The evaluation of DEIS: Monitoring achievement and attitudes among urban primary school pupils from 2007 to 2016

Lauren Kavanagh, Susan Weir and Eva Moran

Educational Research Centre
2017

The evaluation of DEIS: Monitoring achievement and attitudes among urban primary school pupils from 2007 to 2016

Lauren Kavanagh, Susan Weir and Eva Moran

Educational Research Centre

2017

Kavanagh, Lauren

The evaluation of DEIS : monitoring achievement and attitudes among urban primary school pupils from 2007 to 2016 / Lauren Kavanagh, Susan Weir and Eva Moran.

Dublin : Educational Research Centre.

72 pages : illustrations, figures, tables, 30 cm.

ISBN: 978 0 900440 54 0 (pdf)

1. Educational equalization – Ireland – Evaluation.

2. Education and state – Ireland.

3. Education, Primary – Ireland.

2017

I Kavanagh, Lauren. II Weir, Susan. III Moran, Eva.

379.2609415 dc23

Contents

Preface

DEIS (Delivering Equality of Opportunity in Schools) is the most recent in a series of programmes provided by the Department of Education and Skills (DES) aimed at addressing the needs of educationally disadvantaged students. DEIS has been in operation in Ireland's schools for almost a decade. In 2005, primary schools with the highest levels of disadvantage nationwide were identified for inclusion in DEIS. The programme was introduced in 2007 with the explicit aim of addressing the educational needs of children and young people from disadvantaged communities. At its centre is an integrated School Support Programme (SSP) which is intended to bring together and build upon existing interventions for schools with a concentrated level of educational disadvantage.

At the request of the DES, the Educational Research Centre (ERC) began work in 2007 on an independent evaluation of the SSP component of DEIS in urban and rural primary schools and post-primary schools. Like the programme itself, the evaluation is multifaceted, and is attempting to monitor the implementation of the programme and assess its impact on students, families and schools, at both primary and post-primary levels. As part of the evaluation, student achievement in English reading and mathematics has been monitored periodically in a sample of SSP schools. This report presents outcomes from the most recent round of achievement testing in urban SSP primary schools in 2016, and compares these outcomes with those from previous rounds of testing. The monitoring of achievement, while important, is only one aspect of the evaluation. Pupil attitudes are also considered in this report, and a more detailed report, in which a broad range of other aspects is examined, is in preparation.

Chapter 1 of this report provides background information on DEIS, and about the SSP and its evaluation. Chapter 2 describes the samples of participating schools and pupils, provides detail on the instruments used in the collection of test data, and outlines the procedures involved in collecting these data. Chapter 3 describes reading and mathematics achievement outcomes in 2016 and compares these with outcomes of previous rounds of testing (in 2007, 2010 and 2013). Chapter 4 describes pupil attitudes and educational expectations in 2016 and links them to pupil achievement. Trends in these non-achievement outcomes over time are also examined. Chapter 5 compares student outcomes assessed as part of the SSP evaluation with those from recent national assessments of English reading and mathematics. Chapter 6 describes principals' views on what they perceive to be the most effective elements of the SSP, and in particular the specific factors that have led to achievement gains. Chapter 7 contains a discussion of the findings.

The authors would like to sincerely thank all schools and pupils who participated in the 2016 round of testing. We additionally thank all principals who attended a series of nationwide meetings on DEIS in 2014, and those who facilitated school visits and participated in interviews in late 2015 and early 2016. Since the start of the evaluation, we have found schools to be extremely welcoming and accommodating of evaluation activities. We are very grateful for this continued cooperation.

Statistical Terms

The following are key terms used in this report:

Raw Score	This refers to the number of items answered correctly on the reading test or the mathematics test. The 'mean raw score' is the average number of items answered correctly by a group of pupils on a given test. Raw scores can be converted to standard scores and percentile ranks.
Standard Score	Standard scores are transformations of raw scores. Standard scores are used in norm-referenced assessments to allow comparison of an individual's score to a national norm. The 'mean standard score' is the average standard score of a group of pupils.
Percentile Rank	This indicates a pupil's performance on a test relative to that of the group on which the test was standardised. It indicates the percentage in that sample whose scores were lower than that of the pupil in question. If a pupil has a percentile rank of 75, for example, this means that the pupil's test score is as high as, or higher than, 75% of pupils.
Standard Deviation	The standard deviation (*SD*) is a measure of the dispersion of a set of data from its mean (average) score. The more spread apart the data, the higher the deviation. In a normal distribution, 68% of the scores are within one standard deviation of the mean, 95% within two standard deviations, and 99% within three.
Effect Size	Effect sizes are quantifications of the difference between two means. In this report, Cohen's *d* (Cohen, 1988) effect sizes are reported. A Cohen's *d* effect size is the standardised difference between two mean scores that is expressed in standard deviation units. According to the What Works Clearinghouse (2014), an effect size of 0.25 or higher in educational research can be considered 'substantively important'.
Confidence interval	A confidence interval is a range of values defined so that there is a specified probability (95% in the current report) that the "true" value of the difference lies within it.

Chapter 1: Introduction and Background

The DEIS Programme

DEIS has been in operation in Ireland's schools for almost a decade, and is the most recent in a series of programmes provided by the Department of Education and Skills (DES) aimed at addressing the needs of disadvantaged students. Its predecessors included the Disadvantaged Areas Scheme introduced in 1990, Breaking the Cycle (1996), and Giving Children an Even Break (2000).

In 2005, primary schools with the highest levels of disadvantage nationwide were identified via a survey of principals for inclusion in DEIS (for information on how programme schools were identified, see Archer & Sofroniou, 2008). The programme was introduced in 2007, with the explicit aim of addressing the educational needs of children and young people from disadvantaged communities. At its centre is an integrated School Support Programme (SSP) which is intended to bring together, and build upon, existing interventions for schools with a concentrated level of educational disadvantage (DES, 2005). DEIS differs from its predecessors in that it has a greater focus on school planning and on activities designed to boost literacy and numeracy (e.g., using programmes such as First Steps and Reading Recovery). While DEIS operates in both urban and rural primary schools and at post-primary level, the current report is solely concerned with the 328 primary schools in urban areas that are in the programme. Urban schools in the SSP under DEIS are divided into two 'bands', depending on their assessed level of disadvantage. In 2016, there are 190 Band 1 schools and 138 Band 2 schools receiving supports under the programme (for more details on participating schools see the Social Inclusion section of www.education.ie).

Resource allocation under the SSP varies somewhat for schools in Bands 1 and 2, with more intensive resources allocated to schools in Band 1, where assessed levels of disadvantage are greater. Until 2012/13, schools in Band 1 were permitted to operate maximum class sizes of 20 pupils in all junior classes (junior infants through Second class) and 24 in all senior classes (Third class through Sixth class). Since 2012/13, schools in Band 1 have been permitted to operate a maximum of 20 students in schools with junior classes only, 24 in schools with senior classes only, and 22 in vertical schools (schools with junior and senior classes) (DES, 2012).

Apart from reduced class size, the supports allocated to Band 2 schools are the same. Briefly, these are: the allocation of administrative (non-teaching) principals on lower enrolment and staffing figures than apply in primary schools generally; additional non-pay/capitation allocation based on assessed level of disadvantage; financial allocation under the school books grant scheme, based on level of disadvantage; access to the School Meals Programme; access to a literacy and numeracy

support service, and to literacy and numeracy programmes (Reading Recovery; First Steps; Maths Recovery; Ready, Set, Go Maths); access to homework clubs/summer camps designed to assist literacy and numeracy development; access to Home School Community Liaison (HSCL) services (including literacy and numeracy initiatives involving parents and family members, such as paired reading, paired maths, Reading for Fun, and Maths for Fun); access to transfer programmes supporting progression from primary to second-level; and access to planning and other professional development supports from the Professional Development Service for Teachers (PDST). The original Action Plan for Educational Inclusion provided for a dedicated preschool element for urban primary schools with the highest concentrations of disadvantage (DES, 2005). However, the preschool element was not implemented, and instead a universal Early Childhood Care and Education Scheme was introduced for all preschool children from 2010. Another of the original provisions for participating schools that was not implemented was access to a sabbatical leave scheme for principal teachers.

One of the key features of the DEIS programme (and indeed a prerequisite for participation), is schools' engagement in school planning in key areas. This involves schools setting targets in specific areas, monitoring progress towards those targets, and measuring outcomes. At the outset, schools were provided with planning templates in priority areas (e.g., literacy and numeracy) by the School Development Planning Support service (SDPS; now the Professional Development Service for Teachers [PDST]), and were given on-site assistance with the development of their plans.

The evaluation of DEIS

At the request of the DES, the Educational Research Centre (ERC) began work in 2007 on an independent evaluation of the SSP component of DEIS in urban and rural primary schools and post-primary schools[1]. Like the programme itself, the evaluation is multifaceted, and is attempting to monitor the implementation of the programme, and assess its impact on students, families, schools, and communities at primary and post-primary levels. Data collection has taken many forms, involving both qualitative and quantitative approaches. Some large-scale questionnaire studies have been undertaken to investigate issues such as planning for DEIS in all participating schools. Smaller-scale studies within the evaluation have involved samples of schools that were identified as interesting for particular reasons (e.g., their students performed consistently well in standardised

[1] While this report is solely concerned with the urban dimension of DEIS at primary level, reports have been published on the evaluation of DEIS in rural primary schools (Weir, Archer & Millar, 2009; Weir & McAvinue, 2013) and post-primary schools (McAvinue & Weir, 2015; Weir, McAvinue, Moran & O'Flaherty, 2014).

tests). All participating post-primary and urban and rural primary schools have contributed evaluation data, although more intensive data collection has taken place with a smaller number of schools. In particular, a subset of about 120 urban primary schools that have contributed test data on four occasions were all visited and interviews conducted with the principal and other key staff.

Meeting as many personnel as possible involved in DEIS has been an aspiration of the evaluation from the outset. Since the beginning, meetings between the evaluation team and groups of principals and others in DEIS schools have taken place. Often these meetings capitalised on events organised by others which happened to involve bringing DEIS principals together. For example, one such event was a conference hosted by the Irish Primary Principals Network (IPPN) to which the evaluators were invited, while another took the form of 13 nationwide Area Cluster meetings of HSCL co-ordinators (the HSCL scheme is an important component of the SSP). These meetings typically involved ERC staff giving a presentation on the evaluation, followed by an open discussion forum and feedback on the programme from attendees. Over the last few years, much more intensive work has been undertaken in organising school visits and focus groups of DEIS principals. In 2011, all 120 schools that had participated in the test sample (described fully in Chapter 2) in 2007 and 2010 were visited by members of the evaluation team or by specially trained fieldworkers. The visits were multipurpose: they were designed to allow the evaluators to get a feel for each school; to meet and interview personnel on key issues; to undertake a study of how learning support and resource teaching were organised (see Weir & Moran, 2014); to follow up on previous information gathered about each school's plan for DEIS; and, in particular, to explore what school staff deemed the most effective aspects of DEIS and why. Some data that resulted from these visits are described in Chapter 6 of this report in the context of interpreting student outcomes.

In 2014, a major exercise was undertaken in which the evaluation team set up a series of nationwide meetings to which all DEIS primary principals were invited. As well as providing the evaluation team with general feedback on the programme, the meetings were explicitly aimed at increasing the team's understanding of the outcomes of testing that had taken place the previous year, and on two other occasions prior to that. While all DEIS principals were invited, it was thought to be particularly important to communicate with schools that were not in the achievement testing sample about the outcomes of that testing. Where relevant, feedback from those meetings is also provided in Chapter 6.

Other evaluation activities have been desk-based, and used data supplied by the DES to investigate specific issues related to programme implementation or outcomes. For example, on two occasions the DES supplied the evaluation team with data on the size of all classes in the state to permit the investigation of the implementation of class size maxima in DEIS schools and for class sizes to be

compared with non-DEIS schools at primary level (see Weir & McAvinue, 2012, and Kelleher & Weir, 2017). Other data were supplied by the State Examinations Commission to allow outcome data in DEIS and non-DEIS post-primary schools in the Junior Certificate Examinations to be compared over time (see McAvinue & Weir, 2015; Weir, McAvinue, Moran & O'Flaherty, 2014).

Evaluation findings at primary level

While the purpose of the current report is to summarise the findings on student outcomes since baseline data were collected in 2007, it should be noted that the collection of such data only represents a small, albeit important, element of the overall evaluation. Much of the evaluation effort has been directed at investigating how the programme is being implemented in schools and trying to gain insights from participants into what they perceived to be particularly effective. Some findings relating to the latter are very briefly described in the next section.

Programme implementation

Early studies carried out as part of the evaluation indicated that implementation levels at national level were high (see Weir & Archer, 2011). In other words, most of the provisions under the programme listed earlier were made available to schools. As already mentioned, however, notable exceptions included the failure to provide dedicated preschools in areas with concentrated levels of disadvantage, and to provide access to a sabbatical leave scheme for principals.

Evaluation studies also found that key aspects of the programme, such as reductions in the size of junior classes in Band 1 schools, were largely implemented as envisaged. Analyses of class size data for 2009/10 revealed that the targets for maximum class sizes in Band 1 schools (20 students in junior classes and 24 in senior classes) were achieved for the majority of junior (79.3%) and senior (86.8%) classes (Weir & McAvinue, 2012). Analyses also revealed positive discrimination towards Band 1 schools when these junior and senior class sizes were compared to those in junior (8.9%) and senior (22.7%) classes in urban non-DEIS schools. A more recent follow-up study by Kelleher and Weir (2017) also found clear evidence of positive discrimination toward Band 1 schools in terms of junior class size in 2014/15. However, a comparison of the data between 2009/10 and 2014/5 revealed some erosion of positive discrimination over that period. Specifically, the percentage of Band 1 schools with junior classes of 20 or fewer declined from 79.3% in 2009/10 to 63.5% in 2014/15, with the average junior class sizes in Band 1 schools increasing by about one pupil.

The evaluators found no evidence of any serious implementation failures at school level. Indeed, the response of schools to the initiative has been overwhelmingly positive, both in the sense that what has happened at school level has been in line with what was envisaged in the Action Plan, and in the sense that participants reported wholeheartedly engaging with and valuing highly what had been

put in place. A survey of schools shortly after the scheme was introduced revealed that all participating schools had received some in-service training associated with the programme, most had adopted at least one of the recommended literacy and numeracy programmes, and most had set targets in key areas as part of the planning process and had a plan in place for DEIS by 2008 (Weir & Archer, 2011). However, there has been some anecdotal evidence from principals that the in-career development aspect of DEIS has lessened somewhat in recent years, as the implementation of the Department's National Literacy and Numeracy Strategy (2011) has required members of the PDST to provide support to all primary schools in the system. Prior to the introduction of the Strategy, schools participating in the SSP had been prioritised for support.

Student outcomes

The current report, which describes changes in student achievement and attitudes since baseline data were collected in 2007, constitutes an important component of the evaluation. English reading and mathematics test data were collected from students in Second, Third and Sixth class in selected urban primary schools in May 2007. Students in Second, Third, Fifth, and Sixth class in the same schools were tested again in May 2010, 2013 and 2016 (see Chapter 2 for more details on the tests used and on the selection of the sample). On each occasion, all pupils involved in the testing responded to a pupil questionnaire concerning their attitudes to school, their educational expectations and aspirations, and how they spent their leisure time. Issues such as students' engagement with school and their aspirations to progress in education are considered important evaluation outcomes and are described in the present report. A further evaluation report, in which both types of outcomes are placed in a wider context, will be made available in due course. Data collected from schools, teachers, parents, as well as additional data from pupils themselves, will feature prominently in that report.

Chapter 2: The Collection of Test Data

Overview

This chapter outlines the methodology involved in the collection of test data in the spring of 2016. First, an overview of achievement testing since the introduction of DEIS is provided. Next, a description of the sample of schools and pupils involved in the 2016 testing is provided, followed by a description of the test and questionnaire instruments administered. The final sections provide detail on the procedure followed in the collection of data.

Achievement testing since 2007

Although the SSP was formally introduced in September 2006, the provision of some resources to schools and the establishment of initiatives under the programme happened gradually over the course of the 2006-2007 school year. The first wave of testing in reading and mathematics took place in the spring of 2007. Data from this round of testing are presented as baseline data with which later test scores in reading and mathematics can be compared, even though they were collected after the phased introduction of the programme in 2006/2007. Testing was carried out in spring in line with usual practice in primary schools and to facilitate comparison with spring test norms. Successive waves of testing in reading and mathematics took place in spring of 2010, 2013, and, most recently, 2016.

Figure 2.1 illustrates the different grade levels in which testing took place over the period from 2007 to 2016. Each cell with a highlighted black border indicates that the pupils in that cohort participated in testing. As the figure shows, Second, Third and Sixth classes (E, D, A) were tested in 2007 (top row), which represent baseline data. Four grade levels (Second, Third, Fifth, and Sixth class) were then tested in the second, third and fourth rounds of testing in 2010, 2013, and 2016, respectively. Originally, the study design included one longitudinal cohort, in which pupils in Third class in 2007 represented the majority of Sixth class pupils that were subsequently tested in 2010. However, from 2010 onwards, the study was extended to include Fifth class pupils in order to create a second longitudinal cohort (Second – Fifth class).

The data collected permit both cross-sectional and longitudinal comparisons to be made. The eleven vertical downward arrows in Figure 2.1 indicate the potential for cross-sectional comparisons (e.g., Second class achievement in 2007 can be compared with Second class achievement in 2010, 2013, and 2016). The six diagonal arrows in the figure represent the longitudinal relationships between the cohorts from 2007 and 2016 (e.g., pupils tested in Second class in 2013 were tested again when in Fifth class in 2016).

	Junior Infants	Senior Infants	First Class	Second Class	Third Class	Fourth Class	Fifth Class	Sixth Class
2007	H	G	F	E	D	C	B	A
2008	I	H	G	F	E	D	C	B
2009	J	I	H	G	F	E	D	C
2010	K	J	I	H	G	F	E	D
2011	L	K	J	I	H	G	F	E
2012	M	L	K	J	I	H	G	F
2013	N	M	L	K	J	I	H	G
2014	O	N	M	L	K	J	I	H
2015	P	O	N	M	L	K	J	I
2016	Q	P	O	N	M	L	K	J

Figure 2.1: Test data collection points between 2007 and 2016 in the evaluation of the SSP under DEIS in urban primary schools

The sample of schools and pupils

When collecting baseline data in 2007, the decision was made to test pupils in a sample of the 340 urban SSP schools. A sample size of 120 schools was deemed necessary to capture a sufficient number of pupils for testing at each of the grade levels. Schools were also sampled to represent different types of schools in the SPP (e.g., large, medium and small schools; English-medium and Irish-medium schools)[2]. As Second class was the most junior class to be tested, junior schools without a Second class were omitted from the sampling frame. In 2007, the decision was made to test all pupils in each grade level, rather than a sample of pupils or classes. This was primarily to facilitate the longitudinal component of the study, maximising the chance of recapturing Second and Third class pupils when these pupils were in Fifth and Sixth class at the next round of testing.

Of the original sample of 120 schools, 71 schools were in Band 1 and 49 were in Band 2. Two sample schools amalgamated between 2007 and 2010, and so 119 schools were involved in testing in 2010, and again in 2013. Between 2013 and 2016, a further school in the sample amalgamated with a non-SSP school and did not continue to provide test data. Therefore, of the initial 120 schools in the

[2] For a more detailed explanation of the sampling design, see Weir and Archer (2011).

sample in 2007, 118 schools participated in the testing exercise in 2016, with 70 of those schools in Band 1 and 48 schools in Band 2.

Large numbers of pupils were involved in each administration of testing. Table 2.1 displays the total numbers of pupils in each grade level available for testing on the four successive testing occasions, before absences are considered. In 2007, approximately 12,500 pupils were eligible for testing. From 2010 onwards, when Fifth class was added as a grade level, more than 17,000 pupils were eligible to complete the achievement testing. Table 2.2 shows the numbers of pupils who actually completed the testing on each occasion. In 2007, approximately 11,000 pupils participated in testing, while approximately 16,000 pupils participated in testing in 2010, 2013 and 2016.

Table 2.1: Numbers of pupils at each grade level in each testing cohort in 2007, 2010, 2013 and 2016

Grade level	2007	2010	2013	2016
Second class	3,599	3,717	3,356	3,616
Third class	4,544	4,657	4,636	4,580
Fifth class	-	4,628	4,683	4,370
Sixth class	4,434	4,597	4,511	4,506
All	12,577	17,599	17,186	17,072

Table 2.2: Numbers of pupils[3] at each grade level who completed testing in 2007, 2010, 2013 and 2016

Grade level	2007	2010	2013	2016
Second class	3,236	3,467	3,128	3,390
Third class	4,063	4,316	4,314	4,290
Fifth class	-	4,253	4,324	4,037
Sixth class	3,919	4,138	4,187	4,155
All	11,218	16,174	15,953	15,872

[3] These numbers refer to pupils with reading test scores, but the numbers for mathematics are very similar.

Numbers of absent and exempted pupils

Two groups of pupils did not participate in the achievement testing: those pupils who were absent on the day and those pupils who were exempted from testing by their teacher. Table 2.3 shows the percentages of pupils absent for the tests in each year, by grade level. Levels of pupil absence fell from 10.8% in 2007 to 7.0% in 2016. There is a tendency for levels of absence to rise with increasing grade level, with the exception of 2013, where Fifth class levels of absence were higher than those for Sixth class. The extent to which the decline in pupil absence might be interpreted as an outcome of participation in the SSP, and the extent to which the decline may be related to achievement outcomes of the testing will be considered later in this report (see Chapter 7).

Table 2.3: Percentages of pupils absent for testing at each grade level in 2007, 2010, 2013 and 2016

Grade level	2007	2010	2013	2016
Second class	10.1	6.7	6.8	6.2
Third class	10.6	7.3	6.9	6.3
Fifth class	-	8.1	7.7	7.6
Sixth class	11.6	10.0	7.2	7.8
All	10.8	8.0	7.2	7.0

The second group that did not participate were pupils who were exempted from testing. Pupils could be exempted from testing by their teacher if they were diagnosed with a moderate to severe general learning disability, had a physical disability that would prevent them from participating, or their proficiency in English was at such a level that in the opinion of the teacher(s) they were unable to attempt the test. Table 2.4 shows the percentages of exempted pupils at each grade level for the four successive waves of testing. It is evident that levels of exemptions are very low overall. Exemption levels decreased between 2007 and 2010, and again between 2010 and 2013; they increased marginally between 2013 and 2016.

Table 2.4: Percentages of pupils exempted from testing by their teachers at each grade level in 2007, 2010, 2013 and 2016

Grade level	2007	2010	2013	2016
Second class	2.3%	1.8%	0.8%	1.5%
Third class	1.7%	1.4%	0.8%	1.1%
Fifth class	-	1.9%	1.1%	1.2%
Sixth class	1.2%	1.1%	0.9%	0.9%
All	1.7%	1.5%	0.9%	1.1%

Instruments

Five instruments were used in the collection of data. These were:

- The Drumcondra Sentence Reading Test (DSRT)
- A shortened version of the Drumcondra Primary Mathematics Test – Revised (DPMT-R)
- A Pupil Questionnaire
- A Parent Questionnaire
- A Pupil Information Form.

For each of the grade levels tested, a single test booklet was prepared. This contained the reading test, the mathematics test, and the pupil questionnaire. The content of these instruments, along with other ancillary materials, is now described.

Reading Test

The Drumcondra Sentence Reading Test (DSRT), a test developed by the ERC for research purposes, was used to assess English reading. There are six levels of the DSRT, one for each grade level from First to Sixth class. Although there are two forms of the DSRT (A & B), only Form A was used to assess reading at Second, Third, Fifth and Sixth class levels in this study. The DSRT is a multiple-choice silent reading test. Pupils are asked to read 40 sentences, each of which has a word missing,

and identify which one of four alternative words best completes a sentence.[4] At Level 2, pupils record their responses directly into their test booklet, while pupils taking Levels 3, 5 and 6 of the test use a separate machine-scorable answer sheet. The DSRT is a secure test, meaning pupils and teachers are not familiar with it. It is also a relatively short test to administer, taking approximately 35 minutes (including time for distributing materials and completing examples). The test has good reliability, with published reliabilities[5] of .93 at Second class, .92 at Third class, .89 at Fifth class, and .89 at Sixth class levels, respectively.

Mathematics Test

The Drumcondra Primary Mathematics Test-Revised (DPMT-R) is a standardised test developed by the ERC for use in primary schools. There are six levels of the test, to be used from First to Sixth class. Twenty-five items were selected from the 75 items of Form A of Levels 3, 5 and 6 of the DPMT-R to form the Third, Fifth and Sixth class tests used as part of the SSP evaluation. Thirty items were chosen from Form A of Level 2 of the DPMT-R to form the test for Second class pupils. At each level, test items were chosen to achieve a balanced coverage of the mathematics curriculum in terms of content and process skills at each level. The shortened mathematics test takes approximately 50 minutes to administer and has reliabilities of .87, .87, .88, and .89 at Second, Third, Fifth, and Sixth class levels, respectively. For some items at Levels 5 and 6, pupils are allowed to use calculators (supplied by the ERC for use on the day). On the first testing occasion in 2007, Irish-medium schools were given the option of administering Irish language versions of the mathematics test but no school availed of this option. To maintain comparability over time, English-language versions were used in all schools on all subsequent testing occasions.

Pupil Questionnaire

Pupils at all four grade levels completed a questionnaire. Two versions of the questionnaire were designed. Third, Fifth, and Sixth class completed a 43-item questionnaire designed to elicit information on their attitudes to school, their scholastic self-evaluations, their leisure and reading

---

[4] For a more detailed account of the development of the DSRT, see Eivers, Shiel and Shortt (2004).

[5]The reliability of a test provides an indication of the confidence one can place in a set of test results. The Kuder-Richard 20 (KR_{20}) reliability coefficient is reported as the measure of reliability in this report (for both the DSRT and the DPMT-R). KR_{20} coefficients provide a measure of the extent to which different parts of the test or different questions are measuring the same attribute. The calculation is based on the number of items in the test, the standard deviation of the total score, and the covariance of the items (ERC, 2006). Values of the KR_{20} coefficient range from 0 to 1. In general, a test should have a reliability of at least .7, and preferably closer to .9, to be considered useful (Aron & Aron, 1994).

activities, and their educational aspirations and expectations. The questionnaire for pupils in Second class was shorter and simpler, containing 27 items seeking information on pupils' self-evaluations, reading behaviour, leisure behaviour, and attitudes towards school. At all grade levels, questionnaire items and response options were read aloud to the pupils by the class teacher.

Parent Questionnaire

In 2007, questionnaires were distributed to parents/guardians of pupils in Second, Third and Sixth class (i.e. all grade levels at which the tests were administered). In 2010, 2013 and 2016, only parents/guardians of Second and Third class pupils were asked to complete a questionnaire. This was to avoid asking parents of Fifth and Sixth class pupils to complete a very similar questionnaire to that which they had completed three years earlier. The questionnaire administered in 2016 included questions on topics such as home literacy activities, parents' aspirations and expectations for their child's educational attainment, the extent of parents' involvement in the child's education, and home/family background factors, such as medical card status, parents' educational attainment and occupational status, and the main language of the home. Analyses of data obtained from the parent questionnaire are not presented in this report, but will feature in a later evaluation report.

Pupil Information Form

Teachers of participating classes were asked to provide some background information about pupils in their classes. For each individual pupil, teachers were asked to indicate whether the pupil was exempted from testing (and if so, why), to indicate the number of school days attended in the first quarter of the year, to indicate if he/she was a member of the Traveller community, lived in a home where the main language used was neither English nor Irish, was in receipt of learning support or resource teaching in English reading or mathematics, and whether he/she received additional language support for English (EAL). These data are not presented here, but will be described in a later report.

Procedure

Principals of participating urban schools were contacted in February 2016 to formally invite their schools' participation in the 2016 round of testing. All 119 schools still in the sample were invited to participate. Aside from one school that did not continue with the evaluation (having amalgamated with a school not in the SSP), all schools agreed to participate. Therefore, 118 schools participated in

the testing exercise in 2016. The procedure followed in 2016 was similar in all respects to that followed in previous rounds of testing.

Schools were next asked to provide details (name, date of birth, teacher) of all pupils in participating grades, using a template emailed to them for this purpose. The ERC had already obtained details of Second and Third class pupils in these schools at the last testing occasion in 2013, and it was expected that these pupils would comprise the majority of Fifth and Sixth class pupils in 2016. As such, the template for Fifth and Sixth class was prepopulated with these names and details, which schools were asked to update (removing any pupils who had left the school and adding the details for pupils who had enrolled in the school since 2013), as well as providing details for current Second and Third class pupils (about whom the ERC had no prior information). The collection of pupils' and class teachers' details allowed for the preparation of test materials in advance. It permitted, for example, the pre-labelling of test booklets with pupils' names, gender and birth-dates and reduced the administrative burden on teachers and schools on the day of testing.

In 2016, as on previous testing occasions, class teachers administered the reading and mathematics tests and pupil questionnaires to pupils in their classes. In advance of testing, teachers were sent a test administration pack, including a manual detailing instructions for the administration of the tests, the Pupil Information Form (as described above), and a pupil tracking form for use on the day of testing to track absences and exemptions. Teachers were also advised that a specially trained fieldworker would be present in the school to oversee testing and to assist with any issues that arose. The assigned fieldworker brought all additional materials with them on the day of testing (test booklets, answer sheets, calculators, pencils, parent questionnaires, envelopes).

Given the important role of the fieldworkers in overseeing testing, all fieldworkers who were recruited were retired principals or inspectors who had previous experience of overseeing test administration for the ERC. Fieldworkers attended briefing sessions to prepare them for their roles, liaised with the schools assigned to them in advance of testing, oversaw testing in these schools, returned all materials securely to the ERC, and attended a debriefing session to report back to the ERC on the test administration process. As part of the debriefing session, fieldworkers completed a questionnaire that asked about their experiences of the testing process. Fieldworkers reported high levels of satisfaction with testing procedures and were confident that test administration standards were adhered to throughout. The outcomes of this testing are detailed in the following chapters.

Chapter 3: Pupil Achievement in Reading and Mathematics

Overview

This chapter outlines the reading and mathematics achievement of Second, Third, Fifth and Sixth class pupils in the 2007, 2010, 2013 and 2016 rounds of testing. This is done in a number of ways, including cross-sectional consideration of overall mean raw and standard scores, as well as the percentages of pupils scoring at the lowest and highest percentiles. Longitudinal comparisons are made for the subgroups of students who provided test data in 2013 and 2016. Mean scores are compared to national averages where appropriate. The average reading and mathematics scores of Band 1 and Band 2 schools are then considered separately. School-level changes in achievement are also broadly outlined. The chapter concludes with a brief summary.

Overall Reading Achievement

At all grade levels at which the tests were administered, mean raw reading scores (i.e. average numbers of correctly answered items) increased between 2013 and 2016 (Table 3.1). The increases range from 0.3 of a point at Second class to 0.8 of a point at Sixth class (i.e. less than one additional correct answer, on average, at each grade level).

Table 3.1: Mean raw reading scores (number of items correct out of a total of 40 items) at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016
2nd class	22.8	24.3	26.0	26.3
3rd class	22.1	22.7	24.8	25.5
5th class	--	19.4	20.9	21.5
6th class	18.0	18.4	19.6	20.4

These modest increases are also reflected in the standard scores (Table 3.2 and Figure 3.1). It is useful to examine standard scores as well as raw scores, as this facilitates comparisons of performance across the different grade levels, as well as to national norms. As shown in Table 3.2, although the smallest increase in mean reading scores from 2013 to 2016 was observed at Second class, reading performance at Second class is closer to the national average than at any other grade level. Of the grade levels originally tested in 2007, the highest starting mean reading score was at Second class, and the increase in mean scores from 2007 to 2016 has also been slightly larger at Second class than at any other grade level. At all grade levels, the magnitude of the increases in

standard scores from 2013 to 2016 is smaller than was observed between 2010 and 2013, indicating a levelling off of gains in reading across the board.

Table 3.2: Mean reading standard scores at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016	Norm group[6] average
2nd class	92.4	94.6	97.2	97.6	100.0
3rd class	90.7	91.6	94.6	95.7	100.0
5th class	--	93.0	95.6	96.7	100.0
6th class	90.4	91.2	93.2	94.6	100.0

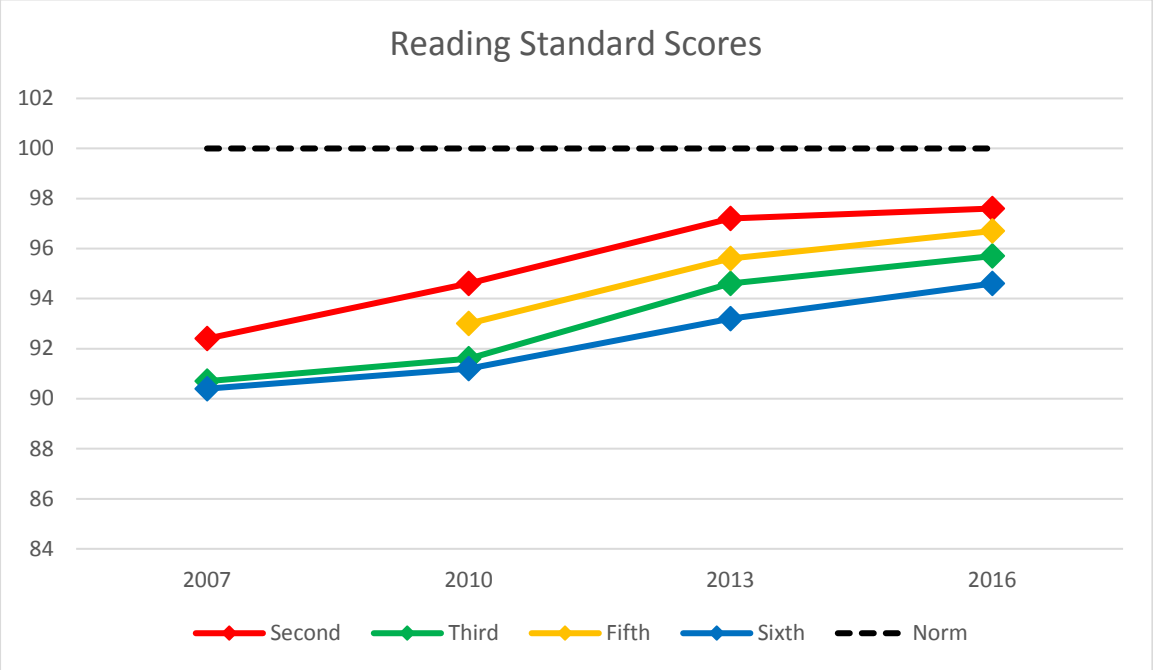

Figure 3.1: Mean reading standard scores of Second, Third, Fifth and Sixth class pupils in 2007, 2010, 2013 and 2016

At three of the four grade levels, the proportion of students performing at the lowest levels in reading (at or below the 10th percentile) reduced between 2013 and 2016 (Table 3.3). The largest change was observed at Sixth class, with a 2.6 percentage point reduction in the number of students

[6] The age of test norms should be borne in mind when interpreting the results. See p. 60 for discussion of this issue.

performing at or below the 10th percentile. At Second class, there was an *increase* of just under one percentage point in the proportion of students performing at or below the 10th percentile.

In terms of higher-achieving students, the proportion of students performing at or above the 90th percentile remained largely unchanged at Second class (4.1% in 2013, 4.2% in 2016; Table 3.4). At each of the other grade levels, increases were observed. However, these were smaller in magnitude than the corresponding reductions in students performing at or below the 10th percentile, at less than one percentage point change at Third, Fifth and Sixth classes. The largest percentage of students performing at or above the 90th percentile in reading was observed at Fifth class, at 5.4%. This is still considerably lower than the 10% of students in the norm group who, by definition, perform at or above the 90th percentile.

Table 3.3: Percentages of pupils scoring at or below the 10th percentile in reading at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016	Norm group average
2nd class	22.0	15.9	11.0	11.9	10.0
3rd class	26.4	23.0	16.8	14.4	10.0
5th class	--	20.6	13.6	12.3	10.0
6th class	28.0	25.6	20.2	17.6	10.0

Table 3.4: Percentages of pupils scoring at or above the 90th percentile in reading at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016	Norm group average
2nd class	2.2	2.2	4.1	4.2	10.0
3rd class	1.6	1.1	1.6	2.1	10.0
5th class	--	3.3	4.8	5.4	10.0
6th class	2.3	2.5	3.1	3.9	10.0

It was possible to identify the pupils who completed tests when in Second or Third class in 2013 and also completed tests when in Fifth or Sixth class in 2016, allowing the tracking of changes in their achievement over time. As shown in Table 3.5, the mean standard score of pupils in Fifth class in 2016 is identical to the mean standard score of those same pupils when in Second class in 2013.

Similarly, the mean standard score of Sixth class pupils in 2016 who also participated in testing in Third class in 2013 is the same as the mean standard score of those same pupils in 2013. The average reading achievement of pupils who participated in both the 2013 and 2016 rounds of testing has not changed at all over the two rounds of testing. At all previous testing occasions where longitudinal comparisons in reading scores were made (2007 – 2010; 2010 – 2013), increases in average scores were observed.

Table 3.5: Mean reading standard scores of Second class pupils and Third class pupils in 2013, and their follow-up scores in Fifth and Sixth class in 2016

Cohort	2013	2016	Norm group average
2nd — 5th (n = 2247)	97.9	97.9	100
3rd — 6th (n = 3464)	95.2	95.2	100

Overall Mathematics Achievement

As shown in Table 3.6, increases in mean raw mathematics scores were observed from 2013 to 2016 at Second, Third, Fifth, and Sixth class. Increases ranged from 0.4 of a point to 1 score point. As was the case with reading, the smallest increase from 2013 to 2016 was observed at Second class, and the largest at Sixth class.

Table 3.6: Mean raw mathematics scores (number of items correct out of a total of 40 items) at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016
2nd class	13.8	15.0	16.1	16.5
3rd class	11.6	12.2	14.0	14.5
5th class	--	11.7	13.2	14.1
6th class	10.9	11.4	12.5	13.5

Inspection of mean standard scores reveals that students in urban DEIS schools are performing closer to the national norms in mathematics (Table 3.7 and Figure 3.2) than in reading (Table 3.2 and Figure 3.1) at all grade levels. The gap between the 2016 mean standard score of the urban DEIS sample and the national average is greatest at Sixth class (4.1 points lower) and smallest at Third class (1.5 points below the norm group average). In 2007, the mean standard mathematics score at

any of the grade levels was roughly equivalent to the corresponding reading score for that grade (less than one standard score point of a difference at each grade level). From 2007 to 2016, greater gains have been observed in mathematics than in reading at all four grade levels.

Table 3.7: Mean mathematics standard scores at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016	Norm group average
2nd class	91.5	93.9	96.7	97.2	100.0
3rd class	91.1	92.6	97.2	98.5	100.0
5th class	--	92.3	95.8	98.0	100.0
6th class	89.8	91.2	93.6	95.9	100.0

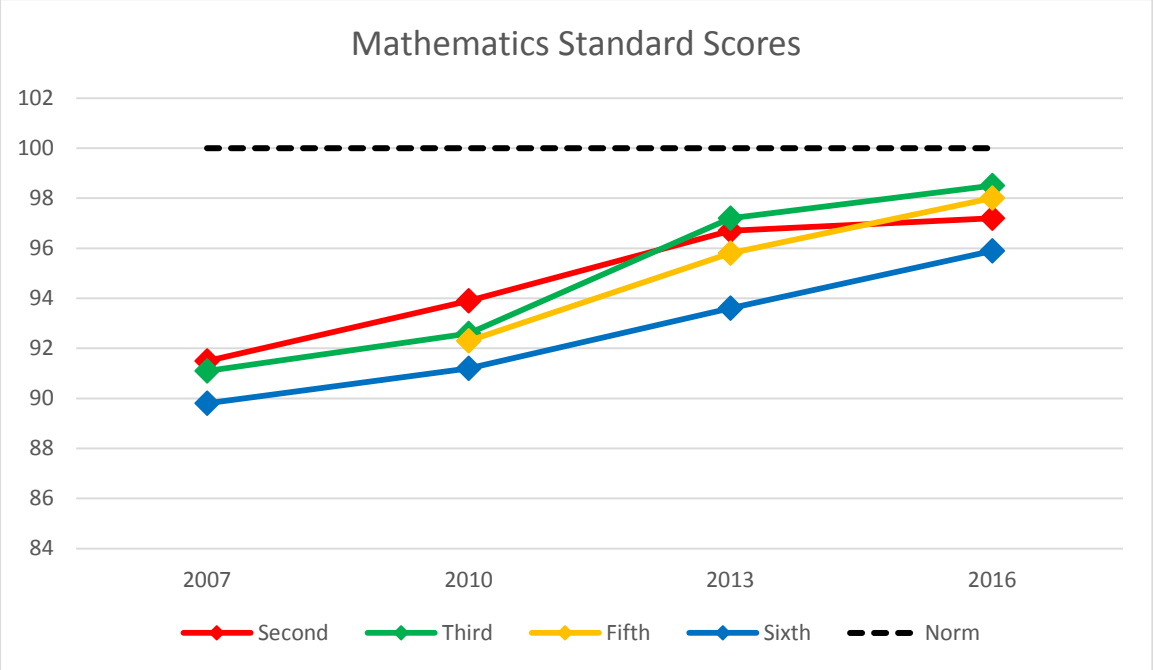

Figure 3.2: Mean mathematics standard scores of Second, Third, Fifth and Sixth class pupils in 2007, 2010, 2013 and 2016

At three grade levels, the proportions of students scoring at or below the 10th percentile in mathematics reduced from 2013 to 2016 (Table 3.8). Larger reductions were seen at the higher grade levels (8 percentage points at Sixth class, 3.5 at Fifth, compared with 0.4 of a point at Third class; Table 3.8). At Second class, there was a slight increase, from 12.7% to 14.3%. At all grade levels, increases were observed in the proportions of students scoring at or above the 90th percentile in mathematics (Table 3.9). At Sixth class, close to 10% of students (9.6%) were found to perform at this level, while at both Third class and Fifth class, the proportions scoring at or above the 90th

percentile are larger than the proportions in the norm groups (at 12.9% and 10.8%, respectively, compared to 10% nationally).

Table 3.8: Percentages of pupils scoring at or below the 10th percentile in mathematics at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016	Norm group average
2nd class	21.8	16.8	12.7	14.3	10.0
3rd class	24.1	21.0	13.8	13.4	10.0
5th class	--	25.1	18.8	16.3	10.0
6th class	31.1	28.3	22.6	14.7	10.0

Table 3.9: Percentages of pupils scoring at or above the 90th percentile in mathematics at each grade level in 2007, 2010, 2013, and 2016

Grade level	2007	2010	2013	2016	Norm group average
2nd class	2.8	4.5	6.1	7.4	10.0
3rd class	5.4	7.3	11.2	12.9	10.0
5th class	--	4.7	8.3	10.8	10.0
6th class	4.1	5.5	7.3	9.6	10.0

Longitudinal comparisons of mathematics scores show a mixed pattern of change from 2013 to 2016. The mean mathematics score of the Second to Fifth class cohort has increased by just under two standard score points, while the Third to Sixth class cohort had a lower mean standard score in 2016 than in 2013 (Table 3.10).

Table 3.10: Mean mathematics standard scores of Second class pupils and Third class pupils in 2013, and their follow-up scores in Fifth and Sixth class in 2016

Cohort	2013	2016	Norm group average
2nd — 5th (*N* = 2252)	96.9	98.7	100
3rd — 6th (*N* = 3463)	97.8	96.3	100

Achievement by DEIS Band

This section outlines differences in achievement by DEIS band. In reading, Band 2 mean scores were higher than Band 1 mean scores at all grade levels at each year of testing (Figures 3.3 to 3.6). At Second and Fifth class in 2016, the mean standard reading scores of Band 2 schools are almost at the national averages for those grade levels (at over 99 points in each case).

At Second and Third class in 2016, the mean standard scores in reading for Band 1 schools are approximately the same as those in DEIS Band 2 schools at the first round of testing in 2007, while at the higher grade levels, average Band 1 scores in 2016 remain below the 2007 average scores of Band 2 schools.

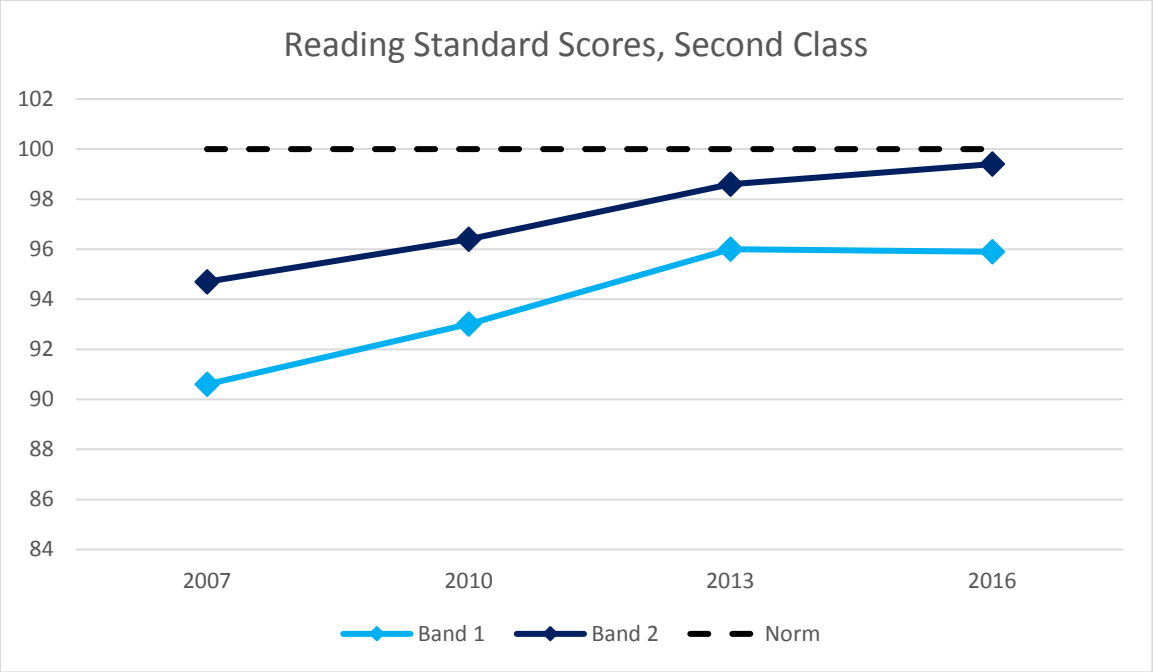

Figure 3.3: Mean reading standard scores of Second class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

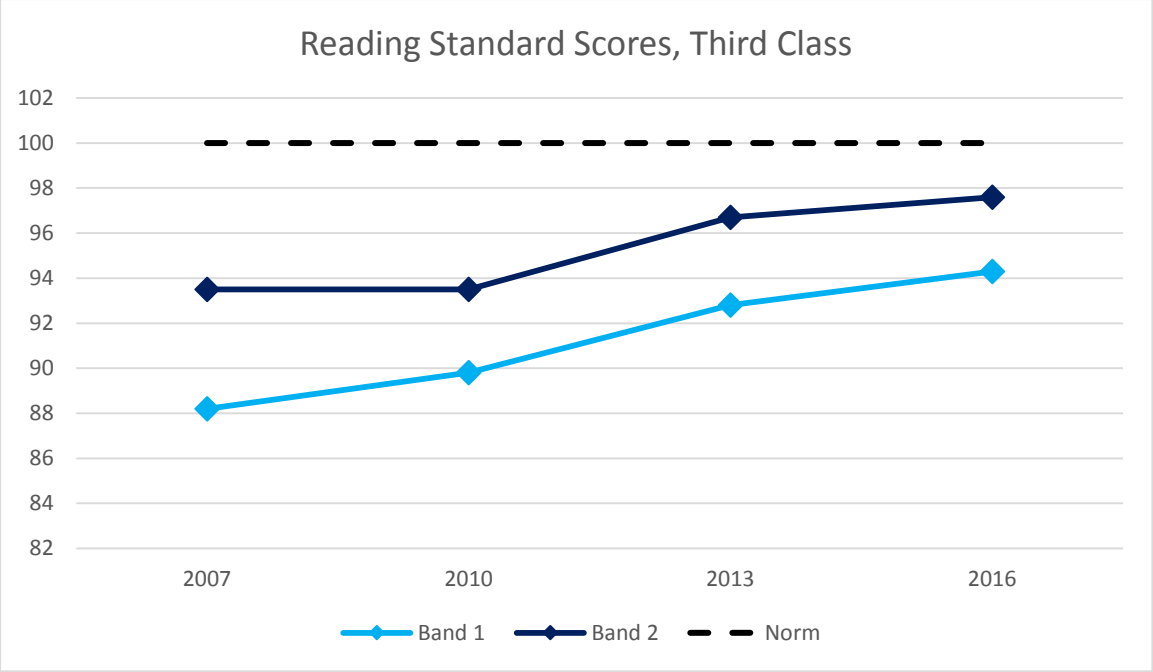

Figure 3.4: Mean reading standard scores of Third class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

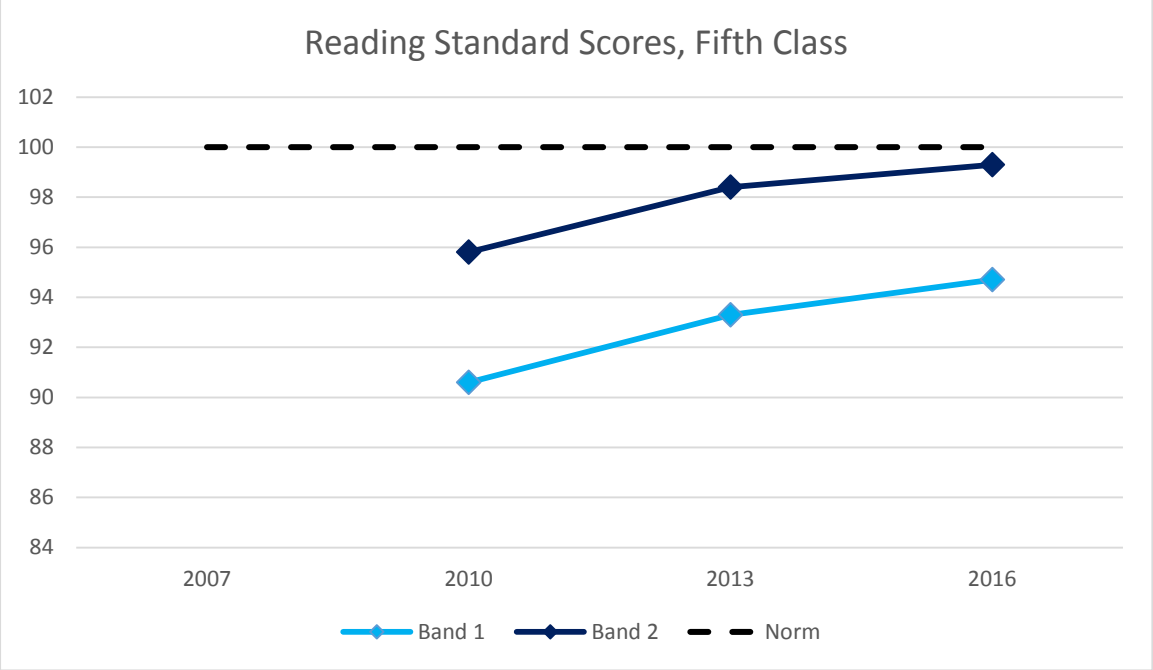

Figure 3.5: Mean reading standard scores of Fifth class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

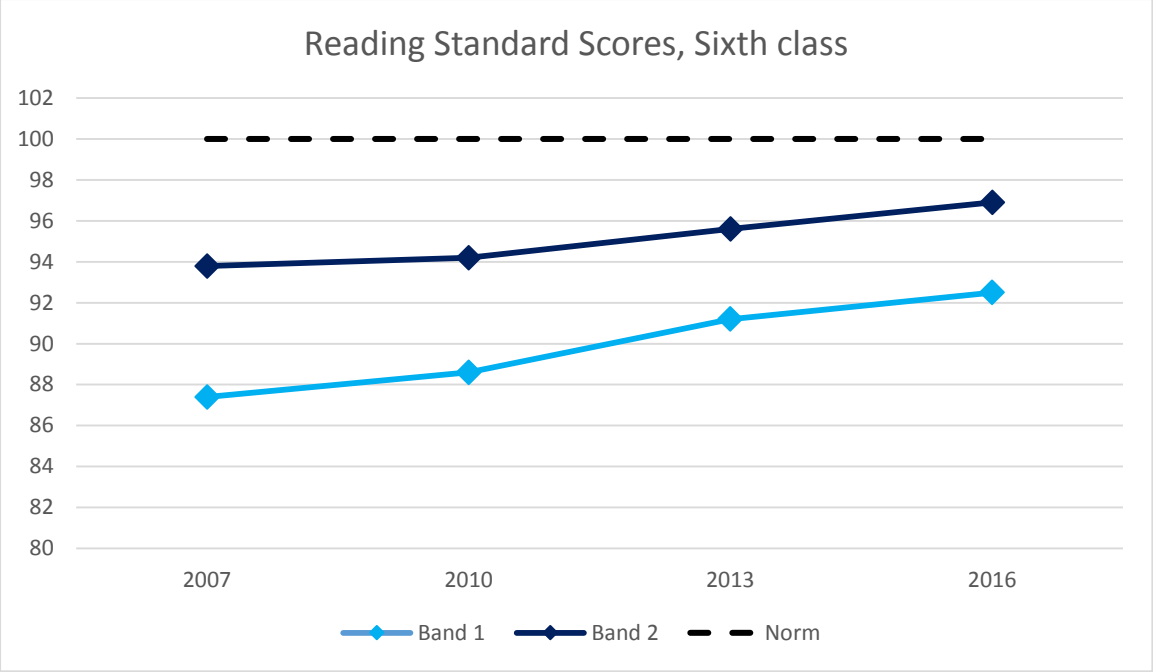

Figure 3.6: Mean reading standard scores of Sixth class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

In mathematics, DEIS Band 2 mean standard scores in 2016 are approaching or exceeding the norm group average scores at all grade levels (Figures 3.7 to 3.10). As in reading, pupils in Band 2 schools consistently outperformed those in Band 1 schools, on average, across all rounds of testing and at all grade levels. In both bands, average scores are higher in 2016 than they were in 2007. The pattern of change over this period varies somewhat by grade level. As seen in Figure 3.7, the achievement gap between Band 1 and Band 2 pupils in mathematics has been maintained over the four rounds of testing at Second class, and a similar pattern can be seen at Fifth class (Figure 3.9). At both Third class (Figure 3.8) and Sixth class (Figure 3.10), the gap appears to have narrowed over time.

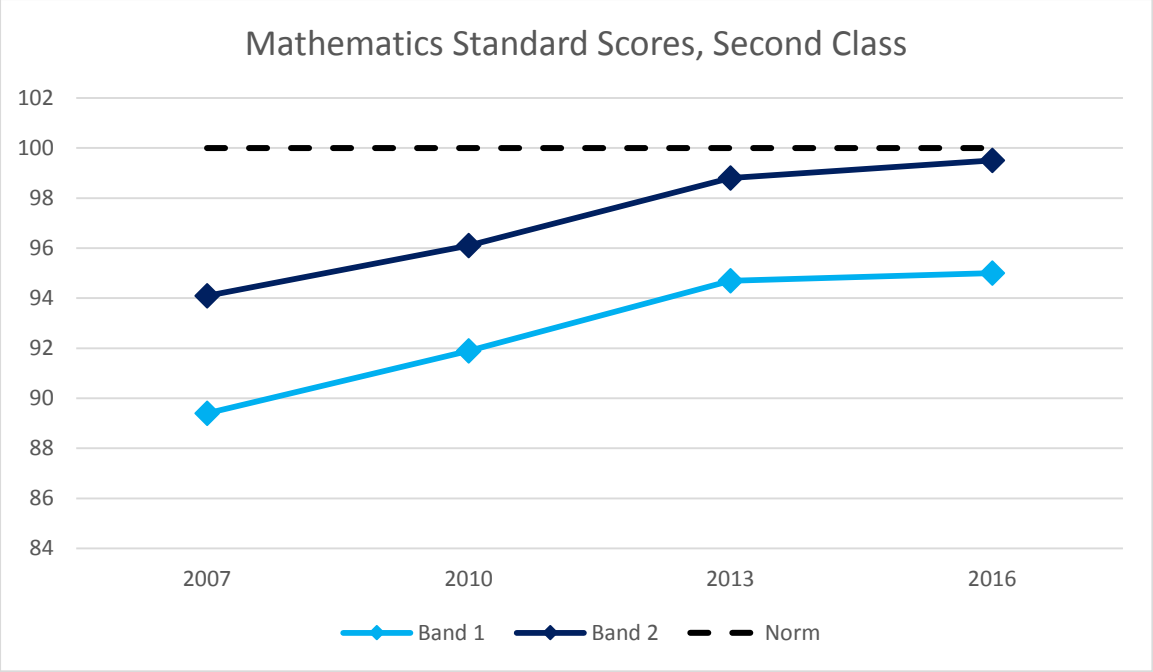

Figure 3.7: Mean mathematics standard scores of Second class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

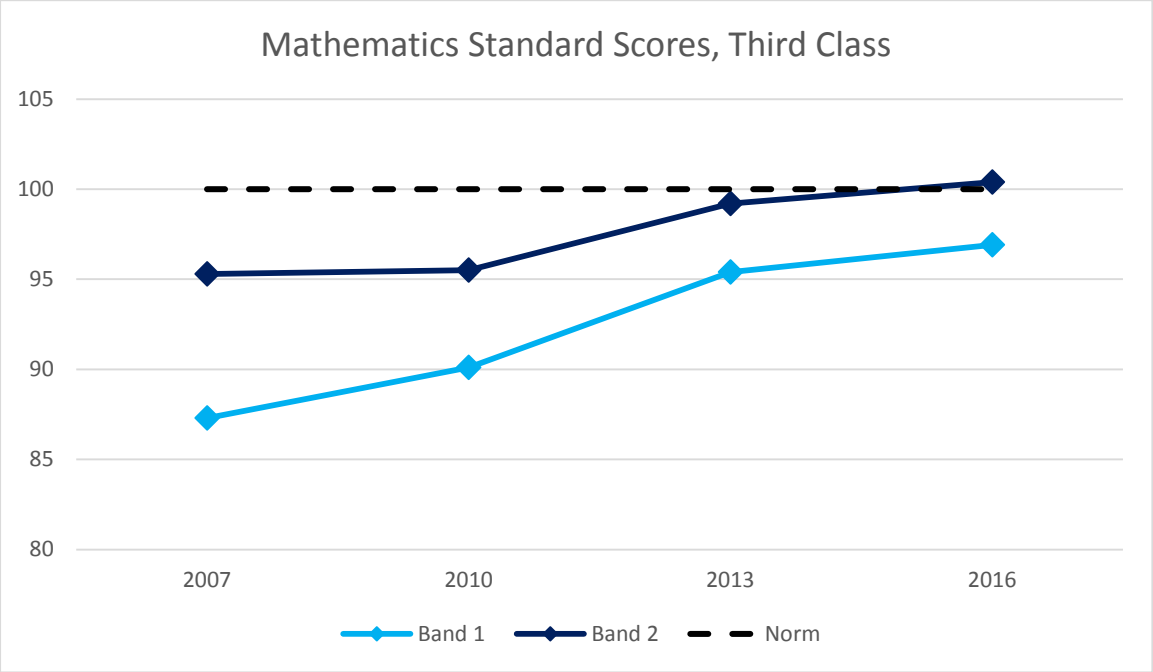

Figure 3.8: Mean mathematics standard scores of Third class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

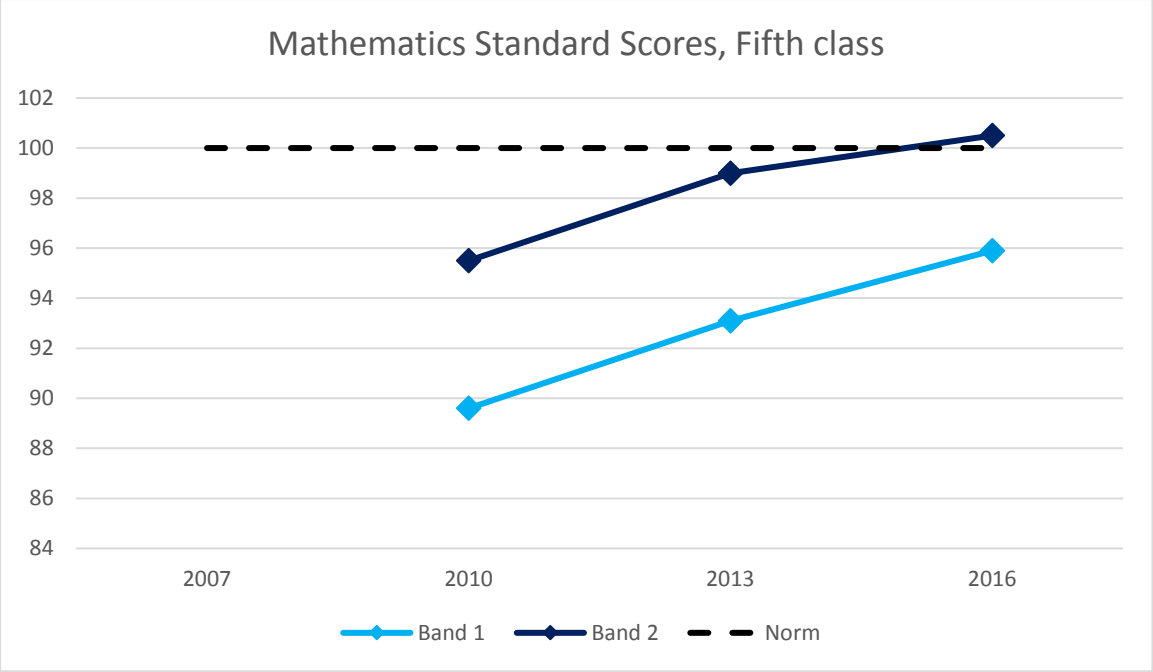

Figure 3.9. Mean mathematics standard scores of Fifth class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

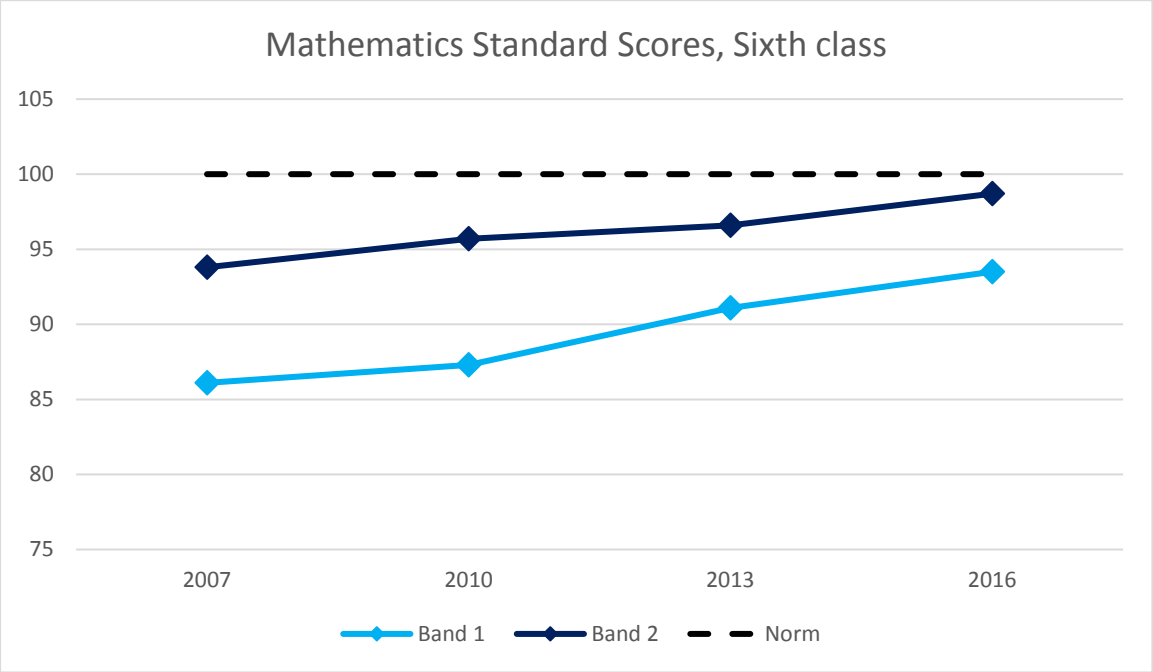

Figure 3.10. Mean mathematics standard scores of Sixth class pupils in 2007, 2010, 2013, and 2016, by DEIS Band

Achievement in Reading and Mathematics at School Level

Up to this point, achievement has been described at the individual level (i.e. across all pupils). It is also possible to examine reading and mathematics achievement aggregated to school-level, and to describe school-level changes in achievement over time. Table 3.11 shows the numbers and percentages of schools with various patterns of change in average reading and mathematics scores from 2010 to 2016.[7] In all cases, fewer than 10% of schools saw decreases in average test scores from both 2010 to 2013 and 2013 to 2016. Much larger numbers of schools had increases in average achievement at each grade level on

both occasions. The most common pattern for schools was a mixture of increases and decreases in average achievement over the two cycles of testing (reading and mathematics at Fifth class being the exceptions).[8]

Table 3.11: Numbers and percentages of schools showing increases, decreases, and a mixed pattern of change in their average reading and mathematics scores at each grade level from 2010 to 2016

	Reading				Maths			
	2nd (*N*=98)	3rd (*N*=111)	5th (*N*=111)	6th (*N*=111)	2nd (*N*=98)	3rd (*N*=111)	5th (*N*=111)	6th (*N*=111)
Decrease between 2010/2013 and between 2013/2016	4 4.1%	3 2.7%	8 7.2%	5 4.5%	9 9.2%	6 5.4%	7 6.3%	11 9.9%
Increase between 2010/2013 and between 2013/2016	40 40.8%	52 46.8%	54 48.6%	38 34.2%	21 21.4%	27 24.3%	52 46.8%	33 29.7%
Mixture of increases and decreases between 2010/2013 and 2013/2016	54 56.1%	56 50.4%	49 44.1%	68 61.2%	68 69.4%	78 70.2%	52 46.8%	67 60.3%

Table 3.12 shows the percentages of schools that have shown increases in average scores at all opportunities (2007-2010, 2010-2016, and 2013-2016), those that have shown only decreases over this period, and those that have shown a mixed pattern of change (note that no data are presented

[7] Readers interested in the patterns of change from 2007 to 2013 are referred to Weir and Denner (2013, p.20).

[8] It should be noted that no attempt has been made to reflect the fact that the size of the increases and, less commonly, decreases vary considerably across schools. Each comparison of schools' average scores over consecutive rounds of testing results in the school being classified simply as an increase or a decrease. Thus, for example, a school where an increase was close to zero was treated the same as a school where a substantial difference was observed. There was no instance of a school having identical averages at consecutive rounds of testing.

for Fifth class as this grade level was not included in testing in 2007). Very few schools experienced decreases in either reading or mathematics at all three opportunities (0-2%), while between 10 and 24% experienced only increases over this period at least one of the grade levels tested.

Table 3.12: Numbers and percentages of schools showing only increases, showing only decreases, and those showing a mixed pattern of change in their average reading and mathematics scores at Second, Third and Sixth class from 2007 to 2016

	Reading			Maths		
	2nd (*N*=98)	3rd (*N*=111)	6th (*N*=111)	2nd (*N*=98)	3rd (*N*=111)	6th (*N*=111)
Only decreases	0 0.0%	0 0.0%	1 0.9	2 2.0%	2 1.8%	1 0.9%
Only increases	24 20.3%	28 23.7%	18 16.2%	13 13.3%	11 9.9%	16 14.4%
Mixture of increases and decreases	74 62.7%	83 70.3%	92 82.9%	83 84.7%	98 88.3%	94 84.7%

Summary

In both reading and mathematics, modest increases in average scores were observed from 2013 to 2016. These are smaller, on the whole, than the increases observed between the 2010 and 2013 rounds of testing. From 2007 to 2016, greater gains have been observed in mathematics than in reading at all grade levels. As in previous rounds of testing, higher average scores in both reading and mathematics were observed in Band 2 schools than in Band 1 schools at all grade levels. In several cases, achievement in Band 2 schools in 2016 is at or above the national norms for the tests for the first time. Very small proportions of schools have shown repeated decreases in average achievement over the course of the evaluation, with a majority of schools showing a mixed pattern of change over this period.

Chapter 4: Pupils' Attitudes and Achievements

Overview

Pupil academic achievement is an important outcome which is monitored as part of the evaluation of the School Support Programme under DEIS, but it is not the only outcome of concern. Pupils' experiences of, and attitudes towards, school and learning are also assessed. The present chapter describes pupils' self-reported attitudes towards a range of school-related topics. Data are drawn from responses to the pupil questionnaires administered in conjunction with the achievement tests. Two pupil questionnaires were designed: one for completion by Second class pupils, and a slightly longer, more detailed questionnaire to be completed by Third, Fifth, and Sixth class pupils. In this chapter, pupils' attitudes towards school, reading, and mathematics are described. Pupils' aspirations and expectations for their educational attainment are outlined. Pupils' judgements about their own progress at school, including assessments of their own ability in reading and mathematics relative to others in their class, are also described. Finally, pupils' attributions for success at school are considered. Throughout, pupils' attitudes are related to achievement in reading and mathematics in 2016, as indicated by standard scores. Trends in attitudes over time are also considered. The chapter concludes with a summary.

Attitudes towards School

Pupils in Third, Fifth, and Sixth class were asked to indicate the degree to which they like school. At all three grade levels, at least three-quarters of pupils indicated that they 'liked' school or 'liked it a lot' (Table 4.1). The degree to which pupils liked school varied by grade level, with pupils in Third class over twice as likely as Sixth class pupils to indicate that they liked school 'a lot'. At each grade level, pupils who reported liking school had higher mean reading and mathematics scores than pupils who disliked it; however, the strength of the association between liking school and achievement depended on the grade level. For example, the gaps in mean reading and mathematics scores between those who liked school a lot and disliked it a lot were in the region of four standard score points at Third class, 8-9 points at Fifth class, and 8-12 points at Sixth class.

Table 4.1: Pupils' liking of school and mean reading and mathematics standard scores of Third, Fifth, and Sixth class pupils in 2016

	Third Class			Fifth Class			Sixth Class		
	%	Reading (*N*=4264)	Maths (*N*=4266)	%	Reading (*N*=4011)	Maths (*N*=4018)	%	Reading (*N*=4129)	Maths (*N*=4136)
Like a lot	32.4	95.9	98.5	20.2	98.6	99.7	15.3	96.4	99.7
Like	45.3	97.1	100.2	56.4	97.1	98.8	60.9	95.3	96.4
Dislike	10.1	93.9	96.6	14.7	96.3	97.2	16.4	93.0	94.3
Dislike a lot	12.2	92.0	94.0	8.7	90.6	90.6	7.3	88.5	87.9
Total	100	95.8	98.5	100	96.7	98.0	100	94.6	95.9

The question about liking school was also asked in the pupil questionnaires administered in 2007, 2010, and 2013. Table 4.2 shows the combined percentages of Third, Fifth, and Sixth class pupils who reported that they liked school or liked it a lot, at each of the four years of testing. At all grade levels, the proportion of students reporting that they liked school was higher in 2016 than at any previous year, having increased at each occasion in all but once instance (between 2007 and 2010 at Third class).

Table 4.2: Percentages of Third, Fifth, and Sixth class pupils who like school or like it 'a lot', by year

Grade level	2007	2010	2013	2016
3rd class	69.5	68.7	75.2	77.7
5th class	--	70.2	72.5	76.6
6th class	63.2	65.7	69.2	76.2

Second class pupils were also asked to indicate whether they liked being in school by answering 'yes', 'no', or 'don't know'. A majority of Second class pupils (58%) reported that they liked being in school (Table 4.3). One in five Second class pupils (20%) indicated that they did not like being in school. These pupils had lower mean reading and mathematics scores than pupils who reported liking school and those who indicated that they did not know whether or not they liked being in school (21%). The proportion of Second class pupils indicating that they did not like school has decreased over each of the rounds of testing from 2007 to 2016 (Table 4.4).

Table 4.3: Percentages of Second class pupils indicating they like being in school, do not like being in school, and do not know, and mean reading and mathematics standard scores

	%	Reading (*N*=3350)	Maths (*N*=3373)
Yes	58.3	97.7	97.7
No	20.2	95.6	94.0
Don't know	21.4	99.3	98.9
Total	100	97.6	97.2

Table 4.4: Percentages of Second class pupils indicating that they liked school, did not like school, and who did not know, by year

Grade level	2007	2010	2013	2016
Yes	54.7	57.0	59.9	58.3
No	25.5	23.8	22.0	20.2
Don't know	19.8	19.3	18.1	21.4

Attitudes towards Reading and Mathematics

Pupils in Third, Fifth, and Sixth class were asked to indicate whether they liked reading. At all grade levels, large majorities 'agreed' or 'strongly agreed' that they liked reading (combined percentages ranging from 70% at Sixth class to 82% at Third class). The likelihood of pupils indicating that they 'strongly agreed' that they liked reading decreased with grade level, from 47% at Third class to 29% at Sixth (Table 4.5). At each grade, the highest mean reading scores were those of pupils who strongly agreed that they liked to read, and the lowest were among those who strongly disagreed. Second class pupils were also asked whether they liked reading, with a majority (64%) agreeing that they liked reading, one in four saying that they were not sure, and the remainder indicating that they disagreed that they liked reading (12%). As at the higher grades, liking reading was associated with higher mean reading scores among Second class pupils (Table 4.6).

Table 4.5: Third, Fifth and Sixth class pupils' agreement that they like reading and mean reading standard scores

	Third Class (*N*=4224)		Fifth Class (*N*=4000)		Sixth Class (*N*=4113)	
	%	Reading	%	Reading	%	Reading
Strongly agree	47.1	98.4	36.2	101.3	28.7	100.5
Agree	35.0	95.3	42.5	95.3	43.9	93.6
Disagree	9.2	91.8	13.9	92.9	18.8	90.9
Strongly disagree	8.6	88.9	7.4	89.8	8.5	88.0
Total	100	95.9	100	96.7	100	94.6

Table 4.6: Second class pupils' agreement that they like reading and mean reading standard scores

	%	Reading (*N*=3336)
Agree	64.2	98.8
Do not agree	12.3	94.1
Not sure	23.5	96.5
Total	100	97.7

Pupils in Third, Fifth, and Sixth class were asked whether or not they agreed that they liked working out mathematics problems. Pupils were less uniformly positive about liking mathematics problems than liking reading, but a majority at each grade level agreed that they liked working out mathematics problems (from 58% at Sixth class to 68% at Third class). Liking mathematics problems was strongly associated with mathematics achievement, particularly at the higher grades where, for example, the mean mathematics score of Sixth class pupils who strongly agreed that they liked solving mathematics problems was more than a standard deviation higher than the mean score of pupils who strongly disagreed (Table 4.7). Second class pupils were asked if they liked mathematics, with 60% agreeing that they did. These pupils outperformed, on average, the one in five pupils (22%) who disagreed that they like mathematics (Table 4.8).

Table 4.7: Pupils' agreement that they like solving mathematics problems and mean mathematics standard scores, by grade level

	Third Class (*N*=4232)		Fifth Class (*N*=4007)		Sixth Class (*N*=4127)	
	%	Maths	%	Maths	%	Maths
Strongly agree	36.6	101.7	25.5	104.5	21.0	103.7
Agree	31.1	99.2	35.3	98.5	36.5	96.9
Disagree	17.4	96.1	25.2	95.0	27.5	92.7
Strongly disagree	14.9	93.2	13.9	90.6	15.0	88.6
Total	100	98.7	100	98.0	100	96.0

Table 4.8: Second class pupils' agreement that they like mathematics and mean mathematics standard scores

	%	Maths (*N*=3364)
Agree	60.2	98.6
Do not agree	21.8	93.3
Not sure	18.0	97.9
Total	100	97.2

Educational Aspirations and Expectations

Pupils in the higher grades (Third, Fifth, Sixth class) were asked to indicate how far they would like to progress in education. At all grade levels, a majority of pupils indicated that they would like to attend college or university, with proportions ranging from 64% of Third class pupils to just over three-quarters (76%) of Sixth class pupils. At all grade levels, educational aspirations were associated with achievement; highest mean scores in reading and mathematics were found amongst pupils who aspired to attend college or university, while the small proportions of pupils who aspired to leave education after primary school had the lowest mean scores (Table 4.9).

Table 4.9: Educational aspirations and mean reading and mathematics standard scores of Third, Fifth, and Sixth class pupils in 2016

	Third Class			Fifth Class			Sixth Class		
	%	Reading (*N*=4252)	Maths (*N*=4253)	%	Reading (*N*=4003)	Maths (*N*=4010)	%	Reading (*N*=4126)	Maths (*N*=4133)
Finish primary school	7.6	88.6	90.9	2.9	84.4	84.7	1.6	82.4	80.6
Do the Junior Cert	2.7	90.4	92.5	2.0	88.9	90.4	1.7	85.4	87.5
Do the Leaving Cert	10.0	94.8	97.6	11.7	93.5	93.1	11.5	89.2	89.5
Go to college or university	64.1	98.3	101.1	72.7	99.0	100.5	76.2	96.6	98.1
Don't know	15.6	90.7	93.9	10.6	89.9	92.3	9.0	88.4	90.0
Total	100	95.8	98.6	100	96.7	98.1	100	94.6	95.9

Table 4.10 shows the proportions of pupils who aspired to attend college or university in 2007, 2010, 2013, and 2016. From the first round of testing in 2007 to the most recent in round in 2016, the proportion of pupils aspiring to attend college or university increased at all three grade levels.

Table 4.10: Percentages of Third, Fifth, and Sixth class pupils who aspire to attend college or university, by year

Grade level	2007	2010	2013	2016
3rd class	51.4	58.4	62.6	64.1
5th class	--	67.5	73.2	72.7
6th class	64.3	70.1	76.0	76.2

Additionally, these pupils were asked to indicate how far they actually expected that they would progress in education. Similar proportions of pupils across grade levels expected that they would attend college or university, ranging from 55% at Fifth class to 58% at Sixth. Just 1% of Sixth class pupils expected that they would leave education after primary school, with just a further 2% expecting to finish after the Junior Certificate (Table 4.11). At all three grade levels, the percentages of pupils who expected that they would attend college or university were considerably lower than those who reported wanting to do so. Achievement in both reading and mathematics were found to

vary with pupils' educational expectations, with highest mean scores among those pupils who expected to attend college or university.

Table 4.11: Educational expectations and mean reading and mathematics standard scores of Third, Fifth and Sixth class pupils in 2016

	Third Class			Fifth Class			Sixth Class		
	%	Reading (*N*=4228)	Maths (*N*=4231)	%	Reading (*N*=3986)	Maths (*N*=3993)	%	Reading (*N*=4121)	Maths (*N*=4128)
Finish primary school	5.4	86.7	89.5	2.2	82.8	83.9	1.0	81.0	78.6
Do the Junior Cert	3.7	90.4	91.5	2.7	90.2	90.4	2.1	86.9	86.9
Do the Leaving Cert	14.0	95.9	97.8	19.8	94.6	95.0	19.9	91.0	91.2
Go to college or university	56.7	97.8	100.3	55.0	99.0	100.8	57.7	97.0	98.8
Don't know	20.1	94.2	98.3	20.3	94.9	96.1	19.3	92.9	94.1
Total	100	95.9	98.7	100	96.7	98.0	100	94.6	96.0

As shown in Table 4.12, the percentages of pupils who expected to attend college or university have increased at each occasion of testing, at all three grade levels at which the question was asked (Table 4.12).

Table 4.12: Percentages of Third, Fifth, and Sixth class pupils who expect to attend college or university, by year

Grade level	2007	2010	2013	2016
3rd class	48.0	52.5	55.0	56.7
5th class	--	50.3	52.0	55.0
6th class	47.5	50.8	52.6	57.7

Across all three grade levels at which the questions were asked, 4% of pupils aspired to leave education after finishing primary school. Of this small subgroup, 38% expected that they would actually do so, while 55% expected that they would progress further (8% of those who aspired to

leave after primary school expected that they would actually leave after the Junior Certificate, 16% after the Leaving Certificate, and 21% expected to attend college or university); the remainder (17%) did not know. Overall, 71% of pupils in Third, Fifth and Sixth class aspired to attend college or university. Of these, 71% expected that they would actually do so, one in eight expected that they would finish after the Leaving Certificate, just 2% expected that they would not reach the Leaving Certificate, and the remaining 15% indicated that they did not know.

Second class pupils were asked whether they agreed that they really want to do well in school. A very large majority (91%) of Second class pupils agreed with this statement. These pupils had mean reading and mathematics scores that were six and eight standard score points higher, respectively, than the small minority (3%) of pupils who disagreed that they really wanted to do well at school (Table 4.13). The proportions of pupils agreeing that they want to do well at school has remained stable since 2007.

Table 4.13: Second class pupils' level of agreement that they really want to do well at school and mean reading and mathematics scores

	%	Reading (*N*=3336)	Maths (*N*=3359)
Agree	90.9	98.0	97.7
Do not agree	2.6	91.7	89.7
Not sure	6.5	96.1	95.1
Total	100	97.7	97.3

Pupils' Assessments of their Progress at School

Third, Fifth, and Sixth class pupils were asked to compare themselves to others in their class in relation to different types of schoolwork, by indicating whether they believed themselves to be 'near the top', 'around the middle' or 'near the bottom' of the class for each of the areas listed. In relation to English reading and English writing, pupils' assessments of themselves relative to others were very positive, with much higher proportions of pupils saying that they were near the top of the class than at the bottom of the class (Table 4.14). At all grade levels, for both reading and writing, pupils who judged themselves to be near the top of the class had higher mean scores than pupils who believed themselves to be around the middle of the class, who in turn scored more highly, on average, than pupils who placed themselves near the bottom of the class.

Table 4.14: Third, Fifth, and Sixth class pupils' assessments of their English reading and writing ability relative to others, and mean reading standard scores

	Third Class		Fifth Class		Sixth Class	
English reading	**%**	**Reading (*N*=4259)**	**%**	**Reading (*N*=4010)**	**%**	**Reading (*N*=4128)**
Near the top of the class	49.7	99.0	42.3	101.5	37.8	100.4
Around the middle	40.2	93.9	47.0	94.4	50.6	92.3
Near the bottom	10.1	87.8	10.8	87.7	11.6	86.0
Total	100	95.8	100	96.7	100	94.6
English writing	**%**	**Reading (*N*=4250)**	**%**	**Reading (*N*=4011)**	**%**	**Reading (*N*=4129)**
Near the top of the class	47.5	96.9	41.4	99.4	38.2	97.6
Around the middle	39.9	96.3	47.8	95.8	51.5	93.6
Near the bottom	12.6	90.4	10.9	90.4	10.3	88.5
Total	100	95.9	100	96.7	100	94.6

Similarly, pupils were more likely to indicate that they were near the top of the class in mathematics than they were to say that they were near the bottom (Table 4.15). Pupils who reported that they were near the top of the class had the highest mean mathematics scores, while those who judged themselves to be near the bottom of the class had the lowest mean scores.

Table 4.15: Third, Fifth, and Sixth class pupils' assessments of their mathematics ability relative to others in their class, and mean mathematics standard scores

	Third Class		Fifth Class		Sixth Class	
	%	**Maths (*N*=4262)**	**%**	**Maths (*N*=4019)**	**%**	**Maths (*N*=4129)**
Near the top	42.7	103.8	37.7	107.2	36.6	106.1
Around the middle	44.6	96.4	49.1	93.8	49.1	91.9
Near the bottom	12.7	88.8	13.2	87.1	14.3	83.7
Total	100	98.6	100	98.0	100	95.9

Attributions for Success at School

Two questionnaire items related to pupils' attributions for success at school. At Third class, a majority of pupils (62%) agreed or strongly agreed that it is necessary to be 'very smart' in order to do well at school. Older pupils were less likely to attribute success at school to intelligence (being very smart); at Sixth class, just one in three pupils agreed or strongly agreed with this statement. At all grade levels, the lowest mean reading and mathematics scores were found among pupils who strongly agreed that to do well at school you need to be smart, and the highest mean scores were those of the pupils who disagreed with this statement (Table 4.16).

Table 4.16: Third, Fifth, and Sixth class pupils' levels of agreement that success at school depends on being 'very smart', and mean reading and mathematics standard scores

	Third Class			Fifth Class			Sixth Class		
	%	Reading (*N*=4239)	Maths (*N*=4242)	%	Reading (*N*= 3996)	Maths (*N*=4003)	%	Reading (*N*=4114)	Maths (*N*=4120)
Strongly agree	33.5	93.4	95.6	14.5	90.3	91.7	10.2	89.9	90.0
Agree	28.9	95.4	98.9	25.8	96.2	97.7	22.7	94.2	96.4
Disagree	26.5	98.7	101.9	44.7	98.8	100.0	50.8	95.7	97.0
Strongly disagree	11.0	97.2	98.7	15.0	97.9	98.7	16.3	94.9	95.8
Total	100	95.8	98.6	100	96.7	98.0	100	94.6	96.0

Large majorities of pupils at all grade levels agreed or strongly agreed that it is necessary to work hard in order to succeed at school, with percentages ranging from 84% at Fifth class to 87% at Third class. Much less variation in achievement was observed with respect to attributions of success to hard work than was observed with respect to attributions of success to intelligence (Table 4.17). Nonetheless, at each grade level, lowest mean reading and mathematics scores were found among pupils who strongly disagreed that hard work is necessary to succeed at school (just 2-4% of pupils).

Table 4.17: Third, Fifth, and Sixth class pupils' levels of agreement that success at school depends on hard work, and mean reading and mathematics standard scores

	Third Class			Fifth Class			Sixth Class		
	%	Reading (*N*=4231)	Maths (*N*=4232)	%	Reading (*N*=4008)	Maths (*N*=4015)	%	Reading (*N*=4117)	Maths (*N*=4123)
Strongly agree	50.3	95.8	98.2	41.3	96.5	97.7	39.1	95.0	96.4
Agree	37.0	96.5	99.7	42.3	97.3	98.6	46.7	94.6	96.0
Disagree	9.0	96.7	100.0	13.6	96.2	97.9	12.6	94.0	95.0
Strongly disagree	3.7	88.6	89.4	2.8	93.6	95.0	1.6	90.3	92.6
Total	100	95.8	98.6	100	96.7	98.0	100	94.6	96.0

Summary

In 2016, pupils reported more favourable attitudes to school, reading, and mathematics than in any other year of testing; this was the case at all grade levels at which questionnaires were administered. More positive attitudes were associated with higher average achievement in both reading and mathematics. Aspirations and expectations for educational attainment also increased substantially from 2007 to 2016, with more pupils aspiring and expecting to attend college or university than at any previous occasion. Higher aspirations and expectations were associated with higher achievement. There remains a gap between pupils' educational aspirations and expectations, with substantially greater proportions of pupils aspiring to attend college or university than actually expecting to do so. Finally, older pupils were less likely than younger pupils to attribute success in school to natural ability (being 'very smart'). Lower mean achievement scores were found among pupils who agreed that doing well at school depended on being intelligent, and among those who strongly disagreed that it depended on hard work.

Chapter 5: Achievement and attitudes in SSP schools in the context of national trends

Overview

The present chapter considers the outcomes described in the previous two chapters in light of national trends. This is achieved by comparing outcomes from the SSP evaluation with those from the most recent rounds of the National Assessments of English Reading and Mathematics. First, trends in reading and mathematics achievement in urban SSP schools are considered in light of achievement trends nationally, through the comparison of effect sizes across the two studies. Pupil attitudes assessed as part of the SSP evaluation are then compared with those nationally, where feasible. The chapter concludes with a short summary.

Interpreting achievement outcomes in SSP schools

As has been noted in previous reports on the evaluation of the School Support Programme (SSP) under DEIS, a major limitation of the design of the achievement testing component of the evaluation is that it was not possible to identify a control group to which schools in the evaluation sample could be compared with respect to achievement. An appropriate control group would be a group of schools similar in all ways to those in the evaluation sample, but which did not receive the resources and supports offered as part of the SSP. Monitoring achievement in such a control group alongside achievement in SSP schools would have enabled more accurate estimates of the impact of the programme, if any, on reading and mathematics outcomes. There was a number of reasons why it was not possible to build a control group into the design of the evaluation. Chief among these was that schools included in the programme were selected before the ERC was tasked with the programme's evaluation. It was not possible to identify a matched sample of schools with similar levels of disadvantage, as all such schools were already in the programme. However, even had this not been the case, there would have been ethical concerns associated with withholding treatment believed to be effective[9] from pupils with an identified need. As funding for the SSP came from the Exchequer, this would have been particularly problematic.

As described in previous chapters, average reading and mathematics scores have increased in SSP schools at all grade levels and at all testing occasions since 2007. In the report on the 2013 round of testing, Weir and Denner (2013) noted that, without a control group, it was not possible to conclude

[9] Elements of the programme had been shown to be effective at tackling educational disadvantage in other settings.

whether these improvements were due to the SSP itself, or reflective of general improvements in reading and mathematics nationally.

National Assessments of English Reading and Mathematics

Information on national standards in reading and mathematics is collected periodically in Ireland. Achievement in primary schools has been monitored in a series of national assessments that began in 1972. At regular intervals (typically every five years or so), English reading achievement and mathematics achievement have been assessed with secure tests of achievement[10] in representative samples of primary school pupils. The assessments have been administered at various grade levels at different testing occasions. For example, in 2004, English reading achievement was assessed at First class and Fifth class (Eivers, Shiel, Perkins & Cosgrove, 2005), and comparisons were made with achievement outcomes in the 1998 National Assessment of English Reading, which was administered at Fifth class (Cosgrove, Kellaghan, Forde & Morgan, 2000). Mathematics achievement was also assessed in 2004, but at Fourth class (Surgenor, Shiel, Close & Millar, 2006), and outcomes were compared to those of the 1999 National Assessment of Mathematics (Shiel & Kelly, 2001), which was also administered at Fourth class. For the 2009 National Assessments, however, the decision was taken to administer the assessments to Second and Sixth class pupils, and to assess both English reading and mathematics achievement at each of these grade levels. Given the change to the grade levels included in the assessments, it was not possible to explore trends in achievement between the 2004 and 2009 rounds of assessments. When reporting on the 2013 SSP evaluation testing, where average reading and mathematics scores in urban SSP schools had risen for the second consecutive occasion at all grade levels, Weir and Denner (2013) noted that this was in the context where 'the outcomes of a series of national assessments in reading and mathematics that have taken place over the past couple of decades indicate that no major changes in reading standards have occurred' (p. 21). This supported the hypothesis that gains observed in Band 1 and Band 2 schools were attributable to the SSP, rather than reflecting general gains across schools nationally. However, as mentioned above, there had not been an opportunity to examine national trends in achievement since the introduction of DEIS.

This changed with the 2014 National Assessments of English Reading and Mathematics. As these assessments were administered at the Second and Sixth class grade levels, 2014 outcomes could be compared with 2009 outcomes. These comparisons revealed that there were significant increases in mean achievement scores between the 2009 and 2014 National Assessments (Shiel, Kavanagh &

[10] For more information on the test instruments used in the National Assessments, see Shiel, Kavanagh and Millar (2014).

Millar, 2014). These increases were observed for both English reading and mathematics, and at both grade levels at which the assessments were administered. These represented the first significant increases in average performance nationally since the 1980 National Assessments.

The 2014 assessments were conducted with representative samples of over 4,000 Second class and 4,000 Sixth class pupils in 150 primary schools. The sample of schools included urban SSP schools, and estimates of achievement in Band 1 and Band 2 schools were provided in the first of two reports on the 2014 assessments (Shiel et al., 2014). However, as these schools were sampled in proportion to their representation in the population, only small numbers of SSP schools were involved (13 Band 1 and 12 Band 2 schools). As such, it was noted by Shiel et al. (2014) that the outcomes reported for each DEIS band could "only be considered indicative" (p. 53), and that they "should be considered in conjunction with the outcomes of other studies of performance in DEIS schools that are based on considerably larger sample sizes, and provide more accurate and stable estimates of achievement" (p. 64).

Considering the SSP evaluation and National Assessments outcomes together

Attempting to disentangle the contribution of SSP schools to national improvements in achievement, or to assess the degree to which gains in SSP schools can be attributed to those national gains, is challenging. However, the availability of achievement data from a representative sample of urban SSP pupils (from the programme's evaluation) and from a nationally representative sample of all primary pupils (from the National Assessments) allows for some consideration of these issues. While both studies assessed reading and mathematics outcomes, they did so using different test instruments, and reported achievement scores on different scales, meaning that mean scores from each study cannot be directly compared. One way of making a meaningful comparison between studies that assess the same outcomes using different measures is through the examination of standardised effect sizes. An effect size is a quantification of the difference between two groups. Standardised effect sizes remove the original measurement units of the variables of interest, placing them on a uniform scale; this allows them to be compared or combined across different studies. One such effect size is Cohen's *d*, which expresses the difference between two means in standard deviation units (Cohen, 1988). Calculating Cohen's *d* effect sizes for differences in mean achievement scores between rounds of testing in the SSP evaluation and between rounds of national assessments allows comparison of the size of the gains in urban SSP schools with those observed nationally.

As the National Assessments series runs on a five-year cycle and the SSP evaluation testing has taken place every three years, comparisons for the same exact time period cannot be made between the two studies. The rounds of national assessments of interest took place in 2009 and 2014. The closest

period in the SSP evaluation for comparison with this period is that between the 2010 and 2016 rounds of testing. In other words, we can compare achievement changes over a five-year period in one study to achievement changes over a six-year period in the other study, with four years common to both periods (i.e., 2010 to 2014).

Reading Achievement

Across the four grade levels tested as part of the SSP evaluation[11], the weighted mean effect size[12] for reading from 2010 to 2016 was estimated as $d = 0.27$[13] (95% confidence interval [CI], 0.23 – 0.30).[14] The corresponding weighted mean effect size for Second and Sixth class reading from the 2009 to the 2014 National Assessments was also estimated to be 0.27 (95% CI, 0.24 – 0.31). In other words, the magnitude of the improvement in urban SSP schools was the same as that observed nationally over a similar period. It must be remembered, however, that the national assessments samples contained pupils in urban SSP schools. As such, it may be more instructive to compare effects for urban SSP schools in the SSP evaluation with effects in non-SSP schools in the National Assessments (approximately 80% of pupils in the 2009 and 2014 National Assessments attended non-SSP schools). The weighted mean effect size for reading for non-SSP pupils nationally was estimated as $d = 0.28$ (95% CI, 0.24 – 0.32). In other words, the size of the improvement in a representative sample of urban SSP pupils was similar to the size of the improvement in a representative sample of pupils in schools outside the SSP.

As already mentioned, the numbers of urban SSP schools included in the 2009 and 2014 National Assessments samples were relatively small, with pupils in Band 1 schools representing just 8% of the sample and pupils in Band 2 schools also representing 8%. This means that the precision with which achievement can be estimated in Band 1 and Band 2 schools is compromised. When considering achievement in the SSP evaluation by band, the weighted mean effect size for Band 1 schools as observed in the evaluation was 0.29 (95% CI, 0.24 – 0.34), and for Band 2 schools was 0.25 (95% CI, 0.20 – 0.30).

---

[11] For breakdowns of effect sizes by grade level, see Appendix.
[12] Calculated using a random effects model.
[13] Cohen's (1988) original guidelines for interpreting d values were that an effect size of .20 represented a small effect, .50 a medium effect, .80 a large effect. However, in the context of educational research, the U.S. Department of Education's What Works Clearinghouse (WWC) has defined an effect size of 0.25 as 'substantively important' (WWC, 2014).
[14] This means that there is a 95% chance that the true effect size for the population lies between these two values.

Mathematics Achievement

Across the four grade levels tested as part of the SSP evaluation, the weighted mean effect size for mathematics from 2010 to 2016 was estimated as *d* = 0.33 (95% CI, 0.23 – 0.44). The corresponding effect size for mathematics from the 2009 to the 2014 National Assessments was 0.26 (95% CI 0.22 – 0.29). For schools not in the SSP in the National Assessments, the effect size was estimated at 0.24 (0.20 – 0.29). While the estimated d is larger for the urban SSP schools in the evaluation than for non-SSP schools in the National Assessments, given the overlapping confidence intervals around these estimates, it is possible that the 'true' effect is the same for both groups.

For Band 2 schools in the SSP evaluation, the weighted mean effect size was estimated as *d* = 0.26 (95% CI, 0.16 – 0.35), i.e. similar to that in non-SSP schools in the National Assessments over a similar period of time. For Band 1 schools in the SSP evaluation, *d* = 0.38 (95% CI 0.28 – 0.47), suggesting a larger effect than for non-SSP schools nationally.

Attitudes and Expectations

As in the SSP evaluation, pupil questionnaires were administered as part of the National Assessments. Analyses of the data obtained from these questionnaires was published in the second of two reports on the 2014 National Assessments (Kavanagh, Shiel & Gilleece, 2015). Some overlap in the questionnaire instruments allows comparisons to be made across studies.

Second class pupils in both studies were asked whether they liked school/liked being in school. Similar proportions of pupils in the SSP evaluation in 2016 and the 2014 National Assessments reported liking school (58% in each study). A higher proportion of Second class pupils in the SSP indicated that they did not like school (20%) than Second class pupils nationally (14%). In both studies, pupils were more likely to indicate they did not know/were not sure whether they liked school than to say that they did not like school (Table 5.1).[15]

[15] Sixth class pupils in the 2014 National Assessments were not asked this question, so a comparison across studies cannot be made at that grade level.

Table 5.1: Percentages of Second class pupils reporting that they liked school, did not like school, and did not know, in the 2016 SSP evaluation and the 2014 National Assessments (NA ’14)

	SSP	NA ’14
Yes	58.3	57.5
No	20.2	14.2
Don’t know/not sure	21.4	28.3
Total	100	100

Sixth class pupils in both studies were asked to indicate their level of agreement with the statement ‘I like reading’. Response options were similar, except that a ‘not sure’ option was offered in the National Assessments questionnaire and not in the SSP evaluation questionnaire. As can be deduced from Table 5.2, a similar proportion of pupils in urban SSP schools in the evaluation agreed or strongly agreed that they liked reading (73%) as did so nationally (75%).

Table 5.2: Sixth class pupils’ levels of agreement with the statement ‘I like reading’ in the 2016 SSP evaluation and the 2014 National Assessments

	SSP	NA ’14
Strongly agree	28.7	32.4
Agree	43.9	42.4
Not sure	--	14.0
Disagree	18.8	7.8
Strongly disagree	8.5	3.4
Total	100	100

Sixth class pupils in both studies were also asked about their educational aspirations and expectations. Again, response options were similar, but the ‘finish primary school’ option was not given on the National Assessments questionnaire. Aspirations in the SSP evaluation were broadly in line with aspirations of Sixth class pupils nationally, with 76% of urban SSP pupils in the evaluation aspiring to attend college or university, compared to 83% in the 2014 National Assessments (Table 5.3). There was greater disparity in educational expectations, however, with 58% of Sixth class pupils

in the evaluation sample expecting that they would actually attend college or university, compared with 70% nationally (Table 5.4).

Table 5.3: Educational aspirations of Sixth class pupils in the SSP evaluation in 2016 and the 2014 National Assessments

	SSP	NA '14
Finish primary school	1.6	--
Do the Junior Cert	1.7	1.4
Do the Leaving Cert	11.5	5.1
Go to college or university	76.2	82.6
Don't know	9.0	11.0
Total	100	100

Table 5.4: Educational expectations of Sixth class pupils in the SSP evaluation in 2016 and the 2014 National Assessments

	SSP	NA '14
Finish primary school	1.0	--
Do the Junior Cert	2.1	0.6
Do the Leaving Cert	19.9	10.1
Go to college or university	57.7	70.4
Don't know	19.3	15.3
Total	100	100

Summary

Improvements in achievement in urban SSP schools as assessed as part of the SSP evaluation (2010-2016) are similar in magnitude to those observed in non-SSP schools in the National Assessments of English Reading and Mathematics over a similar period (2009-2014). In the case of mathematics, a slightly larger effect among Band 1 pupils is indicated. In relation to attitudes, the proportions of pupils in urban SSP schools in 2016 that indicated that they liked school were comparable to those in a national sample of pupils in 2014. While the proportion of urban SSP pupils who aspired to attend college or university was just slightly lower than the proportion in the 2014 National Assessments, the gap between aspirations and expectations was larger among the urban SSP pupils than was the case nationally.

Chapter 6: Principals' attributions for the achievements of students in their schools

Since the beginning of the evaluation of the SSP under DEIS, the evaluators have taken every opportunity to ask principals and others in SSP schools for their views on what they perceive to be the most effective elements of the programme. In this section, information on principals' views on what has impacted on the achievement of their students are drawn together from various sources, including one-to-one interviews conducted during school visits, questionnaire responses, and focus groups.

It should be noted that all data described here were collected before the most recent round of testing in 2016. Nonetheless, it is important that principals' perceptions of what factors impact on the achievement of their pupils are reported. As well as variations in when the data for this chapter were collected, the method by which the data were collected, and the nature of the samples of schools represented also vary. Various subsets of principals provided data for this section (Table 6.1).

Table 6.1: Numbers of principals that provided data for this section, and when they provided data

Group	*N*
A Principals who completed questionnaires in advance of focus groups in 2014	221
B Principals who attended the focus groups in 2014	163
C Principals interviewed in 2015/16 whose schools were identified as having particularly successful outcomes	20

Feedback from a cross-section of principals in SSP schools

In December 2013, following the third phase of achievement testing in May 2013, all urban primary school principals in the SSP were sent a copy of a short report describing outcomes of the testing in reading and mathematics (see Weir & Denner, 2013). In early 2014, all principals were sent a letter inviting them to attend one of a nationwide series of seminars for principals of SSP schools, the primary aim of which was to discuss that report. In advance of the seminars, all principals were also asked to complete a questionnaire focused on a variety of student outcomes. In an accompanying letter, they were reminded that since the programme began, positive outcomes in a range of areas had been noted. These included positive responses from school staff towards the programme, high levels of engagement with the planning process in participating schools, and overall improvements in pupils' reading and mathematics achievement across all grade levels. It was also pointed out that, as

described in the summary report they had received earlier, outcomes from the most recent round of testing in spring 2013 indicated that, not only were initial gains in achievement maintained, they were built upon between 2010 and 2013. It was explained that the aims of the upcoming seminars were to discuss the findings with them and help the evaluators interpret them, and to draw on their expertise and experience in general to better understand which factors were having a positive impact. Principals were asked to complete and return a questionnaire aimed at identifying some topics for further discussion questionnaire in advance of the seminar. The evaluation team had a particular interest in finding out if the principals in non-sample schools (i.e., not in the 119 schools whose students had contributed test data for the evaluation) had also experienced positive outcomes in student achievement and other areas since the programme began.[16]

Questionnaire feedback

Completed questionnaires were received from 221 principals (Group A in Table 6.1). Of these, 131 were in Band 1 schools (representing 67% of all Band 1 principals) and 88 were in Band 2 schools (62% of all Band 2 principals). The questionnaire was completed and returned by slightly more principals whose schools had participated in the testing (70%) than those whose schools had not (63%).

An important purpose of the questionnaire was to try to establish if outcomes observed in the test sample were typical of other urban schools in the SSP. Principals' responses indicated that they were, with 84% agreeing that their students had shown either greater or similar gains in reading and 86% agreeing the same for mathematics. Tiny percentages (1% to 1.4%) indicated that they had observed no gains at all or had observed declines in achievement over the period (Table 6.2).

[16] This chapter contains some material that featured in an earlier unpublished account of the 2014 nationwide focus groups by Darina Scully, whose contribution is gratefully acknowledged.

Table 6.2: Percentages of principals indicating the extent to which they had experienced similar patterns of achievement in standardised tests of reading and mathematics to those in the evaluation sample over the period 2007-2013

	Reading (*n*=213)	Maths (*n*=208)
Larger gains than those observed in the sample	22.5	23.6
Similar gains to those observed in the sample	61.0	62.0
Smaller gains than those observed in the sample	15.5	13.5
No changes in achievement outcomes	0.9	0.5
Achievement outcomes declined	0.5	0.5

Evaluation test data indicated that improved outcomes were most marked in the junior classes and amongst lower achieving pupils. Responses to questionnaire items on these issues revealed that 89% of participating principals thought that changes in achievement outcomes in reading were particularly evident in junior classes, and 82% thought the same for mathematics. Principals also agreed that low achievers were more likely than any other student group to have improved in both areas (Table 6.3).

Table 6.3: Principals' indications of where changes in outcomes were most evident in their school

	Low Achievers	Middle Achievers	High Achievers	Equal across multiple groups
Reading	51.4	33.0	2.8	12.8
Mathematics	39.8	32.4	11.1	16.7

A further item was asked only of principals whose schools experienced *gains* over the period 2007-2013. The item required respondents to identify the most and least important determinants of improvements in a set of 14 factors, by ranking the three factors that they considered to be the most important and the one factor that they deemed to be the least important. The number of first,

second and third ranks assigned to each factor were counted and summarised in a 'leader board' (Table 6.4). Three very clear factors emerged as the most important in principals' rankings. The introduction of specialized literacy and numeracy programmes was seen by the vast majority of principals as the most important determinant of gains in achievement between 2007 and 2013 (attracting a rank of 1 from 83 principals for reading), while a further 55 assigned it a rank of 2 or 3. A similar pattern was found for mathematics, with 61 principals assigning specialized literacy and numeracy programmes a rank of 1 and another 56 assigning it a rank of 2 or 3. The practice of target-setting in relation to literacy and numeracy levels also emerged as a leading factor, with 27 principals ranking it as the most important determinant of reading gains and a further 57 assigning it a rank of 2 or 3. Principals also considered this factor to be an important contributor to gains in mathematics with 36 rating it as most important and another 53 rating is as second or third most important. The factor that was rated third most highly by respondents – reduced class size – was assigned a rank of 1 as a determinant of increases in both reading and mathematics by 26 principals. It should be recalled, however, that only schools in Band 1 schools experienced reductions in class size. Also ranked as important were improvements in pupils' attitudes and overall engagement with school, and improvements in learning support services for low-achieving children. The former, unlike the other top ranked determinants, was not a practical feature of the SSP but rather referred to something which may have been a consequence of participation in the programme. Increased professional development support for teachers in the SSP and improved pupil attendance were the next most highly rated factors.

Although the figures are not reported in Table 6.4, the factor deemed the least likely to have impacted on gains in reading and mathematics was a general improvement in achievement outcomes nationwide. This factor was chosen as the least important factor in relation to reading gains by 33 principals, and as the least important determinant of mathematics gains by 31 principals. This was followed by increased numbers of non-national pupils in the school (22 principals in the case of both reading and mathematics), and increased exposure of students to standardized testing procedures nationally (22 and 20 principals in the case of reading and mathematics respectively).

Table 6.4: Principals' rankings of the most important determinants of gains in reading and mathematics achievement between 2007 and 2013 (*N*=172)

Potential Determinant	**Reading**	**Maths**
Improvement in your pupils' attitudes towards/overall engagement with school	4	5
Improvement in Learning Support services for low achieving children in your school	5	4
Increased cooperation between your school and other schools/educational agencies	10	10
Increased levels of home support and parental involvement in your pupils' education	8	8
Increased attendance rates amongst your pupils	7	7
Increased numbers of non-national pupils attending your school	12	12
Increased professional support for teachers in your school	6	6
Recruitment of more skilled teachers in your school	9	9
Increased pupil exposure to standardized testing procedures nationwide	13	13
Introduction of specialized literacy and numeracy programmes in your school (*e.g. Reading Recovery)*	**1**	**1**
Clear target setting and progress monitoring in the areas of literacy and numeracy in your school	**2**	**2**
Reduced class sizes in your school	**3**	**3**
General improvement in achievement outcomes nationwide	14	14
Reduced teacher turnover in your school	11	11

Data from the principals' questionnaires also suggested that there were improvements in areas other than literacy and numeracy between 2007 and 2013 in schools participating in the SSP (Table 6.5). Almost all principals indicated that pupils' attitudes towards, and engagement with, school had improved since the programme began (a factor which many perceived to be implicated in achievement gains). This increase in positivity towards school was reflected in pupils' own responses to evaluation questionnaires, with significantly greater numbers endorsing statements such as "I like school" at follow-up (see Chapter 4). Principals also thought that their students' educational aspirations had increased over the six years since the programme began. This too was confirmed by

data provided by students themselves, which showed significant increases in both their educational aspirations and expectations which continued to grow with every test administration (see Chapter 4). Finally, data on attendance levels during four waves of test administration suggest significant increases in attendance since baseline data were collected.

Table 6.5: Percentages of principals indicating the extent to which pupil attendance, attitudes towards school, behaviour during class, educational aspirations, and engagement with school had improved or disimproved over the period 2007-2013

	Improved	**No Change**	**Disimproved**
Attendance (*n*=219)	90.0	8.2	1.8
Attitudes (*n*=221)	91.0	8.6	0.5
Behaviour (*n*=221)	77.8	18.6	3.6
Aspirations(*n*=218)	75.2	23.4	1.4
Engagement (*n*=219)	90.4	8.7	0.9

Although the general patterns of improvement between 2007 and 2013 were encouraging, there still appeared to be a substantial gap between the achievements of students in SSP and non-SSP schools. In light of this, the evaluators were interested to find out if principals thought further improvements possible. Principals were asked whether they believed that the SSP was likely to yield further gains in literacy and numeracy levels over the coming years. The results indicated that four out of five questionnaire respondents believed further improvement was possible (Table 6.6). In a separate item, principals were asked to describe the gap between the socioeconomic status of pupils in their school and those in other schools over the previous six years. Responses indicated that a majority (61%) thought the gap had widened, a further 24% thought it had remained the same, and 14% thought it had narrowed.

Table 6.6: Percentages of principals indicating that the SSP had the capacity to produce further gains in reading and mathematics achievement outcomes

	Reading (*n*=213)	Maths (*n*=212)
Yes	79.8	80.2
No	20.2	19.8

Feedback from focus groups

In March 2014, nine two-hour meetings were held across seven locations nationwide: Athlone, Cork, Dublin North (2), Dublin West (2), Limerick, Sligo and Wexford. In total, 163 principals attended (or, in a small number of cases, someone deputising for them), representing slightly under 50% of the number invited (Group B in Table 6.1). Each seminar was facilitated by ERC staff members.

It was explained to each group at the outset that the seminars represented the beginning of an extensive body of work investigating the SSP evaluation findings in further detail. The seminars were aimed at providing the evaluators with insights into the operation of the programme, and a better understanding of the determinants of achievement gains. Each seminar began with a brief synopsis of the findings, including description of patterns in pupil achievement up to and including what was then the most recent round of testing in 2013. Principals' responses to the questionnaire described in the previous section were then summarised in a presentation by the evaluation team. The material in this section is intended to augment the quantitative content described in the previous section, in that principals were required to reflect on and explain why they answered the questionnaire items the way they did. While the discussion was guided by the responses to key items in the questionnaire, the format was predominantly open-ended, with principals encouraged to offer their insights regarding any of the issues raised throughout.

Much of the discussion concerned the exploration of the nature of, and reasons for, the observed achievement gains. Almost all principals confirmed that key determinants of achievement gains had been the introduction of literacy and numeracy programmes and an increased focus on planning and target setting in these areas. It emerged, however, that in most schools, there had been an increased emphasis on literacy and numeracy in a broad sense, and that the use of specialized initiatives and clear target-setting were just two of several factors reflecting this. Many principals indicated that SSP funding had been invested in resources such as ICT, school library books, individual levelled readers for pupils of differing abilities, and support materials for mathematics. In

addition, activities such as reading with parents, sharing of book reviews, 'Readathons' and 'maths games' were commonly mentioned. Increased attention on literacy and numeracy at a whole-school level was widely reported.

Discussions also revealed that small classes were highly valued by all. Indeed, some pointed out that the wording of the item in the questionnaire may have resulted in an under-estimation of the importance attributed to this factor. For example, principals of some Band 1 schools explained how their school had benefited from lower teacher-pupil ratios since before the SSP began (as a result of their participation in previous programmes for disadvantage), but that the progress made in recent years would not have been possible without the long-term exposure to small classes. All agreed that small class sizes were essential to facilitate the successful implementation of literacy and numeracy initiatives, and, in this sense, could be regarded as a critical determinant of progress. There was also frustration among many principals of Band 2 schools who regarded their relatively larger class sizes as one of the greatest challenges to continued progress. Challenging behaviour among students was a serious concern for a number of principals, with many commenting on the prevalence of "severe emotional difficulties" among students. Some believed smaller class sizes could contribute towards mitigating the negative influence of such behaviour.

There was general agreement across all groups that the greatest progress had been made with low-achieving pupils, and few believed that this had been at the expense of high-achievers (a possibility if undue focus had been placed on low-achievers). Some principals felt that it was more difficult to obtain improvements with high-achieving pupils. However, it was generally believed that very high achievers can improve under most circumstances, with one principal suggesting that, in her experience, students in this category are almost capable of independent learning. Considerable concern was evident, however, for pupils in the 10^{th}-30^{th} percentile range. Many principals pointed out that such pupils have the potential for huge improvement — more so than those below the 10^{th} percentile, many of whom may have a significant learning difficulty. It was suggested by some that the introduction of the General Allocation Model (GAM) in 2005 had particularly adversely affected low to middle achievers in its imposition of limits on the amount of learning support available. This issue was exacerbated in schools with high numbers of pupils from the Travelling community, because the Resource Teachers for Travellers (RTTs) and Visiting Teachers Service for Travellers (VTS) schemes had been discontinued from August 2011. The provision of in-class learning support was viewed as a potentially valuable strategy in some situations, as support can be spread across groups of pupils.

However, it was conceded that, in reality, withdrawal is often preferred and indeed necessary for the very weakest pupils.

The evaluation finding that the most marked progress was made by students in junior classes provoked some very interesting discussions across the groups. One of the most frequently mentioned issues implicated in differential progress rates was increasing pupil-teacher ratios in senior classes. Principals of Band 1 schools in particular mentioned large increases in class sizes between junior and senior classes in their schools. In one case, a principal indicated that the ratio of 16:1 in Second class increased to 28:1 in Third class in her school. Many felt that these larger class sizes, combined with lower levels of learning support, and the increasing difficulty level of the curriculum made it difficult to maintain at senior level the rates of improvement occurring in the junior grades.

A few principals pointed out that parental involvement tended to be greatest in the junior grades, and often dipped after Second or Third class, when some pupils begin to equal or surpass their parents' literacy levels. Many indicated that parents felt inadequate, or were simply unable to help their children with their schoolwork at this stage. Furthermore, it was agreed that the 'higher order comprehension' skills required for Fifth and Sixth class reading did not develop in many pupils, such as those who speak a language other than English in the home, and children who do not read outside of school hours.

An interesting observation was made a by a small number of principals who thought that the results of standardized testing may underestimate levels of achievement in Sixth class. They highlighted how disengagement among these pupils may adversely affect their test scores, particularly towards the latter part of the school year when testing usually takes place. Although the gains found in the evaluation up to 2013 were less marked at senior levels, it should be noted that significant gains were observed at all grade levels. It was agreed that pupils were enjoying school more than they previously did. One principal pointed out that because goals were now set at the level of the child, there was always a sense of achievement, regardless of ability, which in turn had yielded greater enjoyment for children. Many principals agreed that a change in pupils' attitudes towards reading had been particularly noticeable. During the seminars, it was pointed out that these types of changes are not necessarily reflected in standardized test results, suggesting the full extent of the gains observed may be greater than measured by tests.

Some principals also mentioned the presence of significant numbers of newcomer pupils in participating schools as possibly contributing to achievement gains. Anecdotal evidence from teachers and principals has suggested that these pupils are often higher achievers, or come from backgrounds where there is great value placed on education. Moreover, the 'social context effect' suggests that diversity serves to enhance the educational experience (and ultimately the achievements) of other pupils in the school (Smyth, 1999; Sofroniou, Archer & Weir, 2004). As such, increasing numbers of newcomer pupils may be implicated in increases in achievement, although principals' opinions were divided on the issue, with many pointing to the fact that they are not a homogeneous student group. As described in the previous section, 'Increasing numbers of newcomer pupils' was often rated as the 'least important determinant' of gains in achievement by questionnaire respondents, but a handful of seminar attendees commented that the performances of newcomers had undoubtedly raised the average achievement scores. One principal described how high-achieving newcomers introduce 'competition' for other high achievers, while others noted that many newcomers are highly committed to education. Others argued that newcomers were responsible only for mathematics gains, and that levels of ability in English had suffered as a result of reductions in EAL support.

Compulsory standardized testing of students at two grade levels was introduced in primary schools in 2007 (see DES, 2006). Of greater relevance in the current context is the more recent requirement under the Department's National Literacy and Numeracy Strategy (DES, 2011) for schools to annually report to the Department aggregated test results in reading and mathematics for Second, Fourth and Sixth class students. This has undoubtedly increased the stakes associated with such testing. Furthermore, the increased exposure of students to tests of the kind used in the SSP evaluation in recent years may have led to improvements in 'test-taking ability' rather than underlying achievement. This notion was rejected, however, by the vast majority of principals, with many indicating that improvements were evident above and beyond standardized test results. It was also argued that 'coaching', or specifically training pupils to achieve higher test scores, was not common practice in most SSP schools.

In discussions of which elements of the programme were most effective, the interdependence of various factors was frequently stressed by participants. Many felt that the elements of the SSP were "all very connected" and that it was unrealistic to isolate just one or two. The success of specialized literacy and numeracy programmes, for example, was described as being "inextricably linked", both to CPD for classroom teachers, and to adequate learning support and resource provision. It was suggested during the seminars that this may be one of the reasons that DEIS appears to have been

more successful than many previous programmes addressing educational disadvantage in Ireland. Some principals agreed with this, identifying the provision of "focused" resources as a crucial difference between the SSP and its predecessors.

There was mixed reaction from principals regarding the potential for continued improvements in achievement. Cutbacks in the provision of CPD were viewed as considerable threats to future progress, with many stressing the need for ongoing staff training to facilitate the implementation of literacy and numeracy programmes, and to allow teachers to "keep up with the challenges" of working in an SSP school. There was a small cohort of principals who believed that further gains were simply unattainable, claiming that in light of socioeconomic conditions, a "plateau" had been reached. However, for the most part, the principals of schools participating in the SSP were tentatively optimistic about the potential for further gains in achievement. Many believed that continuous progress was possible, but repeatedly emphasized that resources should not be withdrawn, as such resources were "the reason for those improvements".

Feedback from principals in a subsample of high-achieving schools

While continuing to collect data in a range of other areas, the evaluators remained focused on trying to better understand why some SSP schools in the sample were particularly successful in raising student achievement while other schools with the same resources were not. As was seen in Chapter 3, most schools saw improvements in the achievements of their students since testing began, so a sample of schools was identified which had performed particularly well and in which consistent increases in reading and mathematics achievements had been achieved. Arrangements were made to visit twenty schools that qualified for this group over a two-month period between late 2015 and early 2016. During the visits, a structured interview was held with the principals focusing on the impact of the SSP in their school (Group C in Table 6.1). A copy of the school's results in each round of testing was brought to the school as a reminder for principals of the progress that had been made in terms of achievement outcomes.

At one point in the interview, principals were asked to review a list of possible determinants of achievement gains, and to indicate if they thought each was a factor in the achievement gains in their school. The outcome of this, described separately for reading and mathematics, is summarised in Table 6.7. As the data in the table show, similar factors were judged to be determinants of gains among this important subsample of schools as was found in the other groups. Once again, students' attitudes towards school, the setting of targets in literacy and numeracy, the use of specialised literacy and

numeracy programmes, and, to a slightly lesser extent, reduced class size, were all deemed very important. Among this group of principals a further set of factors emerged as being of equal importance. These were: increased levels of home support and parental involvement; engaging parents in students' learning; improvement in Learning Support services for low-achieving children; improved attendance; increased professional support for teachers; raised teaching standards in the school; teaching literacy and numeracy across the curriculum; grouping students for English reading and mathematics; the use of both formative and summative assessment; and the *National Strategy to Improve Literacy and Numeracy.*

Table 6.7: Numbers of principals indicating that each of a variety of factors (where relevant) represented a determinant of improvement in reading and mathematics achievement in their schools (*N*=20)

Potential determinant	**Reading**	**Maths**
Improvement in your students' attitudes towards/overall engagement with school	All	All
Improvement in Learning Support services for low-achieving children in your school	18 / 20	18 / 20
Increased cooperation between your school and other schools/educational agencies	17 /20	16 / 20
Increased levels of home support and parental involvement in your students' education	19 / 20	19 / 20
Increased attendance rates amongst your students	All	All
Increased numbers of students from migrant families attending your school	12 / 20	14 / 20
Increased professional support for teachers in your school	19 / 20	All
Raised teaching standards	19 / 20	19 / 20
Recruitment of more skilled teachers in your school	12 / 20	12 / 20
Increased student exposure to standardized testing procedures nationwide	13 / 20	13 / 20
Clear target setting and progress monitoring in the areas of literacy and numeracy in your school	All	All
School-level targets for English reading within the DEIS school plan	All	—
School-level targets for mathematics within the DEIS school plan	—	All
Teaching literacy across the curriculum	All	—
Teaching mathematics across the curriculum	—	All
Grouping students for English reading	19 / 20	—
Grouping students for mathematics	—	All
Introduction of specialized literacy and numeracy programmes in your school (*e.g. Reading Recovery)*	19/20	All
The *National Strategy to Improve Literacy and Numeracy*	All	19 / 20
Use of formative assessment	All	All
Use of summative assessment	19 / 20	19 / 20
Reduced class sizes in your school	17 / 20	17 / 20
General improvement in achievement outcomes nationwide	9 / 20	9 /20
Reduced teacher turnover in your school	14 / 20	14 / 20
Engaging parents in children's learning	19 / 20	19 / 20

As was the case with other groups of principals, the factors rated as the least likely to have impacted on the achievements in these schools included the following: a general improvement in achievement outcomes nationwide; recruitment of more skilled teachers in the school; increased student exposure to standardized testing procedures nationwide; and increased numbers of students from migrant families attending the school.

As well as these factors, others were mentioned as important during the interviews. While it is not an exhaustive list, several principals pointed to the following as important: team teaching; grouping students according to their ability; differentiated teaching; less reliance on workbooks than is the case in other schools; creativity in lesson planning; a strong SEN team; a focus on small group work; a shift from withdrawal to delivering in-class learning support; and an emphasis on literacy and reading throughout the school. While it was not possible to identify a set of characteristics that distinguished this set of high-achieving schools from other schools, it may well have been their capacity to adapt to their own unique circumstances and tailor their responses to meet the challenges facing them is that what makes them particularly effective. The more detailed forthcoming context report will contain the results of quantitative analyses designed to shed more light on the factors that distinguish higher-achieving from lower-achieving schools.

Chapter 7: Discussion and Conclusions

The present report is the latest in a series on the achievement testing component of the evaluation of the School Support Programme (SSP) under DEIS. The report focuses on the reading and mathematics achievement of primary school pupils in the urban dimension of the programme (i.e., pupils in Band 1 and Band 2 primary schools). Achievement in 2016 is compared with that in previous rounds of testing (2007, 2010 and 2013), and trends in achievement in SSP schools are compared with national trends in English reading and mathematics achievement. In this chapter, the findings reported in previous chapters are summarised and discussed, and some preliminary conclusions are drawn. The content of further planned evaluation reports is also outlined.

From 2013 to 2016, average scores in reading and mathematics in urban SSP primary schools increased at all four grade levels at which the achievement tests were administered. These increases can be described as modest, and were slightly larger in mathematics than in reading. In relation to English reading, there was no change in the mean reading scores in either of the longitudinal cohorts (Second to Fifth class; Third to Sixth class) from 2013 to 2016. In mathematics, there was an increase in the average mathematics score of the Second – Fifth longitudinal cohort from 2013 to 2016, but there was a decrease for the corresponding Third – Sixth cohort. At school level, schools were considerably more likely to have experienced two increases in average scores from 2010 – 2013 and 2013 – 2016 at a given grade level than to have experienced two decreases over that same period. The most common pattern for schools was a mixture of increases and decreases in average achievement over this period.

As on all previous testing occasions, the average reading and mathematics scores of Band 2 pupils were higher than those of Band 1 pupils in 2016, at all grade levels that participated in testing. Given the mixed patterns of achievement at different grade levels in different years, it is difficult to draw conclusions about whether the achievement gaps between Band 1 and Band 2 schools have narrowed over time. Average scores in Band 1 schools remain considerably below national norms, but in Band 2 schools scores are approaching or surpassing the norms in several instances, particularly in mathematics. These data, as well as data from national assessments in 2009 and 2014, clearly show achievement varying in line with assessed level of disadvantage. The finding that

schools in Band 1 consistently have lower average test scores than those in Band 2 serves to validate the process used to identify schools for inclusion in the programme in 2005.[17]

When interpreting these outcomes, it is important to recognise the limitations of the test instruments used to assess English reading and mathematics achievement in the present study. The Drumcondra Sentence Reading Test (DSRT) is a short test that features just one type of item. The advantage of this is that it provides a valid measure of literacy for the target population without overburdening pupils with a long test. However, it does not facilitate assessment of the various different processes involved in reading. It is, therefore, not possible to identify areas of relative strength and weakness in reading among pupils in urban SSP schools, nor to track how these may have changed over time. Although the shortened version of the Drumcondra Primary Mathematics Test- Revised (DPMT-R) administered to pupils does include items relating to a range of mathematical content areas and processes, there are too few items relating to any particular content area or process to derive reliable conclusions about anything other than overall mathematics achievement. Another important issue is the age of the test norms to which pupil outcomes in this report have been compared. The DSRT was standardised in 2002 and the DPMT-R was standardised in 2006.[18] The norms developed for each of these tests can now be considered old. Given the increases in average performance in reading and mathematics in the National Assessments of English Reading and Mathematics, it is likely that these tests now overestimate pupil achievement (Shiel et al., 2014). Additionally, although the DSRT is a secure test used for research purposes, the DPMT-R is available and widely used in primary schools. It is therefore plausible that items have become familiar to teachers and pupils over time, possibly inflating test scores. This is one possible explanation for the finding that average mathematics scores have increased more than average reading scores over the course of the evaluation of the SSP.

Even with the limitations of the test instruments noted, the improvements in achievement are noteworthy. Since 2007, there have been 22 separate opportunities for cross-sectional comparisons of average scores to be made, when both reading and mathematics are taken into account (see Figure 2.1, p. 7). At each of these 22 points of comparison, average scores were found to have increased. This stands in contrast to findings of previous evaluations of schemes aimed at addressing educational disadvantage in Ireland. Standardised test scores in reading and mathematics were used

[17] For more detail on the 2005 identification process at primary level, see Archer & Sofroniou (2008); for information on the identification process at post-primary level, see Weir (2006).

[18] The DPMT is currently being redeveloped and is due for standardisation in 2018.

to assess the impact of Early Start, the HSCL scheme, and Breaking the Cycle, for example, with little evidence that these programmes had any impact on test scores (Weir, 2016).

The degree to which increases in achievement scores since 2007 can be attributed to the SSP is unclear, given the absence of a control group. Interpretation of the gains in urban SSP schools is also complicated by their coincidence with increases in average achievement in reading and mathematics nationally. Comparisons of achievement trends observed in the SSP evaluation with those observed in the National Assessments of English Reading and Mathematics suggest that improvements in SSP schools are broadly similar in magnitude to those in non-SSP schools over a similar period. Of course, it is possible that the gap between SSP and non-SSP schools would have widened in the absence of the programme, and it is important that the consistent gains in mathematics and reading scores in SSP schools from 2007 to 2016 be interpreted in the light of a number of wider contextual factors.

Increases in average performance in urban SSP schools occurred over a period where Ireland experienced economic recession. Principals of SSP schools interviewed in 2015 as part of the evaluation reported increased levels of disadvantage among families of pupils in their schools, as indicated by increased parental unemployment, increased poverty, and unprecedented levels of homelessness. As noted in Chapter 6, a majority of SSP principals surveyed as part of a series of nationwide meetings in 2014 (61% of 215 principals) indicated that the gap between the socioeconomic profile of pupils in their schools and that of pupils in other schools had widened since the introduction of DEIS. If the effects of the economic recession impacted families attending SSP schools disproportionately, the finding that achievement gains in SSP schools kept pace with those of pupils in non-SSP schools nationally is significant. The question of whether the negative effects of the economic crisis in Ireland were more concentrated among families in SSP schools than in other schools will be explored in more detail in a future report.

Additionally, there is evidence that junior class sizes in urban SSP schools have increased in recent years. Kelleher and Weir (2017) report that the average junior class size in Band 1 schools increased by 4.4% over their period of interest, from 18.4 in the 2009/10 school year to 19.2 in 2014/15 (i.e. an increase of approximately one pupil, on average, over that period). Similarly, in Band 2 schools, the average junior class size increased from 22.8 in 2009/10 to 23.6 pupils in 2014/15 (a 3.4% increase). The corresponding increase for urban non-SSP pupils was considerably smaller, at 0.3 of a pupil, or 1.1% (Kelleher & Weir, 2017). There is a substantial body of evidence that indicates that reducing class sizes can improve achievement, particularly when used as a means of tackling educational disadvantage (e.g. Schanzenbach, 2014; Shin & Chung, 2009; Zyngier, 2014). Increases in class sizes

over time would therefore be expected to depress achievement. This should also be borne in mind when interpreting achievement gains in urban SSP schools relative to those in non-SSP schools.

That improvements in achievement in SSP schools were observed during a period where factors known to militate against achievement increases is encouraging. Another such factor is the decrease in levels of pupil absence over each consecutive round of SSP evaluation achievement testing, from 10.8% in 2007 to 7% in 2016. As poor attenders tend to have lower levels of achievement[19], the presence of a higher proportion of pupils on the day of testing would be expected to depress achievement. Exemption from testing (for reasons such as learning disabilities and low proficiency in English) have also remained low in 2016, at just 1.1% (down from 1.7% in 2007).

Several factors have been suggested as possibly contributing to the increases in average reading and mathematics scores in the National Assessments. These include increased instructional time allocated to literacy and numeracy, School Self-Evaluation, and increased continuous professional development introduced as part of the *National Strategy to Improve Literacy and Numeracy among Children and Young People, 2011-2020*. While such initiatives may also have contributed to gains in SSP schools, there is evidence of increases in SSP schools that pre-date the gains observed nationally, and which pre-date the Strategy. An increased emphasis on literacy and numeracy was a major component of the SSP from its inception, with the introduction of a number of specialised literacy and numeracy programmes, and the requirement for schools to set targets in literacy and numeracy and to measure progress towards those targets. As outlined in Chapter 6, principals in SSP schools were more likely to rank these two factors as the most important determinants of achievement increases in their schools than any other factor; they were least likely to indicate that general improvement in achievement outcomes nationwide was an important determinant of the gains. Taken together, these factors suggest that attributing the increases in average achievement in urban SSP schools to overall national improvements is unwarranted.

It appears that much of the improvement in reading and mathematics achievement from 2007 to 2016 has been amongst lower achievers, with reductions in the proportions of pupils scoring at or below the 10th percentile greater than increases in the proportions at or above the 90th percentile. This pattern is more pronounced in relation to reading than in mathematics; in mathematics, the proportions of pupils performing at or above the 90th percentile are now close to or exceed the 10% of pupils who would be expected to perform at this level. As outlined in Chapter 6, principals tended

[19] Analyses of evaluation data have supported this assertion in the SSP evaluation sample. The results of these analyses will be presented in a later report.

to report that their primary concerns, and thus the bulk of their efforts, centred on lower-achieving pupils. Indeed, one of the literacy programmes available under the SSP, Reading Recovery, is explicitly targeted at the lowest achieving pupils. Recent international assessments of achievement at primary and post-primary levels in which Ireland has participated have also revealed stronger performance among lower achievers than higher achievers in Ireland, particularly in relation to mathematics. Findings from the Trends in International Mathematics and Science Study (TIMSS) in 2015 indicated that improvements in average achievement among students over time in mathematics and science in Ireland were most marked among lower-achieving students, and that higher-achieving students in Ireland under-performed in TIMSS 2015 relative to higher-achieving students in other countries with similar levels of overall achievement (Clerkin, Perkins & Cunningham, 2016). In the Programme for International Student Assessment (PISA) study in 2015, there was a lower proportion of students performing at the lowest levels of proficiency (below Level 2) in mathematics in Ireland than on average in OECD countries, but the proportion performing at the highest levels (Levels 5 and 6) was also lower than the OECD average (Shiel, Kelleher, McKeown & Denner, 2016). Raising awareness among teachers in all educational contexts about the importance of extending higher-achieving students' learning, and supporting them in doing so, may be an important means of further increasing average achievement.

Pupil achievement is an important outcome of interest monitored as part of the SSP evaluation. It is also monitored at post-primary level, where consistent increases in achievement have also been observed (see McAvinue & Weir, 2015; Weir, McAvinue, Moran & O'Flaherty, 2014). However, achievement is not the sole outcome of interest. Attendance is an important pupil outcome, and, as previously noted, average attendance has improved at each testing occasion since 2007. Pupil attitudes and reported behaviours are also assessed periodically by evaluators. As outlined in Chapter 5, the evidence suggests that the gains in mathematics and reading scores observed from 2007 to 2016 have not come at the expense of pupils' enjoyment of school. In fact, the proportions of pupils reporting that they like school have increased substantially over that period, at all grade levels. Similarly, pupils' aspirations and expectations for educational attainment have increased with each round of testing. However, there appears to be scope for further raising expectations, as a substantial gap remains between pupils' aspirations and expectations. It is also worth noting that this gap is more marked among urban SSP pupils than among pupils nationally.

To conclude, since the introduction of the SSP programme under DEIS, average scores in reading and mathematics have increased with each consecutive round of testing. Pupils' educational expectations and aspirations have also increased over that period, and more urban SSP pupils reported more favourable attitudes towards school in 2016 than at any other time since the

evaluation of the programme began. A further evaluation report, in which achievement outcomes are placed in a wider context, will be made available in due course. Analyses of data collected from schools and parents, as well as further data collected from pupils themselves, will form the basis of that report.

References

Archer, P., & Sofroniou, N. (2008). *The assessment of levels of disadvantage in Primary Schools for DEIS*. Dublin: Educational Research Centre.

Aron, A. & Aron, E.N. (1994). *Statistics for Psychology*. New Jersey: Prentice-Hall.

Clerkin, A., Perkins, R. & Cunningham, R. (2016). *TIMSS 2015 in Ireland: Mathematics and science in primary and post-primary schools*. Dublin: Educational Research Centre.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. Hillsdale, New Jersey: Erlbaum.

Cosgrove, J., Kellaghan, T., Forde, P. & Morgan, M. (2000). *The 1998 National Assessment of English Reading*. Dublin: Educational Research Centre.

DES (Department of Education and Science). (2005). *DEIS (Delivering equality of opportunity in schools): An action plan for educational inclusion.* Dublin: Author.

DES (Department of Education and Science). (2006). Supporting assessment in primary schools. *Primary Circular 0138/2006.* Retrieved from http://www.education.ie/en/Circulars-and-Forms/Active-Circulars/cl0138_2006.doc

DES (Department of Education and Skills). (2011). *Literacy and numeracy for learning for life: The National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020.* Dublin: Author.

DES (Department of Education and Skills) (2012). *Staffing arrangements in primary schools for the 2012/13 school year, Primary Circular 0007/2012*. Retrieved from www.education.ie/en/Circulars-and-Forms/Archived-Circulars/cl0007_2012.pdf

Educational Research Centre (ERC) (2006). *Drumcondra Primary Mathematics Test – Revised. Level 2. Administration manual and technical manual*. Dublin: Author.

Eivers, E., Close, S., Shiel, G., Millar, D., Clerkin, A., Gilleece, L. & Kiniry, J. (2010). *The 2009 National Assessments of Mathematics and English Reading*. Dublin: Educational Research Centre.

Eivers, E., Shiel, G., Perkins, R. & Cosgrove, J. (2005). *The 2004 National Assessment of English Reading*. Dublin: Educational Research Centre.

Eivers, E., Shiel, G. & Shortt, F. (2004). *Reading literacy in disadvantaged primary schools*. Dublin: Educational Research Centre

Kavanagh, L., Shiel, G. & Gilleece, L. (with Kiniry, J.) (2015). *The 2014 National Assessments of English Reading and Mathematics. Volume 2: Context Report*. Dublin: Educational Research Centre.

Kelleher, C., & Weir, S. (2017). *The impact of DEIS on class size in urban primary schools in 2014/15 with comparative data from 2009/10.* Report to the Department of Education and Skills. Dublin: Educational Research Centre.

McAvinue, L., & Weir, S. (2015). *The evaluation of DEIS at post-primary level: An update on trends over time in achievement and retention.* Report to the Department of Education and Skills. Dublin: Educational Research Centre.

Schanzenbach, D.W. (2014). *Does class size matter?* Boulder, CO: National Education Policy Centre.

Shiel, G., Kavanagh, L., & Millar, D. (2014). *The 2014 National Assessments of English Reading and Mathematics. Volume 1: Performance report*. Dublin: Educational Research Centre.

Shiel, G., Kelleher, C., McKeown, C. & Denner, S. (2016). *Future ready? The performance of 15-year-olds in Ireland on science, reading literacy and mathematics in PISA 2015.* Dublin: Educational Research Centre.

Shiel, G. & Kelly, D. (2001). *The 1999 National Assessment of Mathematics Achievement*. Dublin: Educational Research Centre.

Shin, I.S. & Chung, J.Y. (2009). Class size and student achievement in the United States: A meta-analysis. *KEDI Journal of Educational Policy, 6*(2), *3-19.*

Smyth, E. (1999). *Do schools differ? Academic and personal development among pupils in the second level sector.* Dublin: Oak Tree Press / Economic and Social Research Institute.

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.

Surgenor, P., Shiel, G., Close, S. & Millar, D. (2006). *Counting on success: Mathematics achievement in Irish primary schools*. Dublin: Department of Education and Science.

Weir, S. (2006). *A report on the procedures used to identify post-primary schools for inclusion in the School Support Programme under DEIS.* Dublin: Educational Research Centre.

Weir, S. (2016). Raising achievement in schools in disadvantaged areas. In S. Edgar (Ed.), *Successful approaches to raising attainment and tackling inequity. CIDREE yearbook*. Livingston: Education Scotland.

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). *Analysis of English reading and mathematics achievements 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., & Denner, S. (2013). *The evaluation of the School Support Programme under DEIS: Changes in pupil achievement between 2007 and 2013.* Report to the Department of Education and Skills. Dublin: Educational Research Centre.

Weir, S., & McAvinue, L. (2012). *The impact of DEIS on class size in primary schools.* Report to the Department of Education and Skills. Dublin: Educational Research Centre.

Weir, S. & McAvinue, L. (2013). *The achievements and characteristics of pupils attending rural schools participating in DEIS.* Report to the Department of Education and Skills. Dublin: Educational Research Centre.

Weir, S., McAvinue, L., Moran, E., & O'Flaherty, A. (2014). *A report on the evaluation of DEIS at second level.* Report to the Department of Education and Skills. Dublin: Educational Research Centre.

Weir, S., & Moran, E. (with O'Flaherty, A.) (2014). *The organisation of learning support and resource teaching in a sample of urban primary schools serving disadvantaged pupils.* Dublin: Educational Research Centre.

What Works Clearinghouse (2014). *Procedures and standards handbook. Version 3.0*. Washington, DC: US Department of Education, Institution of Educational Sciences.

Zyngier, D. (2014). Class size and academic results, with a focus on children from culturally, linguistically and economically disenfranchised communities*. Evidence Base, 1,* 1-23.

Appendix

Table 1: Descriptive statistics and effect sizes for reading in urban School Support Programme (SSP) schools 2010-2016 in the SSP evaluation, by grade level

	2010			2016			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	***d***
2nd class	94.6	13.06	3467	**97.6**	13.05	3390	0.23
3rd class	91.6	13.24	4316	**95.7**	13.04	4290	0.31
5th class	93.0	13.97	4253	**96.7**	13.75	4037	0.27
6th class	91.2	13.43	4138	**94.6**	13.39	4155	0.25

2016 scores in **bold** are significantly[20] higher than the corresponding 2010 scores.

Table 2: Descriptive statistics and effect sizes for reading in Band 1 schools 2010-2016 in the SSP evaluation, by grade level

	2010			2016			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	***d***
2nd class	93.1	13.06	1835	**95.9**	13.30	1766	0.21
3rd class	89.8	13.09	2287	**94.3**	13.19	2378	0.34
5th class	90.6	13.62	2343	**94.7**	13.71	2233	0.30
6th class	88.6	12.53	2186	**92.5**	12.97	2230	0.31

2016 scores in **bold** are significantly higher than the corresponding 2010 scores.

[20] If the difference between two mean scores in this appendix is described as statistically significant, it means that there is a 95% or higher chance that the difference is real rather than due to chance. A statistical test has been carried out to establish this.

Table 3: Descriptive statistics and effect sizes for reading in Band 2 schools 2010-2016 in the SSP evaluation, by grade level

	2010			2016			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	96.4	12.83	1632	**99.4**	12.54	1624	0.24
3rd class	93.5	13.13	2029	**97.6**	12.61	1912	0.32
5th class	95.8	13.85	1910	**99.3**	13.39	1804	0.26
6th class	94.2	13.81	1952	**96.9**	13.48	1925	0.20

2016 scores in **bold** are significantly higher than the corresponding 2010 scores.

Table 4: Descriptive statistics and effect sizes for mathematics in urban School Support Programme (SSP) schools 2010-2016 in the SSP evaluation, by grade level

	2010			2016			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	94.6	14.11	3480	**97.3**	14.00	3408	0.19
3rd class	91.6	15.91	4319	**98.8**	15.76	4285	0.46
5th class	93.0	14.31	4255	**97.9**	15.42	4041	0.33
6th class	91.2	14.79	4146	**96.6**	15.33	4154	0.36

2016 scores in **bold** are significantly higher than the corresponding 2010 scores.

Table 5: Descriptive statistics and effect sizes for mathematics in Band 1 schools 2010-2016 in the SSP evaluation, by grade level

	2010			2016			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	91.9	13.73	1846	**95.0**	13.85	1784	0.23
3rd class	90.1	15.72	2290	**96.9**	15.91	2376	0.43
5th class	89.6	13.89	2347	**95.9**	15.58	2237	0.43
6th class	87.3	13.85	2192	**93.5**	15.05	2241	0.43

2016 scores in **bold** are significantly higher than the corresponding 2010 scores.

Table 6: Descriptive statistics and effect sizes for mathematics in Band 2 schools 2010-2016 in the SSP evaluation, by grade level

	2010			2016			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	96.1	14.20	1634	**99.5**	13.89	1624	0.24
3rd class	95.5	15.65	2029	**100.4**	15.55	1909	0.31
5th class	95.5	14.15	1908	**100.5**	14.92	1804	0.34
6th class	96.7	14.55	1954	**98.7**	15.43	1913	0.13

2016 scores in **bold** are significantly higher than the corresponding 2010 scores.

Table 7: Descriptive statistics and effect sizes for English reading in the 2009 and 2014 National Assessments, by grade level

	2009			2014			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	250.0	50.00	3839	**264.0**	47.51	4099	0.29
6th class	250.0	50.00	3803	**263.0**	48.73	4285	0.26

2014 scores in **bold** are significantly higher than the corresponding 2009 scores.

Table 8: Descriptive statistics and effect sizes for mathematics in the 2009 and 2014 National Assessments, by grade level

	2009			2014			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	250.0	50.00	3899	**263.6**	49.14	4128	0.28
6th class	250.0	50.00	3832	**261.7**	48.92	3312[21]	0.24

2014 scores in **bold** are significantly higher than the corresponding 2009 scores.

Table 9: Descriptive statistics and effect sizes for English reading in non-SSP schools in the 2009 and 2014 National Assessments, by grade level

	2009			2014			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	254.9	49.69	2841	**267.7**	47.00	3237	0.27
6th class	253.2	48.24	2814	**267.4**	48.09	3326	0.30

2014 scores in **bold** are significantly higher than the corresponding 2009 scores.

Table 10: Descriptive statistics and effect sizes for mathematics in non-SSP schools in the 2009 and 2014 National Assessments, by grade level

	2009			2014			
Grade level	*M*	*SD*	*n*	*M*	*SD*	*n*	*d*
2nd class	254.8	48.22	2886	**266.9**	48.82	3261	0.25
6th class	255.1	49.93	2833	**265.7**	47.79	2622	0.22

2014 scores in **bold** are significantly higher than the corresponding 2009 scores.

[21] During the administration of the 2009 National Assessments, concern was expressed by a number of class teachers about the length of the mathematics test for Sixth class pupils. The 2014 assessments were used as an opportunity to explore the feasibility of reducing the length of the Sixth class test in future rounds of the assessments. To this end, shortened versions of the mathematics test forms were administered to pupils in a random set of 20% of participating schools that had Sixth class pupils. Pupils who received the shortened test booklets had a mean mathematics score that was 4 scale points higher than pupils who took the regular-length test, and so were excluded from analyses where 2009 and 2014 scores were compared (Shiel et al., 2014). For this reason, the reported *n* for Sixth class mathematics is lower than might be expected (this also applies to Table 10).