AN ANALYSIS OF THE APPLICATION VARIABLES USED TO SELECT SCHOOLS FOR THE "BREAKING THE CYCLE" SCHEME

1. THE BACKGROUND TO THE *BREAKING THE CYCLE* SCHEME

In early 1995, the Combat Poverty Agency approached the Educational Research Centre to undertake an investigation of the criteria used in designating urban and rural schools as disadvantaged. Specifically, the terms of reference of the study were to: (a) consider and report on the rationale which should underlie designation as disadvantaged; (b) assess the appropriateness of current indicators and, if necessary, suggest improvements and/or other measures; and (c) review existing support measures, and if necessary, suggest improvements and/or other measures.

Following investigations of the above, the *Scheme of Assistance to Schools in Designated Areas of Disadvantage* was deemed to be in need of reform, and several recommendations were put forward for consideration (Kellaghan, Weir, Morgan & Ó hUallacháin, 1995).

A key recommendation of the report related to the inadequacy of existing provision for disadvantaged pupils in rural areas. It was pointed out that, while approximately 60% of all disadvantaged pupils in the country live in rural areas, only 4.9% of these pupils were in schools receiving supports under the Department of Education's Scheme of Assistance. Of the 305 schools nation-wide that were designated as disadvantaged in 1993/94, only 64 (or 2.5%) of all rural primary schools (N=2,576) were designated. Furthermore, lack of access to remedial teachers, and to other initiatives targeted at disadvantaged pupils such as the *Early Start* programme, results in pupils in rural areas being further marginalised. The unequal access of those in rural areas to such schemes may, indeed, contribute to the high level of disadvantage found in such areas. The authors, therefore, recommended that the funding available for such initiatives designed to address disadvantage be distributed more equally across geographical areas.

Another recommendation contained in the report was that resources should be targeted on a limited number of schools with high concentrations of pupils from disadvantaged backgrounds and low levels of achievement (as opposed to being spread fairly thinly among a large number of schools). The envisaged intervention would be co-ordinated and comprehensive, adopting a multi-faceted approach to meeting the needs of educationally disadvantaged children (e.g., the approach was

conceived as involving appropriate curriculum adaptation, a reduction in the class size of junior classes in urban areas to facilitate individual attention to pupils, and the reform of school organisation to develop a unity of purpose and build on existing strengths of teachers and pupils). In addition, it was suggested that the participation of selected schools in the scheme should be supported by advice and inservice training for school staffs.

It was further proposed that acceptance into the scheme should be dependent on the school undertaking to formulate a five-year plan of action. The plan was to be based on an examination of the problems in the school, should describe the existing deployment of resources in the school and how additional resources would be used. Implicit in this school plan was the setting of targets to be met during the five-year period of intervention, as well as the monitoring of progress towards the attainment of these targets.

The Department of Education responded to these recommendations by engaging the Educational Research Centre to develop revised criteria for selecting schools for participation in a new scheme targeting acutely disadvantaged schools. The proposed scheme was envisaged as catering in different ways to the needs of small and large schools serving disadvantaged populations. Therefore, specially tailored criteria were developed for use in the selection of rural and urban schools.

2. THE SELECTION OF SCHOOLS FOR *BREAKING THE CYCLE*

Indicators Used in the Selection of Urban Schools

The indicators used to select schools for the new scheme were in accordance with the suggestions outlined by Kellaghan, Weir, Ó hUallacháin and Morgan (1995). As was the case with previous application systems, the intention was to produce an index of disadvantage (represented by a total of points scored) for each applicant school based on data on each of the indicators. In the existing *Scheme of Assistance to Schools in Designated Areas of Disadvantage*, schools were selected on the basis of the following indicators: (a) the proportions of pupils resident in local authority housing or non-permanent accommodation (weighted x 3); (b) the proportion of pupils whose families held medical cards (weighted x 2); and (c) the proportion of pupils whose families were in receipt of unemployment benefit or Assistance (weighted x 4). Each school's total score was achieved by summing (a), (b), and (c) above, but was then adjusted to

take account of the school's pupil teacher ratio. In schools where the PTR was favourable, a greater downwards points adjustment was made than in schools with unfavourable ratios.

Investigation of the appropriateness of these criteria led to the recommendation that the number of indicators used to identify schools in disadvantaged areas be increased, and that the relative weightings given to each indicator be re-evaluated. Analysis revealed that family possession of a medical card and residence in local authority housing were consistently more powerful than other indicators in predicting student achievement and attainment (both key correlates of educational disadvantage). To reflect their significance in disadvantage, medical card possession was accorded a weight of 3 and residence in local authority housing was accorded a weight of 2. The need to break the cycle of intergenerational poverty was also seen to be of key importance, and because children of long-term unemployed parents were considered to be especially vulnerable, family long-term unemployment was accorded a weight of 2.

Two new indicators (each assigned single weighting) relating to the educational attainments of pupils' parents were included. These were designed to take into account the close relationship observed in previous studies between parental educational level, poverty, and children's educational achievements. Finally, an indicator relating to lone-parent families (already used at second level in the designation of schools as disadvantaged) was included, and was accorded single weighting. The family-based indicators sum to a maximum of 1000 points when relative weightings are taken into account (Table 1). In addition to the indicators relating to the families in the schools, schools were allocated up to a maximum of 200 points for a school plan submitted with their application, bringing the maximum possible total points score to 1200 points.

Schools were also asked to provide information in a range of other areas including the numbers of pupils and teachers in the school, school's membership of schemes to assist disadvantaged pupils, the availability of additional accommodation in the school, the school's willingness to prepare a five-year plan, willingness to participate in additional inservice for staff, and willingness to participate in the administration of achievement tests to pupils. In addition, schools were asked to specify objectives that they would strive to achieve over a five-year period in the areas of pupil achievement, parent involvement, and inservice training. Finally, principals were asked to give the number of pupils in senior classes that were one and two years below the standard for their age in reading and numeracy.

Table 1. Indicators (and associated weights by which the score was multiplied), which, when summed, were used to rank order schools for selection for the urban dimension of *Breaking the Cycle*.

Indicator	Points calculation	Maximum points
% of pupils in reception class whose mother did not take at least the Group or Intermediate Certificate Examination	Percentage X 1	100 points
% of pupils in reception class whose father did not take at least the Group or Intermediate Certificate Examination	Percentage X 1	100 points
% of pupils in reception class living in a family in which the main breadwinner was unemployed for a year or more	Percentage X 2	200 points
% of pupils in reception class living in local authority housing	Percentage X 2	200 points
% of pupils in reception class living in a family that holds a medical card	Percentage X 3	300 points
% of pupils in reception class living in a lone-parent household	Percentage X 1	100 points
School plan		200 points
Maximum total		**1200 points**

The Selection Procedure in Urban Schools

The selection of schools for participation in the *Breaking the Cycle* scheme was carried out during the summer of 1996. Application forms (Appendix 1) to join the new scheme were posted out to 221 urban schools in *the Scheme of Assistance to Schools in Designated Areas of Disadvantage*. Of the schools which received application forms, 190 (or 86% of eligible schools) returned completed applications for inclusion in *Breaking the Cycle*. Schools were selected on the basis of the total number of points they scored on the application indicators. The intention was to select the top scoring 25 schools for participation in the scheme. However, the 33 schools which were ultimately selected to participate in the scheme consisted of the 25 top scorers, plus 8 partner (or associated) schools. If a senior school was selected, its junior counterpart was included, or if a selected girls' school served the same population as a neighbouring boys' school, the boys' school was also selected. This was done to ensure continuity of treatment for children over their primary school careers, and to avoid difficulties that may arise when schools serving the same population are treated differently in terms of designation.

The Structure of the Urban Indicators

Prior to the availability of data from the applications returned by schools, it was not possible to establish the extent to which each of the application variables measured the same underlying construct. Indeed, it was not possible to estimate the number of aspects of disadvantage which the indicators used in the application form measured. The availability of completed applications from 190 urban schools permitted an investigation of the number of factors, as well as the nature of the factors, underlying the set of application variables. Using data from all 190 applicant schools, a Principal Components Analysis with Oblimin rotation was carried out on all application variables for which schools received a score. Although schools received points towards their total score based on a school plan submitted with their application, this variable was not included in the analysis because it was not considered to be an indicator of poverty. Results of the analysis may be seen in Table 2.

Table 2. Factors and item loadings derived from a Principal Components Factor Analysis (with Oblimin rotation) of indicators used in the *Breaking the Cycle* application form for urban schools (*N*=190).

	Loadings	
Application indicator	**Factor 1**	**Factor 2**
% of pupils in reception class living in a family in which the main breadwinner was unemployed for a year or more	**.89**	**.53**
% of pupils in reception class living in local authority housing	**.93**	**.52**
% of pupils in reception class living in a family that holds a medical card	**.86**	**.50**
% of pupils in reception class living in a lone-parent household	**.71**	**.24**
% of pupils in reception class whose mother did not take at least the Group or Intermediate Certificate Examination	**.51**	**.95**
% of pupils in reception class whose father did not take at least the Group or Intermediate Certificate Examination	**.46**	**.96**
Total amount of variance accounted for by factor	**62.8%**	**16.9%**

Table 2 shows that two main factors underlie the application indicators. All indicators load highly on Factor 1, but the indicators relating to unemployment, residence in local authority housing and medical card possession have very high loadings (loadings ≥. .86 in each case). Factor 1 may be interpreted as measuring aspects of material deprivation. Lone-parent family status also loads highly on this

factor, but at .71, is not of the same magnitude as the loadings of the other poverty variables. Only maternal and paternal educational attainment load very highly on the second factor indicating that it reflects only the educational histories parents. The overall outcome of the factor analysis indicates that the urban application data measure two distinct dimensions, one of which relates to material deprivation, and the other to parental educational attainment. Factor 1 accounts for 62.8% of the variance, and Factor 2 for 16.9% of the variance. It should be noted, however, that the factors are not independent of one another (r =.49).

Indicators Used in the Selection of Rural Schools

Following analysis of each of the existing indicators of disadvantage (described in Section 2.1) undertaken by Kellaghan et al. (1995), revised criteria were developed for use in the selection of rural schools for *Breaking the Cycle* (Table 3*)*. The choice of indicators, and the weights attached to them, took a number of factors into account.

First, long-term unemployment and the receipt of Smallholder Assistance were included as useful measures of poverty, and were accorded a weight of 2. Second, family possession of a medical card was included as an indicator due to the extent to which it had been shown to predict school attainment (early leaving) and achievement (literacy and numeracy difficulties) in Junior Certificate Examination performance (see Kellaghan et al. 1995). Medical card possession was accorded a weight of 2, which is the weight it achieved in regression analyses of indicators used in the *Scheme of Assistance to Schools in Designated Areas of Disadvantage* to predict attainment and achievement. Third, an indicator relating to lone-parent families (used in the designation of schools as disadvantaged at second level) was included. Finally, as in the case in urban schools, two indicators relating to the educational attainments of pupils' parents were included. In the absence of a rationale for doing otherwise, single weighting was applied to parental education and lone-parent indicators.

Table 3. Indicators (and associated weights by which the score was multiplied), which, when summed, were used to rank order schools for selection for the rural dimension of *Breaking the Cycle*.

Indicator	Points calculation	Maximum points
% of pupils in the school whose mother did not take at least the Group or Intermediate Certificate Examination	Percentage X 1	100 points
% of pupils in the school whose father did not take at least the Group or Intermediate Certificate Examination	Percentage X 1	100 points
% of pupils in the school living in a family in which the main breadwinner was unemployed for a year or more	Percentage X 2	200 points
% of pupils in the school living in a family that receives assistance because of limited means from farm income	Percentage X 2	200 points
% of pupils in the school living in a family that holds a medical card	Percentage X 2	200 points
% of pupils in the school living in a lone-parent household	Percentage X 1	100 points
Maximum total		**900 points**

The Selection Procedure in Rural Schools

All primary schools in the country with four teachers or fewer (*N*=1,915) were sent an application form (Appendix 2) inviting them to participate in *Breaking the Cycle*, which was described as a pilot scheme for schools serving children from disadvantaged backgrounds. Completed applications were received from 692 schools (36.1% of the total number of applications sent out). In their application, schools were asked to provide the information specified in Table 3. On the basis of this information schools were assigned a score which permitted them to be ranked from the most disadvantaged to the least. Schools were also asked to provide information in a range of other areas including the numbers of pupils and teachers in the school, school's membership of schemes to assist disadvantaged pupils, the availability of additional accommodation in the school, the school's willingness to prepare a five-year plan, willingness to participate in additional inservice for staff, and willingness to participate in the administration of achievement tests to pupils. In addition, schools were asked to specify objectives that they would strive to achieve over a five-year period in the areas of pupil achievement, parent involvement, and inservice training. Finally, principals were asked to estimate the number of pupils in senior classes that were one and two years below the standard for their age in reading and numeracy.

In calculating a school score, long-term unemployment, smallholder assistance, and possession of a medical card received double weighting. Single weighting was applied to the lone-parent household measure and to the measures concerning parental level of education. Following this, schools were assigned to one of ten categories depending on their scores. The 10% of schools with the highest scores were assigned to Category A; the next highest scoring 10% were assigned to Category B, and so on. Categories were also identified numerically to reflect their degree of disadvantage. Schools in the highest scoring category (A) were assigned a score of 10; schools in the next category (B) were assigned a score of 9, and so on down to 1 for schools in the lowest category.

It was decided to select clusters of schools rather than individual schools for the rural scheme as it would not be economically feasible to provide additional services to individual small schools. A total of 123 small schools was selected for inclusion in the scheme on the basis of information submitted in the applications. Geographical location (i.e., the location of several disadvantaged schools which were geographically proximal) was taken into account in the selection.

It was not the intention to give extra full-time staff to individual rural schools participating in *Breaking the Cycle*, as the classes in rural schools were already small. Instead, rural schools were to be given access to an extra resource, in the form of a scheme co-ordinator, for approximately one day per week. Because the rural component of *Breaking the Cycle* was organised around the idea of a co-ordinator serving a cluster of schools, all schools in a cluster had to be reasonably close to each other. As many schools as possible from the highest scoring category were selected. All but four (of the 25) clusters had at least one school that was in the top 10% of schools in terms of disadvantage. Of the schools that were selected, most would also have been selected using their total application score alone. Eighty-one of the 123 selected were ranked among the 123 most disadvantaged applicants. One hundred of the 123 schools selected were ranked between 1 and 160 (from a possible range of 1 to 692). Thus, despite having to consider geographical and other issues, the great majority of selected schools were applicants that were most disadvantaged according to the application criteria.

It should be noted that there is a greater concentration of clusters in some areas of the country than in others, with most of the clusters being located in the West or North West of Ireland. However, a self-selection bias may have operated, as proportionately more applications were received from schools in Mayo and Donegal (the counties with the greatest number of clusters) than were received from other regions (Table 4).

Table 4. Numbers of eligible small schools that were invited to join the scheme, numbers and percentages of these that applied to join the scheme, and numbers and percentages that were selected for participation, by county[1].

County	No. of schools invited to apply	No. of schools that applied	% of schools that applied	No. of schools selected	No. of clusters
1. Mayo	150	83	55.33%	45	9
2. Donegal	127	66	51.97%	34	7
3. Longford	29	15	51.72%	———	———
4. Kildare	41	20	48.78%	———	———
5. Wexford	65	30	46.15%	———	———
6. Laois	52	21	40.38%	———	———
7. Galway	175	70	40.00%	21	4
8. Offaly	43	17	39.53%	———	———
9. Clare	95	37	38.95%	———	———
10. Cork	208	80	38.46%	4	1
11.Waterford	40	15	37.50%	———	———
12. Leitrim	35	13	37.14%	5	1
13. Carlow	22	8	36.36%	———	———
14. Sligo	54	17	31.48%	———	———
15. Limerick	74	23	31.08%	———	———
16. Tipperary	127	37	29.13%	5	1
17. Wicklow	39	11	28.21%	———	———
18. Kerry	102	27	26.47%	4	1
19. Meath	54	13	24.07%	———	———
19. Westmeath	49	13	24.07%	———	———
21. Roscommon	82	19	23.17%	5	1
22. Louth	28	5	17.86%	———	———
23. Cavan	59	10	16.95%	———	———
24. Kilkenny	45	7	15.56%	———	———
25. Monaghan	43	5	11.63%	———	———

[1]Data are presented in descending order of the percentages of schools that applied from each county.

The tendency for some counties to have higher rates of application for schemes of assistance has been noted previously. In a paper in which various proposals for the identification of rural primary schools for the *Scheme of Assistance to Schools in Designated*

Areas of Disadvantage were discussed, Kellaghan (1996) reported that the highest rates of application in 1994 were from schools in Donegal (64% of schools), Leitrim (56%) and Mayo (53%). Counties that had the lowest rates of application were Louth (23%), Meath (21%), Monaghan (20%), and Cavan (15%). When examined by county, the application rates to join *Breaking the Cycle* are not dissimilar, with Donegal and Mayo in the top three counties, and Cavan, Louth and Monaghan in the bottom four. This may, indeed, indicate that there are greater numbers of disadvantaged pupils in counties that have higher application rates. However, a lack of awareness of schemes designed to address disadvantage, or a reluctance to apply for them, may also help to explain the low application rates (and the relatively low representation in schemes) of some counties.

The Structure of the Rural Indicators

As in the case of urban application data, the availability of completed applications from 692 rural schools permitted an investigation of the nature and number of factors underlying the set of application variables. Using data from all 692 applicant schools, a Principal Components Analysis with Oblimin rotation was carried out on all application variables for which schools received a score. Results of the analysis may be seen in Table 5.

Table 5. Factors and item loadings derived from a Principal Components Factor Analysis (with Oblimin rotation) of indicators used in the *Breaking the Cycle* application form for rural schools (*N*=692).

	Loadings	
Application indicator	**Factor 1**	**Factor 2**
% of pupils in school living in a family in which the main breadwinner was unemployed for a year or more	**.82**	**.01**
% of pupils in school living in a family that receives assistance because of limited means from farm income	**.57**	**-.56**
% of pupils in school living in a family that holds a medical card	**.86**	**.00**
% of pupils in school living in a lone-parent household	**.21**	**.88**
% of pupils in school whose mother did not take at least the Group or Intermediate Certificate Examination	**.82**	**.10**
% of pupils in school whose father did not take at least the Group or Intermediate Certificate Examination	**.82**	**.00**
Total amount of variance accounted for by factor	**51.9%**	**18.6%**

Table 5 shows that two main factors underlie the rural application indicators. The indicators relating to unemployment, medical card possession, and maternal and paternal educational attainment load very highly on Factor 1 (loading ≥ .82 in each case), and may be interpreted as measuring material deprivation and parental educational attainment. Lone-parent family status has the lowest loading on this factor. Factor 2 has only two items loading highly on it, the first of which relates to lone-parent family status (loading =.88), and the second of which is low farm income which loads more moderately (loading = -.56). This factor appears to indicate that schools that serve high numbers of lone-parent families serve few families on low farm incomes, and vice versa. Put another way, in families where farming is an occupation, households tend to headed by two parents. The overall outcome of the factor analysis indicates that the rural application data measure two distinct factors, one of which relates to material poverty, and the other to a rural family factor concerned with family composition and occupation. Factor 1 accounts for 51.9% of variance, and Factor 2 for 18.6% of variance. The factors themselves are unrelated (r = .00).

3. CHARACTERISTICS OF SCHOOLS GROUPED ON THE BASIS OF TOTAL APPLICATION SCORE

Characteristics of Urban Schools

To compare degree of disadvantage across applicant schools, all 190 urban schools that applied were divided into 10 equal groups of 19 schools on the basis of their total application score. Group 1 was composed of the 19 schools with the highest total scores, the next highest scoring 19 schools comprised the second group, and so on down to the 19 schools with the lowest application scores (Table 6). The arrangement of schools in this way permits statements to be made about the extent to which the pupils in each group are characterised by the individual indicators of disadvantage (e.g., residence in local authority housing).

The intention was to select the top scoring 25 schools for participation in the scheme. However, as already mentioned, the 33 schools which were ultimately selected to participate in the scheme consisted of the 25 top scorers, plus 8 associated schools. For this reason, some schools which were not among the top scoring schools were also included in the scheme. In terms of their membership of the groups in Table 6, all 19 schools in Group 1 were selected for participation, nine of the schools in Group 2 were

selected, two schools in Group 4 were selected, and three schools in Group 5 were selected.

Despite the fact that all applicant schools are designated disadvantaged, there are clear differences between applicant schools in the different groups. There are substantially greater percentages of pupils affected by the various indicators of disadvantage in the high scoring groups than there are in the low scoring groups.

Table 6 shows that the proportions of pupils that come from families where the main breadwinner has been unemployed for a year or more decrease systematically from the highest scoring group (Group 1) to the lowest scoring group (Group 10). The same pattern is observed in the case of indicators relating to medical card possession, residence in local authority housing, and lone-parent family status. A single exception to this trend involves the percentage of families living in local authority housing in Groups 5 and 6, where there is a slightly greater percentage of pupils living in local authority housing in the lower scoring group (Group 6). A general pattern of decreasing proportions along with decreasing total scores is also observed in the two parental education measures, with the exception that there are greater percentages of pupils in Group 8 with parents who did not complete Junior Cycle than there are in the higher scoring Group 7. With the exception of Group 7, each group shows that there are slightly greater proportions of pupils' mothers with no formal educational qualifications than is true of fathers in each group.

In Group 1, in which all schools were selected for participation in the scheme, the profile of the families served by the school is an extremely disadvantaged one. Almost all pupils in reception classes (97.5%) reside in local authority housing, 95.6% of their families hold medical cards, 88.5% come from a family in which the main breadwinner is long-term unemployed, and more than one child in every two (51.7%) comes from a one-parent family. The vast majority of pupils' parents in this group (89.2% of mothers and 86.5% of fathers) have no formal educational qualifications. The difference between the highest scoring group and the second highest scoring group in terms of the proportions of pupils satisfying the conditions ranges from 12.5% in the case of long-term unemployment to 4% in the case of residence in local authority housing. The differences between the second and third groups are of a much smaller magnitude, with only a difference of between zero and 2% in the percentages of pupils in Groups 2 and 3 that satisfy each of the poverty variables. This suggests that the schools in Groups 2 and 3 serve similarly disadvantaged populations, and should really be thought of as equivalent. Because all applicant schools are designated disadvantaged, the proportions of pupils whose families satisfy the poverty criteria are high

in all groups. Even families served by the schools in Group 8 are characterised by high rates of long-term unemployment, residence in local authority housing, and medical card possession (more than 50% of all families in the case of each variable). Therefore, while the schools in the top scoring categories are clearly the most disadvantaged, even those in the low scoring groups have significant proportions of disadvantaged pupils who could be considered to be in need of extra support.

Table 6. Application data for urban schools on each indicator of disadvantage (using the percentage of pupils in the reception class to which each indicator applies), where schools are grouped into ten equal sized groups, with the highest scoring schools in group 1 and the lowest scoring schools in group 10[a] (*N*=190).

	Application variables											
	% unemployed breadwinner		**% holding medical card**		**% local authority housing**		**% lone-parent family**		**% mothers no Inter / Group cert.**		**% fathers no Inter / Group cert.**	
Group and total score	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.
1. (*n*=19) > 929	**88.5**	71.0	**95.6**	84.0	**97.5**	84.0	**51.7**	0	**89.2**	56.0	**86.5**	32.0
2. (*n*=19) 834 - 929	**76.2**	67.0	**86.8**	69.0	**93.5**	76.0	**41.7**	15.0	**77.1**	43.0	**76.1**	48.0
3. (*n*=19) 794 - 833	**76.2**	63.0	**85.5**	70.0	**91.5**	69.0	**40.1**	10.0	**69.1**	41.0	**68.8**	25.0
4. (*n*=19) 762 - 793	**72.5**	51.0	**79.9**	58.0	**87.5**	71.0	**35.7**	12.0	**68.4**	32.0	**58.5**	25.0
5. (*n*=19) 709 - 761	**65.1**	48.0	**76.7**	62.0	**77.9**	63.0	**35.6**	21.0	**70.0**	43.0	**65.3**	21.0
6. (*n*=19) 601 - 708	**60.3**	47.0	**71.8**	58.0	**79.2**	67.0	**31.0**	13.0	**51.0**	0	**49.9**	0
7. (*n*=19) 534 - 600	**59.5**	38.1	**67.2**	50.0	**69.3**	44.0	**29.2**	13.0	**42.0**	0	**43.3**	0
8. (*n*=19) 482 - 533	**51.1**	43.0	**59.4**	50.0	**52.3**	0	**27.1**	11.0	**48.9**	22.0	**46.9**	6.0
9. (*n*=19) 402 - 481	**45.7**	33.0	**53.3**	40.0	**51.3**	0	**23.0**	7.0	**37.3**	0	**31.3**	0
10. (*n*=19) < 402	**36.5**	23.0	**42.4**	27.0	**36.2**	18.0	**23.6**	8.0	**28.5**	8.0	**26.8**	0

[a] Maximum possible total score = 1200

Characteristics of Rural Schools

As was the case with urban schools, all 692 applicant schools were divided into 10 approximately equal groups on the basis of their total application score. Group 1 was composed of the 69 schools with the highest total scores, the next highest scoring 70 schools comprised the second group, and so on down to the 68 schools with the lowest application scores (Table 7). When the schools are organised into groups on this basis, the extent to which the pupils in each group are characterised by the individual indicators of disadvantage may be examined.

As already mentioned, the selection of rural schools did not depend solely on a total application score, but took into account applicant schools' proximity to other disadvantaged schools. Therefore, not all schools in the high-scoring categories were selected. For example, only 52 of the 69 schools in Group 1 were selected for participation, 39 of the 70 schools in Group 2, and 21 of the 69 schools in Group 3. When added together, 112 of the 123 selected schools (or more than 90%) were drawn from the top three groups. However, some relatively low-scoring schools were also included: 4 schools from each of Groups 4 and 5 were selected, as were two schools from Group 6[1].

An indication of the relative degree of disadvantage associated with schools in each of the groups can be gleaned from Table 7. The mean score of schools in Group 1 (the highest-scoring group) is clearly the highest on all characteristics, with the exception of lone-parent families. More than three-quarters of pupils in schools in this group come from families in which the breadwinner is long-term unemployed, and more than half of families are in receipt of financial assistance due to limited farm income.

Percentages decrease systematically by group for all characteristics with a couple of minor exceptions, the most notable of which occurs in relation to the lone-parent household indicator. Not only do the proportions of pupils living in lone-parent households not decrease uniformly in line with total application score, but it seems that this characteristic does not distinguish between levels of disadvantage in the way

[1] The total number of schools sums to 122 rather than 123 because there are no application data in the case of one selected school, and so it is not possible to categorise it into one of the groups on the basis of a total score.

that the other poverty variables do. For example, while acknowledging that there are slightly more than twice as many pupils living in lone-parent households in Group 1 as in Group 10, there are almost 14 times as many unemployed families in Group 1 as there are in Group 10, more than 30 times as many families receiving Smallholder Assistance in Group 1 as in Group 10, and there is a tenfold differential between Groups 1 and 10 for the remaining variables. The proportion of pupils whose mothers and fathers have no formal educational qualifications decreases systematically by group, with the single exception of Groups 7 and 8, where the trend is reversed for maternal education. Interestingly, in each of the 10 groups, there is a consistently greater proportion of pupils' fathers with poor educational qualifications than there are mothers with equivalent low qualifications.

If one takes, as an example, the proportion of families that are long-term unemployed as a means of assessing the extent of disadvantage across groups, it can be seen that more than three-quarters of pupils in Group 1 and more than half of pupils in Group 2 come from families in which the main breadwinner is long-term unemployed (Table 7). At the other end of the scale, the parents of pupils in Group 10 have a rate of long-term unemployment of 5.5%. This rate is slightly lower than the national average of 7% in 1996, the year in which the application data were gathered (Ireland, 1999, p.14). In Group 9 (the second lowest scoring group), the rate of long-term unemployment is almost twice the national average, in Group 5 it is almost 4 times the national average, and in Group 1 the unemployment rate is more than 10 times the national average. Therefore, while it is evident that the schools in the upper groups have greater proportions of disadvantaged pupils, only families served by schools in Group 10 had lower levels of long-term unemployment than existed nationally in 1996. Nevertheless, it is possible that pockets of disadvantage exist even in schools in the lowest scoring group.

Table 7. Application data for rural schools on each indicator of disadvantage (using the percentage of pupils in the school to which each indicator applies), where schools are grouped into ten approximately equal sized groups, with the highest scoring schools in group 1 and the lowest scoring schools in group 10[a] (*N*=691).

	Application variables											
	% unemployed breadwinner		**% holding medical card**		**% assistance due to low farm income**		**% lone-parent family**		**% mothers no Inter / Group Cert.**		**% fathers no Inter / Group Cert.**	
Group and total score	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.	*Mean*	Min.
1. (*n*=69) > 461	**76.1**	2.0	**85.0**	59.0	**52.5**	0	**8.4**	0	**59.6**	12.0	**70.3**	8.0
2. (*n*=70) 372 – 461	**52.0**	9.0	**70.1**	46.0	**31.4**	0	**8.5**	0	**39.7**	0	**55.4**	0
3. (*n*=69) 314 – 371	**39.8**	2.0	**61.2**	34.0	**19.4**	0	**10.4**	0	**36.4**	0	**49.0**	0
4. (*n*=70) 279 – 313	**33.5**	0	**50.5**	11.0	**18.1**	0	**9.7**	0	**33.6**	0	**45.5**	0
5. (*n*=68) 236 – 278	**27.6**	0	**45.3**	14.0	**15.0**	0	**8.8**	0	**28.8**	0	**41.4**	0
6. (*n*=70) 202 – 235	**24.9**	0	**40.6**	0	**11.2**	0	**9.1**	0	**22.8**	0	**33.2**	0
7. (*n*=69) 172 – 201	**21.0**	0	**34.9**	12.0	**12.6**	0	**6.1**	0	**17.9**	0	**25.7**	0
8. (*n*=71) 136 – 171	**17.4**	0	**26.2**	0	**9.0**	0	**6.5**	0	**18.1**	0	**23.4**	0
9. (*n*=67) 88 – 135	**13.1**	0	**19.7**	0	**5.3**	0	**5.6**	0	**13.2**	0	**20.7**	0
11. (*n*=68) < 88	**5.5**	0	**8.8**	0	**1.6**	0	**3.6**	0	**5.6**	0	**7.8**	0

[a] Maximum possible total score = 900

A Comparison of the Distributions of Total Points Achieved by Urban and Rural Applicant Schools

There are differences in the overall scoring patterns of urban and rural applicant schools. Figures 1 and 2 show the frequency distributions of the total scores (i.e., the score achieved when points on all indicators are summed) of all urban and rural applicants respectively.

Figure 1. Distribution of total scores (up to a maximum of 1200 points) achieved by urban applicant schools (*N*=190).

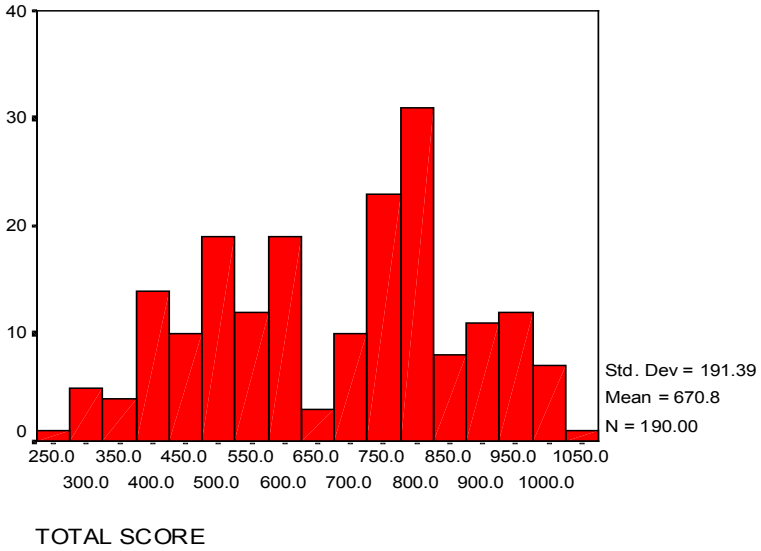
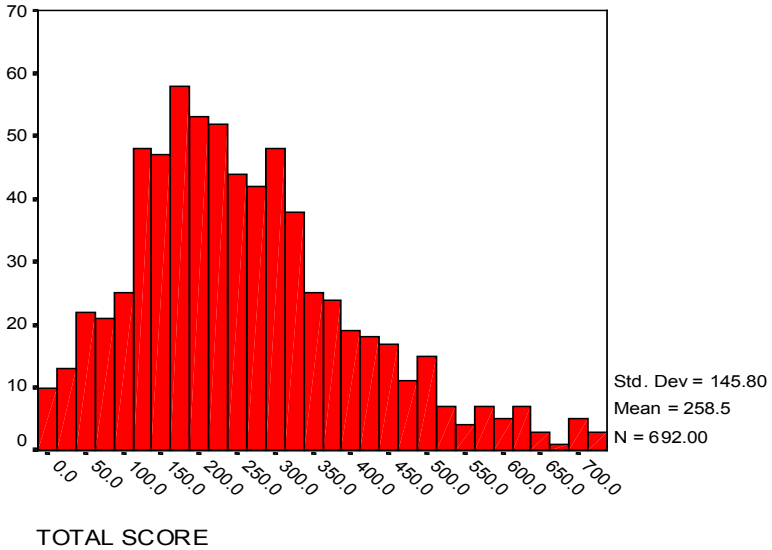


Figure 2. Distribution of total scores (up to a maximum of 900 points) achieved by rural applicant schools (*N*=692).



As can be seen from Figures 1 and 2, the shapes of the distributions of urban and rural applicant scores are quite different. There is a measure, known as skewness,

commonly used to describe the extent to which a distribution of variables resembles a normal distribution. Skewness is a measure of the asymmetry of a distribution: a distribution which is positively skewed is characterised by a long right tail, and a negatively skewed distribution is characterised by a long left tail. In the case of urban application data, the distribution is slightly negatively skewed (indicating that there is a somewhat greater proportion of high scores than low scores). The urban distribution could also be described as bimodal in that there are two distinct groupings within the distribution: the frequency of observations drops at around the mean (670.8) of the distribution. On either side of the mean there are fairly distinct groupings, which suggests a naturally occurring division between high and low-scoring applicant schools. The mean score of the urban schools as a group was 670.8 points out of a maximum of 1200, or 55.8% of the total points available.

The distribution of data for rural schools is quite different from that of urban applicants. The shape of the distribution is markedly skewed, with a long right tail. The mean of the rural distribution is 258.5, indicating that rural schools achieved an average of 28.7% of the 900 total points available. Thus, rural applicants, on average, accrued about half as many points on the application criteria as their urban counterparts. In contrast to the urban distribution, the rural distribution does not contain any naturally occurring divisions between high and low scoring schools.

A Comparison of the Characteristics of Urban and Rural Applicant Schools

Before examining the characteristics of urban and rural applicant schools, it should be noted that urban applications were based on data from schools that had already been identified as disadvantaged, while the vast majority (96.5%) of rural applications were not[2]. For this reason, it might be expected that greater levels of disadvantage would be observed among the urban applicants. Also, as already described, the indicators used to select participating urban and rural schools differed slightly, because an effort was made to tailor the criteria to suit each context. It is, nevertheless, possible to compare the characteristics of families served by urban and rural applicant schools using the characteristics that are common to both. One method of doing this is to compare the

[2] All 190 urban applicant schools were designated disadvantaged (i.e., participating in *The Scheme of Assistance to Schools in Designated Areas of Disadvantage*), while only 24 of the 692 rural applications (or 3.5%) were from schools that were thus designated.

percentages of families satisfying the selection criteria in the highest and lowest scoring groups of schools (Table 8).

Table 8. Percentages of families in highest- and lowest-scoring urban and rural groups satisfying application criteria common to both schemes.

	Percentage satisfying each application variable				
Group	**Unemployed Breadwinner**	**Medical card possession**	**Lone-parent families**	**Low maternal education**	**Low paternal education**
Urban: Group 1 (*N*=19) (highest scorers)	88.5%	95.6%	51.7%	89.2%	86.5%
Urban: Group 10 (*N*=19) (lowest scorers)	36.5%	42.4%	23.6%	28.5%	26.8%
Rural: Group 1 (*N*=69) (highest scorers)	76.1%	85.0%	8.4%	59.6%	70.3%
Rural: Group 10 (*N*=68) (lowest scorers)	5.5%	8.8%	3.6%	5.6%	7.8%

As can be seen from Table 8, the highest-scoring urban schools have consistently greater proportions of pupils satisfying each of the application criteria than do the highest-scoring rural schools. However, the disparities are smaller for poverty variables than for other variables. Long-term unemployment affects more than three-quarters of pupils' families in the highest-scoring rural schools, while close to one pupil in nine is similarly affected in urban schools. The urban/rural difference in medical card possession is about 10%, with more pupils in urban than in rural schools coming from families that possess a medical card. Rates of low paternal education are also greater in the urban sample (86.5% vs 70.3%), and the percentage of urban pupils whose mothers have no formal educational qualifications is much greater in the urban than in the rural sample (89.2% and 59.6% of mothers respectively).

However, the characteristic on which the urban/rural differential is greatest is that pertaining to lone-parent families. Despite achieving relatively high percentages on other selection criteria (e.g., unemployment), rural schools in the highest scoring group have an average of only 8.4% of pupils from one-parent households. This compares with a rate of 51.7% in the equivalent urban group. This observation leads to the conclusion that while, in an urban setting, lone-parent family status is frequently found in combination with measures of poverty, the same is not true in rural areas. This suggests that lone-parent families are more closely associated with disadvantage in urban than in rural settings.

Finally, the differences between the lowest-scoring urban and rural schools are very large, with the greatest discrepancy arising in the case of medical card possession

(42.4% among urban applicants vs 8.8% among rural applicants), and the smallest discrepancy in relation to low paternal educational attainment (26.8% among urban applicants vs 7.8% among rural). Such differences, however, are not unexpected, as application data were collected differently from both samples. If all urban schools (as opposed to schools which were designated disadvantaged) had been invited to apply, urban schools in the bottom band of applicants may well have had much lower scores on the application variables.

To examine interrelationships between the application variables in urban and rural contexts, separate correlations matrices for all urban selection variables (Table 9) and for all rural selection variables (Table 10) were produced.

Table 9. Correlations[1] between variables used in the applications of urban schools (*N*=190).

Application Variable	% unemployed	% medical card	% L.A. housing	% lone parents	% mother no J.C	% father no J.C
% unemployed	–	–	–	–	–	–
% medical card	**.84**	–	–	–	–	–
% L.A. housing	**.72**	**.78**	–	–	–	–
% lone parents	**.47**	**.53**	**.41**	–	–	–
% mother no J.C	**.51**	**.51**	**.49**	**.35**	–	–
% father no J.C	**.49**	**.49**	**.45**	**.26**	**.85**	–

[1]All correlations are significant at .01 level.

Table 9 shows that unemployment, medical card possession and residence in local authority housing are all highly correlated in urban schools ($r > .7$ in all cases). Each of these variables could be thought of as measuring material deprivation, and it is, therefore, not surprising that they are very closely related to each other in applicant schools. All application variables, however, are significantly correlated with each other, although some of the observed associations are weaker than others. For example, the associations between each of the parental education variables and lone-parent family status, while statistically significant, are the weakest ($r \leq .35$). There is a stronger association between lone-parent status and unemployment (r=.47), medical card

possession (r=.53) and residence in local authority housing (r=.41). The highest correlation in the matrix is that between the two parental education measures (r=.85), indicating that urban pupils' parents resemble each other closely in terms of their educational attainments.

The values of the correlations between rural application variables are somewhat lower in most cases than their urban equivalents (Table 10). However, as was the case with the urban data, the parental educational attainment variables are the most highly correlated (r=.83). Unemployment is strongly related to medical card possession (r=.77), and more modestly related to low maternal (r=.52) and paternal (r=.49) educational attainment. The variable which is associated least with all other variables is that relating to lone-parent families ($r \leq .22$ in all cases), indicating that, in a rural context, there is only a modest association between living in a one-parent household and the other (mainly poverty-related) variables.

Table 10. Correlations[1] between variables used in the applications of rural schools (N=692).

Application variable	% unemployed	% low farm income	% medical card	% lone parents	% mother no J.C	% father no J.C
% unemployed	–	–	–	–	–	–
% low farm income	**.38**	–	–	–	–	–
% medical card	**.77**	**.48**	–	–	–	–
% lone parents	**.20**	**-.12**	**.22**	–	–	–
% mother no J.C	**.52**	**.25**	**.52**	**.17**	–	–
% father no J.C	**.49**	**.33**	**.53**	.05	**.83**	–

[1]Correlations presented in bold type are significant at .01 level.

4. RELATIONSHIPS BETWEEN PUPIL ACHIEVEMENT, ATTENDANCE, AND APPLICATION VARIABLES

Poor achievement has been identified as a key correlate of educational disadvantage (e.g., Kellaghan et al., 1995). For this reason, it is of interest to explore the relationship between achievement and each of the application variables used to quantify rates of disadvantage at school level. Data on pupil achievement were not collected as part of the procedure for selecting schools for the scheme, but in 1997 selected schools participated in the assessment of literacy (English reading) and numeracy (Mathematics) achievements among their third and sixth class pupils as part of the Educational Research Centre's evaluation of the scheme. The availability of these data makes it possible to explore the strength of the relationship between achievement and each application variable. However, the use of these data involves the consideration of a number of caveats.

First, while achievement data were collected from individual pupils, application data were collected at school level. Because achievement scores exist for each pupil, it would be desirable for analyses to also have data for each individual pupil on their family characteristics. However, since individual family background data were not available, pupil data were aggregated to grade level for analysis. This means that each school has a score on each application variable and a score for achievement in each subject area at 3rd and 6th class levels.

Second, as already described in Section 2, urban principals furnished application data using *reception* class pupils as a reference group, while the data from rural principals referred to the *all pupils* in the school. The available achievement data, on the other hand, relate to pupils in 3rd and 6th classes. However, there is no reason to suppose that the family characteristics of 3rd and 6th class pupils differ from those in reception classes (or in the school as a whole), as the schools are likely to serve the same families. Therefore, it can be assumed that the characteristics of the pupils who served as the reference groups are representative of the family characteristics of pupils at all grade levels.

Third, application data were gathered in 1996, while achievement data were collected the following year. However, as was the case with the former caveat, differences in when the data were collected should not matter if there are no differences

in the characteristics of the populations served. In the present context, there is no reason to suppose that the population served by the schools changes from one year to the next.

In addition to the achievement data, there are two other potentially useful types of data available for analysis. One of these consists of information provided by principals in their applications to join the scheme and relates to the number of pupils in senior classes in their school who are two years below standard in literacy and numeracy. Although this information was not taken into account in the calculation of the schools' application scores, it is worth exploring its relationship to achievement in the current context: if there is a strong relationship between these variables and achievement in our sample, the variables could serve as useful substitute variables in the absence of achievement data. Another potentially useful selection measure is the school's annual percentage attendance rate. This information is also available for schools in the scheme, as it has been collected annually from schools as part of the ongoing evaluation of the scheme. In the event of low attendance being found to be associated with poor achievement, the annual percentage attendance rate could be included as a variable in the assessment of degree of disadvantage at school level. Availability of information relating to numeracy and literacy levels and attendance (should they correlate strongly with achievement) would mean that the procedures used to identify schools that serve disadvantaged pupils could incorporate correlates of achievement in addition to the more traditional poverty measures.

Pupil Achievement Measures

Two achievement tests, *The Drumcondra Primary Reading Test* (Educational Research Centre, 1993) and *The Drumcondra Primary Mathematics Test* (Educational Research Centre, 1997) were administered to 3rd and 6th class pupils. All pupils in all urban schools (*N*=24) in the scheme that had 3rd and 6th class pupils were assessed. Psychology graduates, who were specially engaged for the purpose, carried out the assessment of urban pupils. In rural schools, the assessment was carried out by the cluster co-ordinators. Each co-ordinator assessed pupil achievement in two of the schools in their cluster.

The Drumcondra Primary Reading Test (DPRT)

The DPRT is a group-administered test designed for use in primary schools. Levels 3,4,5 and 6 are for use in 3rd, 4th, 5th, and 6th classes respectively. At each level of the

DPRT, there are two forms; Form A and Form B. Form A of the test was used to assess reading in *Breaking the Cycle* schools. The test assesses two aspects of reading: *Reading Vocabulary* and *Reading Comprehension*. The content of the *Reading Vocabulary* and *Reading Comprehension* subtests is based on an analysis of the English curriculum, and of textbooks in English and other subjects that are in current use.

*The Drumcondra Primary Mathematics Test (*DPMT*)*

The *DPMT* is a group-administered test designed for use in primary schools. As is the case with the DPRT, Levels 3,4,5 and 6 are for use in standards 3, 4, 5, and 6 respectively. The content of all levels of the DPMT is based on the mathematics curriculum and textbooks in mathematics that are currently used in Irish primary schools. Levels 3 - 6 of the DPMT assess three aspects of mathematics: *Computation*, *Concepts* and *Problem-solving*. These three content areas are represented by three separate subtests.

Pupil Achievement in Urban Schools

Achievements in Literacy

Achievement test results are reported according to mean total reading raw score (i.e., a combined score for both parts of the DPRT) for each class level. Raw scores represent the number of items correctly answered and these scores may be used to compare the performance of pupils in *Breaking the Cycle* schools with that of the norm group at 3rd and 6th class levels. The maximum possible total raw score on the DPRT is 76, which is achieved if all answers in the Vocabulary (40 items) and Comprehension (36 items) subtests are correct.

Third-class pupils were found to have a mean total reading raw score of 29.66 (Table 11). This means that pupils answered correctly 29.66 (or 38.9%) of the 76 test items. A mean score of 29.66 corresponds to a percentile rank of 33, indicating that urban pupils in 3rd class performed at the same level or better than 33% of pupils nationally. The mean score achieved by the norm group (the national sample of pupils on whom the test was standardised) is 38.51. The reading performance of 3rd class pupils in *Breaking the Cycle* schools is, therefore, relatively weak by comparison with pupils at this level nationally.

At 6th class level, the mean raw score of urban pupils on the reading test as a whole is 29.46 which compares with a mean of 40.38 for the norm group (Table 11).

The corresponding percentile rank for pupils in *Breaking the Cycle* schools is 27, indicating that 6th class pupils performed as well or better than 27% of pupils nationally in 6th class. A mean raw score of 29.46, when expressed as the average percentage of correctly answered items, is 38.8%, which compares with 53.13% for the norm group. Thus, the overall reading achievement of 6th class pupils in *Breaking the Cycle* schools is somewhat poorer than the reading achievement of 6th class pupils nationally.

Table 11. Means and standard deviations (raw scores) of pupils in 3rd and 6th classes in *Breaking the Cycle* urban schools and in a national sample on the Drumcondra Primary Reading Test (Levels 3 and 6).

	Mean and *SD*: Urban pupils in *Breaking the Cycle*	Mean and *SD:* National Sample
3rd class reading	*M* = 29.66, *SD* = 12.67 (*N* = 668)	*M* = 38.51, *SD* = 15.22
6th class reading	*M* = 29.46, *SD* = 11.93 (*N* = 653)	*M* = 40.38, *SD* = 14.95

Achievements in Numeracy

Third-class pupils in urban schools have a mean total mathematics score of 41.7 (Table 12). This means that across all three subtests, pupils on average answered correctly almost 42% of a possible total of 100 items. Compared to the norm group, whose mean score is 58.4, *Breaking the Cycle* urban pupils in 3rd class answered correctly 17% fewer mathematics items than 3rd class pupils nationally. The mean score of 41.7 achieved by urban pupils in 3rd class corresponds to a percentile rank of 20, indicating that these pupils performed at the same level or better than 20% of pupils in the norm group. Thus, the performance in mathematics of 3rd class pupils in *Breaking the Cycle* schools is relatively weak in comparison with that of pupils nationally.

At 6th class level, the mean raw score of urban pupils on the mathematics test as a whole is 42.9 which compares with a mean of 58.7 for the norm group. The corresponding percentile rank for pupils in *Breaking the Cycle* schools is 21, indicating that 6th class pupils performed as well or better than 21% of pupils nationally. Overall, urban pupils in 6th class achieve an average of 16% fewer mathematics items correct than do pupils at this level nationally.

Table 12. Means and standard deviations (raw scores) of pupils in 3rd and 6th classes in *Breaking the Cycle* urban schools and in a national sample on the Drumcondra Primary Mathematics Test (Levels 3 and 6).

	Mean and *SD:* Urban pupils in *Breaking the Cycle*	Mean and *SD:* National Sample
3rd class mathematics	*M* = 41.72, *SD* = 14.14 (*N* = 617)	*M* = 58.43, *SD* = 18.03
6th class mathematics	*M* = 42.90, *SD* = 16.45 (*N* = 605)	*M* = 58.72, *SD* = 17.88

Relationships Between Pupil Achievement, Attendance, and Application Variables in Urban Schools

Correlational Analyses

To explore relationships between variables, correlation matrices involving all variables were produced (Tables 13 and 14). It should be noted that some of the correlations (involving the poverty variables used to select schools) were reported previously, but were based on the responses of all applicant schools and, thus, involved greater numbers of cases than do those reported in this section. Correlations in this section are based only on schools for which achievement and attendance data exist, and, therefore, differ somewhat from those already reported. However, the general pattern of relationships observed is similar.

Two tables concerning urban schools are shown, reporting respectively the correlations between the literacy and numeracy achievements of 3rd class pupils and all other variables, and the achievements of 6th class pupils and all other variables. In addition to the application variables, data on the percentage of pupils specified by principals as having very low literacy and numeracy levels (which were not used in the selection of schools) have been included. Also included is the variable relating to annual percentage attendance in schools in 1996/97 (the year to which the achievement data relate).

Table 13. Correlation matrix of application variables, annual percentage attendance rates in schools in 1996/97, and aggregated literacy and numeracy achievements of 3rd class pupils in urban schools (*N*=24).

Variable	Literacy score	Numeracy score	% unemployed	% medical card	% L.A. housing	% lone parents	% mother no J.C	% father no J.C	% 2 years below in reading	% 2 years below in numeracy	% attendance 1996/97
Literacy score[3]	–	–	–	–	–	–	–	–	–	–	–
Numeracy score[3]	**.80****	–	–	–	–	–	–	–	–	–	–
% unemployed[1]	**-.47***	**-.42***	–	–	–	–	–	–	–	–	–
% medical card[1]	**-.59****	**-.42***	**.59****	–	–	–	–	–	–	–	–
% L.A. housing[1]	**-.62****	**-.68****	**.64****	**.59****	–	–	–	–	–	–	–
% lone parents[1]	**-.44***	-.19	.25	.40	.24	–	–	–	–	–	–
% mother no J.C[1]	-.23	-.11	.29	.32	.20	**.44***	–	–	–	–	–
% father no J.C[1]	**-.48***	**-43***	**.57****	**.55****	**.60****	.40	**.68****	–	–	–	–
% 2 years below in reading[2]	**-.54****	**-.47***	**.62****	.30	.32	-.01	.22	.16	–	–	–
% 2 years below in numeracy[2]	**-.52****	-.39	**.64****	.31	.34	.02	.26	.23	**.90****	–	–
% attendance 1996/97[3]	**.52****	**.51***	**-.44***	-.20	-.24	.25	-.27	-.24	**-.82****	**-.67****	–

****Correlation is significant at 0.01 level**
***Correlation is significant at 0.05 level**
[1]Application data (based on reception class) used in the selection of schools for *Breaking the Cycle*.
[2]Application data collected, but not used, in the selection of schools for *Breaking the Cycle*.
[3]Data collected for the evaluation of *Breaking the Cycle*.

Table 13 reveals that literacy (reading) achievement at 3rd class level is significantly associated with all variables apart from the variable relating to maternal education, while numeracy (mathematics) achievement is significantly associated with all variables except maternal education and lone-parent family status. Residence in local authority housing is the application variable most highly correlated with literacy score, indicating that the greater the percentage of pupils living in local authority housing, the lower the literacy score at 3rd class level. Interestingly, the annual percentage attendance rate is more closely associated with literacy achievement (r=.52) and numeracy achievement (r=.51) at 3rd class level than are rates of unemployment, parental education levels, and proportions of lone-parent families. This is also true of the variable relating to the numbers of senior pupils in

the school identified by principals as two years below standard in reading literacy (r=-.52). This suggests that annual percentage attendance in schools and information provided by principal teachers on levels of literacy and numeracy would be useful in the identification of disadvantaged schools. It is also noteworthy that school attendance is highly negatively correlated with reported levels of literacy (r=-.82) and numeracy (r=-.67), indicating that the lower the annual percentage attendance rate of the school, the greater the proportion of pupils deemed to be two years below standard in literacy and numeracy for their age.

Table 14. Correlation matrix of application variables, annual percentage attendance rates in schools in 1996/97, and aggregated literacy and numeracy achievements of 6th class pupils in urban schools (N=24).

Variable	Literacy score	Numeracy score	% unemployed	% medical card	% L.A. housing	% lone parents	% mother no J.C	% father no J.C	% 2 years below in reading	% 2 years below in numeracy	% attendance 1996/97
Literacy score[3]	–	–	–	–	–	–	–	–	–	–	–
Numeracy score[3]	**.64****	–	–	–	–	–	–	–	–	–	–
% unemployed[1]	**-.56****	**-.54****	–	–	–	–	–	–	–	–	–
% medical card[1]	-.31	-.37	**.59****	–	–	–	–	–	–	–	–
% L.A. housing[1]	**-.68****	**-.50***	**.64****	**.59****	–	–	–	–	–	–	–
% lone parents[1]	.01	.05	.25	.40	.24	–	–	–	–	–	–
% mother no J.C[1]	.03	-.21	.29	.32	.20	**.44***	–	–	–	–	–
% father no J.C[1]	**-.45***	-.31	**.57****	**.55****	**.60****	.40	**.68****	–	–	–	–
% 2 years below in reading[2]	**-.45***	**-.70****	**.62****	.30	.32	-.01	.22	.16	–	–	–
% 2 years below in numeracy[2]	-.34	**-.62****	**.64****	.31	.34	.02	.26	.23	**.90****	–	–
% attendance 1996/97[3]	**.43***	**.75****	**-.44***	-.20	-.24	.25	-.27	-.24	**-.82****	**-.67****	–

****Correlation is significant at 0.01 level**
***Correlation is significant at 0.05 level**

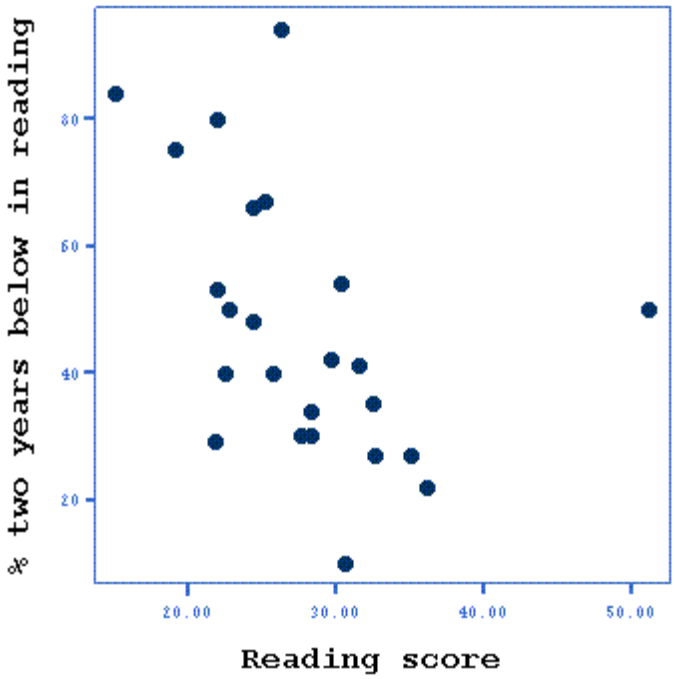
[1] Application data (based on reception class) used in the selection of schools for *Breaking the Cycle*.
[2] Application data collected, but not used, in the selection of schools for *Breaking the Cycle*.
[3] Data collected for the evaluation of *Breaking the Cycle*.

At 6th class level (Table 14), the general pattern of correlations is similar to that at 3rd class. Again, local authority housing is the poverty variable with the strongest association with reading literacy achievement scores, followed by family unemployment. However, the highest achievement related correlation at 6th class level is between pupils' numeracy scores and percentage attendance in 1996/97 (r=.75). This indicates that as attendance increases, achievement in numeracy increases. There is, however, a much more modest correlation between reading literacy achievement and attendance, suggesting that attendance at school is more closely related among senior pupils to achievement in Mathematics than in reading (possibly because reading skills are acquired differently from mathematical ones which depend on regular and explicit instruction). Principals' estimates of the percentages of senior level pupils with serious numeracy (r=.-45) and literacy (r=-.62) difficulties are also significantly negatively correlated with achievement in both subject areas. It is, therefore, suggested that these variables could be used in the identification of urban schools as disadvantaged. However, their inclusion would only be necessary in the absence of achievement data for applicant schools.

The pattern of correlations between literacy and numeracy scores and other variables is largely similar at 3rd and 6th class levels. However, there are some differences in the magnitude of the correlations obtained in the case of certain variables. For example, there is a greater association between unemployment and achievement in both subject areas at 6th class level than at 3rd class level, while the correlation between medical card possession and achievement is stronger at 3rd class level than at 6th class level. Some such differences may be explained by the small sample size: in small samples, variations in scores (such as the presence of an extreme score) make a relatively large difference to the size of the correlation, whereas in larger samples individual scores affect the value of the obtained correlations to a smaller extent. In the case of literacy achievement among 6th class pupils, one of the 24 schools has a high aggregate reading score of 51.3 accompanying a moderate proportion of pupils (50%) who are deemed to be two years below standard for their age in literacy (Figure 3). Figure 3 shows that the data-point for this school does not fit with the general pattern of data-points in the scatterplot, and may be thought of as an outlier. The value of the correlation which describes the association between variables in Figure 3 is -.45 (see also Table 14). However, if the outlier is removed from the analysis, the correlation value increases to

-.65. This outlier is the only one of its kind observed in the urban achievement data at either class level[3].

Figure 3. Scatterplot of 6th class reading literacy achievement scores (x-axis) and percentage of senior pupils considered by principal teachers to be two years below standard in reading literacy (y-axis) (*N*=24).



The fact that the 6th class data are influenced by an outlier helps to explain another anomalous finding. While principals' estimates of the percentage of pupils in the school with serious literacy difficulties relate to senior pupils (i.e., those in 6th class), the correlations between this variable and actual literacy achievement is higher at 3rd class level. However, when the outlying score is removed from the analysis, the correlation improves to the extent that it exceeds that at 3rd class. It should also be noted that the principals' estimates concerning literacy difficulties relate to 6th class pupils in 1996, while the achievement test data describe the performance of 6th class pupils in 1997. Furthermore, although one might consider that both variables should reflect pupils' achievement levels, the measurement scales differ (estimated percentages in the case of data from principals versus actual test scores in the case of achievement data). In light of these considerations one would not expect to find a perfect correlation between the two variables.

[3] The unusually high aggregate reading literacy score achieved by this school is due to the fact that the score is based on data from only 10 pupils, some of whom had very high scores.

Regression Analyses

While the correlational data just described indicate that relationships exist between application variables and achievement in urban schools, the strengths of these relationships vary, and the application variables are often highly related to each other. For this reason, stepwise multiple regression analyses were carried out to identify the application variables which best predict achievement. These analyses, again, used data from the 24 selected urban schools on the literacy and numeracy achievements of their 3rd and 6th class pupils. Results of the analyses reported in this section should be interpreted with caution as the numbers of cases available for analysis are small. Also, while analyses have been carried out separately at 3rd and 6th class level to predict literacy and numeracy achievements, the true function of these analyses should be thought of as exploratory: while analyses of this type are designed to identify variables which predict, for example, reading literacy achievement in a given sample, the procedure capitalises on random variations in data and produces results that tend to be idiosyncratic. For this reason it has also been argued (e.g., Menard, 1995) that it is difficult to replicate results of stepwise regression analysis in samples other than in the sample from which they were originally obtained. Given these difficulties, and bearing in mind that one of the present tasks is to identify variables which could be used to assess degree of disadvantage in a wider context, a prudent approach to interpreting results would be to examine the *overall pattern* of variables found to predict achievement across the various analyses.

In the case of urban schools, four separate multiple regression analyses were carried out, one at each of 3rd and 6th class levels, to predict literacy and numeracy achievements. All application variables (including those that were *not* used in calculating schools' application scores for *Breaking the Cycle*, but which had been shown to relate to achievement in correlational analyses) were entered as predictor variables. Annual percentage attendance was also included as a predictor, in view of its correlation with achievement. The stepwise regression procedure involves the selection of the application variable which is most highly correlated with the dependent variable, and then determines whether any remaining variables contribute additionally to the explanation of variance in achievement. When the addition of further variables to the model no longer significantly increases the amount of variance explained, the process stops. The final result in the present context indicates which variable, or combination of variables, best explains achievement in a given subject area at a given class level.

Tables 15 to 18 contain summaries of results of regression analyses for urban schools. An examination of the tables shows that residence in local authority housing accounts for the greatest proportion of variance[4] in achievement in three out of four of the analyses. Indeed, in the fourth analysis, it also explains a significant amount of variance when used in combination with annual percentage attendance. The annual percentage attendance variable also emerges as a good predictor of achievement, and occurs in three of the four models. Other variables contribute to the prediction of reading literacy achievement at 3rd class level but not at 6th (i.e., percentage of lone-parent families and percentage of families in which mothers have no formal educational qualifications), but these variables do not feature in the prediction of numeracy achievement at either grade level. Each of the four models identified by these analyses accounts for a substantial amount of the variance in achievement, at 73% and 46% respectively in the case of 3rd and 6th class literacy achievement and 53% and 63% in the case of 3rd and 6th class numeracy achievement.

Table 15. Results of Forward Stepwise Multiple Regression analysis to predict 3rd class literacy achievement from attendance and application variables (% attendance in 1996/97, % local authority housing, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy) (*N*=21).

3rd class reading	**Variables in model: Reading literacy achievement vs 9 independents**				
Regression summary (Step 4)		Co-efficient (*b*)	Std error	Std co-efficient (*beta*)	Partial correlation
R Squared = .78	**Intercept**	-29.74	19.05		
Adjusted R Squared = .73	**% Local authority housing**	-.20	.06	-.44	-.65
RMS residual = 2.78	**% Attendance 1996/97**	.85	.19	.64	.75
	% lone parents	-.14	.04	-.56	-.69
	% mothers with no J.C.	.10	.04	.33	.50

[4] The adjusted R^2 is used in all cases. The adjusted R^2 incorporates an adjustment for the fact that there are a large number of independent variables. When this is so, it is possible that R^2 will become artificially high simply because chance variations in some of the independents 'explain' small parts of the variance of the dependent variable.

Table 16. Results of Forward Stepwise Multiple Regression analysis to predict 3rd class numeracy achievement from attendance and application variables (% attendance in 1996/97, % local authority housing, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy (*N*=21).

3rd class Mathematics	**Variables in model: Numeracy achievement vs 9 independents**				
Regression summary (Step 2)		Co-efficient (*b*)	Std error	Std co-efficient (*beta*)	Partial correlation
R Squared = .58	**Intercept**	14.79	28.59		
Adjusted R Squared = .53	**% Local authority housing**	-.37	.10	-.58	-.65
RMS Residual = 5.04	**% Attendance 1996/97**	.68	.29	.37	.48

Table 17. Results of Forward Stepwise Multiple Regression analysis to predict 6th class reading literacy achievement from attendance and application variables (% attendance in 1996/97, % local authority housing, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy) (*N*=21).

6th class reading	**Variables in model: Reading literacy achievement vs 9 independents**				
Regression summary (Step 1)		Co-efficient (*b*)	Std error	Std Co-efficient (*beta*)	Partial correlation
R Squared = .48	**Intercept**	69.18	9.75		
Adjusted R Squared = .46	**% Local authority housing**	-.45	.11	-.70	-.70
RMS Residual = 5.49					

Table 18. Results of Forward Stepwise Multiple Regression analysis to predict 6th class numeracy achievement from attendance and application variables (% attendance in 1996/97, % local authority housing, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy) (*N*=21).

6th class Mathematics	**Variables in model: Numeracy achievement vs 9 independents**				
Regression summary (Step 2)		Co-efficient (*b*)	Std error	Std Co-efficient (*beta*)	Partial correlation
R Squared = .67	**Intercept**	-72.08	33.62		
Adjusted R Squared = .63	**% Attendance 1996/97**	1.61	.34	.66	.74
RMS Residual = 5.92	**% Local authority housing**	-.30	.12	-.35	-.51

Each of the analyses described above produces a different pattern of predictors, depending on whether reading literacy or numeracy is being predicted, and on whether predictions are being made about the achievements of 3rd or 6th class pupils. Four variables (local authority housing, percentage attendance, lone-parent family status, and maternal educational attainment) emerged as predictors of achievement across all four analyses. From a practical viewpoint, the identification of disadvantage could not depend on using different selection variables in different situations. Therefore, to investigate the extent to which this set of four variables predicts achievement in each situation and to discover how well the set compares with the full set of nine variables, two further multiple regression analyses were performed at each class level for both literacy and numeracy (Table 19). Table 19 presents the R-squared value (i.e., the total amount of explained variance in achievement) obtained when all nine variables are entered in a multiple regression analysis, or when only the set of four is entered. By comparing the amounts of variance explained in each type of regression analysis, it is possible to explore the consequences of using only some of the available variables as selection variables.

Table 19. R^2 and adjusted R^2 values (representing proportion of variance in achievement explained) derived from each of type of regression analysis predicting literacy and numeracy achievements at 3rd and 6th class levels.

	Type of regression analysis and number of independents					
	Multiple regression (9 independents)			Multiple regression (4 independent predictors)[1]		
Achievement area and class level	R^2	Adjusted R^2	No. of variables in model	R^2	Adjusted R^2	No. of variables in model
3rd class literacy	.88	.78	9	.78	.73	4
3rd class numeracy	.74	.53	9	.63	.54	4
6th class literacy	.85	.72	9	.62	.53	4
6th class numeracy	.69	.44	9	.67	.59	4

[1]Predictor variables are those which had been shown to contribute significantly to the explanation of achievement in stepwise regression analyses.

The adjusted R^2 values in Table 19 show that when only the local authority housing, percentage attendance, lone-parent family status, and maternal educational attainment variables are used to predict achievement, more than 50% of the variance in

achievement in literacy and numeracy is explained at each class level. Using all nine variables to predict achievement results in only a small improvement in the amount of variance explained in most cases. In other words, it would be possible, without losing much information, to predict achievement from a knowledge of the local authority housing, percentage attendance, lone-parent family status and maternal educational attainment variables.

Pupil Achievement in Rural Schools

Pupil achievements in literacy and numeracy were assessed in 50 of the 123 rural schools in *Breaking the Cycle*. Two schools from each cluster were selected to participate. The purpose of selecting two schools per cluster was twofold. First, this method of sampling resulted in representation for every cluster of schools. Second, it resulted in fairly equal workloads for the local scheme co-ordinators who were engaged to do the achievement testing. Pupil achievements were assessed using the Drumcondra Primary Reading Test (DPRT) and the Drumcondra Primary Mathematics Test (DPMT). For testing purposes, one-teacher schools (*N*=11) were eliminated from the pool as it was thought impracticable to organise achievement testing in these schools. Two schools were then randomly chosen from each of the 25 clusters with one constraint: only schools which had an overall 'index' of disadvantage[5] of 8 or greater were included.

Achievements in Literacy

Third-class pupils were found to have a mean total reading raw score of 39.45 (Table 20). This means that pupils answered correctly 39.45 (or 51.9%) of the 76 test items. The mean raw score achieved by the standardisation group is 38.51. A mean score of 39.45 corresponds to a percentile rank of 55, indicating that rural pupils in 3rd class performed at the same level or better than 55% of pupils nationally. The reading performance of 3rd class pupils in rural *Breaking the Cycle* schools is, therefore, slightly better than that of pupils at this level nationally.

At 6th class level, the mean raw score of pupils on the reading test as a whole is 39.21 which compares with a mean of 40.38 in the standardisation sample (Table 20). The percentile rank for pupils in *Breaking the Cycle* schools is 50, indicating that 6th class pupils performed as well or better than 50% of pupils nationally in 6th class.

[5]The method of calculating this score was based on information furnished by schools in their application to join the *Breaking the Cycle* scheme.

Table 20. Means and standard deviations (raw scores) of pupils in 3rd and 6th classes in *Breaking the Cycle* rural schools and in a national sample on the Drumcondra Primary Reading Test (Levels 3 and 6).

	Mean and *SD*: Rural pupils in *Breaking The Cycle*	Mean and *SD*: National Sample
3rd class reading	*M* = 39.45, *SD* = 15.03 (*N* = 362)	*M* = 38.51, *SD* = 15.22
6th class reading	*M* = 39.21, *SD* = 14.02 (*N* = 433)	*M* = 40.38, *SD* = 14.95

Achievements in Numeracy

Third-class pupils in *Breaking the Cycle* schools have a mean total Mathematics score of 53.1 (Table 21). This is lower than the mean score of the standardisation sample (58.4). The mean score of 53.1 achieved by *Breaking the Cycle* pupils corresponds to a percentile rank of 39, indicating that these pupils performed at the same level or better than 39% of pupils in the norm group. Thus, the performance in Mathematics of 3rd class pupils in *Breaking the Cycle* rural schools is slightly weaker than that of pupils nationally.

At 6th class level, the mean raw score of *Breaking the Cycle* pupils on the Mathematics test as a whole is 55.4 which compares with a mean of 58.7 for the norm group. The corresponding percentile rank for pupils in *Breaking the Cycle* schools is 42, indicating that 6th class pupils performed as well or better than 42% of pupils nationally in 6th class.

Table 21. Means and standard deviations (raw scores) of pupils in 3rd and 6th classes in *Breaking the Cycle* rural schools and in a national sample on the Drumcondra Primary Mathematics Test (Levels 3 and 6).

	Mean and *SD*: Rural pupils in *Breaking the Cycle*	Mean and *SD*: National Sample
3rd class Mathematics	*M* = 53.08, *SD* = 18.48 (*N* = 345)	*M* = 58.43, *SD* = 18.03
6th class Mathematics	*M* = 55.37, *SD* = 17.93 (*N* = 404)	*M* = 58.72, *SD* = 17.88

Relationships Between Pupil Achievement, Attendance, and Application Variables in Rural Schools

Correlational Analyses

As in the case of the urban data, correlations between all variables were calculated. Tables 22 and 23 respectively show the correlations between the literacy and numeracy achievements of 3rd class pupils and all other variables, and the achievements of 6th class pupils and all other variables. It will be noted that there are fewer significant correlations in the rural matrices than in the urban data. The poverty variable relating to medical card possession is, however, related to the percentages of families that are headed by long-term unemployed, and the percentage of families that are in receipt of assistance due to low farm income. In addition, at 6th class level, the lone-parents variable is significantly and negatively related to unemployment. Thus, the percentage of lone-parent families in schools is inversely related to the percentage of families headed by the long-term unemployed.

It is surprising that none of the poverty variables is significantly associated with achievement in either literacy or numeracy at 3rd class level (Table 22). The same pattern of results is repeated at 6th class, with the exception of a significant positive correlation between the percentage of pupils coming from lone-parent households and reading literacy achievement. Thus, in a rural context, reading scores increase in line with the proportion of one-parent families. As already noted in Section 3, lone-parent families in rural settings differ from those in urban settings, in that they are not correlated with poverty. Given the lack of an association between lone-parent family status and either poverty or scholastic achievement, the lone-parent family variable should not be used in the identification of rural schools as disadvantaged, or in their selection for schemes designed to target disadvantage.

A more promising approach might be to use the data given by principals on the percentage of pupils who are two years below standard for their age in reading and numeracy. Of all rural application variables, these are the only ones which showed a relationship to achievement. Tables 22 and 23 show that the relationship between reported literacy and numeracy levels and pupils' actual literacy and numeracy achievements is stronger at 6th class level than at 3rd class level. This is to be expected as principals' estimates of the percentage of pupils with serious literacy and numeracy difficulties relate to senior pupils (i.e., pupils in 6th class). However, it is possible that the

relationship between these variables is stronger than indicated by the present data: of the 50 schools for which data are available, principals in nine of these schools indicated that there were *no* senior pupils that were two years below standard in literacy, and the same number indicated that there were no pupils that were two years below standard in numeracy. This is known as a "floor effect" and describes a situation in which many scores pile up at the lower end because it is not possible to have any lower score. Furthermore, the estimate of the relationship obtained is reduced in size because data for one variable are bunched.

Table 22. Correlation matrix of application variables, annual percentage attendance rates in schools in 1996/97, and aggregated literacy and numeracy achievements of 3rd class pupils in rural schools (*N*=49).

Variable	Literacy score	Numeracy score	% unemployed	% low farm income	% medical card	% lone parents	% mother no J.C	% father no J.C	% 2 years below in reading	% 2 years below in numeracy	% attendance 1996/97
Literacy score[3]	–	–	–	–	–	–	–	–	–	–	–
Numeracy score[3]	**.59****	–	–	–	–	–	–	–	–	–	–
% unemployed[1]	-.06	.14	–	–	–	–	–	–	–	–	–
% low farm income[1]	-.05	.05	.13	–	–	–	–	–	–	–	–
% medical card[1]	.23	.25	**.41***	**.35***	–	–	–	–	–	–	–
% lone parents[1]	-.03	-.20	-.25	-.20	-.17	–	–	–	–	–	–
% mother no J.C[1]	-.16	-.08	.26	.00	.25	-.20	–	–	–	–	–
% father no J.C[1]	-.09	-.04	**.31***	-.08	**.28***	-.21	**.82****	–	–	–	–
% 2 years below in reading[2]	-.25	**-.32***	.12	.14	-.03	.14	.25	.04	–	–	–
% 2 years below in numeracy[2]	-.17	**-.36***	.02	.10	-.19	.19	.18	-.06	**.85****	–	–
% attendance 1996/97[3]	.12	.25	-.16	.21	-.10	.11	-.10	-.13	-.01	.00	–

****Correlation is significant at 0.01 level**
***Correlation is significant at 0.05 level**

[1] Application data (based on all pupils in the school) used in the selection of schools for *Breaking the Cycle*.

[2] Application data collected, but not used, in the selection of schools for *Breaking the Cycle*.

[3] Data collected for the evaluation of *Breaking the Cycle*.

Table 23. Correlation matrix of application variables, annual percentage attendance rates in schools in 1996/97, and aggregated literacy and numeracy achievements of 6th class pupils in rural schools (*N*=50).

Variable	Literacy score	Numeracy score	% unemployed	% low farm income	% medical card	% lone parents	% mother no J.C	% father no J.C	% 2 years below in reading	% 2 years below in numeracy	% attendance 1996/97
Literacy score[3]	–	–	–	–	–	–	–	–	–	–	–
Numeracy score[3]	**.64****	–	–	–	–	–	–	–	–	–	–
% unemployed[1]	-.19	.04	–	–	–	–	–	–	–	–	–
% low farm income[1]	-.17	-.09	.17	–	–	–	–	–	–	–	–
% medical card[1]	-.16	.11	**.42****	**.37***	–	–	–	–	–	–	–
% lone parents[1]	**.29***	.12	**-.28***	-.25	-.19	–	–	–	–	–	–
% mother no J.C[1]	-.14	-.10	**.29***	.05	.26	-.24	–	–	–	–	–
% father no J.C[1]	-.12	.07	**.33***	-.02	**.30***	-.25	**.83****	–	–	–	–
% 2 years below in reading[2]	**-.34***	**-.33***	.14	.18	-.01	.09	**.28***	.08	–	–	–
% 2 years below in numeracy[2]	**-.29***	**-.48****	.06	.15	-.16	.13	.21	-.02	**.86****	–	–
% attendance 1996/97[3]	.26	.13	-.16	.20	-.10	.11	-.10	-.13	-.01	.00	–

****Correlation is significant at 0.01 level**
***Correlation is significant at 0.05 level**

[1] Application data (based on all pupils in the school) used in the selection of schools for *Breaking the Cycle*.
[2] Application data collected, but not used, in the selection of schools for *Breaking the Cycle*.
[3] Data collected for the evaluation of *Breaking the Cycle*.

Regression Analyses

Stepwise multiple regression analyses were carried out to identify the application variables which best predict pupil achievements in rural schools. These analyses used data from the 50 selected rural schools. Four separate regression analyses are reported, one at each of 3rd and 6th class levels predicting reading literacy and numeracy achievements. All application variables (including those relating to the percentage of pupils reported by school principals to be two years below standard for their age in literacy and numeracy) were entered as predictor variables, as was annual percentage attendance in 1996/97.

Tables 24 to 27 summarise the results. The first thing to be noted is that the variables which emerge as predictors account for very small amounts of the total variance in achievement at either class level. The variable relating to the numbers of pupils identified by principals as being two years or more below standard for their age in numeracy emerges as a predictor in three of the analyses, and, indeed, is the only predictor of pupils' actual numeracy achievement at 3rd and 6th class levels. Even though it is the best predictor, it accounts for only 8% of the variance in numeracy achievement at 3rd class. It functions somewhat better at 6th class, where it predicts 19% of variance in actual numeracy achievement. Only two other variables (medical card possession and lone-parent families) emerge as predictors of achievement across all four analyses. Medical card possession explains 14% of the variance in literacy achievement at 3rd class, but does not predict achievement in any other situation. Finally, the lone-parent variable, in combination with the variable relating to numbers of pupils judged by principals to be two years or more below standard for their age in numeracy explains 16% of the variance in 6th class literacy achievement.

Table 24. Results of Forward Stepwise Multiple Regression analysis to predict 3rd class literacy achievement from attendance and application variables (% attendance in 1996/97, % low farm incomes, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy) (*N*=42).

3rd class reading	**Variables in model: Reading literacy achievement vs 9 independents**				
Regression summary (Step 1)		Co-efficient (*b*)	Std error	Std co-efficient (*beta*)	Partial correlation
R Squared = .16	**Intercept**	23.30	5.97		
Adjusted R Squared= .14	**% Medical card**	.21	.08	.40	.40
RMS residual = 6.64					

Table 25. Results of Forward Stepwise Multiple Regression analysis to predict 3rd class numeracy achievement from attendance and application variables (% attendance in 1996/97, % low farm incomes, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy) (*N*=42).

3rd class Mathematics	**Variables in model: Numeracy achievement vs 9 independents**				
Regression summary (Step 1)		Co-efficient (*b*)	Std error	Std co-efficient (*beta*)	Partial correlation
R Squared = .10	**Intercept**	57.47	2.53		
Adjusted R Squared = . 08	**% pupils 2 years below in numeracy**	-.26	.12	-.32	-.32
RMS Residual = 10.62					

Table 26. Results of Forward Stepwise Multiple Regression analysis to predict 6th class literacy achievement from attendance and application variables (% attendance in 1996/97, % low farm incomes, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy) (*N*=43).

6th class reading	**Variables in model: Reading literacy achievement vs 9 independents**				
Regression summary (Step 2)		Co-efficient (*b*)	Std error	Std Co-efficient (*beta*)	Partial correlation
R Squared = .20	**Intercept**	37.42	1.77		
Adjusted R Squared= .16	**% lone-parent families**	.44	.18	.35	.37
RMS Residual = 5.66	**% pupils 2 years below in numeracy**	-.14	.06	-.32	-.33

Table 27. Results of Forward Stepwise Multiple Regression analysis to predict 6th class numeracy achievement from attendance and application variables (% attendance in 1996/97, % low farm incomes, % long-term unemployed, % medical card holders, % lone-parent families, % mothers with low education, % fathers with low education, % of pupils two years below standard in literacy, % of pupils two years below standard in numeracy) (*N*=42).

6th class Mathematics	**Variables in model: Numeracy achievement vs 9 independents**				
Regression summary (Step 1)		Co-efficient (*b*)	Std error	Std Co-efficient (*beta*)	Partial correlation
R Squared = .21	**Intercept**	59.80	2.21		
Adjusted R Squared= .19	**% pupils 2 years below in numeracy**	-.34	.10	-.45	-.45
RMS Residual = 9.33					

While three out of four of the analyses identified the variable relating to the percentage of pupils judged by principals to be two years below standard in numeracy as a predictor of achievement, two other variables (lone-parent family status, and medical card possession) also emerged as predictors of reading literacy achievement. None of the variables in the analyses is a strong predictor of achievement (in that all explain relatively small amounts of variance). However, to investigate the extent to which the three (when used together) predict achievement in each situation and to discover how well this set compares with the full set of nine variables, two further multiple regression analyses were performed at each class level for literacy and numeracy (Table 28). Table 28 presents the R-squared value and the adjusted R-squared value (i.e., the total amount of explained variance in achievement) obtained when all nine variables are entered in a multiple regression analysis, or when only the set of three is entered.

Table 28. R^2 and adjusted R^2 values (representing proportion of variance in achievement explained) derived from each of type of regression analysis predicting literacy and numeracy achievement at 3rd and 6th class levels.

	Type of regression analysis and number of independents					
	Multiple regression (9 independents)			Multiple regression (3 independent predictors)[1]		
Achievement area and class level	R^2	Adjusted R^2	No. of variables in model	R^2	Adjusted R^2	No. of variables in model
3rd class literacy	.29	.10	9	.07	.01	3
3rd class numeracy	.30	.11	9	.18	.12	3
6th class literacy	.28	.08	9	.22	.17	3
6th class numeracy	.33	.15	9	.26	.22	3

[1]Predictor variables are those which had been shown to contribute significantly to the explanation of achievement in stepwise regression analyses.

Table 28 shows that the three predictors on their own function better than all nine independent variables in predicting 6th class achievement in rural schools. In contrast, at third class level, using all nine variables leads to a better explanation of the variance, particularly in the case of literacy achievement. It should be noted, however, that the overall outcomes of the regression analyses indicate that the application variables, and the variable relating to percentage attendance, are relatively poor predictors of achievement

among rural pupils. The only promising variable in this regard is the one concerning the percentage of pupils that are regarded by principals as being two years below standard in numeracy. None of the variables actually used in the selection of rural schools for *Breaking the Cycle* demonstrates a consistent relationship with pupil achievement.

5. SUMMARY AND CONCLUSIONS

General Issues

On the basis of the various analyses reported in this paper, it is possible to make some general statements about indicators of disadvantage in urban and rural contexts. When urban and rural applicant schools are each divided into 10 equal-sized groups, and are rank- ordered on the basis of their total application score, there is a fairly systematic decrease in the percentages of schools satisfying each of the application criteria as one goes from the highest-scoring group to the lowest. This indicates that each of the indicators functions well in discriminating between high and low-scoring groups. The only exception to this trend occurs in relation to the lone-parent family variable among rural applicants: although the percentage of lone-parent families decreases from the highest to the lowest-scoring rural group, the decrease is not systematic, and is not of the same magnitude as decreases observed in the case of other application variables.

A comparison of the characteristics of the highest-scoring urban and rural schools reveals that in the urban schools there are greater proportions of pupils from lone-parent families, families possessing a medical card, families which are headed by someone who is long-term unemployed, and families where parents have low educational qualifications. Differences favouring urban schools in the proportions of pupils coming from such families range from 10.6% of pupils in the case of medical card possession to 43.3% of pupils in the case of lone-parent families. This indicates that the profile of the highest-scoring urban schools is more disadvantaged than that of the highest-scoring rural schools.

Among urban applicants, factor analyses identified two main dimensions measured by the application variables: a dimension concerning material deprivation and a parental educational attainment dimension. Among rural applicants, equivalent analyses also revealed two dimensions. The first of these was concerned with poverty and parental educational attainment, while the second was concerned only with the inverse relationship

between the numbers of households characterised by low farm incomes and those headed by lone parents. Although all indicators were designed to assess degree of disadvantage, the indicators appear to be measuring slightly different underlying constructs in urban and rural contexts.

Appropriateness of Application Indicators in the Identification of Disadvantage in Urban Schools

Correlations between variables used in the selection of urban schools revealed that poverty variables (medical card possession, long-term unemployment, and residence in local authority housing) are all highly associated ($r \geq .72$ in each case). Since poor pupil achievement is an important feature of educational disadvantage, its relationship to the application variables was also examined. Exploratory analyses involving achievement data and other available school-level data (on percentage attendance and on the percentage of pupils in senior classes who were judged by principal teachers to be two years below standard for their age in literacy and numeracy) revealed some interesting relationships. For example, all application variables, except the one relating to maternal educational attainment, are significantly and negatively correlated with pupils' literacy and numeracy achievement in 3rd class in urban schools. Thus, the greater the percentage of pupils' families satisfying each of the application criteria (e.g., living in local authority housing), the poorer the achievements of pupils in the school. Attendance rates were found to relate significantly and positively to achievement, while percentages of pupils judged to have serious literacy and numeracy difficulties were, predictably, negatively associated with achievement.

Further confirmation of the efficacy of individual variables to identify disadvantage at school level (as measured by poor achievement) comes from the results of a series of regression analyses. In urban schools, the percentage of pupils living in local authority housing was the strongest predictor of achievement, followed by the annual percentage attendance rate in the school. Other regression analyses revealed that using all 9 available independent variables to predict achievement (8 application variables and the attendance variable) did not result in a much better prediction of pupil achievement than using only four variables in the case of urban schools. Table 29 provides a summary of the relationships between all variables in an urban context.

Table 29. Summary of intercorrelations between application and other variables [a] and summary of outcomes of regression analyses predicting achievement in urban schools (*N*=24).

Indicator / variable	Significant positive correlations with other variables	Significant negative correlations with other variables	Identified in regression analysis as a predictor of achievement?
Local authority housing[1]	Unemployment; medical cards; paternal attainment	Reading literacy achievement; Numeracy achievement	Yes (Good predictor)
Medical card possession[1]	Unemployment; local authority housing; paternal attainment	Reading literacy achievement; Numeracy achievement	No
Lone-parent families[1]	Maternal attainment	Reading literacy achievement	Yes (Moderate predictor)
Unemployment[1]	Medical cards; local authority housing; paternal attainment; % of pupils 2 years below in reading; % of pupils 2 years below in numeracy	Reading literacy achievement; Numeracy achievement; % attendance 1996/97	No
Maternal attainment[1]	Paternal attainment; lone-parent families	_____	Yes (Moderate predictor)
Paternal attainment[1]	Maternal attainment; unemployment; medical cards; local authority housing	Reading literacy achievement; Numeracy achievement	No
% 2 years behind in numeracy[2]	% of pupils 2 years below in reading; unemployment	Numeracy achievement; Reading literacy achievement; % attendance 1996/97	No
% 2 years behind in reading[2]	% of pupils 2 years below in numeracy; unemployment	Reading literacy achievement; Numeracy achievement; % attendance 1996/97	No
% attendance 1996/97[3]	Reading achievement; Mathematics achievement	Unemployment; % of pupils 2 years below in reading; % of pupils 2 years below in numeracy	Yes (Good predictor)
Reading literacy and numeracy[3]	% attendance 1996/97	Unemployment; medical cards; local authority housing; lone-parent families; paternal education; % of pupils 2 years below in reading; % of pupils 2 years below in numeracy	_____

[a] **1** Application data (based on reception class) used in the selection of schools for *Breaking the Cycle*.

2 Application data collected, but not used, in the selection of schools for *Breaking the Cycle*.

3 Data collected for the evaluation of *Breaking the Cycle*.

On the basis of the information summarised, it is possible to say that residence in local authority housing is a good indicator of disadvantage in urban areas. It is significantly associated with other poverty measures, and it has been identified as a good predictor of pupil achievement. A second variable, that concerning annual percentage attendance, also is potentially useful as an indicator. It emerged as a good predictor of both pupils' literacy and numeracy achievement, and is positively correlated with data

from principals on the percentages of pupils that are considered to be two years below standard for their age in both reading and numeracy. The latter two variables are also closely associated with the test achievements of pupils in literacy and numeracy, and could, in the absence of test data, be used to assess levels of educational disadvantage at school level. It is acknowledged that the results of standardised tests would provide better estimates of pupil achievement, and, hence, better estimates of levels of educational disadvantage. However, applications to join schemes may be received from sizeable numbers of schools, and the wide-scale testing of pupils poses many practical problems. A compromise would be to use a variable which is correlated with achievement (such as data provided by teachers on literacy and numeracy levels) as a substitute for test data.

Consideration should be given to increasing the relative weighting attached to the variables concerning the percentages of pupils with serious literacy and numeracy difficulties, as well as to the indicator relating to local authority housing. Weaker indicators of disadvantage in urban schools include those relating to lone-parent family status and parental educational attainment. However, these variables have been found to correlate with other urban application variables, and to relate moderately well to achievement, and so there is insufficient evidence to say that they are too weak to be used as indicators of disadvantage in an urban context.

Finally, the fact that the reading literacy and numeracy achievements of urban pupils in *Breaking the Cycle* are poor relative to a national sample provides confirmation that the selected schools serve educationally disadvantaged pupils, and that the measures used to select schools for the scheme were valid indicators of disadvantage.

Appropriateness of Application Indicators in the Identification of Disadvantage in Rural Schools

Positive associations between the poverty variables of medical card possession and unemployment (r = .77) and medical card possession and low farm income (r =. 48) were found in rural schools. In contrast with urban schools, though, none of the application criteria used to select rural schools correlates significantly with the achievements of rural 3rd class pupils. At 6th class level, only the lone-parents variable is significantly associated with pupil achievement and, because the observed relationship is positive, it is opposite in direction to that found in urban schools (i.e., as numbers of lone-parent families increase in rural schools so too does reading achievement). While attendance

was shown to relate to pupil achievement in urban schools, the same was not found in the case of rural schools. However, there is a significant association in rural schools between measured pupil achievement and the percentage of senior pupils in the school judged by principals to have serious literacy and numeracy difficulties.

Indeed, in the regression analyses, achievement in rural schools was found to be best predicted by a knowledge of the percentage of senior pupils in the school judged by principals to be two years below standard for their age in numeracy. Other regression analyses revealed that using all 9 available independent variables to predict achievement (8 application variables and the attendance variable) did not result in a much better prediction than using only three variables. Table 30 contains a summary of the relationships between all variables in the rural context.

Table 30. Summary of intercorrelations between application and other variables [a] and summary of outcomes of regression analyses predicting achievement in rural schools (*N*=49).

Indicator / variable	Significant positive correlations with other variables	Significant negative correlations with other variables	Identified in regression analysis as a predictor of achievement?
Low farm income[1]	Medical cards	_____	No
Medical card possession[1]	Unemployment; low farm income; paternal attainment	_____	Yes (Moderate predictor)
Lone-parent families[1]	Reading literacy achievement	Unemployment	Yes (Moderate predictor)
Unemployment[1]	Medical cards; paternal attainment; maternal attainment	Lone-parent families	No
Maternal attainment[1]	Paternal attainment; unemployment; % of pupils 2 years below in reading	_____	No
Paternal attainment[1]	Maternal attainment; unemployment; medical cards	_____	No
% 2 years behind in numeracy[2]	% of pupils 2 years below in reading	Numeracy achievement; Reading literacy achievement	Yes (Good predictor)
% 2 years behind in reading[2]	% of pupils 2 years below in numeracy; maternal attainment	Reading literacy achievement; Numeracy achievement	No
% attendance 1996/97[3]	_____	_____	No
Reading literacy and numeracy achievement[3]	Lone-parent families	% of pupils 2 years below in reading; % of pupils 2 years below in numeracy	_____

[a] **1** Application data (based on all pupils in the school) used in the selection of schools for *Breaking the Cycle*.

2 Application data collected, but not used, in the selection of schools for *Breaking the Cycle*.

3 Data collected for the evaluation of *Breaking the Cycle*.

While an examination of urban indicators confirmed the appropriateness of most of the selection indicators, outcomes of analyses which examined the functioning of rural indicators are more disappointing. Lone-parent family status is not a good indicator of disadvantage in a rural context, and should not be used as an indicator. Further (regression) analyses showed that most of the available variables did not demonstrate any ability to predict achievement. However, data on the percentages of pupils in the school considered by principals to have serious numeracy difficulties were shown to be the best predictor of achievement, even though they explain only a relatively small amount of variance. It is, therefore, suggested that data on serious numeracy and literacy difficulties be used in identification, and be accorded extra weighting to reflect their usefulness in the assessment of disadvantage in a rural context.

An important finding relates to the achievements of rural pupils in schools which were selected (on the basis of the application variables) for participation in the scheme. The finding that these pupils performed well in tests of reading literacy and numeracy is at odds with what would be expected of educationally disadvantaged pupils. There are several possible explanations for this finding. First, despite the fact that co-ordinators who were engaged to do the testing were briefed on the testing procedures, the procedures may not have been strictly adhered to in all cases. A lack of standardisation of testing procedures may have conferred advantages on pupils in some clusters, and led to an inflated estimate of the mean achievements of the pupils involved. This, in turn, would have the effect of increasing the overall estimates of achievement. If this, indeed, is the explanation of the higher scores, it is most unfortunate and will undermine efforts to use achievement data in evaluating the effects of the scheme.

Second, we know that poor scholastic achievement is not an inevitable consequence of family 'poverty' (as indicated by possession of a medical card, parental employment status, etc.), which was the main criterion employed in the selection of schools for inclusion in the scheme. In rural areas, a variety of family, school, and community factors may operate to alleviate the effects of material deprivation. Third, it may be that the effects of educational disadvantage in rural areas are manifested in ways that differ from the effects of disadvantage in urban areas. For example, there may be a high rate of early school-leaving among rural pupils. Data collected over the course of the evaluation of the scheme on rates of Junior Cycle completion among pupils in *Breaking the Cycle* schools, prior to and after the introduction of the scheme, will permit this issue to be investigated.

It is also possible that the proportions of pupils from small rural communities that continue to higher education may be lower than the national average.

A fourth, and compelling, possible explanation of the achievement levels found in the present sample relates to the distribution of disadvantage in rural areas. On the basis of a combined achievement and poverty measure (derived from reading test scores and measures of family poverty), Kellaghan et al. (1995) estimated that 60.7% of all disadvantaged pupils live in areas with populations of less than 10,000 people. Yet, in 1993/94, less than 5% of all pupils in these areas were in schools that were designated disadvantaged. It may be the case that using the school as the unit of designation is inappropriate in identifying disadvantaged pupils in rural areas. It is possible that such pupils are widely dispersed across a great number of small schools, while in urban locations, schools have high concentrations of disadvantaged pupils in a relatively small number of schools. This would explain why the mean achievement scores of pupils in rural *Breaking the Cycle* schools do not differ much from the national average, as disadvantaged pupils would only make a minor contribution to the school's average score. It may also explain the failure to find an any associations between poverty variables and achievement in the present sample. In the analyses reported in this paper, achievement data have been aggregated to school level, and so the relationship between individual pupil background characteristics and achievement is impossible to examine. Therefore, it is still possible that at the level of the individual *pupil*, achievement is related to the application indicators. If this is so, it would be more appropriate in rural areas to use the pupil, rather than the school, as the unit of designation when targeting disadvantaged pupils. Such an approach would, however, make the allocation of extra resources and supports to needy pupils more difficult than if identification was carried out at school level. Indeed, such an approach may serve to further marginalise disadvantaged pupils by singling them out for special treatment.

Whatever the explanation, it is clear that the procedures used to select rural schools for participation in *Breaking the Cycle* cannot be regarded as satisfactory, as they failed to identify pupils who were both materially deprived and had low achievement levels.

Suggestions for Additional Indicators

In urban schools, the indicators relating to unemployment and medical card possession relate well to residence in local authority housing (the best predictor of achievement in urban schools). They are also inversely associated with pupil achievement, and so appear to be suitable indicators of disadvantage. However, since the application data for *Breaking the Cycle* were gathered in 1996, Ireland has experienced unprecedented economic growth which has, among other things, resulted in falling unemployment levels. Long-term unemployment (which is the indicator of interest here) has fallen from 7% in April 1996 to 3.1% in the period September-November 1998 (Ireland, 1999, p.15). However, it is possible that reductions in rates of long-term unemployment have impacted differently in different sectors of the population. The extent to which recent economic prosperity has enhanced the employment prospects of families in severely disadvantaged areas (such as the families served by schools in *Breaking the Cycle*) remains to be seen.

An indicator which could be used in addition to the unemployment indicator for assessing levels of disadvantage in urban and rural contexts is the percentage of families in receipt of Family Income Supplement (FIS). This payment is available to families who are employed but whose income is below a specified limit for their family size. The indicators at present do not take into account such families, even though they could be considered marginalised on the basis of their income. It should also be noted that it is possible for families who are employed and receiving FIS to retain their medical card entitlement. Also, as announced in the 1998 Budget, long-term unemployed people who gain employment may retain their medical cards for three years after commencing work. This means that medical card possession is now less directly linked to unemployment than was the case previously. This may have implications for using medical card possession (and for the weight accorded it) as an indicator of disadvantage.

Another possible approach to assessing disadvantage at school level is to collect data on the percentage of Travelling families and families of refugees and asylum-seekers served by applicant schools. As both of these groups may be considered disadvantaged, an indication of the proportions of pupils from such families could be employed as an additional indicator of disadvantage. Data collected for the evaluation of the *Breaking the Cycle* scheme show that, in the current school year, 18 out of the 33 participating urban schools (54%) serve Travelling families, and the same percentage serves the

families of refugees/asylum seekers. Information on the number of rural schools in the scheme that serve refugee families was not collected, but none of the 117 rural schools (for which information exists) serves Travelling families (although one principal indicated that the school served new-age travellers). Therefore, indicators concerning Travellers and refugees may only serve as useful measures of disadvantage in an urban context.

As well as being associated with material poverty and poor achievement, disadvantage is also manifested in poor attainment. If it were possible to identify primary schools which serve significant numbers of students who, later in their educational careers, leave school with poor or no qualifications, then this information could also be used as a identification measure at school level. In light of the difficulties associated with identifying disadvantage in rural schools, data on rural pupils with poor achievements and attainments at post-primary level might be used to identify rural primary schools attended by such pupils. However, this information on individual schools is not available at the present time. Furthermore, if disadvantaged rural pupils are dispersed through a large number of schools rather than being concentrated in a small number, this approach will not successfully identify pupils for treatment. The same problem would arise if an area-based approach was adopted in the identification of rural disadvantage: while some areas may experience greater poverty than others, the schools in these areas may contain only a small proportion of pupils that are disadvantaged.

It seems that the only reliable way to assess levels of disadvantage in rural areas is to use a combined poverty and achievement/attainment measure at school level. However, this approach will only serve as a means of identification if pupils are concentrated within schools. A first step to determine if this is so would involve a study of the distribution of achievement in an adequately sized sample of small schools. If it is found to be case that low achieving pupils associated with poverty are distributed across schools in small numbers, rather than being concentrated in some schools (which was the rationale underlying the *Breaking the Cycle* strategy), then it will be necessary to focus identification procedures on individual pupils rather than on schools. This, of course, will have implications for the development of strategies to address problems of disadvantage in rural areas. In particular, it would seem that greater attention will have to be paid to preparing *all* teachers to deal with disadvantage, and to providing them with the necessary resources (including inservice education) to do so.

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APPENDIX 1

U | | | | |

EDUCATIONAL DISADVANTAGE PILOT SCHEME FOR URBAN SCHOOLS

Application Form 1996/97

1. Roll No. of School _____
2. Name of School _____
3. Address of School _____

_____

4. Name of Principal _____
5. Name of Chair of Board of Management _____
6. How many pupils were on the roll of your school on September 30, 1995?

☐ Boys ☐ Girls ☐ Total

7. What was the number of authorised teachers in your school on September 30, 1995? _____

Please state the number of pupils at each grade level

		Boys	Girls	Total
8.	Junior Infants	____	____	____
9.	Senior Infants	____	____	____
10.	First	____	____	____
11.	Second	____	____	____
12.	Third	____	____	____
13.	Fourth	____	____	____
14.	Fifth	____	____	____
15.	Sixth	____	____	____

Is your school in

		Yes	No
16.	The Scheme of Assistance to Schools in Designated Areas of Disadvantage?	❑	❑
17.	The Home-School-Community Liaison Scheme?	❑	❑
18.	Early Start?	❑	❑

Does your school have

		Yes	No			Yes	No
19.	A Loan/Rental Scheme for Books?	❑	❑	22.	A School Meals Service?	❑	❑
20.	A remedial teacher?	❑	❑	23.	A special class teacher?	❑	❑
21.	A HSCL co-ordinator?	❑	❑	24.	Other special teacher?	❑	❑

(U -1)

In the following questions, information is sought about the characteristics of pupils in the reception class of your school. The best way to obtain the information is to make a list of all pupils in your reception class and for each pupil make a decision about the topics which are the subject of enquiry in questions 25 to 30. If, for example, the pupil lives in a family in which the main breadwinner has been unemployed for a year or more, you would place a tick opposite his or her name. When you have done this for all pupils, sum the number of ticks in the column and enter the figure under (a) in Question 25. In making decisions about pupils, please consult school records, talk to teachers, and take whatever steps are necessary to ensure that the information is accurate. It is not necessary to send the list of pupils but please retain it as, in the interest of securing comparability between schools in their responses, it may be required for examination. In column (b), enter the figure in column (a) as a percentage of the number of pupils in your reception class.

	(a)	(b) Number under (a) as a percentage of pupils in reception class
25. How many pupils in your reception class of September 1995 live in a family in which the main breadwinner has been unemployed for a year or more?	_____	_____
26. How many pupils in your reception class of September 1995 live in a family that holds a medical card?	_____	_____
27. How many pupils in your reception class of September 1995 live in a rented local authority house or flat?	_____	_____
28. How many pupils in your reception class of September 1995 live in a lone-parent household?	_____	_____
29. How many pupils in your reception class of September 1995 come from a home in which the mother did not take at least the Group or Intermediate Certificate Examination?	_____	_____
30. How many pupils in your reception class of September 1995 come from a home in which the father did not take at least the Group or Intermediate Certificate Examination?	_____	_____

- -

31. If your school does not have all grades (junior infants to sixth), please give the name and address of the school to which most of your pupils go after leaving your school (if you only have junior classes) or from which most of your pupils come (if you only have senior classes).

_____

_____

(U -2)

32. If another school serves the area from which your pupils come (e.g., a school serving boys if your schools serves girls), please give the name and address of the school.

_____

_____

33. If class size was reduced in your school to 15 pupils in junior infants, senior infants, first, and second classes, how many additional classrooms would be required?

_____

34. Is such space available in your school or close to your school?

❑ Yes ❑ No

35. If Yes, please describe the space.

_____

_____

If your school is selected for the scheme

36. Would you and all teachers in the school be willing to participate in inservice relating to the scheme? ❑ Yes ❑ No

37. Would you and all teachers in the school be willing to develop a five-year plan designed to respond to the needs of children from disadvantaged backgrounds in your school? ❑ Yes ❑ No

38. Would you agree to the administration of standardised achievement tests to pupils at regular intervals? ❑ Yes ❑ No

Please provide short answers to the following:

39. What percentage of children in the most senior class(es) in your school

(a) is one year below the average for their age in reading? _____

(b) is two years below the average for their age in reading? _____

40. What action would participation in the scheme enable you to take to reduce that percentage in future years?

_____

_____

_____

(U-3)

41. What percentage of children in the most senior class(es) in your school

(a) is one year below the average for their age in numeracy? _____

(b) is two years below the average for their age in numeracy? _____

42. What action would participation in the scheme enable you to take to reduce that percentage in future years?

_____

_____

_____

43. Please state one objective that you would strive to achieve over a five-year period for each of the following:

(a) pupil achievement _____

_____

_____

(b) parent involvement _____

_____

_____

(c) inservice training _____

_____

_____

_____ooo_____

Signature of Principal

_____ Date _____

Signature of Chair of Board of Management

_____ Date _____

Please return by June 14, 1996 to

Educational Research Centre
St Patrick's College
Dublin 9

(U -4)

APPENDIX 2

S | | | | | |

EDUCATIONAL DISADVANTAGE PILOT SCHEME FOR SMALL SCHOOLS

Application Form 1996/97

1. Roll No. of School _____
2. Name of School _____
3. Address of School _____

   _____
4. Name of Principal _____
5. Name of Chair of Board of Management _____
6. How many pupils were on the roll of your school on September 30, 1995?

   ☐ Boys ☐ Girls ☐ Total
7. What was the number of authorised teachers in your school on September 30, 1995? _____

Please state the number of pupils at each grade level

		Boys	Girls	Total			Boys	Girls	Total
8.	Junior Infants	____	____	____	12.	Third	____	____	____
9.	Senior Infants	____	____	____	13.	Fourth	____	____	____
10.	First	____	____	____	14.	Fifth	____	____	____
11.	Second	____	____	____	15.	Sixth	____	____	____

Is your school in

		Yes	No
16.	The Scheme of Assistance to Schools in Designated Areas of Disadvantage?	❑	❑
17.	The Home-School-Community Liaison Scheme?	❑	❑
18.	Early Start?	❑	❑

Does your school have

		Yes	No			Yes	No
19.	A Loan/Rental Scheme for Books?	❑	❑	21.	A shared remedial teacher?	❑	❑
20.	A School Meals Service?	❑	❑				

(S - 1)

In the following questions, information is sought about the characteristics of pupils attending your school. The best way to obtain the information is to make a list of all pupils in your school and for each pupil make a decision about the topics which are the subject of enquiry in questions 22 to 27. If, for example, the pupil lives in a family in which the main breadwinner has been unemployed for a year or more, you would place a tick opposite his or her name. When you have done this for all pupils, sum the number of ticks in the column and enter the figure under (a) in Question 22. In making decisions about pupils, please consult school records, talk to teachers, and take whatever steps are necessary to ensure that the information is accurate. It is not necessary to send the list of pupils but please retain it as, in the interest of securing comparability between schools in their responses, it may be required for examination. In column (b), enter the figure in column (a) as a percentage of the number of pupils in your school.

	(a)	(b) Number under (a) as a percentage of pupils in reception class
22. How many pupils in your school live in a family in which the main breadwinner has been unemployed for a year or more?	_____	_____
23. How many pupils in your school live in a family which receives assistance because of limited means from farm income?	_____	_____
24. How many pupils in your school live in a family that holds a medical card?	_____	_____
25. How many pupils in your school live in a lone-parent household?	_____	_____
26. How many pupils in your school come from a home in which the mother did not take at least the Group or Intermediate Certificate Examination?	_____	_____
27. How many pupils in your school come from a home in which the father did not take at least the Group or Intermediate Certificate Examination?	_____	_____

- -

28. If another school serves the area from which your pupils come, please give the name and address of the school.

_____

_____

(S - 2)

If your school is selected for the scheme

29. Would you be willing to share a co-ordinator with other schools? ❑ Yes ❑ No

30. Would you and all teachers in the school be willing to participate in inservice relating to the scheme? ❑ Yes ❑ No

31. Would you and all teachers in the school be willing to develop a five-year plan designed to respond to the needs of children from disadvantaged backgrounds in your school? ❑ Yes ❑ No

32. Would you agree to the administration of standardised achievement tests to pupils at regular intervals? ❑ Yes ❑ No

Please provide short answers to the following:

33. What percentage of children in the senior classes in your school

    (a) is one year below the average for their age in reading? _____

    (b) is two years below the average for their age in reading? _____

34. What action would participation in the scheme enable you to take to reduce that percentage in future years?

    _____

    _____

    _____

35. What percentage of children in the senior classes in your school

    (a) is one year below the average for their age in numeracy? _____

    (b) is two years below the average for their age in numeracy? _____

36. What action would participation in the scheme enable you to take to reduce that percentage in future years?

    _____

    _____

    _____

37. Please state one objective that you would strive to achieve over a five-year period for each of the following:

(a) pupil achievement _____

_____

(b) parent involvement _____

_____

(c) inservice training _____

_____

_____ooo_____

Signature of Principal

_____ Date _____

Signature of Chair of Board of Management

_____ Date _____

Please return by June 14, 1996 to

Educational Research Centre
St Patrick's College
Dublin 9

(S - 4)