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A COMPARISON OF SECONDARY SCHOOL ENTRANTS, VOCATIONAL SCHOOL ENTRANTS AND TERMINAL LEAVERS

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Measures of personal characteristics home background educational history and of type of primary school attended were obtained for a representative sample of 500 eleven year old children attending primary school in Ireland When the destination of all pupils was known—i e after they had transferred to a secondary (including comprehensive) school to a vocational school or had finally terminated their education at the primary level—a discriminant function analysis was carried out to identify the most important predictors of post primary school destination Two sets of variables were identified which discriminated between the three groups The major contributors to the first and most important set were socio economic status, school attendance record, type of primary school attended verbal reasoning ability and sex Personality characteristics were important factors in the second set of variables

In 1967, information on the scholastic aptitude, educational progress, personality and home background of a sample of eleven-year-old children was collected The sample consisted of 500 children selected to represent the population of eleven-year-old children attending schools, other than special schools for the handicapped, in Ireland A primary reason for the selection of the sample was to monitor the progress of a representative group of Irish schoolchildren through the educational system and, since the first selection of the sample, information has been obtained yearly from schools on the whereabouts of the children

The first major educational decision for the sample involved choices relating to the type of post-primary school they would transfer to and whether or not they would leave school on reaching the statutory school-leaving age (fourteen at the time of the study) In the Irish educational system on completing the sixth standard of the primary school, a pupil

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may enrol in a secondary, vocational or comprehensive school Secondary schools, which attract the majority of pupils, emphasize academic subjects in their curriculum and provide the avenue to the Leaving Certificate examination, third-level education and white-collar occupations Vocational schools, on the other hand, emphasize practical subjects and the preparation of students for trades The third type of school—comprehensive—is relatively new on the Irish scene and, as the name implies, provides a comprehensive curriculum

A report of a two-year follow up of the 1967 cohort, when pupils were aged between thirteen and fourteen years, has already been published (14) At that time, 29 of the 500 pupils had left school, 20 were still in primary school and the remainder (with the exception of 6 who could not be traced) were attending post-primary schools Significant differences in verbal reasoning ability were found between pupils attending three types of school (vocational, secondary and primary) Differences related to home background and the educational history of pupils were also found Pupils who later went to secondary school tended to come from higher-level socio-economic homes and their educational history was judged more satisfactory by teachers than that of pupils who later went to vocational school The social status was higher and educational history more satisfactory for pupils in both types of school than for pupils who left school directly from the primary school

For the present study, data collected over a further two years were available When analyses were carried out for the earlier study, 20 pupils were still attending primary school Over the following two years these pupils either transferred to a post-primary school or terminated their formal education Thus the analyses for the present study are based on information relating to the destination of all pupils when they leave primary school

There are a number of other ways in which the present study differs from the earlier one (14) At the time the analyses for the earlier study were carried out, six pupils could not be traced these have since been located Secondly, more variables relating to pupil characteristics are included in the present study, these are based on teacher ratings of personality traits And finally, the method of analysis used in this study differs from that used in the earlier one, in which the data were subjected to a series of separate univariate analyses of variance In this study, dependent variables are combined and multivariate analysis of

variance and discriminant function analysis carried out These analyses were performed to help identify the characteristics or variables which best discriminate among three groups of pupils—secondary school entrants, vocational school entrants and primary school terminal leavers

METHOD

Sample

A random sample of 500 children was drawn from a larger sample of 2,164 eleven-year-old children who had taken part in the standardization of a verbal reasoning test in 1967 The standardization sample was selected so as to be representative of all eleven-year-old children in the country attending national and private (but not special) schools In the selection of the parent sample, location (city—town—rural), size of school, sex of children attending school and type of administration in the school (religious—lay) were all taken into account

Procedure

In 1967, all the pupils took a verbal reasoning test The following year, teachers, by means of postal questionnaire provided information on the home background of the pupils, on their educational history and they also rated each pupil on twenty personality traits Each succeeding year, teachers provided information on the type of school being attended by each pupil The possible alternatives were secondary, vocational, comprehensive, primary or no school at all If the pupil had left school, teachers were asked to indicate if he or she had found employment and, if so, the nature of that employment

Variables investigated

Home background (i) Occupation of pupil's father or guardian Occupations were categorized according to the classification of the British census (9), with certain modifications The following five categories were used (a) professional, higher administrative and managerial, (b) intermediate professional, administrative and managerial (and farmers with over 30 acres) (c) skilled occupations, (d) partly skilled occupations (and farmers with 30 acres or less), and (e) unskilled occupations A code of 1 indicated high status, a code of 5 low status (ii) Size of family i e the number of children in the pupil's family (iii) Pupil's ordinal position in family (iv) Whether or not the pupil's father was alive (v) Whether or not the pupil's mother was alive

Educational history (i) Pupil's rank position in class over all subjects as rated by the teacher On the basis of pupil's rank position and the total number of pupils in the class, each pupil was assigned to one of five categories top ten per cent, next twenty per cent, middle forty per cent, next lowest twenty per cent, bottom ten per cent (ii) General scholastic progress, rated by the teacher as being either satisfactory or unsatisfactory (In coding, a zero indicated unsatisfactory progress) (iii) Scholastic progress in individual school subjects Teachers were asked to indicate if pupils have difficulties in any of the following subjects (yes or no) Irish reading, oral Irish, written Irish, English reading, oral English, written English, mechanical arithmetic, problem arithmetic (In coding, a zero indicated difficulty was being experienced) (iv) School attendance the number of days the pupil had been absent during the school year (1967-68) (v) Standard attained by age twelve (i e, in the school year 1967-68) Pupils were distributed over standards 4, 5 and 6 in the primary school and over first and second year in post-primary school

Characteristics of primary school attended Five variables were included under this category (i) School administration (lay Catholic, Catholic religious, Protestant, private) * (ii) Size of school, based on the number of teachers in the school (categorized as one, two, three, four to six, seven or more) (iii) Sex composition of school (male, female or mixed) * (iv) Location of school urban (if situated in Dublin, Cork, Limerick Waterford or Dun Laoghaire) town (if in a town with a population of 1 500 or greater) and *rural* (if in a town or area with

*In preparing the data on school administration and sex composition of school for analysis a number of modifications had to be made Neither variable was suitable for analysis as it stood because of the nominal nature of the data By means of dummy variable coding (2 5 16) a number of new variables were created Three variables were created to represent the four groups of the school administration variable In the first of the three new variables a student who attended a lay school was coded 1, and all of the remainder were coded zero On the second variable a student who attended a Protestant school was coded 1 and all other students were coded zero Similarly, on the third variable a student who attended a Catholic religious school was coded 1 and all others were coded zero Students attending private schools served as a reference group Likewise in the case of the sex composition of the school variable, students enrolled in male schools were coded 1, while all others received a zero, students in female schools were coded 1, while all others received a zero, students who attended mixed schools served as the reference group

a population less than 1,500) (v) Size of class the number of children in the pupil's class

Personal characteristics (i) Verbal reasoning ability based on scores on the Drumcondra Verbal Reasoning Test—a test designed to measure general verbal intelligence The test has been standardized on an Irish population with a mean of 100 and a standard deviation of 15 (ii) Ratings on personality characteristics were obtained for each pupil on the Teacher rated Pupil Personality Construct Scale This scale is based on those used by Terman and Merill (26) and Lightfoot (15) A five-point scale was provided for each of the following twenty personality characteristics keenness to get on, enquiring mind, achievement tendencies, leadership, concentration, self-confidence, dominance, creativity, dependence, deference, gregariousness, common sense, originality, sense of humour, popularity, sensitivity, appreciation of beauty intelligence health, physical energy For each trait, a score of 1 indicated possession of the trait to a small degree, a score of 5 to a high degree To reduce the dimensionality of the twenty ratings, the data were subjected to a factor analysis (8) Three oblique promax factors based on a varimax rotation were chosen as the most satisfactory solution as it best satisfied the criteria of simple structure (27) Three factors which accounted for 51 per cent of the total variation were identified and these were termed 'satisfactory school behaviour', 'independence', and 'popularity' Three standardized factor scores (3) were computed for each pupil in the sample In this manner three new variables were created

RESULTS

Details of the immediate destinations of the pupils in the sample are presented in Table 1 It will be noted that the majority of pupils (67 per cent) enrolled in a secondary or comprehensive school, about a quarter (25 4 per cent) transferred to a vocational school and the remaining pupils (7 4 per cent) did not enrol in any second level school

A series of one way analyses of variance was carried out between the secondary school entrants, vocational school entrants and primary school terminal leavers on each of the thirty variables The results of these analyses are summarised in Table 2 These are difficult to interpret, since many of the variables correlate highly among themselves To help identify the crucial variables or dimensions which differentiate

between the three groups, discriminant function analysis was carried out In discriminant function analysis one or more linear combinations of all variables is constructed which serve to maximize differences between groups Each linear combination in effect creates a new transformed variable which can then be used as a basis for describing the nature of the group differences

Before a discriminant function analysis could be carried out, it was necessary to establish that the three groups differed in terms of their centroids To do this, a multivariate analysis of variance, which used the thirty variables as dependent measures, was carried out The computed F-ratio of 6 26 ($df=60, 936$) for differences among the centroids of the secondary, vocational and primary school terminal leavers was significant beyond the 001 level In effect this meant that the three groups could not be considered members of the same population

Since the group centroids differed, the next step was to carry out a stepwise multiple discriminant function analysis (6, 25) Given the fact that there were only three groups, this statistical procedure permitted a comparison of groups in terms of one, or at most two new transformed variables The problem of deciding the number of significant discriminant functions (or transformed variables) was solved by means

TABLE 1

IMMEDIATE DESTINATION OF PRIMARY SCHOOL LEAVERS

Age at leaving primary school	Destination				
	Secondary	Comprehensive	Vocational	Terminal Leaver	Emigrant
Left by age 14	326	6	118	30	0
Left between age 13 years 5 mths, and 14 years 5 mths	2	1	9	6	1
Left between age 14 years 5 mths, and 15 years 5 mths	0	0	0	1	0
Total (N 500)	328	7	127	37	1*

*This pupil was not included in the remaining analyses

of Bartlett's V statistic (1) Both the functions proved to be statistically significant ($\chi^2=331\,08$, $df=60$, $p<001$ and $\chi^2=46\,64$, $df=29$, $p<05$) Table 3 presents the vectors of scaled weights arranged in order of magnitude for the two significant discriminant functions The vectors are the weights which reveal the relative contributions of the 30 variables to the discriminating power of each function Each of the functions is interpreted separately in the light of these vectors and the centroids of each of the three groups The group centroids arranged in order of magnitude on each of the functions, are presented in Table 4

The total discriminatory power (25) of the two functions was estimated to be 506 Thus, about 51 per cent of the variability in the discriminant space is attributable to differences between the three groups The first function (y_1) accounts for 86 3 per cent of the total discriminatory power, while the second function (y_2) accounts for 13 7 per cent An examination of the first function (y_1) reveals that the three large positive weights (44 for socio-economic status, 43 for number of days absent and 41 for lay administration) are considerably larger than the remaining positive weights Similarly the negative weights with the largest absolute value (— 37 for verbal reasoning) is considerably larger than the remainder of the negative weights The next highest negative weights recorded are for sex (— 28) and school location (— 20) Due to the relatively large absolute values of the weights attaching to four variables, it is reasonable to focus attention on them A person with a low score on y_1 was more likely to come from a high socio-economic level, was seldom absent from primary school, attended a non-lay administered primary school, and also had high verbal reasoning ability It is difficult to subsume all these characteristics under one label, several of them, however, seem to reflect scholastic aptitude and interest When the mean y_1 scores of the three groups are compared (Table 4), it is apparent that secondary school entrants receive lower scores than vocational entrants, and that vocational entrants in turn receive lower scores than primary school terminal leavers

The second function is more difficult to interpret In considering this function, it is important to remember that y_2 is uncorrelated with y_1 and represents the dimension along which the largest group differences, which have not been accounted for by the first dimension, may be found A comparison of the mean y_2 values reveals that the lowest score on this function is recorded by the vocational entrants (— 51)

TABLE 2

UNIVARIATE COMPARISONS OF SECONDARY ENTRANTS, VOCATIONAL ENTRANTS, AND PRIMARY SCHOOL TERMINAL LEAVERS

Variables	Secondary (N 335)		Vocational (N 127)		Terminal Leavers (N 37)		F
	M	SD	M	SD	M	SD	df=2,496
Home background							
1 Socio economic status	2 89	1 02	3 72	1 07	4 27	99	50 88***
2 Number of children in family	5 24	2 51	6 43	2 84	6 49	3 44	11 03***
3 Ordinal position	3 10	2 10	4 13	2 34	4 11	2 67	11 86***
4 Father living	95	22	94	24	95	23	0 13
5 Mother living	98	15	98	15	97	16	0 01
Educational history							
1 Class place	1 73	1 02	2 28	98	2 68	88	24 67***
2 Progress	16	36	39	49	62	49	32 12***
3 Irish reading	80	40	58	50	35	48	24 81***
4 Oral Irish	75	44	61	49	22	42	24 75***
5 Written Irish	70	46	48	50	16	37	28 66***
6 English reading	94	24	87	34	65	48	17 89***
7 Oral English	94	24	88	32	65	48	17 87***
8 Written English	86	35	75	44	46	51	19 65***
9 Mechanical Arithmetic	85	36	76	43	49	51	15 49***
10 Problem Arithmetic	60	49	49	50	14	35	16 20***
11 Absenteeism	11 13	10 76	18 88	15 40	30 51	24 81	43 04***
12 Class in 1967-68	2 10	69	1 72	63	1 41	64	27 25***

Type of school attended

1	Lay administration	40	49	60	49	66	47	11 36***
2	Catholic religious admin	52	50	39	49	30	46	5 55**
3	Protestant administration	03	16	02	12	03	16	0 25
4	Private administration	06	24	00		00		5 10*
5	Number of teachers	3 75	1 13	3 59	1 08	3 57	99	1 22
6	All male	36	48	38	49	30	46	0 41
7	All female	39	49	23	42	38	49	5 72**
8	Mixed sex	25	43	39	49	32	47	4 64*
9	School location	2 13	90	2 18	89	2 03	90	0 43
10	Class size	2 46	1 53	2 51	1 67	2 27	1 48	0 34

Personal characteristics

1	Verbal reasoning ability	104 73	13 95	93 44	13 70	81 68	11 45	67 81***
2	Sex	55	50	40	49	43	50	4 28*
3	Satisfactory school behaviour	50 31	1 02	49 50	1 09	48 94	1 13	47 89***
4	Independence	50 14	1 27	49 72	1 29	49 65	1 29	6 45
5	Popularity	50 12	1 24	49 90	1 22	49 27	1 30	8 28***

* $p < 05$ ** $p < 01$ *** $p < 001$

TABLE 3

DISCRIMINANT FUNCTION COEFFICIENTS FOR COMBINATION OF 30 VARIABLES FOR THE THREE GROUP DISCRIMINATION

Function 1		Function 2	
Variables	Weights	Variables	Weights
Verbal Reasoning	— 37	Progress Oral Irish	— 55
Sex	— 28	Class size	— 48
School location	— 20	Lay administration	— 41
Progress English reading	— 15	School location	— 36
Progress Mechanical arithmetic	— 13	Progress Problem Arithmetic	— 34
Progress Written Irish	— 12	Catholic religious administration	— 33
Progress Irish reading	— 09	Progress Written English	— 24
Progress Oral English	— 08	Progress English reading	— 23
All male school	— 07	Progress Oral English	— 22
All female school	— 06	Progress Mechanical arithmetic	— 22
Personality Satisfactory school behaviour	— 06	Place in class	— 20
Class at age eleven	— 04	Socio economic status	— 18
Place in class	— 04	Sex	— 17
Father living	— 03	Verbal reasoning	— 16
Personality Popularity	— 03	Ordinal position	— 13
Progress Oral Irish	— 03	Number of children in family	— 12
Class size	— 02	Number of teachers	— 11
Mother living	02	Protestant administration	— 10
Problem arithmetic	04	Mother living	— 02
Number of children in family	05	Written Irish	— 01
Written English	08	General school progress	00
Protestant administration	10	Class at age eleven	00
Catholic religious administration	11	Father living	03
Personality Independence	11	All male school	14
General school progress	14	Number of days absent	18
Ordinal position	16	Personality Popularity	28
Number of teachers	17	Progress Irish reading	36
Lay administration	41	Personality Independence	40
Number of days absent	43	All female school	48
Socio economic status	44	Personality Satisfactory school behaviour	58

TABLE 4

CENTROIDS OF GROUPS ON DISCRIMINANT FUNCTIONS

Group	First function centroid	Second function centroid
Secondary entrants	— 58	10
Vocational entrants	86	— 51
Primary school terminal leavers	2 28	87

Secondary school entrants receive a somewhat higher score (10), while the primary school terminal leavers are rated the highest (87) of the three groups The y_2 weights suggest that students with low scores received relatively poor ratings on the three personality factors (satisfactory school behaviour, independence, popularity) In addition, these students generally did not experience difficulties in most cognitive areas (after the effects of y_1 which included an ability component, had been partialled out) Enrolment in a large class and attendance at a lay administered rural school also seems to have contributed to low y_2 scores

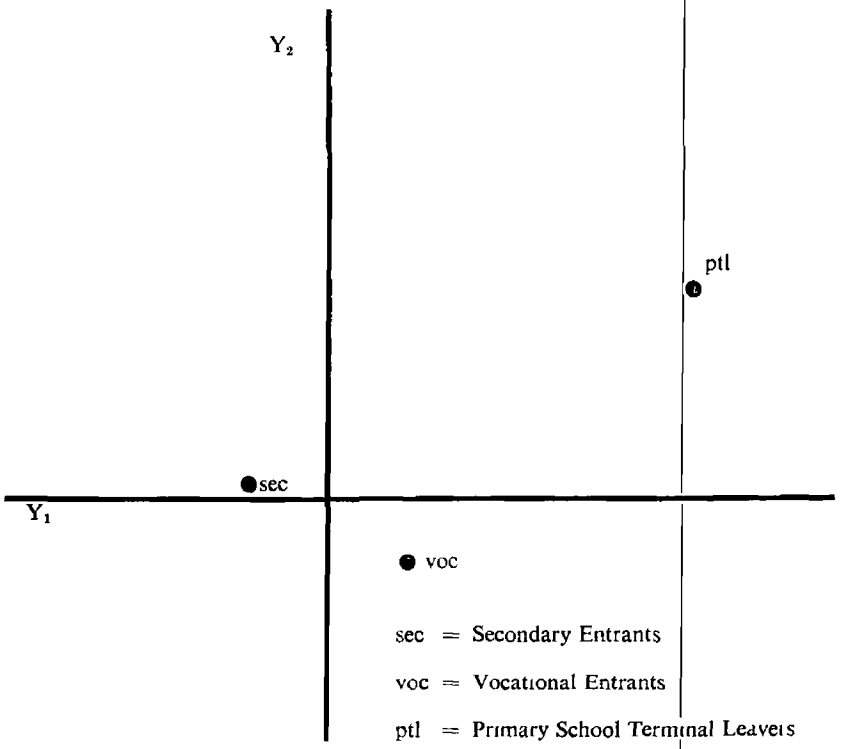
A plot of the centroids is shown in Figure 1 The graph clearly shows that the first discriminant function separates the three groups about equally well, ranking them from high to low in the order, terminal leavers, vocational entrants, and secondary entrants On the second discriminant function terminal leavers have the highest rank followed by secondary entrants and vocational entrants in that order

To determine the effectiveness of the significant variables in the prediction of student destination after leaving primary school, the classification of 'hits-misses' table produced by the computer programme was examined * The programme uses the maximum likelihood method of classification to compare the profile of each subject with the profile of the typical subject in each of the three categories Each individual's predicted category is determined by his highest classifi-

*The stepwise discriminant analyses were carried out on IBM 360 70 computer at Boston College using Sampson's BMD 07M programme Cf Sampson, W J (Ed) *BMD Biomedical computer programs* Berkeley University of California Press 1968

FIGURE 1

LOCATION OF THREE GROUP CENTROIDS IN DISCRIMINANT FUNCTION SPACE



cation probability of membership in each of the three destination categories (secondary, vocational, terminal leaver) For instance, a student who has a probability of 68 of being classified as a secondary entrant, a probability of 24 of being classified as a vocational school entrant, and a probability of 08 of being classified as a dropout, would be predicted as a secondary school entrant If in fact the student entered a school, this prediction would be recorded as a 'hit' If, on the other hand, he dropped out of school after leaving primary school, the prediction would be recorded as a 'miss'

Clearly, if a large percentage of the 499 students were classified correctly the selected variables could be considered effective in discriminating among the three groups The criterion for determining whether

or not the variables were effective discriminators was arbitrarily set at a hit rate of 66 67 per cent, or twice the 'hit' rate one would expect on the basis of random assignment to each of the groups

How accurate were the two discriminant functions in classifying students according to their destinations after leaving primary school? The hits and misses table computed by the computer programme is reproduced in Table 5 'Hits' for each group are represented in the diagonal of the table and are underlined The row totals equal the actual group totals while the column totals equal the predicted totals The overall 'hit' rate is 73 55 per cent which is greater than the arbitrary significance level of 66 67 per cent

TABLE 5

PREDICTION OF GROUP MEMBERSHIP ON THE BASIS OF FUNCTION SCORES

	Predicted membership			
Actual membership	Secondary Entrants	Vocational Entrants	Primary School Terminal Leavers	Actual Group Totals
Secondary Entrants	**258**	61	16	335
Vocational Entrants	23	**80**	24	127
Primary School Terminal Leavers	1	7	**29**	37
Predicted Group Totals	282	148	69	

An interesting aspect of the data in Table 5 is the distribution of 'misses' Most of the misclassified secondary school entrants (79 per cent) fall into the vocational entrants group This in effect means that in terms of the 30 variables used in the analysis the misclassified secondary entrants were more like the vocational entrants than the correctly classified secondary entrants A total of 16 secondary entrants were misclassified as primary school terminal leavers When the magnitude of the difference between secondary entrants and primary school terminal leavers is taken into account, this latter finding strongly suggests that these 16 students were atypical of the secondary entrants

Among the vocational entrants, 63 per cent were correctly classified In terms of the 30 variables, 19 per cent of the terminal leavers possessed attributes similar to those of the vocational entrants, while one terminal leaver would have been 'more at home' with the secondary school group than with either of the other groups

Ideally, it would have been more appropriate to compute the discriminant function coefficients from half of the sample and to cross-validate the functions on the rest of the sample However, the size of the overall sample was considered too small to justify this type of cross-validation Had the discriminant function coefficients been applied to a different sample of students, fewer 'hits' would have been recorded

From the original set of 30 variables a reduced model (16) of 15 variables was identified The reduced set of variables performed the task of discriminating among the three groups without a significant loss in information when compared to the full model * Not surprisingly, the two reduced model functions were very similar to the two functions based on the full model Although 15 fewer variables were used to classify the 499 primary school leavers, the 'hits and misses' table computed on the basis of 15 variables was almost identical to that produced when 30 variables were used to classify students The overall 'hit' rate was 72 5 per cent as compared with a 'hit' rate of 73 5 per cent when 30 variables were used

DISCUSSION

Two out of three students in the national sample enrolled in a secondary (grammar) type school after completing their primary school education This proportion is one of the largest in Europe (11) The reasons for the high enrolment rate in Irish secondary schools are partly historical In the past, only a relatively small proportion of the population obtained employment in industry For students who were not interested in emigration or in pursuing careers on the farm, a white collar job was generally the most attractive alternative Since most

*The first of the two functions in the reduced model accounted for 88 6 per cent of the total discriminatory power (483) The following 15 variables contributed to the reduced model socio economic status number of days absent, verbal reasoning lay administration, sex school location, ordinal position, English reading, satisfactory school behaviour oral Irish, mechanical arithmetic, independence oral English, problem arithmetic and class size The variables are arranged in order of absolute magnitude on the first function

white collar jobs required a secondary school certificate, attendance at a secondary school was the accepted way of advancement Secondly, secondary schools have been generally more accessible than vocational schools, simply because the number of secondary schools has always exceeded the number of vocational schools The comparatively large number of secondary schools may be attributed to the initiative of many religious orders and diocesan clergy who built over 80 per cent of the total number of secondary schools now in existence The traditional emphasis on the classical-academic type of education in these schools was understandable in light of the fact that the fostering of vocations to the religious way of life was among the major goals of many of these schools Thirdly, the preference of most parents for secondary education for their children may be attributed to the status and reward systems which operate within the country In Ireland, as in most other countries (20), white collar work tends to have a higher status than skilled or semi-skilled work

One out of four students transferred from primary to vocational school The verbal reasoning scores and attainment ratings of these students suggest that vocational schools do not attract their proportionate share of the more able primary school children It is, therefore, unreasonable to expect that the performance of vocational students on state examinations should be comparable to that of secondary school students

One of the most welcome trends in Irish education in recent years has been the steady decrease in the proportion of students who terminate their formal education upon leaving primary school The evidence from this study indicates that presently less than 8 per cent of students, as against 62 8 per cent of the adult population (13) drop out of full-time education at the end of primary school Guidance might help in reducing still further the dropout rate Senior primary school students need to be forewarned of the very real social and economic hardships they are likely to encounter without some type of post-primary school qualification Of course it should be pointed out that had the present dropouts remained in school for a few years, they would probably not have been as academically successful as those students who did remain in post-primary school It is important to remember that the primary school terminal leavers differed from the post primary 'stay-ins' in other ways than just length of schooling (e g , attainment, verbal reasoning ability, socio economic status, personality) and the chances of eventual

success or failure for these dropouts may well hinge primarily on these other differences

The present study clearly demonstrates that, in Ireland, secondary school entrants, vocational school entrants and primary school terminal leavers can be distinguished from one another on the basis of measures obtained while the students were still in primary school Through the use of discriminant function analysis, two dimensions or sets of variables were identified which discriminate between the three groups The major contributors to the first and most important dimension were socio economic status, school attendance record, type of primary school attended, verbal reasoning ability and sex Secondary school entrants, by comparison with the two other groups, tended to have higher socio-economic status ratings, better primary school attendance records, had attended non-lay primary (Catholic Protestant or private) schools and had higher verbal reasoning test scores Furthermore, more female than male students entered secondary school At the other extreme, primary school terminal leavers by comparison with the vocational and secondary groups, tended to have lower socio-economic status ratings, poorer primary school attendance records, had attended lay primary schools, had lower verbal reasoning test scores and were predominantly male

The findings of the study indicate that socio-economic status is one of the most powerful discriminators among secondary entrants, vocational entrants and primary school terminal leavers This evidence strongly supports the findings of the earlier Lynch report (12) that socio-economic levels are not equally represented in post-primary schools in Ireland Approximately half (51 per cent) of the vocational school entrants were drawn from partly skilled and unskilled occupational groups In contrast, only 25 per cent of the secondary entrants were drawn from these two groups Over three-quarters (78 per cent) of the primary school leavers who did not enrol in any post-primary school were also drawn from partly skilled and unskilled occupational groups Although early school leaving does occur in Ireland among middle-class children it is predominantly a lower-class phenomenon

The fact that over three-quarters of the terminal leavers came from lower socio-economic homes might be taken as an indication that financial circumstances in the home are related to dropping out of school It has been argued, however, that it is unlikely that the subsistence needs of the majority of the terminal leavers were such that the students were forced to leave school and go out to work to help support members of

the families (19) Since the introduction of so-called 'free' post primary education, the economic cost to a parent of sending a child to post-primary school has been reduced and, for most parents, may not play a crucial role in decisions about a child's future at the end of primary schooling It is more likely that the parents of a drop out fail, either by word or by example, to impress upon their children the importance of pursuing a post-primary education, since they themselves are indifferent to, or place little value on formal education (19, 22) The relevance of financial considerations in some cases should not, however, be ruled out

Even when children from low socio economic backgrounds have the financial resources and desire to persist in school, the educational cards may be stacked against them According to Tannenbaum (24),

> As aliens in a middle class school world, they often lack preparation to stand up to heavy academic pressure They enter school without the wealth of experiences and verbal facility essential to scholastic success, and this early handicap becomes greater and greater as they continue through the grades School punishes them not only for limping along academically but also for behaving in ways that may be sanctioned in their homes and communities but are condemned in a middle-class milieu In short, their life styles are so inhibiting to success at school that extraordinary adjustments are necessary for them to compete on equal terms with classmates from favored backgrounds (p 9)

Despite the difficulties which lower class children are likely to encounter in second-level education the majority of such children in this investigation did stay at school This finding serves to illustrate the danger of type-casting all pupils from low socio-economic backgrounds as probable drop-outs simply because social status is identified as a major discriminator between drop-outs and stay-ins A further study in which lower-class primary school terminal leavers are contrasted with lower-class entrants to post-primary school might yield insights into the reasons why some children continue in full-time education despite apparent adverse circumstances

Following socio-economic status, absenteeism while at primary school proved to be the most significant discriminator among the secondary entrants vocational entrants and primary school terminal leavers The

primary school attendance records of secondary school entrants were superior to those of the vocational entrants and the attendance records of the vocational school entrants in turn were clearly superior to those of the primary school terminal leavers A separate analysis of the data not described in this paper showed that in each of the three post-primary school destination categories urban students had better attendance records than their rural counterparts (8) Numerous other studies have also concluded that the attendance records of early school leavers are generally poor (4, 7, 21, 23) It is of interest that in two other studies in which discriminant function analysis was used, the student's attendance record was also among the major discriminators between drop-outs and stay-ins (10, 18) Most research studies similar to the present one require a considerable amount of data collection and so tend to be rather expensive and time consuming Therefore from the point of view of the researcher, the identification of a variable which involves comparatively little collection cost or effort and which also proves to be a major discriminator among groups is of considerable interest In the present study, the pupil's school attendance record while at primary school was identified as such a variable While poor school attendance may well be related to a student's health, more often it probably reflects a lack of commitment to education in the student's home Thus, the importance of regular school attendance may not be valued sufficiently in the home

A significantly greater proportion of secondary entrants came from Catholic religious Protestant and private schools than from national schools in which the principal teacher was a lay person This finding, however, should not be allowed to obscure the fact that the majority of pupils in each of these categories became secondary entrants Most (90 per cent) pupils who had not attended lay primary schools had attended Catholic religious primary schools (i e , schools in which the principal teachers were members of Catholic religious orders) It might be argued that since religious and private schools are generally found in urban areas and since urban children tend to have higher socio-economic levels than rural children (28), the difference in secondary enrolment might have reflected differences in social class between urban and rural pupils Such, however, does not appear to be the case No significant difference between the mean socio-economic levels of urban and rural children was found for the present sample (8) In examining the relatively high enrolment rate of pupils from religious, private and

Protestant schools, it is important to consider that many Catholic religious orders administer both a secondary and a primary school, often on the same site It seems reasonable therefore, to assume that the most convenient and logical educational progression for children in these schools involves enrolment in the adjacent secondary school Further, the traditional preference of religious orders for secondary education as opposed to vocational education is possibly a factor which may have helped to foster a tradition within Catholic religious primary schools of secondary school enrolment at the end of primary school This kind of tradition, in turn, might attract parents with high educational aspirations to select such primary schools for their children in the first instance, since attendance at them makes access to secondary schools more likely Thus a selective factor may be operating even at the primary school level

Verbal reasoning ability is also a powerful discriminator among secondary entrants, vocational entrants and primary school terminal leavers The mean verbal reasoning score of the secondary entrants group was 104 8, the means for vocational entrants and primary school terminal leavers were 93 4 and 81 7 respectively In terms of verbal reasoning ability the results suggest that a tripartite system of selection exists in Ireland The more able children tend to enter secondary school, those somewhat less than average in terms of verbal reasoning ability go to vocational school, while the least able children tend to drop out at the end of primary school It should be strongly emphasized, however, that there is considerable overlap in scores especially between the secondary and vocational groups For example, in the vocational group, the spread of scores on the verbal reasoning test was from 70 to 130, in the secondary group, the range was 70 to 140 Ten per cent of the vocational entrants had scores on the verbal reasoning test ranging from 109 to 130 At the other extreme 10 per cent of the secondary entrants had scored lower than 86 on the same test The verbal reasoning scores of terminal leavers were more homogeneous than those of the other two groups The vast majority (92 per cent) of this group fell in the lower half of the distribution of verbal reasoning scores It may be that the decision to allow pupils to drop out of full-time education at the end of primary school is strongly influenced by perceptions of children's ability since the mean verbal reasoning score of the drop-out group was more than one standard deviation below the mean for the entire sample It may be that parents permit children to

drop out of school because they feel they would not benefit from further education

In Ireland, up to the age of eighteen, the enrolment rate in post-primary schools has been consistently higher for girls than for boys (17) The findings of the present study suggest that this trend may have changed and that equal numbers of boys and girls now attend post-primary schools However, among one segment of the post primary school population (secondary school students), girls are still in the majority, approximately 55 per cent of the secondary entrants were female Among rural secondary school entrants the discrepancy was even more pronounced, approximately 57 per cent were female On the other hand males predominated among vocational entrants, accounting for 60 per cent of the total number of entrants When secondary and vocational entrants are pooled, it is found that 50 per cent of the total number of post-primary entrants are female Clearly, there is insufficient evidence in the data of the present study to state that female students are over-represented in post-primary schools

Slightly over half of the primary school terminal leavers were male In rural schools, 80 per cent of the terminal leavers were male in the urban schools, on the other hand, approximately 60 per cent are female

The drop-out in a particular area may well be related to employment opportunities in that area In the present study, the number of terminal leavers was greater among urban children than among rural children This is not surprising since the demand for cheap unskilled labour is likely to be far greater in commercial urban areas than in rural areas It was found that almost all of the urban female primary school terminal leavers found employment in factories Most male primary school terminal leavers were to be found in dead-end jobs of the type normally associated with young male unskilled labour in urban areas (e g newspaper and milk delivery, fruit seller, etc) The majority of male rural primary school terminal leavers were working as farm labourers It is indeed likely that as Ireland becomes more industrialized and as the demand for young cheap labour changes, the drop-out rate may change For this reason it is important that indices of labour demand in different localities be gathered in future Irish studies of early school leavers

Scores on the second dimension derived from the discriminant function analysis can be interpreted as indicating that terminal leavers were more socially mature than secondary entrants, and that the vocational

entrants were the least socially mature of the three groups This conclusion is based on the interpretation that low personality ratings on the second function represent a type of social immaturity on the part of the student It is likely that many teachers in rating the students on the personality variables compared them with other children in the same class Obviously many of the eventual terminal leavers (who scored highly on the y_2 function) had been retained for a second year in certain standards since over half (51 per cent) of this group had not advanced beyond fourth or fifth standard by the age of eleven (8) (In contrast 28 per cent of eventual vocational entrants and 16 per cent of eventual secondary entrants had not advanced beyond fourth or fifth standard) Class retention would have helped to ensure that many of the terminal leavers would have been among the eldest students in their class This could have resulted in the terminal leavers being rated more socially mature by their teachers than either the secondary or vocational pupils (i e, after the effects of those variables which had contributed to y_1 had been partialled out)

The results of the present study illustrate the multivariate nature of the differences that exist between secondary school entrants, vocational school entrants and primary school terminal leavers For the policy maker these differences underline the necessity of considering a number of factors simultaneously since groups such as secondary and vocational school entrants differ in many respects from one another It should be remembered too that the results help to isolate the major independent sources or dimensions of difference among these groups from a large pool of information The longitudinal nature of the study also showed that measures obtained on pupils while still enrolled in primary school are important predictors of subsequent post-primary school destination The early identification of these important variables can help to indicate areas where timely guidance might be introduced to ensure that each student receives the education most suited to his abilities However, the question of the usefulness of the primary school measures as predictors of the length and quality of performance of pupils in the post-primary sector must await further study

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