also higher for graduates than for non-graduates on Set *a* (internationalism) and *f* (permissiveness), although questionnaire scores had revealed no difference on these two values.

The hypothesis for Set *e* (law vs. direct action and violence) was not supported on either the questionnaire or the continuum. It must therefore be assumed that among the students of this sample an inverse or zero association existed between education and the preference for law over direct action and violence as agents of policy. The article by Tumin et al. appeared in 1958. Since then there have been major changes of attitude in our society. The increasing acceptance of violence and direct action as agents of policy is perhaps the most significant. It has been expressed through the increased incidence of protest marches, sit-ins, riots, bombings, hijackings, assassinations, and kidnappings, and by the growth of activist groups who publically exhort the use of violence as an agent of policy. These phenomena have been accompanied by a decreasing confidence in

conventional governmental and legal processes as effective agents in the resolution of the major problems of our time. Because of these changes in society itself, the value represented by Set *e* may no longer be indicative of enlarged perspectives, although it may have been in the context of social attitudes that prevailed in 1958.

In summary, the data supported the hypothesis on seven of the eight values posited as indicators of enlarged perspectives and rejected the hypothesis for Set *e* (a preference for law over direct action and violence as agents of policy). Differences were small, however, and could be stated only in terms of direction, and then only with a low degree of confidence. This is not surprising when one considers the homogeneity of the sample. In some cases, the difference between "graduate" and "non-graduate" was a matter of only two or three university courses; and in all cases respondents had at least grade 13 education. There was no instance of degrees beyond the B.A. level. Added to this was the homogeneity of age — only four of the sample were over thirty — and of experience: all had been students for the previous six months at the same teachers' college; all had been tutored by the same group of teaching masters.

If the same eight values were tested in a sample from the general population, ranging from those with grade school education to Ph.D.s, no doubt a more definite association between education and values reflecting enlarged perspectives could be expected.

Hypothesis II — Religion and Enlarged Perspectives

The data confirmed a positive relationship between non-orthodoxy in religious orientation and enlarged perspectives. Mean EP scores were highest for non-orthodox students and lowest for highly orthodox students:

Mean EP score for non-orthodox students 80
Mean EP score for moderately orthodox students 76
Mean EP score for highly orthodox students 73

Table 2 shows a positive association between non-orthodoxy in religious orientation and high EP scores. This relationship is represented by a gamma score of .40.

Table 2 / Number of Students Achieving EP Scores above and below the Mean, According to Rejection of Religious Orthodoxy ($n = 178$)

	Religious Orthodoxy		
EP Scores	Non-Orthodox	Moderately Orthodox	Highly Orthodox
Above mean (76)	18 (72%)	48 (49%)	19 (35%)
Below mean (76)	7	50	36

$p < .01$ $\gamma = .40$

The reader is reminded of the relatively high association between education and EP scores among non-orthodox students; a gamma of .46, compared with .28 and .11 for moderately and highly orthodox students respectively (see table 1). It appears from these data that religious orientation is even more closely related to enlarged perspectives in future teachers than is education.

In table 3 the variables education and religion were combined on a grid and the mean scores for each cell computed. The highest mean EP score fell in the cell representing non-orthodox students with a university degree. The lowest mean EP score fell in the cells representing undergraduate students of high religious orthodoxy. Remaining cell values were distributed in a fashion consistent with hypotheses I and II.

Table 3 / Distribution of Mean EP Scores

	Education		
Religious Orientation	B.A. (n = 69)	Some Univer. (n = 38)	No University (n = 71)
Non-Orthodox (n = 25)	81	78	75
Moderately Orthodox (n = 98)	78	76	74
Highly Orthodox (n = 55)	75	73	73

It is interesting to note that non-orthodox students with no university achieved a mean score equal to students of high religious orthodoxy who were university graduates. It must be assumed there is a positive association between religious orthodoxy and the hindrance of enlarged perspectives. Since many religious advocates claim that religion frees the individual and broadens his concern, this is a finding to which those concerned with religion and its role in the school and society should give further study.

Validity Check

An alternative explanation for the above findings is that the questionnaire itself was biased in favor of non-orthodoxy and against more orthodox religious views. To check on this possible source of bias, mean scores on the self-rating continuum for students of low, moderate, and high religious orthodoxy were compared. The continuum scores were respectively 71, 60, and 58, revealing an even greater difference than did the qustionnaire scores. It is therefore unlikely that differences in scores were due to biased wording of the questionnaire.

Non-orthodox students had the highest ratio (.91) of questionnaire scores to self-rating continuum scores, while the scores of moderately orthodox students showed the lowest test score ratio (.77). Students of high religious orthodoxy had a score ratio of .81. If the questionnaire had

been biased against high religious orthodoxy, the lowest score ratio would be expected in the scores of the highly orthodox students. The data suggest that the higher ratio of questionnaire to continuum scores among non-orthodox students may have been due, not to biased wording of the questionnaire, but to consistencies resulting from a higher degree of self-knowledge and a more integrated value system.

Sets *b* and *c* were the only sets making reference to religious concepts. If a religious bias existed, it would most probably have been contained in these sets. As a further check against the possibility that questionnaire wording was biased against religious orthodoxy, table 4 compares the ratios of these two sets with the ratios for the other sets.

Table 4 / Ratio of Mean Continuum Scores to Mean Questionnaire Scores for Classes J and D ($n = 44$)

	Set and Item							
	(*a*) 1–2	(*b*) 3–4	(*c*) 5–6	(*d*) 7–8	(*e*) 9–10	(*f*) 11–12	(*g*) 13–14	(*h*) 15–16
Highly Orthodox								
Continuum	4.4	5.1	4.6	8.1	6.8	5.4	5	7.4
Questionnaire	7.2	7.8	6.6	8.1	6.8	8.1	7.2	5.5
Agreement	.61	.65	.70	1	1	.67	.69	1.3
Moderately Orthodox								
Continuum	3.9	5	5.7	6.4	7.4	5.5	7.6	6.6
Questionnaire	6.3	7.4	8.2	8	8.7	8.7	9.3	5.7
Agreement	.62	.68	.70	.80	.85	.63	.82	1.2
Non-Orthodox								
Continuum	6.3	7.8	5	8.7	6	7.4	8.8	6.8
Questionnaire	6.2	9.2	7.5	8.5	6.9	8.5	8.8	6.3
Agreement	1	.85	.67	1	.87	.87	1	1.1

In Set *b* (secularism vs. traditionalism) the questionnaire rated non-orthodox students a high 9.2, but the self-rating scale also gave non-orthodox students a high 7.8 in this value, a difference of only 1.4, or an agreement of .85. On the same set, the questionnaire rated students of high religious orthodoxy 7.8, while the self-rating continuum rated them only 5.1, or 2.7 units lower than the questionnaire, resulting in an agreement of only .65. It appears from these data that if a questionnaire bias existed in Set *b*, it was in the favor of religiously orthodox respondents.

In Set *c* (science vs. common sense) agreement between questionnaire and continuum scores does not differ significantly for orthodox and non-orthodox respondents. It is interesting to note that the slightly lower agreement for non-orthodox students is due, not to high questionnaire scores on this item, but to unusually low continuum scores. Their mean self-score of 5 is one whole unit below any other of their mean self-scores.

In summary, the data supported Hypothesis II, that there is a positive relationship between enlarged perspectives and the rejection of dogmatic and traditional solutions to transcendental questions. As anticipated, students who identified with a religious position of moderate orthodoxy achieved higher scores than students who identified with a religious position of relatively higher orthodoxy.

Hypothesis III — Socio-Economic Background and Enlarged Perspectives

A positive association between professional (or equivalent) family background and enlarged perspectives was confirmed by the data:

Mean EP score of students from professional families 77
Mean EP score of students from other families 75

As table 5 indicates, a positive relationship between socio-economic background and enlarged perspectives was confirmed by a coefficient of association of .30.

Table 5 / Number of Students Achieving EP Scores above and below the Mean of 76, According to Socio-Economic Background ($n = 178$)

	Socio-Economic Background	
E.P. Scores	Professional (or equivalent)	Other
Above mean	43 (57%)	42 (41%)
Below	33	60
	$p < .05$	$Q = .30$
Controlled for education		
No University ($n = 71$)		
Above mean	13 (52%)	15 (33%)
Below mean	12	31
		$Q = .38$
Some University ($n = 38$)		
Above mean	7 (47%)	9 (49%)
Below mean	8	14
		$Q = .15$
B.A. ($n = 69$)		
Above mean	23 (64%)	18 (55%)
Below mean	13	15
		$Q = .19$

When education was controlled, an interesting difference appeared. Although there was a very weak association between socio-economic background and EP scores of graduates and students with some university, the association was much stronger among students with no university. Education apparently wipes out differences in perspectives originally created by differences in socio-economic background.

Hypothesis IV – Age and Enlarged Perspectives

For this variable, only the scores of non-graduates were used, since almost all university graduates were 21 and over. The data supported the hypothesis that older students have more enlarged perspectives than younger students:

Mean score of the 4 non-graduates 30 and over 78
Mean score of the 36 non-graduates 21 to 29 75
Mean score of the 69 non-graduates under 21 64

Because of the possibility that score differences were due to education rather than to age, the mean for students with some university and the mean for students with no university were calculated separately. The hypothesis was supported for respondents with some university; however, it was not supported for students with no university:

Mean of respondents with some university:
23 students 21 or over 78
15 students 20 or under 73
Mean of respondents with no university:
17 students 21 or over 73
74 students 20 or under 74

The possibility remained that the apparent association between age and EP scores among students with some university might actually be due to education, since it seemed logical that older students might have a greater number of university courses than younger students. However, little or no difference was found among mean scores of undergraduate students who had completed varying numbers of university courses:

Mean score of the 11 students with 1–5 courses 76
Mean score of the 13 students with 6–10 courses 76
Mean score of the 9 students with 11–15 courses 75

It was therefore concluded that age was positively associated with enlarged perspectives for students with some university courses, but not for students without any university courses.

This finding presents an interesting challenge for further study. A tentative explanation may lie in the possibility that prospective teachers who had reached the age of 21 or more without obtaining even one university credit were less intellectually oriented. The relationship between intelligence and enlarged perspectives would also have been most helpful in clarifying this problem. Another possible explanation may lie in the

occupation of older students prior to their entrance to teachers' college. It is conceivable that some experiences in the world outside of educational institutions hinder the development of enlarged perspectives.

Hypothesis V — Sex and Enlarged Perspectives

Our data did not support Hypothesis V. The mean score for men was identical with that for women:

Mean EP score for the 39 males	76
Mean EP score for the 139 females	76

Questionnaire Set *g* (items 13 and 14) referred directly to the male–female relationship (patriarchy vs. democracy in spouse relationships). It is interesting to note that scores for the two sexes on this set were also very close, with females scoring only slightly higher than males:

Mean score on Set *g* for males	8.0
Mean score on Set *g* for females	8.4

Continuum scores for Classes J and D were consistent with questionnaire scores for Classes J and D on this item. The wording of Set *g* must therefore be accepted as accurately eliciting the data required. It is interesting to note that 10% of males gave this set the lowest possible score, while 14% of females gave it the lowest possible score.

QUESTIONS ARISING FROM THIS STUDY AND AREAS PROPOSED FOR FURTHER RESEARCH

Of the students in the sample, 6% scored 90 or more on the questionnaire. These 11 students represented the whole range of independent variables, coming from almost every educational, religious, socio-economic, and age level. In contrast, 5% of the sample scored under 60. These nine students also represented the whole range of independent variables. Apparently there were influences determining students' perspectives beyond the variables of education, religion, socio-economic level, and age. Assuming that these were the only variables affecting students' perspectives, those students who possessed all the attributes associated with enlarged perspectives should have scored extremely high, while students with all the negatively related variables should have scored extremely low. Among the 178 students in the sample, eight possessed all four positively related attributes; that is, they had B.A. degrees, were non-orthodox in their religious orientations, had professional family backgrounds, and were 21 or older. Scores of these eight students ranged from 53 to 88. However, the score of 53 was 23 points lower than the next-lowest score, which was 75. What influences in the experience of the lowest-scoring student counteracted the variables related to enlarged perspectives? Did he respond honestly to the questionnaire? What was his level of self-knowledge? If this exceptionally low score is omitted, the mean score of this group is 81.

Again, of the 178 respondents, 10 possessed all four negatively associated variables; that is, they had no university credits, were highly orthodox in their religious orientation, had working-class family backgrounds, and were under 21 years of age. Scores of these students ranged from 53 to 93. Here again we find one student with a score extremely different from what could be expected if the above four variables were the only ones related to students' perspectives. His score of 93 was 13 points above the next highest score, which was 80. What variables influenced the perspectives of this high-scoring student to the extent that the four variables found to be negatively associated with enlarged perspectives were almost completely counteracted? Again, if this exceptional score is omitted, the mean score of this group was 71, only 10 points lower than the group that possessed all four of the positively associated variables. Clearly, other variables were influencing students' perspectives. Clues to these variables may be found among such factors as IQ, work experience, marriage and family responsibility, attitudes of "significant others" in students' past or present experience, travel, reading and television-viewing habits, degree of parental authoritarianism, and levels of self-realization and altruism.

In specific value, a fruitful area of investigation is suggested by the 14% of females who believed spouse relationships should be patriarchal rather than democratic. What factors in the experiences of these girls influenced them to view ideal marriage relationships in this way? Will these attitudes be reflected in their teaching?

Of the total sample, 5% gave the lowest possible score to reform versus punishment in penological theory. What variables influenced these nine students to tend toward a punitive orientation? How will this orientation be reflected in their relationships with their students?

The lowest possible score was also given to secularism in general social philosophy by 5% of the sample. What variables influenced these students toward a traditionalist orientation? How will this orientation be expressed in their teaching? What association is there between traditionalism and authoritarianism? between traditionalism and creativity? Do teachers holding this value experience higher levels of stress and anxiety when faced with changes and innovations? What is the association between this value and political preference?

Of the total sample 29% gave the highest possible score to internationalism in political point of view. What variables influenced these students in the direction of internationalism? How will this orientation be expressed in their teaching? Is this value associated with travel experience? with television-viewing preferences? with political preferences? Is it negatively associated with authoritarianism? with ethnocentrism? with prejudice? These and many other related questions arise from the data on enlarged perspectives in specific value areas.

SUMMARY

Hypothesis I assumed a positive relationship between increased levels of formal education and enlarged perspectives. The data supported this assumption, producing a chi-square score significant at the .02 level and a gamma score of .25.

This hypothesis stated further that enlarged perspectives would be expressed in specific areas through a preference, by those with higher levels of education, for certain specific values over certain other related values. This assumption was supported in seven of the eight values, although support was weak in three of them. Values supported were as follows:
(a) internationalism vs. nationalism in political point of view — supported weakly
(b) secularism vs. traditionalism in general social philosophy — supported
(c) science vs. common sense as acceptable evidence — supported
(d) reform vs. punishment in penological theory — supported
(f) permissiveness vs. rigidity in child rearing — supported weakly
(g) democracy vs. patriarchy in spouse relationships — supported
(h) creativity vs. anesthesia in patterns of recreation — supported weakly.

The data did not support the assumption that there is a positive association between formal education and a preference for law over direct action and violence as agents of policy (Set *e*).

Hypothesis II stated a positive relationship between non-orthodoxy in religious orientation and enlarged perspectives. This hypothesis was supported by a gamma score of .40 and a chi-square score significant at the .01 level. Among non-orthodox students, a much higher association was found between education and enlarged perspectives (gamma of .46) than among moderately or highly orthodox students (gammas of .28 and .11). These findings suggest a re-examination of the role of orthodox religion in relation to education and teacher training.

Hypothesis III stated a positive relationship between professional (or equivalent) family background and the enlargement of perspectives. This hypothesis was supported by a chi-square score significant at the .05 level and a coefficient of association (Q) of .30. When education was controlled, only a very low association was found between family background and enlarged perspectives among university graduates ($Q = .19$) and students with some university ($Q = .15$). A much higher association between socio-economic background and enlarged perspective was found among students who had no university education ($Q = .38$). Possibly education eliminates differences originally created by differences in socio-economic background.

Hypothesis IV stated a positive relationship between age and enlarged perspectives. This hypothesis was supported by the data. However, when education was controlled, an association between age and enlarged per-

pectives was found for students with some university, but no association was found for students with no university. Apparently the acquisition of even a small amount of university education is positively associated with the broadening of perspectives with increasing age, at least up to a point. All students were young, and care must be taken not to extend this generalization to those beyond their twenties.

Hypothesis V stated a positive association between sex and enlarged perspectives. This hypothesis was not supported by our data. Males and females achieved an identical mean enlarged perspectives score.

In summary, variables positively related to enlarged perspectives were non-orthodoxy in religious orientation, a B.A. degree, a professional (or equivalent) family background (especially among students with no university), and an age level of 21 or over (except for students who had no university).

Variables negatively related to enlarged perspectives were high religious orthodoxy; a lack of any university education; a relatively lower socio-economic family background, especially among students with no university; and youthfulness (under 21) except among students with no university education.

Relatively strong positive associations were found between education and enlarged perspectives among religiously non-orthodox students; between professional (or equivalent) family background and enlarged perspectives among students who had no university credits; and between age and enlarged perspectives among students who had had some university credits.

To return to the original problem and the hypotheses coming from it, the data confirmed the assumption that higher levels of academic education for teachers would result in better classroom teachers, provided that by "better" one means having more enlarged perspectives. The role of orthodox religion in education and in teacher training deserves a more thorough study. Its contributions should be carefully weighed against its negative association with enlarged perspectives. Admittedly, a value judgment is involved here, and it may be that many parents do not actually prefer their children to develop more enlarged perspectives, but prefer ethnocentric and traditional values for their children. These are decisions that will ultimately be made through political choice at the ballot box. Whatever that choice may be, it is hoped that the findings of this study will contribute some small part in arriving at the type of education Canadian citizens desire for their children.

NOTE

1. Gamma is the proportional excess of pairs of observations which are similarly differentiated (Ns) on both measures, compared with those which are oppositely differentiated (Nd), out of all pairs differentiated on both measures (Ns + Nd).

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