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A REVIEW OF PROCEDURES TO SELECT SCHOOLS FOR SUPPORT TO DEAL WITH EDUCATIONAL DISADVANTAGE

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In response to claims that the provision of schemes to alleviate educational disadvantage in Ireland is fragmented, the extent to which anomalies exist in the selection of schools for participation in various primary-level programmes and the overlap between schemes at post-primary level are examined. While the degree of overlap between schemes at primary level is greater than is often claimed, overlap at post-primary level is less satisfactory. The extent to which schools and pupils benefit from programmes in four locations (cities, large towns, small/medium towns, and rural areas) is examined. Analysis at primary level revealed that city schools and pupils are overrepresented, though there was no evidence that the incidence of disadvantage is greater in cities than in other locations. Further issues considered are the use of multiple indicators to identify disadvantage, the appropriateness of indicators in urban and rural settings, and the use of educational, in addition to socioeconomic, criteria.

Over the last two decades, educators and policy-makers have become increasingly concerned with the issue of educational disadvantage and with finding ways of providing educational support for pupils from disadvantaged backgrounds. Attempts to provide these supports have inevitably led to a focusing of attention on the most effective ways of identifying, and ultimately reaching, the target population.

In 1984, the Department of Education introduced a set of special measures to deal with problems of disadvantage in selected primary schools in urban areas. The additional provision was later to become known as the Disadvantaged Areas Scheme (DAS). As the scheme developed, more explicit indicators were used to assist in the identification of schools (Department of Education, 1990). Schools were asked to supply information on the number of pupils whose families were resident in local authority housing or non-permanent accommodation; held medical cards; and were in receipt of unemployment benefit or assistance under schemes administered by the Department of Social Welfare. These indicators were weighted and used in the calculation of a points total for each applicant school. The points total also took

account of the existing pupil-teacher ratio (PTR) in the school by making a downwards adjustment to compensate for already favourable ratios. Applicants were rank-ordered for consideration for inclusion in the scheme on the basis of this adjusted points total.[1] A review of the procedure found that pupils in schools in Dublin and, to a lesser extent, other cities and large towns were far more likely to attend designated schools than pupils in other locations (Kellaghan, Weir, Ó hUallacháin, & Morgan, 1995). Pupils in schools in rural areas (populations less than 1,500) fared particularly badly. The review suggested that the overrepresentation of schools in cities and large towns, and the underrepresentation in rural areas, was not warranted on the basis of an analysis of the distribution of disadvantage operationally defined as the possession of a medical card combined with a low reading test score. Analysis revealed relatively small differences between locations in the incidence of disadvantage defined in this way. It also revealed that about 30% of primary-school pupils from disadvantaged backgrounds were in schools served by the DAS. It should be noted that participation in some of the other primary-level schemes discussed in this paper, such as Early Start and the Support Teacher Project, was confined (with a couple of exceptions) to schools that were already designated. The Home School Community Liaison (HSCL) scheme was also introduced to a subset of DAS primary schools in 1990 and subsequently to post-primary schools associated with these primary schools. A gradual expansion occurred during the 1990s up to 1999 when all DAS schools were invited to participate in the HSCL scheme.

A larger number of indicators were used to select schools at post-primary than at primary level. Some indicators related to family background (unemployment, medical card possession, residence in local authority houses or flats, residence in non-permanent accommodation, lone-parent households, and number of students from deprived rural backgrounds). Other indicators related to pupil attainment and achievement. Principals were asked to estimate the number of first-year students with significant literacy and numeracy difficulties, and to indicate the percentage of students that drop out of school at or about 15 years of age without formal educational qualifications. An examination-score points adjustment was made on the basis of each school's performance on the Junior Certificate Examination (JCE). Four variables were used to calculate this: the number of candidates achieving fewer than 4 D grades; the number taking Foundation-level English; the number taking Foundation-level Mathematics; and the number taking Foundation-level Irish.

[1]A list of the indicators used to select schools for the DAS, and other primary-level schemes referred to in this paper, is provided in the Appendix.

While only socioeconomic indicators were used at primary level, both educational and socioeconomic indicators were used in the designation of post-primary schools. A further difference between provision for primary and post-primary schools was that a greater proportion of students was served by designation at post-primary than at primary level (24% and 14.9% of the populations respectively were in designated schools).

In 1996/97, the Department of Education adopted a more targeted approach to the problem of disadvantage at primary level when it introduced the Breaking the Cycle (BTC) scheme to 33 urban and 123 rural schools to assist them in addressing problems associated with catering for large numbers of pupils from disadvantaged backgrounds. Only schools that were already designated as disadvantaged were eligible to apply for inclusion in the urban dimension of the scheme. Application for inclusion in the rural dimension was confined to schools with four or fewer teachers. An index of disadvantage based on the home background of pupils was computed for each school. Separate sets of indicators were used for urban and rural schools, thus acknowledging differences in the nature of disadvantage in urban and rural areas. A measure of parental education was introduced, as research had highlighted its importance in disadvantage. Provision was also made to include the partner schools of high-scoring schools (i.e., those serving the same families), thereby preventing anomalies that had occurred previously in designation.

The belief that disadvantage manifests itself differently in urban and rural settings was also acknowledged in the use of different sets of indicators for urban and rural schools in the survey of disadvantage conducted by the Educational Research Centre (ERC) in 2000, the results of which were used to inform the allocation of resources under Giving Children an Even Break (GCEB). The weaknesses associated with relying on principals' reports in this survey were acknowledged from the outset (Weir, 2004). Following a brief exploration of the feasibility of adopting alternative approaches (e.g., collaboration between the Department of Education and Science, the then Department of Social, Community and Family Affairs, and the Health Boards in data collection), it was agreed that, despite their weaknesses, the use of principals' estimates of socioeconomic indicators was probably less unsatisfactory than any other approach to identification available at the time. However, in addition to suggesting that alternative approaches be sought in the future, the ERC recommended that a sample of responses should be independently validated to ensure that reported levels of disadvantage reflected accurately the situation in schools.

More recently, a different approach was attempted at post-primary level for the identification of schools for participation in the 16:1 Initiative[2]. Since data used in the identification process were available centrally (from Department of Education and Science records), the approach had the obvious advantage that identification could be carried out without the problems associated with a reliance on principals' reports.

In 2003, the Educational Disadvantage Committee (EDC) consulted with the ERC regarding weaknesses in previous approaches to the identification of schools serving pupils from disadvantaged backgrounds. The outcomes of joint discussions on the issue were subsequently incorporated into a submission to the Minister for Education and Science in 2003 (Educational Disadvantage Committee, 2004). The submission, entitled *Identifying Disadvantage for the Purpose of Targeting Resources and Other Supports*, briefly described a variety of approaches to the allocation of resources. These included approaches that focus on the targeting of individual students within schools (one element of GCEB), approaches which restricted resources to relatively small numbers of schools (e.g., BTC), and area-based approaches to identification that would afford priority to schools located in areas receiving support under other anti-poverty programmes. Such programmes might include the RAPID (Revitalising Areas through Planning Investment and Development) programme in urban settings and CLÁR (Ceantair Laga Árd-Riachtanais), a targeted investment programme in rural settings.

It was noted in the submission that existing attempts to identify schools appear to have been effective insofar as the achievements of pupils in selected schools (e.g., those participating in the DAS and BTC) were significantly below those of pupils in non-participating schools. However, the submission also referred to anecdotal evidence relating to a number of anomalies whereby schools were included in some initiatives and not in others. I t further regarded

[2] The 16:1 Initiative, which was announced by the Minister for Education and Science in 2002 but was not subsequently implemented, proposed the allocation of additional teachers to post-primary schools where disadvantage was most concentrated, and was envisaged as assisting students in early post-primary school who were experiencing literacy and numeracy difficulties. In late 2002, the ERC, in co-operation with the Department of Education and Science, devised a procedure for the identification of schools for participation in the new initiative. Schools were to be selected on the basis of a combination of educational and socioeconomic indicators. Specifically, schools were rank-ordered for consideration on the basis of the percentage of students from families in possession of a medical card (based on the percentage of Junior Certificate Examination candidates granted an examination fee waiver), schools' retention rate to the Junior Certificate Examination, and schools' average performance on the examination.

the reliance on principals' estimates to assess numbers of pupils with characteristics associated with disadvantage (a feature of all the primary-level schemes described here) as unsatisfactory. The submission highlighted the need for research on the social context effect (i.e., the belief that the disadvantages associated with poverty are exacerbated when large proportions of pupils in a school are from poor backgrounds). The results of some research into this issue are described by Sofroniou, Archer and Weir (2004).

The present paper addresses some of the issues raised in the EDC submission and in its discussions with the ERC. It has three main purposes: (i) to examine, using the results of the GCEB survey, the extent to which anomalies existed in the selection of primary schools for participation in various programmes; (ii) to examine, using the database prepared for the 16:1 Initiative, the extent to which anomalies existed in the selection of post-primary schools for participation in programmes; and (iii) to examine differences between primary schools in cities, towns, and rural areas in terms of the extent to which they benefited from policies and programmes to tackle disadvantage.

OVERLAP AND ANOMALIES AT PRIMARY LEVEL

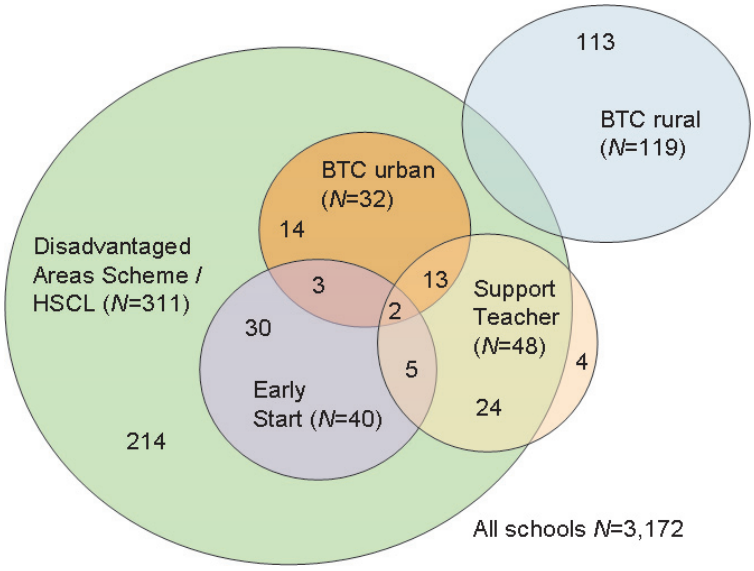
In the preface to its submission to the Minister for Education and Science, the EDC (2004) described the existing approach to addressing educational inclusion as 'rather fragmented and diffuse'. It went on to stress the importance of 'avoiding duplication of roles and staffing and targeting investment in the most strategically effective way' (p.vii).

One way in which fragmentation could be evident is in the extent to which there is a lack of overlap between schools' participation in various schemes[3]. This issue was examined using lists of ordinary primary schools participating in various schemes aimed at addressing disadvantage. The Venn diagram in Figure 1 shows schools' participation in the Disadvantaged Areas Scheme (DAS), the urban and rural dimensions of Breaking the Cycle (BTC), the Support Teacher Project (STP), and Early Start. The Home School Community Liaison (HSCL) scheme is included with the DAS because the two schemes are virtually synonymous at primary level. The School Completion Programme (SCP) is not included in Figure 1 because primary schools are admitted to the programme on the basis of being feeder schools for selected post-primary schools, rather than on the basis of their own characteristics.

[3]A description of schemes can be found on the Department's website (DES, n.d.). Archer and Weir (2005) have summarized evaluations of some of these schemes.

As Figure 1 shows, there is very little overlap between BTC rural and other schemes. This is not surprising, however, as the rural dimension of BTC was established partly as a response to the finding by Kellaghan et al. (1995) that very few schools in rural areas were involved in schemes aimed at addressing disadvantage. Otherwise, apart from four STP schools, the smaller schemes are subsets of the DAS.

Figure 1
Numbers of Primary Schools in the Total Population in 1999/2000 Participating in Schemes Targeting Pupils from Disadvantaged Backgrounds



The introduction of GCEB permits schools' ranking in that scheme to be used to further examine anomalies in participation in schemes. In GCEB, the results of a survey of principals, returned by 80% of all ordinary primary schools in the population, were used to rank schools in terms of their level of disadvantage. Separate rankings were produced for urban and rural schools (see Weir, 2004). The urban GCEB list is of particular interest since 268 urban designated (DAS) schools (81%) appear on it (Table 1).

Table 1
Number of Designated and Non-designated Urban Primary Schools in the Top 268 Ranks in GCEB

	Designated (*N*=268)	Not designated (*N*=584)
In top 268* urban ranks in GCEB	216	52
Not in top 268 ranks in GCEB	52	495

* 268 urban designated schools participated in the GCEB survey

While this exercise provides confirmation of the appropriateness of the original selection of schools for the DAS, it also indicates that there may be 52 schools not in the DAS that had levels of disadvantage in 2000 that warranted their inclusion in the scheme, and a further 52 schools in the DAS with levels of disadvantage that would not have entitled them to participate if the selection had been made in 2000. When these two groups of 52 schools were examined in detail, a number of factors emerged which help explain or reduce the scale of the anomalies involved. For example, up to 8 designated schools below a rank of 268 would probably have been above that rank if their principals had not skipped key questions on the GCEB questionnaire which formed the main basis of the selection index. Furthermore, designated schools that were not in the top 268 were more likely to have been admitted to the HSCL scheme later in the life of the scheme and, as reported by Archer and Shortt (2003), were likely to have had lower levels of disadvantage than those in the top 268. Finally, two non-designated schools in the top 268 did not exist when designated status was last granted.

Information on where schools fell in the GCEB rank order is presented in Table 2, which also summarizes some other characteristics which are relevant when considering the anomalies. As the table shows, in both sets of anomalies, the majority of the 52 schools are close to the cut-point of 268. Thus, although anomalous, the majority are not extremely so. Of the schools that are in the top 268 but are not designated, there is some independent evidence that the areas in which they are located are characterized by poverty in that 15 are located in RAPID areas and three in CLÁR areas. Furthermore, the non-designated high-scoring schools tend to be smaller than the designated schools that did not appear in the top 268. This is not surprising, as the review of the DAS by Kellaghan et al. (1995) suggested that the procedures by which schools were designated favoured larger schools[4].

[4] At primary level, the index used to select schools for the DAS took account of the existing pupil-teacher ratio in the school by making a downward points adjustment to compensate for favourable existing ratios. This adjustment would more likely negatively affect small schools.

Table 2
Characteristics of Anomalous Urban Primary Schools

Below top 268 GCEB ranks and designated (*N*=52)	In top 268 GCEB ranks but not designated (*N*=52)
8 schools skipped "key" questions	5 are in RAPID 1, 10 are in RAPID 2, & 3 are in CLÁR
69% received HSCL posts late in the scheme (since 1994) compared to 47% of schools in top 268	Mean enrolment = 207
Mean enrolment = 238	2 new (opened in 1999/2000)
……	…….
Rank 269-335 = 19 schools	Rank 1-50 = 1 school
Rank 336-400 = 15 schools	Rank 51-100 = 5 schools
Rank 401-500 = 6 schools	Rank 101-150 = 10 schools
Rank 501-600 = 7 schools	Rank 151-200 = 9 schools
Rank 601-700 = 5 schools	Rank 201-268 = 27 schools

Table 3 contains information on the numbers of schools in the urban dimension of BTC, the STP, and Early Start that are and are not in the top 268 schools in the GCEB rank order.

Table 3
Numbers of Schools in BTC, STP, and Early Start Categorized According to their Rank in the GCEB Survey

GCEB rank	In BTC (Urban)	In STP	In Early Start
1-50	18	19	10
51-100	5	6	12
101-150	3	8	5
151-200	3	4	8
201-268	1	5	2
Over 268	2*	5**	3
Total	32	47	40

*One of these was missing data on key questions. **Two of these were missing data on key questions.

It is clear that schools in BTC (urban), the STP, and Early Start tend to be found at the top of the GCEB rank order but that there are a few serious outliers in each scheme. It should be noted that the indicators used to rank-order schools for GCEB are quite similar to the methods used in BTC which, in turn, are similar to those used in the DAS (see Appendix). Criteria in the DAS, however, were not always applied rigidly. Furthermore, while the observed level of overlap may be reassuring, it is important to recognize the possibility of the same mistake being repeated, leading to the re-selection of the same schools for different schemes

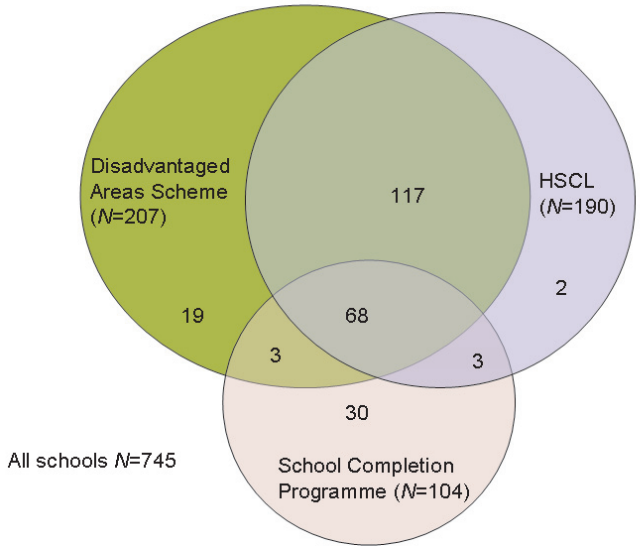
(i.e., the measures that have been used may be reliable but not valid). One possible source of error (a bias related to location) will be considered later. Other problems include the possibility of changes in schools' socioeconomic profiles over time, the fact that some schools tend not to return survey/application forms at all (20% in GCEB), or that important questions are skipped in some schools' returns.

The fact that there are relatively few genuine anomalies, and that most are not large, does not mean that there are not difficulties with the practice in most existing schemes of allocating significant extra resources to schools above a particular level of disadvantage and none to schools below that level. In most cases, the cut-off point was determined by the resources available when the scheme was established rather than by the needs of schools. Not surprisingly, an examination of the rank order of schools produced for GCEB reveals very little difference between the socioeconomic profiles of schools immediately above and below the cut-off point for the allocation of additional teaching posts. A further implication of a strictly dichotomous treatment of schools in terms of inclusion in schemes is that limiting selection for other purposes (e.g., for additional resources or for other schemes) to schools participating in a particular programme or scheme may serve to perpetuate existing anomalies (e.g., considering only schools already designated as disadvantaged for inclusion in Early Start and the urban component of BTC; the use of the urban 'post-bar' in GCEB – the point above which schools were considered for additional staffing – as a marker in the allocation of learning support or resource teachers).

OVERLAP AND ANOMALIES AT POST-PRIMARY LEVEL

An analysis similar to that undertaken at primary level was carried out to examine the overlap between three main schemes at post-primary level. Figure 2 shows the overlap between schools in the DAS, the HSCL scheme, and the SCP. It should be noted that membership of the HSCL scheme at post-primary level was offered (either simultaneously or subsequently) to the post-primary schools associated with the primary schools already in the scheme. Schools were directly invited to participate in the SCP by the Department of Education and Science on the basis of centrally held data on their retention levels at junior and senior cycle.

Figure 2
Numbers of Post-Primary Schools in the Total Population in 2002/2003 Participating in Schemes Targeting Pupils from Disadvantaged Backgrounds



As Figure 2 shows, 68 schools are participating in all three schemes. A total of 30 schools in the SCP are not in the DAS or the HSCL scheme. The degree of overlap between the DAS and the HSCL scheme is not as great at post-primary as at primary level.

Participation in the SCP and the DAS may also be examined with respect to schools' position on the 16:1 index. This index is based on centrally available 'objective' information at school level, relating to medical card possession by students' families (indicated by percentage of examination fee exemptions), rate of early school leaving, and average performance on the JCE. Overlap between the 16:1 index and the SCP is 52% (Table 4), and between the 16:1 index and the DAS 60% (Table 5). There is less overlap at post-primary level than between schools' position in the GCEB rank-order and designation as disadvantaged at primary level. This may be because the indicators used to select schools for primary-level schemes resemble each other more closely than indicators at post-primary level.

Table 4
Number of SCP Post-Primary Schools Within and Below the Top 104 Ranked 16:1 Schools

	In the School Completion Programme	Not in the School Completion Programme
In top 104* ranks	54	50
Not in top 104 ranks	50	616

*There were 104 schools in the SCP at post-primary level in the 16:1 database.

Table 5
Number of DAS Post-Primary Schools Within and Below the Top 203 Ranked 16:1 Schools

	Designated	Not designated
In top 203* ranks	122	81
Not in top 203 ranks	81	436

*There were 203 designated schools at post-primary level in the 16:1 database.

There are two sets of 50 anomalies relating to the SCP (Table 6), and two sets of 81 anomalies relating to the DAS (Table 7). Before looking at these, the following general points may be made. First, the retention figure in the 16:1 Initiative refers to junior cycle only, while the selection criteria for the SCP included retention rates to senior cycle as well as junior cycle. Secondly, the 16:1 exercise used Junior Certificate medical card and examination data averaged for 2000 and 2001 only. Thirdly, approximately 30 schools are not included in the 16:1 data. Some of these cater almost exclusively for adults, while others are relatively new schools, and, therefore, did not have data required for inclusion (e.g., Junior Certificate Examination data). Tables 6 and 7 show, among other things, the relative positions in the 16:1 rank order of these anomalous schools.

The two sets of 50 anomalies relating to the SCP are spread over the 16: 1 rank order as indicated in Table 6. It may be noted that 23 schools that are in the SCP, but not in the top 104, are very close to the cut-off point (they are below the rank of 200 and represent minor anomalies), while 7 schools have ranks greater than 400 (extreme anomalies). However, the analysis also indicates that the appearance of 54 (non-anomalous) SCP schools in the top 104 on the 16:1 rank order provides some independent support for the inclusion of these schools in the SCP.

Table 6
Characteristics of Post-Primary Schools that are Anomalous in Terms of the 16:1 Initiative and the SCP

In top 104 ranks for 16:1, but not in the SCP (*N*=50)	Below top 104 ranks for 16:1 and in the SCP (*N*=50)
27/50 in DAS	28/50 not in DAS
42/50 are Vocational schools	Mean enrolment = 597*
Mean enrolment = 277*	……..
……..	Rank 105-150= 15 schools
Rank 1-35 = 12	Rank 151-200 = 8
Rank 36-70 = 20	Rank 201-300= 12
Rank 71-104 = 18	Rank 301-400= 8
	Rank over 400= 7

*mean enrolment =453 for all schools

The 50 non-SCP schools in the top 104 might be of interest if consideration was being given to selecting additional schools for the SCP. An examination of these schools shows that 42 are vocational, while only 27 are in the DAS. The fact that there is a large difference between the groups of schools in Table 6 in total enrolment suggests that procedures for selecting SCP schools may be biased against smaller schools. This may be because absolute numbers (rather than percentages) of early school leavers are used.

Additional data (not shown here) may shed further light on the 50 schools in Table 6 that are anomalous because they are not in the SCP. Twenty-three could be eliminated from consideration for addition to the SCP because of their relatively 'good' retention rates to Junior Certificate (more than 89%, indicating that they are within half a standard deviation of the national mean). It is also clear from the available data that these schools are high on the 16:1 rank order due to their unusually high rates of medical card possession. (It may be that these schools are particularly good at retaining 'at risk' students or they may be located in parts of the country with lenient criteria for the awarding of medical cards). A further seven schools might be eliminated from consideration on the basis that they have remarkably low junior cycle enrolment (fewer than 20 in a cohort). At least some of these schools appear to be moving towards specializing in Further Education.

Table 7

Characteristics of Post-Primary Schools that are Anomalous in Relation to the 16:1 Initiative and the DAS

In top 203 ranks of 16:1 but not designated (*N*=81)	Below top 203 ranks of 16:1 and designated (*N*=81)
65 (80%) are Vocational schools	46 (57%) are Secondary schools
Mean enrolment =256*	Mean enrolment = 548*
3 new (opened since 1998/1999)	…….....
…….....	Rank 204-250 = 20 schools
Rank 1-50 = 11 schools	Rank 251-300 = 11 schools
Rank 51-100 = 16 schools	Rank 301-400 = 25 schools
Rank 101-150 = 23 schools	Rank 401-500 = 14 schools
Rank 151-203 = 31 schools	Rank over 500 = 11 schools

*mean enrolment =453 for all schools

In relation to the two sets of 81 anomalies that emerge when the 16:1 rank order is compared with designated status (i.e., participation in the DAS) at post-primary level (Table 7), it is important to recognize some differences between what is being attempted here and what was done in the examination of overlap and anomalies at primary level. In the case of primary schools, each attempt to identify schools relied completely on information and estimates provided by school principals. At post-primary level, previous attempts to identify schools (that also relied, to a large extent, on principals' estimates) were judged against a set of criteria based on other kinds of centrally held information (the percentage of families in the school that could establish an entitlement to an examination fee exemption, the percentage of the school's entry cohort that remained to sit the JCE, average performance on the JCE). These differences between the analyses carried out at primary and post-primary levels were always likely to lead to greater overlap emerging in the primary-level analysis. Even when allowance is made for these differences, however, there is cause for concern about the lack of overlap at post-primary level. Some of the anomalies seem quite large (e.g., the 27 schools in the left-hand column in Table 7 that have sufficiently high levels of disadvantage to place them in the top 100 but are not designated, and the 25 designated schools on the right that are below the rank of 400). The underrepresentation of small schools in the DAS is probably due to the fact that some of the educational indicators used in deciding on designation were based on absolute numbers rather than

proportions or percentages[5], while the underrepresentation of vocational schools may be due to the greater number of small schools in this sector. The production of the rank order for the 16:1 Initiative, on the other hand, relied exclusively on percentages. It would seem worthwhile to further examine the influence of these and other factors.

LOCATION BIAS AT PRIMARY LEVEL

Differences in Participation by Location, Before and After GCEB

There has been a concern for some time that pupils in non-urban locations (especially in small towns and rural settings) may be less well served by schemes than pupils in urban schools (Kellaghan et al., 1995). Indeed, part of the reason for the introduction of BTC (rural) and GCEB was to correct this apparent bias. Table 8 shows schools' participation in a number of schemes by location prior to the introduction of GCEB. Table 9 presents data on numbers of schools and pupils targeted by any scheme, according to location, before and after the introduction of GCEB. The figures in Tables 8 and 9 refer only to schools that supplied information on their school's location as part of the GCEB survey in 2000 (approximately 80% of schools nationwide).

City schools were much better represented in the DAS than schools in other locations, with almost half of city schools having designated status, compared to the next best served location (large towns at 19%) (Table 8). Schemes which are subsets of the DAS operate almost exclusively in cities. Schools in large towns were better represented than schools in small and medium-sized towns. Schools in rural areas were particularly badly served by schemes before GCEB, although the introduction of the rural dimension of BTC meant that an additional 119 rural schools began to receive additional resources. Because only six of the BTC (rural) schools had previously been designated, the total number of rural schools receiving resources increased to 153 (just over 9% of such schools).

[5] In the selection of post-primary schools for the DAS, a method of adjusting the points total based on each school's Junior Certificate 'examination' score (relating to the absolute numbers of students taking subjects at Foundation level as well as those performing poorly in the Junior Certificate Examination) had the effect of penalizing smaller schools, as did using the number of first-year students judged by principals to have significant literacy and numeracy difficulties. This is because calculations were based on the absolute number of students, not the proportion in a class or school who met the achievement criteria, and, therefore, schools with fewer students accumulated fewer points.

Table 8
Number of Primary Schools Participating and Not Participating in Four Schemes to Address Disadvantage, by Location

	DAS		BTC		Early Start		STP	
Location	Yes	No	Yes	No	Yes	No	Yes	No
City (n=452)	214 (47.3%)	238 (52.7%)	32 (7.1%)	420 (92.9%)	37 (8.2%)	415 (91.8%)	46 (10.2%)	406 (89.8%)
Large town (>10,000) (n=160)	30 (18.8%)	130 (81.3%)	—	160 (100.0%)	3 (1.9%)	157 (98.1%)	—	160 (100.0%)
Med. Town (5,000–9,999) (n=113)	13 (11.5%)	100 (88.5%)	—	113 (100.0%)	—	113 (100.0%)	1 (0.9%)	112 (99.1%)
Small town (1,500–4,999) (n=156)	12 (7.7%)	144 (92.3%)	—	156 (100.0%)	—	156 (100.0%)	—	156 (100.0%)
Rural (<1,500) (n=1,683)	40 (2.4%)	1,643 (97.6%)	119 (7.1%)	1,564 (92.9%)	—	1,683 (100.0%)	—	1,683 (100.0%)

Both schools and pupils in cities were far better represented in previous schemes than schools and pupils in other locations before GCEB (Table 9). The data in Table 9 may also be used to assess the extent to which bias in previous schemes was redressed by GCEB. Almost all schools that provided data for the survey in 2000 received at least a financial allocation under GCEB. As a result, it is likely that the representation of schools in cities, towns (large, medium and small), and rural areas is similar to the distribution of schools in the system as a whole. However, the aspect of GCEB that appears to be most valued by schools is the allocation of additional staff and this was only considered in schools with the heaviest concentrations of disadvantage (i.e., those above the post-bar). Therefore, in the 'After GCEB' columns of Table 9, participation rates have been calculated to include pupils in schools that were allocated posts under GCEB as well as pupils in schools participating in previous schemes. It would seem that the introduction of GCEB brought about some improvement in the relative position of pupils in non-city schools, especially pupils in rural schools (where representation increased from 8% to 21%) and schools in small towns (where representation increased from 8% to 15%). Non-city representation also improved, though a strong city bias remains. Pupils in city schools are more than twice as likely as pupils in any other location to be attending a school in receipt of significant resources for disadvantage.

Table 9
Number of Primary Schools and Pupils Participating in any Scheme before and after GCEB, by Location

	Before GCEB		After GCEB*	
Location	Schools	Pupils	Schools	Pupils
City (*n*=119,276 pupils; *n*=452 schools)	214 (47%)	46,602 (39%)	233 (52%)	50,887 (43%)
Large town (*n*=48,223 pupils; *n*=160 schools)	30 (19%)	7,601 (16%)	33 (21%)	8,491 (18%)
Medium town (*n*=26,004 pupils; *n*=113 schools)	13 (12%)	3,740 (14%)	17 (15%)	5,169 (20%)
Small town (*n*=25,301 pupils; *n*=156 schools)	12 (8%)	2,054 (8%)	23 (15%)	3,721 (15%)
Rural (*n*=138,983 pupils; *n*=1,683 schools)	153 (9%)	10,609 (8%)	425 (25%)	28,510 (21%)

*Figure includes only GCEB schools that were allocated posts

It is possible that the over-representation of city schools and pupils reflects a greater incidence of disadvantage in cities. However, this proposition is not supported by two separate sources of evidence which will now be considered: incidence of medical card possession by location and the distribution of disadvantage by location.

Incidence of Medical Card Possession by Location

Table 10 provides data on the percentage of medical cards at school level by location derived from data collected for GCEB in 2000, the National Assessment of English Reading (NAER) in 5th class in 1998 (Cosgrove, Kellaghan, Forde, & Morgan, 2000), and the National Assessment of Mathematics Achievement (NAMA) in 4th class in 1999 (Shiel & Kelly, 2001). The information was provided by individual pupils' parents in NAER and NAMA, while the GCEB estimates were provided by principals.

Table 10
Mean Percentage Medical Card Possession at School Level in Cities and Overall in NAER, NAMA, and GCEB

Location	NAER (1998)	NAMA (1999)	GCEB (2000)
City	27.8%	22.3%	46.5%
All schools	27.9%	24.9%	39.2%

The percentage of medical cards at school level is much higher when based on information provided by principals in the GCEB survey (both overall and in cities) than when provided by parents in the national assessments. Furthermore, principals of city schools reported higher levels of medical card possession than principals in other schools whereas no location differences are obvious when parents are the source of information. It is, thus, necessary to consider the possibility that the use of principals' estimates of disadvantage may somehow be responsible for the overrepresentation in schemes of pupils in city schools. It may be, for example, that principals in city schools have less detailed knowledge of their pupils' family backgrounds than principals elsewhere and, as a result, may be more inclined to generalize from one indicator of poverty to others ('because the pupil lives in a local authority house, the family probably has a medical card').

The observed discrepancies between estimates of the incidence of medical card possession based on the reports of school principals and estimates based on the reports of parents may be partly due to the fact that the data for the GCEB survey were not returned for approximately 20% of schools while the two national assessments involved representative samples. There are strong indications, in data from the School Books for Needy Pupils Grants Scheme, that there are far fewer pupils from disadvantaged backgrounds in the 20% of schools that did not respond to the GCEB survey than in the 80% of schools that did respond. However, even if one assumes there were no pupils at all from families with medical cards in non-responding schools and adjusts the mean percentage medical card from the GCEB survey accordingly, that revised percentage would still be several points higher than the percentages from the national assessments.

Estimating the Distribution of Disadvantage by Location

Data from NAER were used to examine the distribution of disadvantage by location. For this purpose, as in the Kellaghan et al. (1995) study, a pupil was operationally defined as 'disadvantaged' if his/her parents had a medical card *and* the pupil had a low score on the Tasks for the Assessment of Reading Achievement (TARA). Table 11 contains the number and percentage of medical card holders who scored poorly on the test using four criteria for poor achievement for each of four locations. The data suggest that, with the exception of large towns, disadvantage is no more common in city schools than in schools in other locations, and, indeed, is less common in cities than in small and medium-sized towns.

Table 11
Numbers of Pupils in the 1998 NAER with Medical Cards that had Reading Scores at Varying Achievement Levels, by Location

Location	Number of pupils in sample	Number (and %) of Pupils with Medical Cards			
		At or below 10th percentile	1 SD below mean	½ SD below mean	⅓ SD below mean
City	1,417	78 (5.5%)	130 (9.2%)	216 (15.2%)	238 (16.8%)
Large town (>10,000)	373	5 (1.3%)	15 (4.0%)	41 (11.0%)	47 (12.6%)
Small/Medium town (1,500-10,000)	659	45 (6.8%)	80 (12.1%)	124 (18.8%)	131 (19.9%)
Rural (<1,500)	1,403	92 (6.6%)	135 (9.6%)	211 (15.0%)	240 (17.1%)
Total	3,852	221 (5.7%)	360 (9.3%)	592 (15.4%)	656 (17.0%)

It is important to recognize the limitations of the data presented in Tables 10 and 11. For example, the samples of pupils in NAER and NAMA are small (particularly for large towns in the case of NAER). The fact that small schools (most of which are in rural areas) are poorly represented in both samples is also relevant. The need for better data to address the issue of location bias is clearly indicated. Government departments and agencies (e.g., the Central Statistics Office) may be able to supply data on the relative incidence of poverty in cities and other locations and it is possible that representatives from various agencies, as previously proposed in a submission by the EDC (Educational Disadvantage Committee, 2004), might, in combination, identify more accurate methods of assessing the geographical distribution of poverty. However, new educational data would also be needed since, even if there are no major differences in overall rates of poverty between types of location, heavier concentrations of disadvantage could still be found in city schools.

OTHER ISSUES

In the course of conducting the work reported above, a number of issues arose which merit further consideration. Some of these are examined briefly in the context of some analyses which should be regarded as no more than preliminary. Our main intention in raising the issues is to signal the need for further investigation.

The first issue, which has already been considered in the context of the development of the 16:1 index, relates to the use of multiple indicators to identify disadvantage. The use of multiple indicators at primary level was recommended in reports from the ERC (Kellaghan et al., 1995; Weir, 1999), partly on the basis of an examination of inter-correlations between separate indicators from applications for inclusion in the DAS and BTC. For the current work, we examined the inter-correlations between variables used to select schools for GCEB. We also included data from the School Books for Needy Pupils Grant Scheme (percentage of pupils for whom a grant was paid) and a variable from the GCEB survey where principals reported the percentage of pupils in the school with reading difficulties. The data from GCEB differ from previous data in that the correlations between variables are not restricted (i.e., they are based on data from schools with varying levels of disadvantage rather than from schools with high levels of disadvantage).

Several findings emerged from the analysis. First, the individual indicators appeared to be more closely related to each other in GCEB (80% of schools nationally) than in the DAS or BTC (applicant schools only). For example, the correlation between medical card possession and living in a local authority house among urban schools in the GCEB survey was .87, while among urban applicants for Breaking the Cycle, it was .78. In addition, the correlations between lone parenthood and other socioeconomic variables were a good deal higher in GCEB (.70 to .72) than in Breaking the Cycle (.41 to .53). Secondly, in GCEB the book grant variable was highly correlated with the individual indicators (e.g., .78 with medical card possession) and with total GCEB points (.86). Third, achievement at school level in urban GCEB schools (as described by principals) was best predicted by total GCEB points (.50), although the differences in predictive power between total points, the individual indicators (e.g., for medical card, .49), and the book grant variable (.47) were not large. The corresponding values for rural schools were in each case lower, although they are statistically significant (e.g., the correlation between total points and the achievement measure was .21).

The results of these analyses provide some basis for suggesting that the case for multiple socioeconomic indicators is not as strong as may previously have been thought. However, more detailed analyses of GCEB data, in conjunction with data on socioeconomic indicators from sources other than school principals, would be needed before firm conclusions could be drawn.

Another issue that merits further consideration is that indicators of disadvantage may not be equally appropriate in urban and rural settings. As noted earlier, there is some evidence that socioeconomic and educational

variables are less closely associated in rural than in urban areas. Furthermore, local authority housing, which is arguably the most discriminating indicator in urban areas, is problematic in some rural areas. There are also problems with using lone parenthood as an indicator in rural settings (Weir, 1999). These problems are not particularly serious when, as in the case of BTC and GCEB, there are separate indicators for urban and rural schools. However, a single measure of disadvantage that could be used with all schools would be useful in the context of trying to achieve targeted resource allocation. In this regard, the procedures used in the School Books for Needy Pupils Grant Scheme (Circular 15/03) may have potential. In that scheme, differences between schools in urban and rural settings are avoided. The application form completed by principals simply asks for an estimate of the number of 'eligible pupils', while the guidelines for completing the form indicate that pupils are eligible if their families are 'dependent mainly on social welfare', 'on low incomes from employment', or 'experiencing financial hardship because of particular circumstances'. These categories are broad enough to allow principals in urban and rural settings to take account of their pupils' individual circumstances. However, weaknesses in the application procedures need to be recognized. For example, there is a belief that some principals do not take completion of the form seriously. Furthermore, the fact that, on average, over 40% of pupils are deemed to be 'needy' by principals and that, in quite a few schools, the figure is 100%, might reduce the power of the variable to discriminate between schools. Finally, the 'city bias' noted earlier is also evident in some analyses. Nevertheless, there might be merit in considering the book grant application approach as a way of obtaining a more general estimate of levels of disadvantage on an annual basis, especially if procedures, including instructions on the form, were made more explicit and if principals were informed that random checking of a sample of applications was planned and such checking did occur.

Finally, the use of educational criteria in addition to socioeconomic ones to select primary schools, recommended by Kellaghan et al. (1995) and Weir (1999), merits further consideration. An argument against the use of educational indicators is based on concerns that schools that successfully raise achievement levels in spite of the challenges posed by catering for large concentrations of pupils from poor backgrounds might be penalized. The issue received a lot of attention in the context of developing the 16:1 index which includes a measure of educational achievement (average JCE score), a measure of educational attainment (retention to the JCE), and a socioeconomic measure (medical card possession weighted by a factor of 2).

CONCLUSION

The situation with regard to the selection of primary schools to participate in programmes designed to address problems associated with disadvantage is perhaps more cohesive and less fragmented than is often thought, although this may be because certain mistakes are being repeated. One such mistake may be evident in the possible overrepresentation of schools in cities, which remains even after the impact of the allocation of posts under GCEB is taken into account. We have no evidence that disadvantage is more prevalent in cities than it is in other locations but this issue needs further investigation using data from a number of sources (e.g., different government departments). The possibility that disadvantage is more concentrated in city schools also requires investigation. In general, the situation with regard to overlap between schemes at post-primary level seems less satisfactory. The overlap between schemes is much less than at primary level; the anomalies seem more striking and more difficult to explain; and there is an apparent bias against small schools or vocational schools (or both).

A particular problem in most schemes has been the use of a cut-off point to determine whether or not additional resources will be allocated to schools. While sliding scales are already used in some schemes (e.g., GCEB), their more widespread use would serve to reduce some of the problems associated with the use of rigid cut-points. Any kind of scale for assessing levels of disadvantage in schools requires an agreed method for providing a numerical estimate of students from disadvantaged backgrounds (though not necessarily identifying them). The 16:1 methodology provides a way of doing so at post-primary level. At primary level, the planned pupil database will open up possibilities when it becomes available. In the meantime, it will probably be necessary to continue to rely on data supplied by schools. Although the evidence presented here and elsewhere (Weir, 2004) tends to support the suggestion that the socioeconomic profiles of schools are fairly stable, it would be desirable to develop a system in which levels of disadvantage in schools could be regularly reviewed. Furthermore, surveys and/or greater use of the data from the School Books for Needy Pupils Grant Scheme, possibly modified, might be considered. Linkages between work on the identification of disadvantage and work on new ways of allocating learning support and resource teachers would also seem worthwhile.

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APPENDIX

Indices used to rank order schools for the Disadvantaged Areas Scheme (DAS), Breaking the Cycle (BTC), and Giving Children an Even Break (GCEB).

	Scheme				
	DAS	BTC		GCEB	
Indicators	All	Urban	Rural	Urban	Rural
% in receipt of grant for free books	——	——	——	100	100
% unemployed breadwinners	400	200	200	200	200
% receiving support for low farm income	——	——	200	——	200
% medical card holders	200	300	200	200	200
% local authority housing / rented accom.	300	200	——	200	——
% lone-parent households	——	100	100	100	——
% parents with no educational quals	——	200	200	——	——
School Plan	——	200	——	——	——
Inspectors' assessment of need	100	——	——	——	——
Maximum possible total:	1,000	1,200	900	800	700