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RELATIONSHIPS BETWEEN ACHIEVEMENT IN SPOKEN IRISH AND DEMOGRAPHIC, ADMINISTRATIVE, AND TEACHING FACTORS*

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The investigation of the factors affecting achievement in spoken Irish at primary and post primary levels has been hampered by the absence of objective tests In the present study a recently developed objective test of spoken Irish was available and achievement on the test of a national sample of sixth grade classes (N=119) was related to nine predictor variables One demographic variable (region) one adminis trative variable ('size of the sixth grade group within the class unit) and two teaching variables (extent of Irish medium instruction and type of course method used) explained significant proportions of the variance in class achievement The proportions of variance explained by these four variables were 7 6% (region) 8 9% (size of sixth grade group) 13 5% (extent of Irish medium instruction), and 11 0% (type of course method)

None of the research on variables related to achievement in the Irish language in schools in Ireland over the last twenty years has used objective measures of competence in the spoken language, such measures were not available (12) The recent development of a series of objective tests of spoken Irish for primary school pupils provided an opportunity for the first time to examine the mastery of objectives in spoken Irish achieved

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by pupils in a national sample of sixth grade classes (13) The present study may be regarded as an extension of that study In it an attempt is made to identify some of the demographic, administrative, and teaching variables which affect achievement in spoken Irish

Existing research on variables related to achievement in Irish is based on four types of criterion measure pupil performance on objective reading based tests, teachers' perceptions of pupil competence or of the difficulty presented by recommended course material, pupil self assessment of ability in Irish, and pupil performance on public exam inations The variables studied in relation to these measures can be roughly divided for convenience into 'non school' and 'school' ones Non school variables relate to factors which are personal (e g , IQ, verbal reasoning ability, gender), familial (e g , socio economic status, home background) and linguistic (e g , home attitudes to Irish, home use of Irish) School variables include ones which are demographic (e g , region, location), administrative/organizational (e g , school size, number of grades within a class) and relate to teaching (e g , medium of instruction, method) In the present paper, the focus is on school variables and on their relation ship to achievement in Irish at primary and post primary school levels It may be noted in passing that the CLAR study (3) found that the two factors most strongly related to adult ability in Irish were also broadly school related – the amount of Irish received at primary school and the amount received at post primary school Research on variables related to ability in Irish in the adult population will be touched on only incidentally in this paper Studies related to achievement in Irish speaking areas of the country will not be considered

Turning first to non school variables, three studies report that perform ance on measures of cognitive ability (general ability, verbal reasoning) is significantly and positively related to achievement in Irish reading at the primary level (5, 8, 29) The proportion of criterion variance explained by such measures, when they are entered first in regression equations, is larger than that explained by any other variable (8, 29) Gender has been related to achievement in Irish in two studies In one of these, the performance of girls was found to be superior to that of boys in the Irish papers in public examinations (31) In the other, primary school pupils in all girls' and mixed schools were found to perform better than pupils in all boys' schools on an objective test of Irish reading (29) Socio-economic status is reported to be significantly correlated with achieve ment in Irish reading in primary schools in two studies In both cases,

the tendency was for achievement to be higher in the higher socio economic groups (28, 29) There was also a tendency for the gap between socio economic groups to increase over the period of primary schooling (28) In a further study, a significant relationship between home background variables and a measure of the ability to correctly pronounce printed Irish words has been reported for a group of primary school pupils living in a disadvantaged area (22) Reported attitudes of parents and students to Irish have been shown to be related to self reported ability in Irish in a study of first and sixth year post primary students in all Irish, Irish stream, and Irish as a subject only programmes (2) In a study of pupils in all Irish and English medium primary schools, parents' attitude to Irish was also strongly and positively related to achievement in Irish reading The effect on achievement was mediated, however, by the choice of an all Irish rather than an English medium school Within the English-medium schools, even though there was considerable variation in parents' attitude towards Irish, the variation was unrelated to pupil achievement in Irish reading (5) Finally, in relation to 'non school' factors, it may be noted that the use of Irish in the families of children attending all Irish schools is considerably higher than in the general population, both before and after commencement of all Irish education (4, 5, 32) The extent to which the higher achievement in Irish reading of pupils in all Irish schools can be attributed to greater home use of Irish as opposed to more favourable attitudes to Irish has not been precisely estimated There are also a number of other differences between the parents of pupils in all Irish and English medium schools which could contribute to the superior achievement of all Irish pupils In particular, there is evidence that parents of all Irish pupils are of a higher socio economic status, have a higher standard of education, and have a higher level of competence in Irish than parents in the general population (32) In relation to parental competence in Irish, it has been established that this variable is significantly related to the achievement in Irish reading of third grade pupils, even after the type of school attended (all Irish or English medium) has been taken into account (5)

Studies in which the relationships between school variables and achievement in Irish were investigated can be divided into three types First, there are a number of studies in which proportion of variance in achievement in Irish which can be explained by school or educational factors is contrasted with the proportion of variance in other subjects explained by such factors Second, there is a large research literature on the relationship between non subject specific administrative/organizational and

instructional variables and scholastic achievement Some of these variables, including school size, class size, teaching time, organization of instruction, and teaching approach have also been studied in relation to Irish Third, there are studies which relate more or less subject specific variables – extent of Irish medium instruction, course method used – to achievement in Irish I include here also studies which provide information on the influence of demographic variables, such as region and location While these variables are potentially relevant to achievement in any school subject, they are included under this heading because of the possibility that they may have a special educational linguistic significance in the case of Irish

A consistent finding to emerge from studies of the first type is that school and educational variables are more strongly related to achievement in Irish than to achievement in other curricular areas For example, it has been estimated that school effects on Intermediate and Leaving Certificate grades are stronger for Irish than for English (23, 26, 27) Similar findings have been reported at the primary school level in studies which used objective tests of Irish and English reading (6, 8, 29) Correspondingly, personal variables appear to contribute less to achievement in Irish than to achievement in some other subjects (8, 29) For example, it is reported in one study that 71 5% of the variance in English reading scores, but only 43 9% of the variance in Irish reading scores, is explained by pupils' verbal reasoning scores (8) These studies suggest that achievement in Irish depends more on the work of the school and less on spontaeneous learning outside the school than does achievement in some other subjects

For this reason, non subject specific administrative/organizational and instructional variables investigated in the second type of study mentioned above are more promising predictors of achievement in Irish than they are of achievement in other subjects Two administrative/organizational variables which have been extensively investigated elsewhere, school size and class size, have also been examined in relation to Irish The evidence concerning school size generally appears to be that small schools have a slight advantage (33) The evidence in the case of Irish is inconclusive One study conducted in the mid 1960s found that fifth grade pupils in three teacher primary schools did better than those in either smaller or larger schools on an objective test of Irish reading (25) By contrast, it was found in a more recent study that Irish reading performance was slightly better in smaller (two teacher) and larger (4 15 teacher) schools

than in three teacher schools (29) Studies of teachers' perceptions suggest that small schools improved more than large ones in all areas of Irish achievement, including oral Irish, in the period from the early to the mid 1970s (7, 20) In one of these surveys, which was conducted by the Department of Education, it is reported that 60% of teachers of senior grades in primary schools with 1 3 teachers had perceived some improvement in oral Irish during that period As school size increased, the percentage of teachers who perceived an improvement dropped steadily, reaching a low of 27% in 16 teacher schools (7) In interpreting these data, it must be borne in mind that the perceptions of teachers may not necessarily refer to the position in their own school or in schools similar to their own

Although the large body of data on class size is conflicting, a recent meta analysis of 77 studies indicates that small classes, particularly those with less than 20 students, tend to have higher achievement (11) Contrary to this, the only relevant Irish study reports that fifth grade pupils from larger classes perform better on Irish reading tests than do pupils in smaller classes (29) Other variables related to class membership, such as the number of grades within the class and the number of pupils of a particular grade represented in the class, do not appear to have been extensively studied In so far as variables such as these relate to factors such as pupil heterogeneity and individualization of instruction, they may be expected to predict achievement, particularly in Irish Both 'number of grades in the class unit' and 'number of pupils of a particular grade within the class unit' are included as predictor variables in the present study

A non subject specific instructional variable which has been studied in relation to Irish is teaching time A significant positive relationship between the amount of time devoted to teaching Irish as a subject and achievement in Irish reading is reported in one study (8) In a second study no relationship was found when variation in teaching time within schools was considered (29) 'Formal' approaches to teaching have been found to be more closely associated than 'informal' approaches with achievement in Irish reading (6) Higher achievement in Irish reading has also been found to be associated with more traditional methods of classroom management in which a relatively large proportion of time is spent teaching the class as a whole and a relatively small proportion of time is spent on teacher prescribed group work and pupil chosen individual work (8) One variable examined in the present study, which has not previously been studied in relation to Irish, is teaching experience On

balance, the available evidence suggests that there is a positive relationship between teacher age/experience and scholastic achievement (9, 10) Measures of teaching experience, of course, may reflect not just the accumulation of professional expertise but also differences in original training

The third category of study of relationships between school variables and achievement consists of studies which focus on variables more specifically related to Irish as such The variables in question include use of Irish as a medium of instruction, course method, region, and location There is considerable evidence from studies in Canada and the United States that teaching school subjects through the medium of a second language is strongly and positively related to achievement in that language (34, 35) The contribution of this approach to the development of second language competence must be interpreted in the light of the fact that the approach generally has strong support from parents, that substantial amounts of second language medium instruction are involved, and that the second languages in question are prestigous languages of wider communication The more variable results relating to Irish medium instruction reported for this country can probably be explained by the absence of some of these features in the situation here (4, 5) Macnamara (25) in a study carried out in the 1960s found that the performance of fifth grade pupils on a reading based test of Irish improved significantly as the use of Irish as a medium for teaching arithmetic increased But this positive effect was only observed in a group in which the medium of instruction effects may have been confounded with extraeneous factors such as teacher skill and enthusiasm for the language In a group where these factors did not seem to enter, medium of instruction was not related to achievement in Irish Macnamara points out that the parents of pupils who attended most of the Irish medium schools in his sample would not have had a choice of school for their children and probably did not differ from the generality of Irish parents in their attitudes to Irish and English A more recent study by Cummins in the mid 1970s showed that the Irish reading scores of third grade pupils in all Irish schools in Dublin were significantly higher than the scores of similar pupils in English medium schools, the mental ability and English reading scores of the two groups did not differ significantly (5) Parents of pupils in the all Irish schools in this instance, however, were distinguished from the parents of pupils in Macnamara's study by the fact that they had consciously chosen all Irish education for their children and that, compared to the general population, they were more committed to Irish and used more Irish at

home (4, 5) Together, these two studies suggest that if variables such as parental attitude to Irish, parental competence in Irish, home use of Irish, teacher commitment to Irish, and teacher skill in teaching Irish are properly interpreted as being prior to the medium of instruction variable, then medium of instruction as such may make only a small independent contribution to the explanation of variance in Irish achievement

Three other studies provide data relating to the effects of Irish medium instruction In none of these, however, can the influence of the extraneous factors just mentioned be excluded Evidence from the CLAR report shows that the self assessed ability in Irish of first and sixth year post primary students in all Irish, Irish stream, and Irish as a subject only programmes reflects the extent of Irish medium instruction received at both primary and post primary school levels (2) In a more recent study, 69% of a sample of second grade pupils in all Irish schools in the Dublin area were perceived by their mothers as having a high level of ability in Irish A little more than a third of these pupils came from families where the eldest child did not attend an all Irish school Only 18% of these older children who were not attending an all Irish school were perceived by their mothers as having a high level of ability in Irish Finally, there is evidence from a third study that there may be a threshold below which small amounts of time devoted to teaching through Irish have no measurable effect on achievement The data in this case, based on the general population of third and fifth grade pupils in schools in Ireland, revealed no relationship between the amount of Irish medium instruction received, measured on a five point scale (excluding time teaching Irish as a subject), and achievement in Irish reading (29) An indication of the amount of Irish medium instruction which is given in primary schools generally is provided by the results of a national survey of fifth and sixth grade teachers between the ages of 35 and 55 in both Irish and English speaking areas conducted by I T E in 1975 Just over a third (36 3%) of the teachers in the sample reported that they taught no subject except Irish through Irish, while a further half (51 4%) reported that they spent less than two hours per week teaching through Irish (30)

A second variable specifically related to Irish as a subject is course method Only two course methods are currently used to any great extent in Irish primary schools – the mainly audio visual *Nuachursaí* (e g , 17) and the ABC method (16), which has been described as a 'well planned and effective aural oral approach' (30) Communicative approaches (15,

21, 36, 37) have not yet been adopted The ABC method was widely and consistently applied in all primary schools from the early 1930s to the mid 1960s A Department of Education booklet on the approach describes both teaching methods and course content The letters ABC refer to the three aspects of the language around which the approach was organised – A (language structure), B (vocabulary) and C (free conversation/ fluency) (16)

The only formal comparison of the two methods currently in use is provided by a survey of the perception of a national sample of 35–55 year old teachers who had direct experience of both the *Nuachursaí* and ABC The results reveal disparities in the percentages of teachers who use each method, prefer each method, and believe each method gives the best results The vast majority (89%) of the teachers in the sample used the *Nuachursaí* usually or almost daily, while a majority of the remaining 11% used either ABC or ABC in combination with the *Nuachursaí* Nevertheless, only 69% of all teachers preferred the *Nuachursaí*, while 31% preferred ABC The percentage preferring the *Nuachursaí* would reduce further to about 56% if prepared ABC courses and materials were made available as they are in the case of the *Nuachursaí* Finally, those who preferred ABC appeared to be more influenced by the results expected than were those who preferred the *Nuachursaí* – 84% of those who preferred the ABC, but only 71% of those preferring the *Nuachursaí* believed their preferred method gave the best results (30) These responses suggest that course method is a promising variable for investigation in relation to achievement in spoken Irish

Finally, there are studies which examine the relevance of region and location to achievement in Irish Two studies provide evidence on regional differences in achievement Macnamara (25) found that fifth grade pupils in English speaking areas of counties in the 'West' of the country had a significantly higher level of achievement on a reading based measure of Irish than had those in the 'Rest' of the country The seven counties in the 'West' were those in which Irish speaking districts had survived – Waterford, Cork, Kerry, Clare, Galway, Mayo, and Donegal Three characteristics of the counties in the 'West' which might account for the superior performance of pupils resident in them were suggested by inspectors and teachers First was the generally higher standard of achievement in Irish in the 'West' which was required at the time by the Department of Education This policy was designed to promote the spread of Irish from existing Irish speaking areas to neighbouring English speaking

areas Second was the stronger tradition in the 'West' of looking on education generally as a route to vocational advancement And third, there was the presumed ease with which pupils in the West' learn Irish because of the greater influence of the syntax and phonetics of Irish on spoken English in that part of the country Macnamara argues that the second and third explanations are difficult to reconcile with the fact that the scores of pupils in the 'West' on a reading based test of English were not significantly different from the scores of pupils in the Rest' To that extent, the first explanation seems to be favoured

A more recent study also provides an indirect measure of regional differences in achievement in Irish The measure in question consists of the perceptions of fifth and sixth grade teachers of the difficulty for pupils presented by the standard of Irish in the *Nuachursai* The study does not permit a comparison of the 'West' versus the Rest , neither is a distinction made between Irish and English speaking areas in presenting data relating to regional differences The results do show however that considerably more teachers in Dublin city and county than in any other region perceive the *Nuachursai* as being too difficult for pupils Dublin is followed, in decreasing order of the proportion of the teachers perceiving pupil difficulty, by 'Leinster/Cavan Monaghan', 'Munster', and 'Connaught/ Donegal' (30)

The relationship between achievement in Irish and location, in terms of the urban, town or rural situation of the school, rather than its regional location, was also examined in this study More teachers in city and town locations than in rural locations perceived the *Nuachursai* as being too difficult for pupils This result is broadly consistent with the results of another study which show that third and fifth grade pupils in urban schools have a lower level of achievement in Irish reading than those in town and rural schools (29) One question which these studies give rise to is whether differences in achievement in Irish due to region and location are really distinct Both variables are examined in the present study in an attempt to answer this question

This examination of the main studies available reveals that a very large number of variables, linguistic, social, and educational, have been shown to be related to achievement in Irish at primary and post primary school levels Clearly, many of these variables are themselves likely to be inter related in a complex manner For example, both teaching variables (e g , medium of instruction) and administrative/organizational variables

(e g , school size) may be expected to be related to demographic variables such as region and location Against this background, the present study can be seen as serving two functions First, by using regression analyses, it assesses the unique contribution of a range of variables to the explanation of variance in achievement in Irish The demographic, administrative/ organizational and teaching variables which are examined include some which have been examined in previous studies but also some which have not previously been investigated, such as course method Second, unlike previous research, the focus in the present study is on the prediction of achievement in spoken Irish using an objective test as the criterion measure

METHOD

Criterion measure

The criterion variable, achievement of sixth grade classes in spoken Irish, is measured by the mean of sixth grade pupils' total score on *Beal triail Ghaeilge I T E –VI (BG VI)* for each class *BG VI,* which is fully described elsewhere (13), is a 135 item criterion referenced test of spoken Irish, based on 16 speaking and listening objectives of the fifth and sixth grade Irish curriculum The objectives represented in the test involve the possession of defined linguistic knowledge and the use of that knowledge in speaking and in understanding Irish The main written sources on which the definition of objectives was based were the primary school curriculum handbook (18) and the fifth and sixth grade *Nuachursai* handbooks (17) The objectives ranged from relatively broad categories of behaviour, such as 'general comprehension of speech', to quite narrow ones, such as 'control of the morphology of verbs in speaking'

All items used to test the listening objectives were in multiple choice form and were presented on a cassette tape to entire class groups of pupils The items relating to listening objectives were always administered before those relating to speaking objectives and on a different day Items repre senting the speaking objectives were administered in a face to face inter view situation While the general directions to the pupils were primarily in English for the listening items, and in both Irish and English for the speaking items, the item material itself was always in Irish only

Predictor variables

The examiners who administered *BG VI* also obtained information from the class teacher (and/or school records) relating to a number of demographic, administrative, and teaching variables The details were

recorded on a form which specified the information required and, where necessary, the answer options available This provided the data on the nine variables listed below which were used to predict scores on the criterion measure (i e , the mean score of the sixth grade pupils in each class on *BG VI*) All of the nine predictor variables relate to the particular class unit (teacher) involved in testing They were composed of two demographic variables (i, ii), four administrative/organizational variables (iii vi), and three teaching variables (vii ix)

(i) Region (four categories) (a) Dublin city and county, (b) Leinster (but excluding Dublin) and Cavan Monaghan, (c) Connaught and Donegal, and (d) Munster

(ii) Location (three categories) (a) city, (b) town, (c) rural

(iii) Gender composition of sixth grade class (three categories) (a) all boys, (b) all girls, (c) mixed

(iv) School size total number of pupils on school rolls

(v) Number of grades in the class unit

(vi) Size of sixth grade in class unit number of sixth grade pupils in the class unit

(vii) Extent of Irish medium instruction (three categories) (a) all aspects of the curriculum taught through Irish, (b) some aspects taught through Irish, and (c) no aspects taught through Irish Since there was no all Irish school in the sample, the first category was never used and the analyses only involve categories (b) and (c)

(viii) Course method (three categories) (a) *Nuachursai* (audio visual), (b) ABC related, (c) other Originally a distinction was made between ABC' and 'ABC plus *Nuachursai* Because of the small numbers of teachers using ABC alone, these two categories were combined into ABC related' Although there was a small number (n=3) of teachers falling into the 'other' category, there was no basis for combining them with either ABC related or *Nuachursai* categories

(ix) Teaching experience number of years which the teacher had taught

Sample

The sample, which is the same as that used in a previous study (13), was randomly chosen from sixth-grade classes stratified by county It was selected by first listing all classes containing sixth grade pupils in the Republic of Ireland, excluding those in Gaeltacht schools and in schools for the handicapped The order of listing classes was by roll number of school within county Where more than one class within a school contained sixth grade pupils, these classes, identified by teacher, were listed consecutively Starting with a random number, every 27th class

was then selected, giving 119 classes in all In effect, no more than one sixth grade class could be selected from any one school because of the size of the selection intervals Only pupils who completed both the listening and speaking section of the test are included in the present analyses Eleven individual pupils who had either never studied Irish or who had only recently begun to do so (e g , children of recently returned emigrants) were also excluded None of the classes happens to come from an all Irish school Details of the population, sample statistics, and sampling fractions are given in Table 1 All testing was conducted by primary school inspectors of the Department of Education in May and June, 1978

TABLE 1

POPULATION AND SAMPLE STATISTICS FOR SIXTH GRADE CLASSES

Grade Composition of classes	Population*		Sample		Sampling fraction (classes)
	Classes	6th grade pupils	Classes	6th grade pupils	
	N	N	N	N	
6th grade only	1,051	37,220	36	1,132	034
6th grade plus one other grade	931	15 388	33	526	035
Multigrade (including 6th)	1 226	11,006	50	326	041
Total	3,208	63 614	119	1 984	037

* Republic of Ireland excluding Gaeltacht areas Information supplied by Statistics Section, Department of Education

Analysis

Simple correlational and multiple regression analyses were carried out to determine (i) which predictor variables were significantly related to class achievement in spoken Irish, (ii) how much variance in class achievement was explained by each variable when the effects of other predictors were held constant, and (iii) what proportion of the total variance in class achievement in spoken Irish could be explained by the nine predictor variables together The predictor variables were entered in the regression

equation in a pre determined order Hierarchical inclusion permits an assessment of the successive effects of the different predictors on achieve ment In other words, the increase in R^2 as each predictor is entered is interpretable in terms of additional variance accounted for after the effects of the previously entered variables have been removed (1) The first six variables were entered in the order in which they are listed above, that is demographic variables, followed by school administration ones The remaining three variables (vii to ix), which relate to teaching, were then entered in a stepwise fashion

The order of entry of variables is intended to reflect the broader context within which each predictor variable might be expected to affect achievement in spoken Irish For example, it seems reasonable to assume that the teaching of Irish responds to regional differences in the degree of 'support for' or 'seriousness about' Irish rather than the other way round That is, it does not seem plausible to assume that regional differences in achievement in spoken Irish are due simply to the accidental accumula tion of favourable teaching factors in particular regions Similarly, adminis trative/organizational arrangements relating to school size, gender compos ition of class, number of grades in classes, and number of pupils at each grade level are probably all primarily determined by population density and, thus, all come within the scope of 'region' and 'location' In the present context of predicting language performance, it seems correct to consider 'gender composition of sixth grade' as being prior to the other three administrative/organizational variables since there is evidence that gender is related to linguistic ability (24) Finally, the administrative/ organizational variables can be seen as defining the general educational constraints within which class level teaching variables have their effect It is more difficult to assign a logical ordering to the three teaching variables and it is for this reason that they were entered in the equation as a group

RESULTS

A breakdown of the criterion variable and of classes/teachers according to each predictor variable is provided in Table 2 For the purpose of this breakdown, continuous predictor variables have been translated into categorical form Looking at the columns relating to teachers and classes in Table 2, two points are notable First, less than a quarter of the classes are taught some aspects of the curriculum through Irish Second, the figures relating to course method show that 58 82% of the teachers use

the *Nuachursai*, while 38 65% use ABC related methods The latter is composed of 5 04% of teachers who use the ABC method alone and 33 61% who use the ABC method in combination with the *Nuachursai* The results of cross tabulation (not shown in Table 2) reveal that the percentage of teachers using ABC related methods who teach some aspects of the curriculum through Irish is 28 88% while the corresponding percent age for teachers using the *Nuachursai* is 18 57 percent

TABLE 2

MEANS AND STANDARD DEVIATIONS OF SCORES ON THE CRITERION VARIABLE (SPOKEN IRISH) FOR PUPILS CATEGORIZED IN TERMS OF PREDICTOR VARIABLES

PREDICTOR VARIABLE	CRITERION VARIABLE MEAN	S D	N (classes/ teachers)	% (classes/ teachers)
Region			(119)	
(i) Dublin City and County	62 73	21 75	21	17 65
(ii) Leinster/Cavan Monaghan	65 94	18 64	34	28 57
(iii) Connacht/Donegal	73 76	18 15	26	21 85
(iv) Munster	76 70	18 50	38	31 93
Location			(119)	
(i) City	63 06	20 14	27	22 69
(ii) Town	66 99	18 58	24	20 17
(iii) Rural	74 72	18 95	68	57 14
Gender composition of 6th grade			(119)	
(i) All boys	66 02	21 14	22	18 49
(ii) All girls	70 23	19 46	31	26 05
(iii) Mixed	72 15	19 28	66	55 46
School size			(117)	
1 100 pupils	74 93	19 54	51	43 59
101 200 pupils	70 07	18 47	23	19 66
201 300 pupils	67 76	17 84	13	11 11
301-400 pupils	68 15	23 29	7	5 98
401 500 pupils	58 08	15 84	10	8 55
501+ pupils	66 30	20 98	13	11 10
*Number of grades in class unit**			(119)	
1 grade	61 91	17 76	36	30 25
2 grades	72 08	18 31	33	27 73
3 grades	74 58	16 97	15	12 61
4+ grades	76 16	21 43	35	29 41

TABLE 2 – Contd

PREDICTOR VARIABLE	CRITERION VARIABLE MEAN	S D	N (classes/ teachers)	% (classes/ teachers)
*Size of 6th grade in class unit**			(119)	
0 10 pupils	75 81	21 24	46	38 66
11 20 pupils	71 19	16 74	31	26 05
21 30 pupils	73 48	18 77	13	10 92
30+ pupils	60 07	16 92	29	24 37
Extent of Irish medium instruction			(118)	
Some aspects of curriculum	83 77	17 71	26	22 03
No aspect of curriculum	66 92	18 68	92	77 97
Course method			(119)	
(i) *Nuachursai*	67 41	20 25	70	58 82
(ii) ABC related	76 91	16 66	46	38 65
(iii) Other	45 05	11 07	3	2 52
*Teaching experience**			(119)	
0 10 years	65 15	18 95	33	27 73
11 20 years	72 08	20 95	38	31 93
21 30 years	75 23	16 97	29	24 37
31+ years	69 51	21 12	19	15 96

* These variables are treated as categorical here only for graphic purposes In the correlational analysis they are treated as continuous variables

The zero-order correlations between the predictor variables and the criterion variable, together with the level of statistical significance associ ated with each, are given in the first column of Table 3 It can be seen that the direction of association between each of the predictor variables and the criterion variable indicated by the correlation values is consistent with the trends evident in the corresponding criterion means in Table 2 Three points about the correlations and about the regression analyses described later should be noted First, they are based only on those 116 classes for which information was available on all nine predictor variables Second, where possible, it was the continuous form of predictor variables, rather than the categorical form, as in Table 2, which was used in the correlation and regression analyses Third, those predictor variables which were in the form of nominal scales such as 'region', location', 'gender composition of sixth grade', and 'course method' had to be recoded as sets of dummy variables in computing correlations and conducting regress

TABLE 3

ZERO ORDER CORRELATIONS BETWEEN CRITERION (SPOKEN IRISH) AND PREDICTOR VARIABLES (N=116)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Criterion variable																		
	Region																		
2	Dublin	−19																	
3	Leinster/Cavan Monaghan	−14	−30																
4	Connaught/Donegal	11	−25	−33															
5	Munster	19	−32	−43	−36														
	Location																		
6	City	−21	75	−35	−24	−07													
7	Town	−09	−18	24	09	−17	−28												
8	Rural	25	−49	10	13	20	−62	−58											
	Gender composition of sixth grade																		
9	All boys	−11	12	−06	−04	−00	10	30	−32										
10	All girls	−01	27	−08	−13	−04	36	17	−45	−29									
11	Mixed	09	−33	12	14	03	−40	−39	65	−53	−66								
	School/instruction																		
12	School size	−22	43	−09	−24	−07	55	25	−68	12	45	−50							
13	Number of grades in class	15	−27	05	19	01	−38	−26	54	−10	−26	31	−67						
14	Size of 6th grade in class (S−6)	−30	29	−07	−15	−04	46	27	−62	26	28	−46	78	−80					
15	Extent of Irish medium instruction	37	−15	−06	−03	21	−10	−12	18	−05	−04	08	−11	10	−12				
	Course method																		
16	*Nuachursai*	−21	−15	22	06	−14	−08	04	03	−04	−17	18	−09	13	−09	−09			
17	ABC related	28	13	−27	−03	18	11	−14	03	−07	20	−12	03	−08	−00	12	−95		
18	Other	−21	06	14	−09	−11	−09	32	−18	34	−10	−18	20	−17	30	−09	−19	−13	
	Teachers																		
19	Teaching experience	17	−13	−08	03	16	−21	00	18	15	−18	04	−16	−01	−04	−11	−28	26	09

Correlations with absolute values of 18 and greater are significant at the 05 level those of 21 and greater are significant at the 01 level Decimals have been omitted

ion analyses Each dummy variable can be seen as setting up a contrast between one category of a nominal variable (e g , 'city') and all other categories of that variable (e g , 'town' and 'rural' considered together) In the case of multiple regression analyses, the number of dummy variables necessary to represent a nominal variable is one less than the number of categories in that variable Where a simple correlation matrix such as that in Table 3 is concerned, however, it is desirable to represent each nominal variable category by a dummy variable for completeness of presentation

Some of the dummy variables corresponding to region', location , and 'course-method', but none of the ones corresponding to gender composition of sixth grade', are significantly correlated with the criterion variable (Table 3) The sign of the correlation coefficient in the case of a dummy variable indicates whether the criterion mean for classes in the nominal category of interest (e g , 'city classes) is larger (positive) or smaller (negative) than the mean for classes not in that category (e g , 'town' and 'rural' classes) (1) Specifically, Table 3 shows that Dublin city and county classes have a significantly lower average level of achievement in spoken Irish than classes in other regions, while classes in Munster have a significantly higher average level of achievement than classes in other regions In relation to 'location', city classes have a significantly lower average level of achievement than combined town and rural classes, while rural classes have a significantly higher average level of achievement than combined town and city classes Classes in which the *Nuachursai* are used have a significantly lower average level of achievement than classes in which ABC related and 'other' methods are used Classes using ABC related methods have a significantly higher average level of achievement than those using the *'Nuachursai* or 'other' methods

Of the remaining five variables, three (school size', 'size of sixth grade in class', and 'extent of Irish medium instruction) are significantly correlated with class achievement in spoken Irish The directions of these correlations show, and this is consistent with the trend in the criterion means in Table 2, that classes in smaller schools, classes with fewer sixth grade pupils and classes taught some aspects of the curriculum through Irish have a significantly higher average level of achievement in spoken Irish than, respectively, classes in larger schools, classes with more sixth grade pupils and classes taught no aspect of the curriculum through Irish Two variables, however, are not related to achievement in spoken Irish 'Number of grades in class' is not significantly correlated with achievement despite the apparent steadiness of the trend in the criterion variable means

for different values of this predictor variable in Table 2 The correlation relating to teaching experience, which indicates a tendency for classes taught by younger teachers to have a lower level of achievement than classes taught by older teachers, approaches but does not reach statistical significance

Although the simple correlations for continuous variables could be used to predict the percentage of variance in achievement explained by each, this would not be possible in the case of nominal variables Instead, multiple R, which takes account of the partial correlation between dummy variables representing a nominal variable, must be computed Table 4 contains multiple R and R^2 values, as well as the value of F and p for each variable The value of the multiple R for continuous variables is, of course, the same as the value of the zero-order correlation given for these variables in Table 3

TABLE 4

REGRESSION OF A MEASURE OF CLASS ACHIEVEMENT IN SPOKEN IRISH SEPARATELY ON EACH PREDICTOR VARIABLE

Predictor variable	Multiple R	R^2	F	df	p
Region	275	076	3 06	3 112	05
Location	262	069	4 18	2 113	01
Gender composition of 6th grade	119	014	81	2 113	NS
School size	222	049	5 92	1 114	01
Number of grades in class	152	023	2 71	1 114	NS
Size of 6th grade in class	298	089	11 15	1 114	01
Extent of Irish medium instruction	367	135	17 72	1 114	01
Course method	332	110	7 00	2 113	01
Teaching experience	167	028	3 26	1 114	NS

Six of the nine predictor variables account for significant proportions of variance, ranging from 13 5% for 'extent of Irish medium instruction' to 4 9% for 'school size' Consistent with the zero order correlation data, the proportions of variance explained by 'gender composition of sixth grade', 'number of grades in class', and 'teaching experience' are not statistically significant An examination of the zero order correlations between the predictor variables themselves (Table 3), however, suggests that the variance explained by each predictor is very unlikely to be unique For example, there are significant correlations between variables within

each of the demographic, administrative/organisational and teaching groups of predictors There are also significant correlations between each of the administrative/organisational and teaching variables and one or both of the demographic variables The teaching variables and the administrative/ organizational variables are not so highly correlated with each other The only correlations between these two groups which are significant are those involving 'gender composition of sixth grade', which is, in any case, unrelated to achievement, and the 'other' course method dummy variable, which represents too few cases to be of practical significance

Looking in more detail at those correlations between predictors which involve at least one teaching variable, a number of conclusions can be drawn It may be noted that some Irish medium instruction is significantly more likely to occur in the Munster region and in rural locations Despite the tendency noted earlier for more of those teachers using ABC related methods than of those using the *Nuachursai* to teach some aspects of the curriculum through Irish none of the correlations between 'extent of Irish medium instruction' and the three 'course method' dummy variables is significant Neither is 'extent of Irish medium instruction significantly correlated with 'teaching experience In the case of course method', it can be seen that ABC related methods are significantly more likely to be used in Munster than in other regions and by older teachers rather than younger teachers The *Nuachursai* are significantly more likely to be used in the Leinster/Cavan Monaghan region and by younger teachers

To take account of the relationships between the predictors and to estimate how much unique variance in achievement is attributable to each predictor, a multiple regression analysis, using a hierarchical inclusion procedure, combined with stepwise inclusion where appropriate, was carried out The nine variables explain 32 4% of the total variance in class achievement in spoken Irish (Table 5) This value is reduced to 23% when an adjustment is made for inflation in sample R^2 (1) The magnitude of the shrinkage in sample R^2 increases as the ratio of predictors to *n* increases The first variable entered, 'region', accounts for 7 6% of the variance which is significant at the 05 level Thus, class achievement is a function of the region in which the class (school) is situated 'Location' on being entered next increases R^2 by 3 7% to 11 3 percent This increase approaches, but does not reach statistical significance Of the variables entered third, fourth, and fifth ('gender composition of sixth grade', 'school size', and 'number of grades in class'), none adds significantly to the variance explained The increases produced by gender composition

TABLE 5

MULTIPLE REGRESSION OF A MEASURE OF CLASS ACHIEVEMENT IN SPOKEN IRISH ON DEMOGRAPHIC, ADMINISTRATIVE AND TEACHING PREDICTOR VARIABLES: SUMMARY TABLE

Predictor variables	Multiple R	R^2	Adjusted R^2	R^2 change	F (change)	df	p
Region	275	076	051	076	3 06	3 112	05
Location	337	113	073	037	2 32	2 110	NS
Gender composition of 6th grade	359	129	072	015	0 96	2 108	NS
School size	367	134	070	006	0 72	1 107	NS
Number of grades in class	367	135	062	001	0 07	1 106	NS
Size of 6th grade in class	435	189	112	054	6 96	1 105	01
Teaching variables	569	324	230	135	5 05	4 101	01
(i Extent of Irish medium instruction)	(523)	(274)	(197)	(085)	(12 19)	(1 104)	(01)
(ii D-course ABC-related)	(553)	(306)	(225)	(032)	(4 78)	(1 103)	(05)

of sixth grade' (1 5%), 'school size' (0 6%), and 'number of grades in class' (0 1%) only bring R^2 up to 13 5 percent The remaining administrative/organizational variable, 'size of sixth grade in class' brings the value of R^2 to 18 9%, an increase which is significant at the 01 level Thus 'size of sixth grade in class' explains a significant amount of variance even after the contributions of the two demographic as well as of the other three administrative/organizational variables have been taken into account

Finally, the introduction of the teaching group of variables brings the value of R^2 to 32 4 percent Since the increase resulting from the inclusion of the teaching variables is significant (01 level), the contribution of each teaching variable was considered separately Two of these variables, 'extent of Irish medium instruction' and the ABC related 'course method' variable were found to contribute significantly to overall R^2 'Extent of Irish medium instruction' adds 8 5%, a value which is significant at the 01 level and also the largest single contribution to R^2 The ABC related 'course method' variable adds a further 3 2%, which is significant at the 05 level

It may be concluded, then, that class achievement in spoken Irish is a function of 'region', 'location' (marginally), 'size of sixth grade in class', 'extent of Irish-medium instruction', and 'course-method' Taking account of the zero-order correlations, it may be stated more specifically, that higher achievement is associated with classes which are in the Munster region and in rural locations, contain fewer sixth grade pupils, are taught some aspects of the curriculum through Irish, and are instructed by means of ABC-related methods

DISCUSSION

The finding that only 22 03% of the sixth grade classes in the sample are taught some aspects of the curriculum through Irish is somewhat surprising Official statistics for the year in which the study was conducted show that 35 44% of all sixth grade pupils were in classes in which Irish was the usual means of communication for at least one subject or activity (19, p 28) There are at least two possible explanations for this discrepancy, although the available evidence does not allow us to decide between them One possibility is that the disparity is due simply to the fact that the figure for the present study refers to classes and is based on data relating only to English speaking areas, while the latter figure refers to individual pupils and is based on data relating to both Irish and English-speaking

areas A second, more likely explanation revolves around the definition of Irish medium instruction and the circumstances in which the two sets of data were collected Regarding the question of definition, it may be noted that the description of the circumstances which constitute Irish medium instruction both in the present study and in the official statistics allows a degree of latitude in categorizing particular teaching situations My figure of 22 03%, for example, refers to classes in which 'some aspects of the curriculum are taught through Irish'*, while the official population statistic of 35 44% refers to pupils in classes 'where the ordinary medium of communication with the class for at least one subject or activity is Irish' * In relation to the circumstances of data collection, it will be recalled that the present data are based on information recorded by the examiner after consultation with the class teacher The teacher in each case would have been aware that his or her pupils would be or had already been tested in spoken Irish by this same examiner In contrast, the official population statistics are based on routine annual school returns The possibility, then, is that the latitude allowed by both definitions of Irish medium instruction and the different circumstances in which the two sets of data were collected may have conspired to produce more conserva tive reports about teaching through Irish in the present study It may be noted that data on medium of instruction in Gaeltacht schools have also been found to be inconsistent Routine annual school returns show a higher level of Irish medium teaching in Gaeltacht schools than surveys based on detailed subject by subject information collected directly from teachers (14)

The results relating to 'course method' indicate that the *Nuachursai* are still very much the dominant method used in teaching spoken Irish at sixth grade 58 82% of teachers use the *Nuachursai* alone, 33 61% use the *Nuachursai* in combination with ABC, 5 04% use ABC only, while 2 52% use 'other' methods What is more difficult to determine is whether these figures indicate any change over time in the proportion of teachers using the two main methods In the only previous study providing infor mation on this question, 89 3% of fifth and sixth grade teachers between the ages of 35 and 55 reported using the *Nuachursai* 'almost daily' or

* The original question used in the present study was Na gneithe den churaclam a mhuintear tri Ghaeilge sa rang (i) gach gne (ii) gneithe airithe (iii) Ni mhuintear gne ar bith The corresponding description quoted in the official statistics is Ma s i an Ghaeilge an gnath mhean cumarsaide leis an rang le haghaidh abhair (gniomh aiochta) amhain ar a laghad lasmuigh den Ghaeilge (19 p 28)

'usually' Of the 10 7% who used the *Nuachursaı* less frequently or not at all, a slight majority used the ABC method, either alone or in combination with the *Nuachursaı* (30) On the face of it, this may appear to indicate that there has been a decline in the number of teachers using the *Nuachursaı* and a rise in the number using the ABC In fact, no definite conclusions can be drawn about this matter since the 89 3% of teachers reported as using the *Nuachursaı* 'almost daily' or 'usually' in the earlier study were not asked if they used the ABC method to any extent Preliminary evidence from a more recent national survey of second grade teachers indicates that many of those reporting frequent use of the *Nuachursaı* were also making some use of the ABC method (14) In response to one question in this national survey, 89 3% of second grade teachers reported using the *Nuachursaı* 'almost every day', responding to another question, however, 46 6% reported using only the *Nuachursaı*, while another 46 6% reported using a combination of the *Nuachursaı* and the ABC While acknowledging that these three surveys are based on samples drawn from different populations of teachers and that they provide somewhat different information, it is probably safe to conclude that the extent to which the *Nuachursaı* and the ABC method are used has not changed substantially in recent years To the extent that there has been any change, this is most likely to consist of a tendency for the use of the ABC in combination with the *Nuachursaı* to increase

Both the bivariate and multivariate analyses in the present study indicate that six of the nine predictors are significantly related to class achievement in spoken Irish The strongest correlates of achievement are two of the teaching variables, 'extent of Irish medium instruction' and 'course method' These are followed, in decreasing order of the strength of their association with achievement by 'size of sixth grade in class', 'region', 'location', and 'school size' Of the three remaining predictors, it is perhaps surprising that the gender composition of classes was not related to achievement, since, in an earlier study, it was found that, at the level of individual pupils, more girls than boys mastered each of the 16 objectives in spoken Irish measured by *BG VI* (13) (the test which provided the criterion measure of class achievement in the present study) Previous research on Irish (29, 31) and in the area of language performance generally (24) would also lead to the expectation of a gender related difference in achievement Perhaps the problem is simply that the class level measure of gender which I used was too crude and that the contribution of gender is better estimated at the individual pupil level

The simple correlation data also confirm and clarify a number of trends in achievement relating to 'region' and 'course method' which were first tentatively identified in the course of the review of previous studies My results show, for example, that achievement in spoken Irish is significantly lower in sixth grade classes in Dublin schools than it is in schools in other regions This is consistent with the results of an earlier study in which it was reported that the percentage of fifth- and sixth grade teachers in Dublin schools who perceived the standard of Irish in the *Nuachursai* as being too difficult was more than twice the percentage in other regions (30) The superior performance of classes in Munster schools compared to schools in other regions in my study, however, is not in accord with expectations based on teacher perceptions it was in the Munster region rather than in the Connaught Donegal region that teachers were more likely to perceive the *Nuachursai* as being too difficult This discrepancy is likely to be due to the fact that the sample of teachers in the other study, unlike the sample of classes in my study, included Irish speaking areas This might be expected to have reduced the proportion of teachers in the Connaught Donegal region, relative to the Munster region, who perceived the *Nuachursai* as being too difficult Results of the present study also show that the use of ABC-related methods is associated with a significantly higher level of achievement in spoken Irish than is the use of the *Nuachursai* This is again consistent with the results of the earlier study which reported that teachers who preferred the ABC method were more likely than teachers who preferred the *Nuachursai* to be motivated by a belief that the method they favoured gave better results (30)

The test on which the criterion measure of spoken Irish was based, *BG VI,* also permits a decision about mastery of 16 specific objectives by individual pupils It may be useful at this point to examine briefly the nature of the correspondence between the criterion measure and some of the data on individual mastery This may help to provide a basis for evaluating the practical significance of some of the predictor related differences in class achievement which have been reported Three predictor variables may be taken as examples 'region', 'extent of Irish-medium instruction', and 'course method' In the case of 'region', a greater percentage of sixth-grade pupils in Munster schools than in the schools of the other three regions achieved mastery of each of the 16 objectives At the other extreme, a smaller percentage of sixth grade pupils in schools in Dublin city and county than in schools in the other three regions mastered 12 of the 16 objectives The mean percentage of pupils in Dublin city and county attaining mastery of each of the objectives

(20 72%) is substantially lower than it is in Munster (36 82%) A similar regional pattern can be seen in the criterion means in Table 2 In the case of 'extent of Irish medium instruction' a greater percentage of those pupils taught some aspects of the curriculum through Irish than of those taught no aspect of the curriculum through Irish mastered each of the 16 objectives The mean percentage of pupils mastering each objective rose from 24 46% in the 'no aspects condition to 43 26% in the 'some aspects' condition These results are matched in the case of class achievement by the substantial difference between the criterion means in the 'some aspects' and 'no aspects' conditions (Table 2) Turning to course method', 15 of the 16 objectives were mastered by a greater percentage of pupils exposed to ABC related methods than of those exposed to the *Nuachursai* Over the 16 objectives, the ABC related mean percentage was 31 45%, while the *Nuachursai* mean percentage was 27 38% Again, the direction of the difference is the same as that in the criterion means in Table 2

In interpreting the significance of these and other results it must be borne in mind that many of the predictor variables which I used were themselves inter correlated For example, the four administrative/organizational variables were found to be correlated with each other as well as with the demographic variables The correlations between the administrative/organizational variables can hardly be regarded as surprising when one considers that each of them measures different aspects of broadly the same set of administrative and organizational arrangements arrangements which are all likely to be strongly determined by population density For example, the lower population density in rural areas, compared to city and town locations, creates the need for smaller schools which at the same time accommodate both genders

The hierarchical regression analysis takes the relationship between the predictor variables into account in estimating the contribution of each predictor to the explanation of variance in the criterion variable, spoken Irish One of the outcomes of this analysis is that a number of variables which account for significant proportions of variance when considered separately, account for only marginally significant or non significant proportions when entered after other variables in the hierarchical regression This hierarchical analysis shows for example that 'region' and 'location must share some explanatory power which is used up by 'region' on being entered first Similarly the proportions of variance explained by 'school size' (4 9%) and 'number of grades in class' (2 3%) do not make

significant contributions when entered after 'region' and 'location' If the arguments advanced earlier for the priority of 'region' and 'location' in explaining achievement in spoken Irish are correct, then 'school size' and 'number of grades in class' may be thought of as simply 'region' and 'location' in a new guise It is also clear that if the object here had been simply to maximize the proportion of variance explained using the minimum number of predictors, the first three administrative variables entered in the equation would have been better excluded altogether

One administrative variable, 'size of sixth grade in class', does contribute significantly to the variance explained, even when it is considered in the context of prior demographic and administrative variables Thus, it is not functioning simply to fine tune, as it were, the predictions of the two demographic variables It is also obvious that, since it is the last of the administrative variables entered, it must be more finely focussed than are the others on an aspect of school organization which is educationally significant in its own right It is a more difficult task, however, to identify precisely what this critical aspect might be since the variable itself is rather complex There are at least two features of the membership of classes, each potentially important for achievement, which 'size of sixth grade in class' might capture the overall size of the class, and the mixture of sixth grade and non sixth grade pupils within the class Unfortunately, the data on the overall size and grade composition of multigrade classes which might have helped to decide this issue were not available

While 'region', 'location (marginally), and 'size of sixth grade in class' account for significant proportions of variance, it is the teaching group of variables which, even after account is taken of the demographic and administrative variables, makes the largest contribution This suggests that while 'region' and 'location' may impose some constraints on the standard of spoken Irish which is achievable, there are a number of factors at the level of schools and classes which, potentially at least, might still be manipulated to improve achievement In addition, the amount of criterion variance shared by the teaching and demographic variables suggests that the process of translating the favourable conditions which exist in certain regions and locations into actual superior performance may depend to an important degree on the proper exploitation of teaching variables such as medium of instruction and course method

In attempting to draw policy conclusions from these findings, two general points must be taken into account First not all the explained

variance in achievement in spoken Irish can be attributed in a direct, causal way to the particular set of predictor variables examined here This is because a number of other factors which are very likely to be related to achievement have not been considered at all Chief among these must be the intellectual functioning, verbal reasoning, home background characteristics, and socio economic status of pupils, variables which all have been found in previous studies to be related to other aspects of achievement in Irish (8, 22, 28, 29) Another important set of variables relate to parental attitudes to, and competence in, Irish and the use of Irish in the home (2, 5) If some class level measure of each of these variables had been obtained and had been entered early in the equation, the proportion of variance which would have been explained by the demographic, administrative, and teaching variables, introduced into the regression at a later stage, would almost certainly have been smaller than was found in the present investigation

A second issue is that the discovery of a significant relationship between a predictor variable and achievement does not necessarily imply that there is always a straightforward, effective way of actually exploiting the relationship to improve achievement For one thing, it is possible that, from the point of view of maximizing achievement, there may already be an optimal or near optimal match between the current standing of classes in relation to a particular predictor variable and certain critical characteristics of pupils and teachers In such a situation, implementing policies which had the effect of, say, switching some classes which were entirely English medium over to at least some Irish medium instruction could conceivably fail to produce the improvement which might be expected on the basis of my results

'Course method' provides another example Even though the data here show that classes currently using ABC related methods have a higher level of achievement than classes using the *Nuachursai* or 'other' methods, a general reversion to ABC related methods in all classes could leave achievement unchanged and might even have the effect of lowering it further Such an outcome would be possible if the *Nuachursai* were currently used only in those classes in which they were more compatible than ABC related methods with the teaching style or original training of the teacher or in which they were more appropriate to the home background, level of ability, or linguistic attitudes of the pupils themselves Some of the characteristics of the two course methods which might determine their effectiveness in different situations are suggested by the results of the

earlier mentioned survey of teachers' perceptions Teachers who preferred the *Nuachursai* believed that they gave greater pleasure to pupils, were more successful in arousing pupil interest, fostered more natural conversation, and were easier for teachers to use Teachers who preferred the ABC method believed that it produced better results, developed a broader vocabulary in pupils, allowed the teacher more freedom, and was more adaptable to individual pupil needs in terms of content (30)

Needless to say, the caution which is being urged here concerning the practical application of the results of this study must be balanced by the recognition that perfect information will never be available A number of strong effects reported here can certainly provide preliminary guidance in devising measures to improve achievement The evidence that a quite limited amount of Irish medium instruction can make a worthwhile contribution to achievement, even after some demographic and administrative variables have been taken into account, is worthy of particular attention One of the goals of future research must be to identify more precisely the social, linguistic, and educational circumstances in which Irish medium instruction improves achievement in spoken Irish A more accurate assessment is also needed of how much Irish medium instruction, and over what sort of time period, is necessary to produce increments of various magnitudes in achievement In this regard, it should be noted that in the case of the present study, no information is available concerning the grade at which the sixth grade classes currently receiving some Irish medium instruction first began to receive that instruction Clearly, the effectiveness of any new programme of Irish medium instruction in schools which are presently entirely English medium will depend to a large extent on how accurately the critical features of currently successful programmes of this kind have been identified in advance

REFERENCES

1 COHEN J & COHEN P *Applied multiple regression/correlation analysis for the behavioral sciences* New York Wiley, 1975

2 COMMITTEE ON IRISH LANDUAGE ATTITUDES RESEARCH Educational sub report Unpublished manuscript, 1974

3 COMMITTEE ON IRISH LANGUAGE ATTITUDES RESEARCH *Report* Dublin Stationery Office 1975

4 CUMMINS, J Immersion programs The Irish experience *International Review of Education* 1978, *24* 273 282

5 CUMMINS J A comparison of reading achievement in Irish and English medium schools *Oideas* 1982, *26* 21 26

6 LGAN O Informal teaching in the primary school Effects on pupil achievement *Irish Journal of Education* 1982, *16* 16 26

7 FONTES P J , & KLLLAGHAN, T *The new primary school curriculum Its implementation and effects* Dublin Educational Research Centre 1977

8 FONTES, P J KELLAGHAN, T , & O BRIEN M Relationships between time spent teaching, classroom organization, and reading achievement *Irish Journal of Education* 1981, *15* 79 91

9 GALTON, M , & SIMON, B (Eds) *Progress and performance in the primary classroom* London Routledge & Kegan Paul 1980

10 GLASMAN N S & BINIAMINOV, I Input output analyses of schools *Review of Educational Research* 1981, *51* 509 539

11 GLASS G V & SMITH M L Meta analysis of research on class size and achievement *Educational Evaluation and Policy Analysis* 1979 *1* 2 16

12 HARRIS, J National assessment of speaking proficiency in Irish In W I Mackey et al *Contemporary perspectives on the teaching of Irish* Dublin Bord na Gaeilge 1982

13 HARRIS J Achievement in spoken Irish at the end of primary school *Irish Journal of Education* 1982, *16* 85 116

14 HARRIS, J *Spoken Irish in primary schools An analysis of achievement* Dublin Institiuid Teangeolaiochta Eireann 1984

15 HAWKES N Teaching other types of beginner Primary children In K Johnson & K Morrow (Eds), *Communication in the classroom* Harlow Essex Longman, 1981

16 IRELAND DEPARTMENT OF EDUCATION *Notes for teachers Irish* Dublin Stationery Office 1932

17 IRELAND DEPARTMENT OF EDUCATION *Cuchulainn/An Seanteach Cursai comhra Gaeilge le haghaidh rang V/VI* Baile Atha Cliath Oifig an tSolathair 1969

18 IRELAND DEPARTMENT OF EDUCATION *Curaclam na bunscoile Lamhleabhar an oide Cuid 1 Primary school curriculum Teacher s handbook Part 1* Dublin Author, 1971

19 IRELAND DEPARTMENT OF EDUCATION *Tuarascail staitistiuil (Statistical report) 1977/78* Dublin Stationery Office

20 IRISH NATIONAL TEACHERS ORGANISATION EDUCATION COMMITTEE *Primary school curriculum Curriculum questionnaire analysis* Dublin Author, 1976

21 JOHNSON, K , & MORROW, K (Eds) *Communication in the classroom* Harlow, Essex Longman, 1981

22 KELLAGHAN T Relationship between home environment and scholastic behavior in a disadvantaged population *Journal of Educational Psychology* 1977 *69* 754 760

23 KELLAGHAN T MADAUS G F & RAKOW E A Within school variance in achievement School effects or error? *Studies in Educational Evaluation* 1979 *5* 101 107

24 MACCOBY, E E , & JACKLIN, C N *The psychology of sex differences* Stanford, Ca Stanford University Press 1974

25 MACNAMARA J *Bilingualism and primary education A study of Irish experience* Edinburgh University Press, 1966

26 MADAUS, G F , KELLAGHAN, T , & RAKOW, E A School and class

differences in performance on the Leaving Certificate examination *Irish Journal of Education* 1976, *10* 41 50

27 MADAUS, G F , KELLAGHAN, T , RAKOW, E A , & KING, D J The sensitivity of measures of school effectiveness *Harvard Educational Review* 1979, *49* 207 230

28 MARTIN, M O Reading and socio-economic background A progressive achievement gap? *Irish Journal of Education* 1979, *13* 62 78

29 MARTIN, M , & KELLAGHAN T Factors affecting reading attainment in Irish primary schools In V Greaney (Ed) *Studies in reading* Dublin Educational Company, 1977

30 O DOMHNALLAIN, T & O GLIASAIN, M *Audio visual methods v A B C methods in the teaching of Irish* Dublin Institiuid Teangeolaiochta Eireann 1976

31 O RIAGAIN P The influence of social factors on the teaching and learning of Irish In W F Mackey et al , *Contemporary perspectives on the teaching of Irish* Dublin Bord na Gaeilge 1982

32 O RIAGAIN P & O GLIASAIN M *All Irish primary schools in the Dublin area* Dublin Institiuid Teangeolaiochta Eireann, 1979

33 RUTTER M School effects on pupil progress Research findings and policy implications *Child Development* 1983 *54* 1 29

34 SWAIN, M Linguistic expectations Core extended and immersion programs *Canadian Modern Language Review* 1981, *37* 486-497

35 SWAIN, M , & LAPKIN, S *Bilingual education in Ontario A decade of research* Toronto Ministry of Education 1981

36 VAN EK, J A Current trends in second language teaching in Europe In W F Mackey et al , *Contemporary perspectives on the teaching of Irish* Dublin Bord na Gaeilge 1982

37 YALDEN, J *Communicative language teaching Principles and practice* Toronto Ontario Institute for Studies in Education 1981