

FACTORS ASSOCIATED WITH EDUCATIONAL DISADVANTAGE IN RURAL AND URBAN AREAS¹

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The scholastic achievements of students in a sample of schools participating in the rural dimension of a programme addressing educational disadvantage were examined and compared to those in the urban dimension. Rural students performed significantly better than urban students in both English reading and mathematics. This could not be explained by the lower concentration of poverty in rural areas, or by the smaller size of many of the rural schools. Further analysis indicated that relationships between socioeconomic characteristics and achievement were weaker in rural areas than in urban areas, suggesting that rural students are less susceptible to the effects of poverty. Data from parent, student, and teacher questionnaires revealed that rural students received higher levels of home support and participated in fewer unstructured extra-curricular activities than their urban counterparts.

The term educational disadvantage encompasses the idea that factors associated with low socioeconomic status represent impediments to students deriving appropriate benefit from their schooling (Kellaghan, 2001). A wealth of evidence, some arising from research in Ireland, links various indices of poverty to poor scholastic achievement. For example, primary school students whose families held a medical card (which is issued on the basis of family income) have been found to have average reading and mathematics scores that were significantly lower than those of students whose families did not have a medical card (Weir, Archer, & Millar, 2009). In rural areas, students in schools in a scheme designed to address educational disadvantage (the School Support Programme) had lower levels of achievement than students in other rural schools (Weir & Archer, 2011), again pointing to the impact of poverty on student achievement.

While poverty may be a crucial factor in determining educational disadvantage, one would expect other factors to be implicated in such a

¹ An earlier account of some of the analyses reported here is provided by Weir and McAvinue (2013).

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complex phenomenon. One such factor that has received attention is geographical location (Khatti, Riley, & Kane, 1997). The superior scholastic achievements of students in poor rural areas, compared to students in poor urban areas, have been documented in several international studies (Lippman, Burns, & McArthur, 1996; Mullis, Dossey, Campbell, Gentile, O'Sullivan, & Latham, 1994). In Ireland, an evaluation of Breaking the Cycle (a government initiative tackling educational disadvantage introduced in 1996) indicated that the achievements of students in rural schools designated as disadvantaged did not differ from those of the national norm group (Weir, Milis, & Ryan, 2002a), while the achievements of students in urban disadvantaged schools were well below those of the national norm group (Weir, Milis, & Ryan, 2002b).

One possible explanation of urban-rural differences is that poverty is less concentrated in rural than in urban areas, something that has been documented in Ireland in the context of the general population (Nolan & Maitre, 2008; Watson, Whelan, Williams, & Blackwell, 2005). It may also be the case that schools vary in their concentrations of poverty (Weir & Archer, 2005). This, in turn, has been associated with the existence of a 'social context' effect, whereby scholastic achievement is negatively affected by increasing densities of students from disadvantaged backgrounds (Lippman et al., 1996; Sofroniou, Archer, & Weir, 2004). In this situation, the socioeconomic mix in a school has an impact on individual students' achievements over and above that of their socioeconomic background. With this in mind, it is possible that the discrepancies in the achievements of urban and rural students in disadvantaged areas do not reflect urban-rural differences *per se*, but may simply reflect varying concentrations of poverty.

The smaller enrolments of rural schools may represent another possible explanation for the relatively higher level of achievement of students in these schools. The correlation between socioeconomic status and achievement tends to be weaker in small schools (see, e.g., Huang & Howley, 1993; Lee & Smith, 1997; Weiss, Carolan, & Baker-Smith, 2010), leading to the claim that small schools may reduce the achievement disadvantage of students from poor backgrounds. As Khattri et al (1997) pointed out, 'small schools tend to cultivate a positive school climate, an orderly environment, a high level of student-faculty engagement, and better school-community relations' (p.19), all factors that may serve to moderate the relationship between socioeconomic status and achievement. An Irish study, however, revealed no differences between the achievements of students in rural schools categorized

as ‘small’, ‘medium’, or ‘large’ (Weir et al., 2009). McMillen (2004) has suggested that factors other than size, such as stage of schooling and students’ baseline achievements, should also be taken into account. Others have cautioned that the relationship could simply be due to a statistical anomaly caused by the greater volatility of achievement scores in smaller schools (see, e.g., Coladarci, 2006).

Clearly, neither the extent to which poverty is concentrated nor school size adequately explains differences in achievement between urban and rural areas of disadvantage. To increase our understanding of such differences, it is necessary to extend our investigation to include other factors that may affect a child’s ability to make a smooth transition from home to school. Of particular importance are modelling in language use and in organization of time and space, monitoring of behaviour, and the provision of stimulation and guidance within the home. These so-called ‘process’ variables have been found to be more strongly related than status variables (such as parents’ level of education) to student achievements, leading to the conclusion that what parents *do* is more important than their socioeconomic status (Kellaghan, 2001). With this in mind, the study described in this paper set out to examine and compare the individual characteristics and home environments of students in schools in the urban and rural dimensions of the School Support Programme (SSP). Associations between ‘process’ variables and student achievement are investigated. The aims of the study were (i) to further our understanding of educational disadvantage in rural areas and (ii) to identify some of the factors underlying the relatively stronger achievements of rural students compared to their urban counterparts.

METHOD

Sample

Students were drawn from urban and rural schools participating in the School Support Programme (SSP) under DEIS (Delivering Equality of Opportunity in Schools) (DES, 2005). Schools were selected for participation in this programme on the basis of principals’ responses to a survey by the Educational Research Centre in 2005 on poverty levels among families served by their school. Schools were subsequently identified for inclusion in the SSP based on the percentage of students in their school that came from families in which there was a lone parent; the main breadwinner was unemployed; housing was provided by the local authority; there were five or

more children; or the family was a member of the Traveller community. Data on these variables were combined with another measure provided by the Department of Education and Science (the percentage of needy students for which the school received a grant for books) to produce rank orders of urban and rural schools on the basis of their assessed poverty levels.³

The top ranking 674 schools in both locations (340 urban and 334 rural) were identified for participation in the SSP. As the number of participating schools was large, subsamples were selected for inclusion in certain aspects of the evaluation. For example, 120 urban schools, stratified on the basis of size and the extent of their participation in previous schemes for tackling disadvantage, were selected to provide test data. Among rural schools, 276 schools were selected.⁴ The final sample that provided student achievement data consisted of 380 schools (114 urban and 266 rural).⁵

Achievement and other data collected in 2007 from 3rd class students in these schools, their parents, and their teachers were used in the analyses presented in this paper. Similar data are available for 2010 and 2013 but the analyses reported here are based on the 3rd class cohorts in 2007. Data from those cohorts were used in the preliminary analyses reported by Weir et al. (2009) and the analyses reported here can be regarded as a continuation of that study.⁶ In total, 4,070 urban students and 2,210 rural students provided data for the present study. Students in the urban sample were, on average, 9.3 years old, while rural students were marginally older at an average of 9.4 years.

Instruments

The Drumcondra Sentence Reading Test (DSRT), Level 3, Form A is a multiple-choice silent reading test for use in 3rd class in primary schools. For each level, the mean score is set at 100 and the standard deviation at 15. Test-retest reliability is high (.92).

³ For further information on the ranking procedure used to select schools for inclusion in the SSP, see Archer & Sofroniou (2008).

⁴ For further information on the sample selection process, see Weir & Archer (2011).

⁵ Six of the 120 schools in the urban sample had no pupils at the grade level of interest (3rd class), while 10 of the 276 schools in the rural sample had no students in 3rd class or were due to close (Weir et al., 2009).

⁶ There were very few differences between the data gathered in 2007 and 2010 (Weir & McAvinue, 2013).

The Drumcondra Primary Mathematics Test – Revised (DPMT-R), Level 3, Form A (Shortened Version) is a test of the content and process skills of the 3rd class mathematics curriculum and has a reliability of .87.

A *Parent Questionnaire* was developed to collect data on a number of home background variables. The questionnaire, which was provided for each participating student, contained 21 multiple-choice items (typically adopting a 4-point scale format). It sought information about students' early educational experiences, such as whether or not they had attended pre-school, the extent to which they were read to before starting primary school, and how often they read aloud at home when in Infant classes; students' engagement in educational activities outside school hours, including the amount of time spent on homework; family structure, and parents' reading habits, education levels, and occupation; the language most often used in the home; and whether or not the family possessed a medical card.

A *Student Questionnaire* was completed by students that took the reading and mathematics tests and sought information about their attitudes to school, their scholastic self-evaluations, their leisure and reading activities, and educational expectations and aspirations. There were 27 items in the test, all but one of which required students to read a statement or question and indicate their response by ticking a box or the most appropriate response from 3 or 4 options. To assist students with reading difficulties, the test administrator read aloud each questionnaire item and the range of possible responses, explaining how to complete each item in turn.

A *Student Rating Form* was completed by the classroom teacher for each student that was tested. The form asked teachers to rate the student's level of home support, his/her behaviour in class, ability in reading and mathematics, and overall academic ability. Ratings on these dimensions were expressed on a 5-point Likert scale ranging from 'very poor' to 'very good'.

RESULTS

Differences Between Students in Urban and Rural Areas

Data from student, parent, and teacher questionnaires⁷ were compared to identify differences between students in urban and rural areas. As the focus was on students from families with low incomes, only those whose parents

⁷ 74% of parents in the urban sample and 84% of parents in the rural sample completed a parent questionnaire.

who indicated that the family possessed a medical card were included ($N=1,486$ urban students and 703 rural students).

Student Attitudes. In general, students in both urban and rural locations had similar attitudes towards school and education (Table 1). Slightly more urban than rural students reported that they liked school ($\chi^2= 37.56, p < .001, \phi = .13$).⁸ Almost half of the students in each group expressed an ambition to go to college or university, but slightly more urban than rural students felt they would achieve this ($\chi^2= 4.41, p < .05, \phi = .05$).

Table 1
Percentages of Urban and Rural 3rd Class Students in Medical Card Holding Families Expressing Positive and Negative Attitudes towards School and Schoolwork and Reporting Varying Educational Aspirations and Expectations

Item		Like a lot	Like	Dislike	Dislike a lot	
How much do you like school?	Urban	33.2	37.8	8.7	19.9	
	Rural	15.5	42.1	16.2	25.9	
Item		Strongly agree	Agree	Disagree	Strongly disagree	
I'm proud of my school work	Urban	47.2	40.5	6.6	5.2	
	Rural	26.4	58.0	10.2	5.0	
I like reading	Urban	46.5	31.1	10.2	11.2	
	Rural	38.5	38.9	11.4	9.9	
I like working out maths problems	Urban	36.3	27.1	16.4	19.1	
	Rural	24.4	29.6	24.0	21.0	
I enjoy going on school trips	Urban	85.1	8.5	1.6	3.7	
	Rural	78.7	18.0	0.7	1.6	
Item		Primary School	Junior Cert	Leaving Cert	College/ University	Don't know
How far would you like to go in school?	Urban	10.1	5.5	16.8	48.8	18.0
	Rural	8.6	3.0	14.2	49.9	23.4
How far do you think you will actually go in school?	Urban	7.5	6.2	17.6	45.6	21.1
	Rural	5.3	4.9	19.4	40.7	26.9

⁸ ϕ is an expression of effect size (see Cohen, 1988).

Student Activities. Several differences between urban and rural students were evident in how they spent their free time (Table 2). The most marked of these related to ‘hanging out’ with friends outside school hours, with 73.3% of urban students indicating that they did so ‘every day or nearly every day’, compared to just 43.8% of rural students ($\chi^2= 176.66, p < .001, \phi = .29$). Computer use for leisure purposes was also much more common among urban students. For example, 42% of these students, but only 15.8% of rural students, indicated that they were members of an online community ($\chi^2= 144.15, p < .001, \phi = .26$), while 35.5% of urban students reported spending at least 2 to 4 hours playing computer games every day, compared to just 22.4% of rural students ($\chi^2= 37.48, p < .001, \phi = .13$).

Table 2
Percentages of Urban and Rural 3rd Class Students in Medical Card Holding Families Indicating Varying Frequencies of Activities Outside School

Item		Every day or nearly every day	Once or twice a week	A few times a month	Hardly ever or never
How often do you read books for fun at home?	Urban	38.4	24.7	13.9	21.8
	Rural	34.8	26.6	15.7	21.8
How often do you ‘hang out’ with your friends after school?	Urban	73.3	13.5	4.8	7.7
	Rural	43.8	29.5	14.2	11.8
How often do you play sports outside of school hours?	Urban	58.2	24.5	6.4	9.8
	Rural	61.8	24.9	5.9	6.5
Item		More than 4 hours daily	2-4 hours daily	1-2 hours daily	0-1 hours daily
How much time do you spend watching TV/videos?	Urban	28.3	16.4	26.2	27.4
	Rural	20.1	21.3	27.4	29.6
How much time do you spend playing computer games?	Urban	22.8	12.7	21.2	42.0
	Rural	12.1	10.3	21.4	53.2
Item		Youth Club	Sports Club	Boy Scouts/ Girl Guides	Online Community
Are you a member of any of the following?	Urban	22.9	54.6	15.8	42.0
	Rural	13.5	63.4	9.5	15.8

Rural students appeared to be more involved in sports than urban students, but these differences were less pronounced. Slightly more rural than urban students indicated that they were members of a sports club (63.4% vs 54.6%, $\chi^2 = 14.76$, $p < .001$, $\phi = .08$) or that they played sport at least once or twice a week after school (86.7% vs 82.7%, $\chi^2 = 5.38$, $p < .05$, $\phi = .05$).

Home Background Factors. Parents' responses revealed a number of differences between urban and rural students in their home backgrounds. Family structure was one such factor. The child's father was more likely to reside in the home in rural households (70.7% of households) than in urban households (46.3%) ($\chi^2 = 190.75$, $p < .001$, $\phi = .2$). Parental education levels also differed, with a greater percentage of rural respondents (27.2%) reporting having completed the Leaving Certificate compared to urban respondents (18.6%) ($\chi^2 = 20.48$, $p < .001$, $\phi = .1$).

Other differences related to educational resources, activities, and practices within the home. When asked to estimate how many books were in the family home, only 12% of urban parents indicated that they had 101 books or more, compared to 30.8% of rural parents ($\chi^2 = 112.74$, $p < .001$, $\phi = .23$). Similarly, a greater percentage of rural parents reported that their child used an atlas (41.5% vs 21.1%; $\chi^2 = 98.18$, $p < .001$, $\phi = .21$) and a family dictionary (62.1% vs 44.1%; $\chi^2 = 61.07$, $p < .001$, $\phi = .17$). Finally, more rural than urban parents indicated (i) that they themselves read books most days or every day (30.5% vs. 24.2%; $\chi^2 = 9.46$, $p < .01$, $\phi = .07$) and (ii) that they, or another member of the household, had read to their child every day before he or she started school (31.8% vs 23.1%; $\chi^2 = 18.36$, $p < .001$, $\phi = .09$).

Teachers' Ratings. Overall, teachers' ratings of students' scholastic ability in urban and rural locations were rather similar (Table 3). For example, 14.2% of students in urban areas and 16% of students in rural areas were rated as 'very good' in terms of mathematics ability. Differences were evident, however, at the other end of the scale: 31.1% of urban students were rated as having 'poor' or 'very poor' mathematics ability, compared to 22.5% of rural students ($\chi^2 = 16.58$, $p < .001$, $\phi = .09$).

More than half (53.4%) of rural students, compared to 42.6% of urban students, were described as having 'very good' behaviour ($\chi^2 = 21.34$, $p < .001$, $\phi = .10$). Finally, home support was rated as 'very good' for 25.6% of urban students, compared to 33.7% of rural students ($\chi^2 = 14.60$, $p < .001$, $\phi = .08$).

Table 3
Percentages of Urban (n=1,486) and Rural (n=702) Students from Medical Card Holding Families Receiving Varying Ratings from Teachers

Item		Very Poor	Poor	Average	Good	Very Good
Reading Ability	Urban	8.5	19.8	28.3	25.9	17.5
	Rural	4.6	14.5	32.2	27.3	21.4
Mathematics Ability	Urban	10.9	20.2	31.2	23.5	14.2
	Rural	6.9	15.6	33.1	28.4	16.0
Behaviour	Urban	2.5	7.3	19.2	28.3	42.6
	Rural	1.0	3.5	12.5	29.6	53.4
Home Support	Urban	5.4	12.6	25.9	30.5	25.6
	Rural	3.1	7.9	23.8	31.5	33.7

Factors Predicting Scholastic Achievement

Correlations Among Predictor Variables. Correlation matrices which included all of the variables described in the analyses already reported were generated for both urban and rural samples. All correlations are Spearman rank correlation coefficients. A large number of moderate to strong correlations were observed between some individual student and home background factors. Teachers' ratings of home support showed particularly strong associations with a number of other variables. Specifically, children rated as having higher levels of home support were also deemed to have more scholastic ability (urban: $r = .45, p < .001$; rural: $r = .47, p < .001$), and to be better behaved at school (urban: $r = .40, p < .001$; rural: $r = .38, p < .001$). Furthermore, these children's parents had higher levels of education (urban: $r = .18, p < .001$; rural: $r = .20, p < .001$), and reported having greater numbers of books in the family home (urban: $r = .22, p < .001$; rural: $r = .21, p < .001$). Parents that reported having greater numbers of books in the home were more likely to read more frequently themselves (urban: $r = .32, p < .001$; rural: $r = .39, p < .001$). These parents were also more likely to have read to their child regularly before the child started school (urban: $r = .30, p < .001$; rural: $r = .32, p < .001$).

In both locations, students with more positive attitudes towards school tended to have higher long-term educational aspirations (urban: $r = .15, p < .001$; rural: $r = .16, p < .001$). Children who liked school were also more

likely to read books during their free time (urban: $r = .29, p < .001$; rural: $r = .27, p < .001$) and less likely to spend time watching television (urban: $r = -.10, p < .001$; rural: $r = -.17, p < .001$).

Correlations with achievement. Analyses were carried out to examine the extent to which each background variable was related to scholastic achievement in both the urban and rural samples. On the whole, reading achievement was associated with a similar group of variables in both samples. The highest correlations were found for variables concerning the number of books in the home and teacher ratings of home support (Table 4).

Table 4
Correlations Between a Variety of Background Variables and Reading Achievement of 3rd Class Students from Medical Card Holding Families, by Urban-Rural Location

Respondent	Item	Rural r	Urban r
Parent	About how many books are in your home?	.38** n = 692	.25** n = 1456
Teacher	Rating of Home Support	.36** n = 676	.34** n = 1431
Parent	How often did anyone in your home read books to your child before s/he started primary school?	.35** n = 691	.18** n = 1430
Teacher	Rating of Behaviour	.22** n = 676	.22** n = 1438
Student	How far would you like to go in school?	.21** n = 528	.21** n = 1188
Student	How often do you 'hang out' with your friends, outside of school hours?	-.21** n = 692	-.004 n = 1451
Parent	When s/he was in Infants classes, did your child read to you or anyone in your home?	.21** n = 685	.16** n = 1432
Parent	What is the highest exam taken by you?	.19** n = 642	.20** n = 1337
Student	I think school outings are boring	-.18** n = 684	-.22** n = 1430
Parent	How often do you read books?	.16** n = 626	.05 n = 1233
Student	How much time do you spend playing computer games on school days?	-.13** n = 676	-.13** n = 1442

** $p < .001$

Many other variables relating to home educational practices also showed significant correlations with reading achievement, as did some variables concerning students' use of time after school. Time spent playing computer games, for example, was negatively correlated with reading achievement in both samples. Students' attitudes towards school also appeared to play a role, with those holding higher educational aspirations performing better. Although not tabulated here, a very similar set of variables was found to be related to mathematics achievement.

In light of the large number of variables showing associations with achievement, and of the numerous inter-relationships between these variables, factor analyses were performed to identify a number of meaningful components. These analyses were conducted separately for the urban and rural samples, and all variables that had been identified as being related to reading achievement within that sample were entered into a principal components analysis. Following a varimax rotation, a three-component solution emerged for each sample. In the case of the urban sample, 32% of the variance was explained. For the rural sample, 31% of the variance was explained. Factor loadings with respect to the rural sample are shown in Table 5. An almost identical pattern of loadings emerged with respect to the urban sample. Based on these loadings, the three components were identified as (i) the presence of educational resources and practices in the home, (ii) positive student attitudes towards school, and (iii) interaction with peers after school.

Multiple regression analyses confirmed that all three components made significant and unique contributions to variance in reading achievement in both urban (Table 6) and rural (Table 7) samples. Achievement was higher for students with greater access to educational resources within the home, those with more positive attitudes towards school, and those who tended not to spend as much time socializing with their peers after school. There were differences between the solutions for the urban and rural samples, however. A greater proportion of the variance in reading achievement was explained by these factors in the rural (35.2%) than in the urban (22.3%) sample. Furthermore, for the rural sample, 'home educational resources and practices' emerged as the most significant factor predicting achievement, while for urban children, 'student attitudes' was the strongest predictor.

Table 5
Factor Loadings following Factor Analysis of Variables Associated with Reading Achievement, Rural Sample

Item	Component		
	Home Educational Practices	Positive Student Attitudes	Interaction with peers after school
Parent Q19. About how many books are in your home?	.756		
Parent Q2. How often did anyone in your home read books to your child before s/he started primary school?	.681		
Parent Q18c. How often do you read books?	.658		
Parent Q20. What is the highest exam taken by you?	.477		
Parent Q16. Does anyone in your home use a public library?	.429		
Parent Q11. Does your child use an atlas in your home?	.398		
Parent Q4. When s/he was in Infants classes, did your child read to you or anyone in your home?	.341		
Teacher Rating of Behaviour		.708	
Teacher Rating of Home Support		.595	
Student Q2. How far would you like to go in school?		.458	
Student Q22. How much time do you spend playing computer games on school days?		-.442	
Student Q10. I think school outings are boring		-.367	
Student Q13. I enjoy going on school trips		.298	
Student Q26g. Are you a member of an online social network?			.677
Student Q26f. Are you a member of a dance or drama group?		.391	.531
Student Q26a. Are you a member of the Boy Scouts/Girl Guides?			.461
Student Q26b. Are you a member of a youth club?			.420
Student Q24. How often do you 'hang out' with your friends, outside of school hours?			.281

Table 6

Summary of Multiple Regression Analyses Predicting Reading Achievement from Home Educational Practices, Student Attitudes and Interaction with Peers, Among Students from Medical Card Holding Families in the Rural Sample

Predictor	B	SEB	β
Constant	93.64	0.58	
Home educational practices	6.13	0.59	.43**
Student attitudes	5.85	0.60	.40**
Interaction with peers after school	1.62	0.60	-.11*

** $p < .001$, * $p < .01$

Adjusted $R^2 = .35$, $p < .001$

Table 7

Summary of Multiple Regression Analyses Predicting Reading Achievement from Home Educational Practices, Student Attitudes and Interaction with Peers, Among Students from Medical Card Holding Families in the Urban Sample

Predictor	B	SEB	β
Constant	87.99	0.40	
Home educational practices	3.55	0.40	.26**
Student attitudes	4.98	0.41	.36**
Interaction with peers after school	2.17	0.41	-.16**

** $p < .001$

Adjusted $R^2 = .22$, $p < .001$

CONCLUSION

The study described in this paper sought to contribute to a better understanding of educational disadvantage in rural areas. A range of process variables relating to attitudes, behaviours, and the home environments of students from urban and rural areas of disadvantage were compared with the intention of identifying some reasons for the frequently reported urban-rural discrepancies in scholastic achievement (e.g., Lippman et al, 1996; Mullis et al, 1994; Weir et al., 2009; Weir et al., 2002a; Weir et al., 2002b;). On the basis of the data presented, a number of conclusions may be drawn.

First, there appears to be a stronger emphasis on education within rural homes. Children attending schools in the rural dimension of the SSP had greater access to educational materials at home. Their parents reported

reading books more frequently and having higher educational levels than parents in urban areas. Teachers' ratings of home support were also higher for rural students. As Kellaghan (2001) noted, a supportive home environment in which education is highly valued and educational resources are plentiful is likely to foster the development of competencies and dispositions that facilitate a child's adaptation to school. If such environments are more common in rural than in urban areas affected by poverty, more children in rural areas will be better equipped to cope with the transition from their home environment to the school environment, and consequently perform better in school.

Second, it appears that rural and urban students differ in their use of free time. Rural students reported spending less time than urban students 'hanging out' with friends and playing computer games after school. Furthermore, they were less likely to be members of online communities, youth clubs, and organizations such as Boy Scouts and Girl Guides. It is worth noting that these findings may reflect practical differences between urban and rural contexts. Children in rural areas may not live within walking distance of their friends, and may have poorer internet access. Furthermore, there is likely to be a much wider range of after-school activities and clubs available to children in urban areas. Thus, urban-rural differences may not represent students' individual decisions to use their time differently. They may, nevertheless, provide a partial explanation for the stronger scholastic performance of students in poor rural areas.

If rural students, compared to urban students, spend less time 'hanging out' with friends after school, and are less likely to be members of after-school clubs, it seems reasonable to infer that they spend more time at home. Furthermore, rural students also reported spending less time on the internet, playing computer games, and watching television. It is possible that, as a consequence, these children engage in more frequent and more meaningful interactions with their parents. This may be especially beneficial in the context of a supportive home environment in which education is highly valued and a child is exposed to positive modelling, encouragement, and stimulation. Conversely, if children in poor urban areas are spending most of their free time amongst peers, the 'social context effect' may be exacerbated (Lippman et al, 1996; Sofroniou et al, 2004). Although youth clubs are typically intended to provide a positive and safe social environment for young people, there is evidence that participation in unstructured recreational centres is associated with higher levels of problem behaviours among youths (Mahoney, Stattin, & Lord, 2004).

The two domains in which urban and rural students appeared to differ (home environment and use of free time) also emerged as being significantly associated with reading and mathematics achievement. Results of regression analyses indicated that achievement was higher for students with greater access to educational resources and for students who spent less time socializing with their peers after school (e.g., through online media, or in the context of a youth club or organization). In light of this, it seems reasonable to suggest that these factors may at least partially explain the discrepancies often observed between the achievements of students in rural and urban areas of disadvantage (e.g., Lippman et al, 1996; Mullis et al, 1994; Weir et al, 2002a; Weir et al, 2002b).

Some complexities are worth noting. Although rural children were less likely than urban children to attend after-school clubs, in general they reported more frequent involvement in sporting activities. Sport differs from relatively unstructured extra-curricular activities because of its emphasis on discipline. Furthermore, as Fredricks and Eccles (2006) noted, sport represents 'a highly valued, skill-related context in which young people can receive positive feedback and feel a sense of mastery' (p.709).

While positive student attitudes towards school also predicted scholastic achievement, the pattern of results suggests that such attitudes were more positive among urban children. One possible explanation for this finding is that teachers in urban schools, cognizant of the relatively low levels of home support given to their students, put a greater effort into emphasizing the importance of school. Teachers in rural schools may not feel the need to focus as much on instilling such attitudes as they can rely upon the home environment to fulfil that function.

Overall, these findings indicate some potentially interesting avenues for further research. First, a more fine-grained qualitative investigation of the protective influence of the home environment may prove informative. Second, the possibility that involvement in sport (as opposed to less structured activities) may foster scholastic resilience in youth in disadvantaged areas is also worth considering. Third, as a substantial proportion of the variance in student achievement was not explained by the factors considered in this study, further studies would do well to consider the influence of additional factors such as community influences. Finally, as the students in this study were relatively young, it is important to acknowledge that some of these findings may not be generalizable to older children who may be more or less susceptible to home and peer influences. For this reason,

similar research using data from older cohorts is desirable. This may be possible as part of the ongoing evaluation of the DEIS programme.

REFERENCES

- Archer, P., & Sofroniou, N. (2008). *The assessment of levels of disadvantage in primary schools for DEIS*. Dublin: Educational Research Centre.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Coladarci, T. (2006). School size, student achievement and the “power rating” of poverty: Substantive finding or statistical artefact? *Education Policy Analysis Archives*, 14 (28). Retrieved 28/02/14 from <http://epaa.asu.edu/epaa/v14n28>
- DES (Department of Education and Science). (2005). *DEIS (Delivering Equality of Opportunity in Schools): An action plan for educational inclusion*. Dublin: Author.
- Fredricks, J.A., & Eccles, J.S. (2006). Is extracurricular participation associated with beneficial outcomes? Concurrent and longitudinal relations. *Developmental Psychology*, 42, 698-713.
- Huang, G., & Howley, C. (1993). Mitigating disadvantage: Effects of small-scale schooling on student achievements in Alaska. *Journal of Research in Rural Education*, 9 (3), 137-149.
- Kellaghan, T. (2001). Towards a definition of educational disadvantage. *Irish Journal of Education*, 32, 3-22.
- Khatti, N., Riley, K.W., & Kane, M.B. (1997). Students at risk in poor, rural areas: A review of the research. *Journal of Research in Rural Education*, 13(2), 79-100.
- Lee, V.E., & Smith, J.B. (1997). High school size: Which works best and for whom? *Educational Evaluation and Policy Analysis*, 19, 205-227.
- Lippman, L., Burns, S., & McArthur, E. (1996). *Urban schools: The challenge of location and poverty*. Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education.
- Mahoney, J., Stattin, H., & Lord, H. (2004). Unstructured youth recreation center participation and antisocial behavior development: Selection influences and the moderating role of antisocial peers. *International Journal of Behavioral Development*, 28, 553-560.
- McMillen, B.J. (2004). School size, achievement and achievement gaps. *Education Policy Analysis Archives*, 12 (58), Retrieved 14/2/14 from <http://epaa.asu.edu/epaa/v12n58>.

- Mullis, I.V.S., Dossey, J.A., Campbell, J.R., Gentile, C., O' Sullivan, C., & Latham, A.S. (1994). *NAEP 1992 Trends in academic progress*. Washington, DC: National Center for Education Statistics, U.S. Department of Education.
- Nolan, B., & Maitre, B. (2008). *A social portrait of communities in Ireland*. Dublin: Office for Social Inclusion.
- Sofroniou, N., Archer, P., & Weir, S. (2004). An analysis of the association between socioeconomic context, gender and achievement. *Irish Journal of Education, 35*, 58-72.
- Watson, D., Whelan, C.T., Williams, J., & Blackwell, S. (2005). *Mapping poverty: National, regional and county patterns*. Dublin: Institute of Public Administration & Combat Poverty Agency.
- Weir, S., & Archer, P. (2005). A review of procedures to select schools for support to deal with educational disadvantage. *Irish Journal of Education, 36*, 63-85.
- Weir, S., & Archer, P. (with O'Flaherty, A. & Gilleece, L.) (2011). *A report on the first phase of the evaluation of DEIS*. Report to the Department of Education and Skills. Dublin: Educational Research Centre.
- Weir, S., Archer, P., & Millar, D. (2009). *Educational disadvantage in primary schools in rural areas. Report No. 1: Analysis of English reading and mathematics achievement in schools in the rural dimension of the School Support Programme*. Report to the Department of Education and Science. Dublin: Educational Research Centre.
- Weir, S. & McAvinue, L. (2013). *The achievements and characteristics of students attending rural schools participating in DEIS*. Report to the Department of Education and Skills. Dublin: Educational Research Centre.
- Weir, S., Milis, L., & Ryan, C. (2002a). *The Breaking the Cycle scheme in rural schools: Final evaluation report*. Report to the Department of Education and Science. Dublin: Educational Research Centre.
- Weir, S., Milis, L., & Ryan, C. (2002b). *The Breaking the Cycle scheme in urban schools: Final evaluation report*. Report to the Department of Education and Science. Dublin: Educational Research Centre.
- Weiss, C.C., Carolan, B.V., & Baker-Smith, E.C. (2010). Big school, small school: (Re)testing assumptions about high school size, school engagement and mathematics achievement. *Journal of Youth and Adolescence, 39*, 163-176.