

STANDARDISED ACHIEVEMENT
TESTS:
AN ANALYSIS OF THE RESULTS AT
PRIMARY SCHOOL LEVEL FOR
2011-12 AND 2012-13



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DEPARTMENT OF
EDUCATION AND SKILLS

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1. Introduction

This is a report on the results of standardised achievement tests that were administered by primary schools and forwarded to the Department of Education and Skills (DES) during the school years 2011-12 and 2012-13. The standardised tests were administered in English reading and Mathematics to pupils in second, fourth and sixth classes in all schools. Standardised tests were also administered in Irish reading to pupils in Irish-medium schools.

The purpose of this report is to provide an overview, at national level, of the performance of Irish pupils as reflected in the results of the standardised tests, and to provide advice on the implications of the findings for the future administration and use of standardised testing within the educational system.

The report will initially present the context in which the standardised tests were administered and an overview of the methodology employed to collect and analyse the test data. There follows an analysis of the test results for English reading, Mathematics and Irish reading respectively for the school years 2011-12 and 2012-13. There is also an analysis of the achievement of pupils relative to the test type used and relative to their Delivering Quality of Education in Schools (DEIS) or non-DEIS status, medium of instruction and gender composition of the school that they attend. The final section of the report presents conclusions and recommendations.

2. The context: Use and purpose of standardised achievement tests in primary schools

Standardised achievement tests have been in use in Irish primary schools since the 1970s and have at the discretion of schools been administered to pupils from first to sixth classes.

Department of Education and Skills (DES) requirements

In accordance with *Literacy and Numeracy for Learning and Life, the National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020*, the DES¹ has required all primary schools since 2011 to administer standardised achievement tests in English reading and Mathematics at the end of second, fourth and sixth classes. All schools are required to report the results to parents and, in the case of 6th class pupils, to post-primary schools. Irish-medium schools are also required to administer standardised tests in Irish reading at these class levels. Schools must also submit the aggregated data from standardised tests to the school's board of management, and to the DES via Esinet, the data input system that schools use to submit data to the DES.

The nature of standardised achievement tests

Standardised achievement tests are assessments that are 'norm-referenced' as opposed to 'criterion-referenced'. Norm-referenced tests are designed to compare and rank test takers in relation to one another. They provide information on whether pupils performed better or worse than a hypothetical average student. Performance is reported in terms of standard scores,

¹ The DES requirements regarding standardised achievement testing are outlined in Circular 0056/2011.

percentile ranks, or STen scores². On norm-referenced tests, the focus is on interpreting the performance of an individual (or group) relative to other individuals (or groups). In criterion-referenced testing, the individual's understanding of specific subject matter is evaluated against pre-specified criteria. The outcome is judged on the student's own performance and not with reference to the performance of others.

The standardised achievement tests in use in Irish primary schools are normed for the Irish population³ and this facilitates the comparison of a child's performance on the test with the performance of children of that class level in Irish primary schools. The National Assessments (NA) which are administered in a sample of schools every five years are norm-referenced but they also have a criterion-referenced reporting element in the form of proficiency levels.

Standardised achievement test instruments

Currently, there are two published sets of standardised achievement tests normed for the Irish population that primary schools can use:

- the Drumcondra tests which test English reading, Irish reading and Mathematics, and
- the Micra-T and Sigma-T tests which test English reading and Mathematics respectively.

The Drumcondra tests are produced by the Educational Research Centre (ERC), Drumcondra. Originally developed in 1993, the Drumcondra Primary Reading Test (DPRT) was revised in 2006. The Drumcondra Primary Mathematics Test (DPMT) was developed in 1997 and the current version was made available to schools in 2005. There are two versions of Triail Ghaeilge Dhroim Conrach (TGD), the standardised reading test available for Irish, one that is normed for use in English-medium schools and another that is normed for use in Irish-medium schools.

The Micra-T and Sigma-T tests were developed under the aegis of the Curriculum Development Unit, Mary Immaculate College, Limerick. The Micra-T test which was first developed in 1988 were subsequently revised and re-normed in 2002-03. The current series of Sigma-T tests was published in 2007.

The selection of the standardised test instrument is a matter for decision by individual schools, provided that the tests chosen are normed for the Irish population and are consistent with *The Primary School Curriculum* (1999).

Administration of tests

Standardised achievement tests are normally administered by class teachers although in some instances, they are administered by Learning Support teachers. In order to ensure the reliability of the results, teachers are expected to administer the tests under conditions specified in the test manual that accompanies the tests. Parallel forms of the tests are available in order to reduce opportunities for copying by pupils and to facilitate repeated administrations. In contrast

² The **Raw Score** corresponds to the number of questions answered correctly by the child. Raw Scores can be transformed to **Standard Scores** which report the position of a child relative to other children nationally. On most standardised achievement tests, the average Standard Score is set at 100. Performance on standardised achievement tests may also be reported in terms of a **STen Score**. These scores are on a scale of 1 to 10. Finally, the standard scores may be reported in terms of a **Percentile Rank** e.g. a child with a Percentile Rank of 60, achieved a score on the test that was the same as, or better than, 60% of children nationally, and lower than 40% of children nationally.

³ *Normed for the Irish population* means that the tests allow the teacher to compare a child's performance on the test with the performance of children of that class level or age in Irish primary schools.

with the National Assessments and international tests where the test booklets are secure, schools and teachers have access to the test booklets for the standardised tests in advance. Parents do not have access to the test booklets.

Purposes of standardised achievement testing

Standardised achievement testing is intended to provide teachers with accurate information on the achievements of pupils in reading and Mathematics. Teachers may use the results to monitor pupil progress and inform teaching and learning at individual, class and whole-school levels. They may also use the data to assist them in identifying pupils with learning difficulties in either reading or Mathematics. In addition, schools can analyse the results and use them to set and monitor targets for improvement as part of the School Self-Evaluation (SSE) process.

The standardised test data also have the potential to serve several useful purposes for the DES. Collecting and analysing the data on an annual basis will help the DES to monitor standards of achievement in literacy and numeracy. In this regard, the analysis of the standardised test data complements the data provided by National Assessments (NAs) of English, Mathematics and Irish⁴ and international assessments such as Progress in International Reading Literacy Study (PIRLS) and Trends in International Mathematics and Science Study (TIMSS)⁵. The intention is that the data provided by the standardised achievement tests will be used as baseline data for future reports. In addition to monitoring trends, the standardised test data will help to identify 'outliers' that is, schools that are performing below and above what is expected.

The DES is currently considering potential revisions to the existing system of allocating Resource Teaching/Learning Support resources to schools. The proposed revised allocation system, as set out in the National Council for Special Education (NCSE) Working Group Report: 'A Proposed New Model for Allocating Teaching Resources for Pupils with Special Educational Needs' (June 2014), makes provision for the inclusion of standardised test data as one of three elements on which to establish a school's educational profile. Additional teaching supports would then be allocated to schools in line with their educational profile.

In addition to the purposes outlined above, an analysis of the data from the first two years also provides a valuable opportunity to review the effectiveness of the standardised achievement tests currently available as tools for monitoring standards.

⁴ National Assessments (NAs) of achievement in English reading and Mathematics in primary schools are conducted on behalf of the DES by the Educational Research Centre (ERC) at intervals of approximately five years, most recently in 2014. The NAs involve the parallel testing of Mathematics and English reading achievement of Second and Sixth Class pupils from a probability sample of 150 primary schools including Scoileanna Lán-Ghaeilge (SLG) and Gaeltacht Schools. In 2010, the national assessments of English reading and Mathematics (NAIMS) were administered to pupils in a representative sample of SLG and Gaeltacht schools where Irish was the medium of instruction.

⁵ PIRLS and TIMSS are large, international comparative studies of achievement that assess the reading, and mathematics and science skills respectively of primary school pupils at the equivalent of fourth class. Combined, PIRLS and TIMSS form the world's largest educational assessment at primary school level. TIMSS takes place every four years and PIRLS every five years. In 2011, Ireland participated in both PIRLS and TIMSS. Ireland has only once previously taken part in TIMSS (in 1995), and never previously in PIRLS. Ireland will participate in the next cycle of TIMSS in 2015 and the next cycle of PIRLS in 2016.

3. Methodology

3.1 The collection of standardised achievement test data

Schools were requested to submit their standardised achievement test data via Esinet, the online data input system that they use to submit data to the DES. The data collection tool was designed by the DES in 2011-12 and piloted and refined during summer and autumn 2012. In both years, it proved necessary to send a number of reminders to schools that had either failed to make a return at all, or had entered their data but had not approved it. For a small minority of schools, the DES had to follow up individually and, in some instances, on a number of occasions.

Table 1 indicates the format used by schools when submitting their collated results online. As outlined in Table 1, each primary school was required to report the aggregated results of the standardised achievement tests in English reading and Mathematics administered to pupils in accordance with:

- class level- second class; fourth class; sixth class
- STen score- STen 1-3; STen 4; STen 5; STen 6; STen 7; STen 8-10
- the curricular area in which the test was taken- English reading; Mathematics; Irish reading
- the name of the test- Drumcondra Test or the Micra-T/Sigma-T Tests.

The results of pupils who achieved STens 1, 2 and 3 were banded together in the reporting process. Similarly, the result of pupils who achieved STens 8, 9 and 10 were also banded together.

Table 1: Standardised testing reporting template 2011-12 and 2012-13

Class	STen 1-3	STen 4	STen 5	STen 6	STen 7	STen 8-10	Numbers of pupils excluded from test	Total enrolment in class	Test administered
Second class									Drumcondra Reading Test or Micra-T Reading Test
Fourth class									Drumcondra Reading Test or Micra-T Reading Test
Sixth class									Drumcondra Reading Test or Micra-T Reading Test

Schools reported on the numbers of pupils who were excluded from the tests for reasons relating to special educational needs or language. As outlined in Circular 0056/2011, pupils may be excluded if, in the view of the school principal, they have a learning or physical disability that would prevent them from attempting the tests or, in the case of migrant pupils, where the level of English required in the test would make attempting the test inappropriate.

Schools provided the total pupil enrolment in each of the three classes. This allowed for the calculation of the numbers of pupils who were absent from the test.

Prior to the introduction of the National Literacy and Numeracy Strategy, schools had the option to administer the tests in either the autumn or the summer terms. Different sets of norms are available to facilitate the interpretation of test results at these times. As this arrangement was still in place when the mandatory administration and reporting of standardised tests was introduced, for 2011-12, schools were allowed to make returns for tests administered in either the autumn or summer terms of that school year. For 2012-13, all schools were required to make returns for tests administered in May or June of the summer term.

3.2 Approach to analysis

An initial analysis was carried out on the data to establish what percentages of pupils did not sit the tests either because they were excluded in line with Circular 0056/2011 or were absent.

In 2011-12, 2% of pupils were recorded as not sitting the tests due to absence and another 1% of pupils were exempted. In 2012-13, the percentage of pupils who were recorded as absent reduced to 1% whilst the percentage of pupils who were exempted remained constant at 1%. In the analysis for this report, the distribution of STen scores is based on the pupils who completed the tests only. This is consistent with the development of norms in a standardisation study.

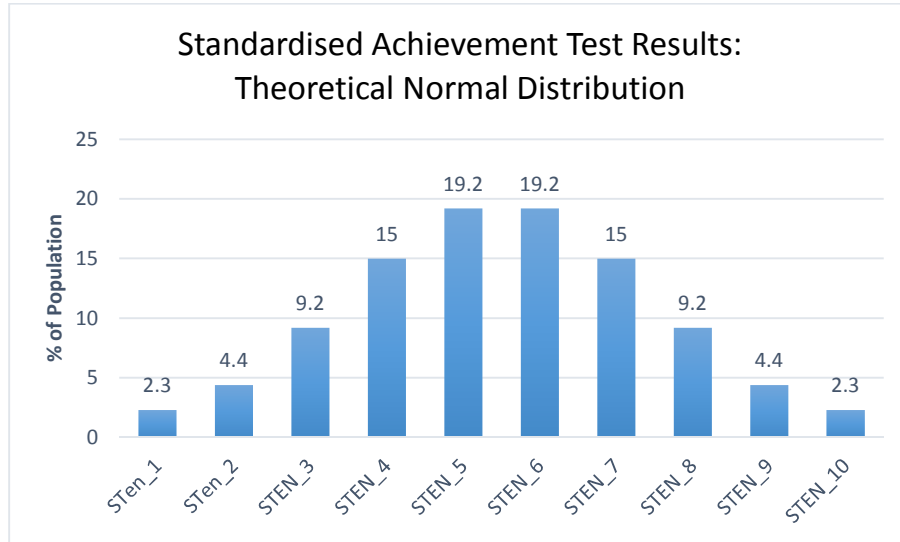
The Oracle Business Intelligence software in the DES was used to analyse the data. The data are presented using descriptive statistics. The analysis describes and compares the overall performance of pupils in English reading, Mathematics and Irish reading in both 2011-12 and 2012/13. It also describes their performance in both years relative to the test type selected by schools and relative to the DEIS/non-DEIS status, medium of instruction and school gender composition of the school that pupils attend. It was not possible to analyse the performance of pupils according to their gender as the aggregated data requested of schools did not differentiate between the performance of boys and girls.

Where possible, the standardised test data is considered in light of the findings from the 2009 and 2014 National Assessments (NA 2014) of English and Mathematics and the 2010 National Assessments of Irish in Irish-medium schools (NAIMS), and from Progress in International Reading Literacy Studies (PIRLS) 2011 and Trends in Mathematics and Science Study (TIMSS), 2011. However, it was not possible to draw firm conclusions from such comparisons due to the very different nature of these studies. The results for national and international assessments are reported with reference to average scores and percentages scoring at proficiency levels, whilst, in this report, they are reported with reference to percentages of pupils scoring at each of several STen score ranges.

The charts of the findings were produced using EXCEL. Data shown are rounded to the nearest whole number/percentage. Thus, percentages shown in tables may not sum to exactly 100%.

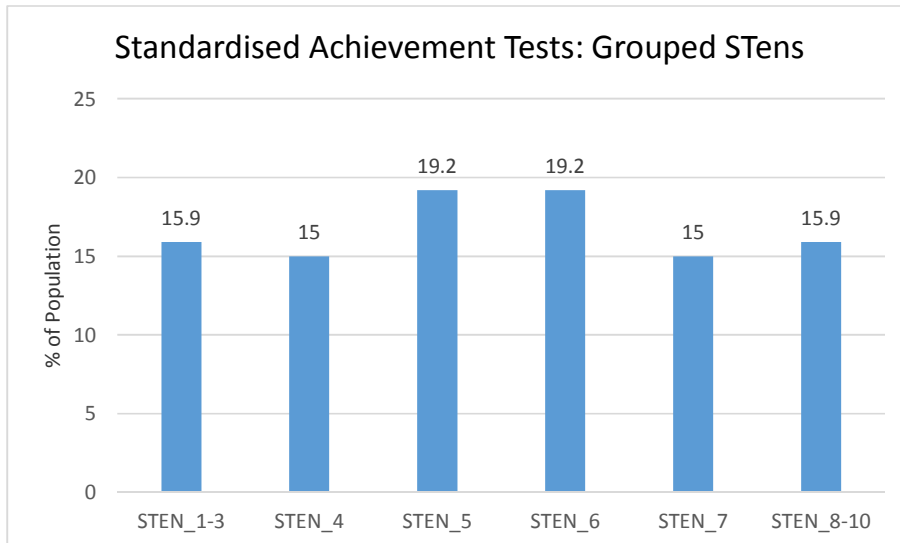
As the tests have been normed for the Irish population, the expectation would be that the data at national level would produce a curve broadly in line with the theoretical normal distribution as outlined in Chart 1. The results of the analyses are therefore presented relative to the theoretical normal distribution (Bell Curve) as presented in Chart 1.

Chart 1: Standardised achievement test results-theoretical normal distribution



As schools were requested to submit aggregated test results that combined STens 1-3 and STens 8-10 respectively, these STens are merged, as presented in Chart 2, to facilitate a comparison between the actual results and those anticipated in line with national norms.

Chart 2: Standardised achievement test results-grouped STens



4. Results of analysis- overall

4.1 School response

As indicated in Table 2, the total number of schools eligible to make a return for 2011-12 was 3,120⁶. Of the 3,120 eligible primary schools, the vast majority of schools (3, 113) submitted a return online.

The total number of schools eligible to make a return for 2012-13 was 3,119. All of these schools submitted a return online⁷.

Table 2: Response Rate- 2011-12 and 2012-13

	2011-12	2012-13
Eligible Schools	3, 120	3,119
Completed returns via Esinet	2, 971	3,090
Submitted but not 'approved' via Esinet	142	29
Submitted by post only ⁸	4	
Not submitted	3	
Number of schools included in this analysis	3, 113	3,119

4.2 English reading

In this section, the overall results in English reading are presented and analysed for 2011-12 and 2012-13 respectively.

4.2.1 English reading- Overall achievement

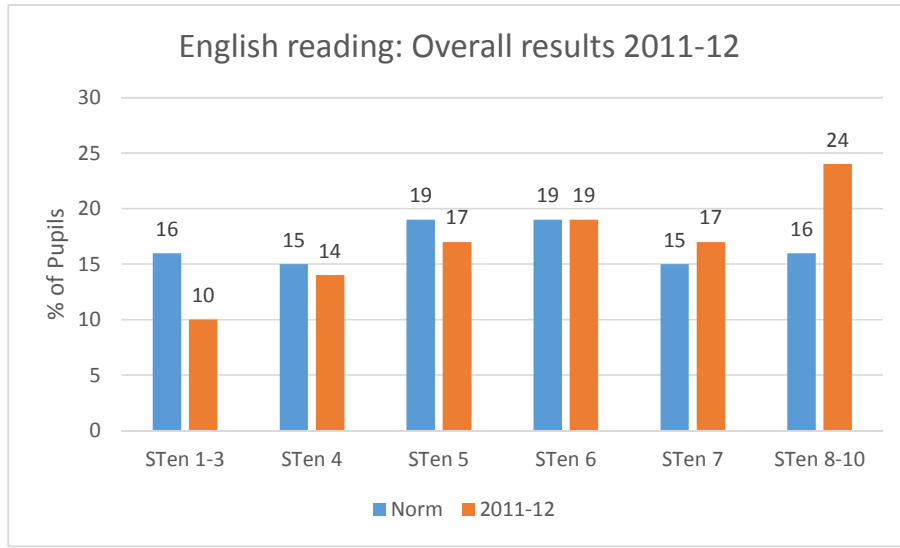
As indicated in Chart 3a, the overall results for English reading in 2011-12 are considerably better than would have been anticipated from tests that have been normed for the Irish population. The results for the mid-ranging STens are broadly in line with what would have been anticipated: 14% of pupils achieved STen 4, and 17% achieved STen 5 which is slightly less than the anticipated 15% and 19% respectively. In line with the theoretical normal distribution, 19% achieved STen 6 whilst 17% achieved STen 7 which is slightly in advance of the 15% anticipated on such tests. The key differences emerge at the upper and lower STens; only 10% of pupils (versus the 16% anticipated) performed at the lower STens of 1-3 inclusive. Meanwhile, 24% of pupils achieved the higher STens of 8-10 inclusive which is considerably greater than the 16% expected in tests that are standardised.

⁶ Note that the total number of primary schools aided by the DES in 2011-12 was 3,300. However, 180 schools were exempted from making returns as follows: 16 had either closed or amalgamated by September 2012; 35 were exempted as they were either new schools or junior schools that did not include second, fourth or sixth class; 129 special schools were exempted as all of their pupils had been exempted on the basis of special educational needs.

⁷ Note that the total number of primary schools aided by the DES in 2012-13 was 3,293. However, 174 schools were exempted from making returns as follows: 10 schools had either closed or amalgamated by September 2012; 38 schools were exempted as they were either new schools or junior schools that did not include second, fourth or sixth class; 126 special schools were exempted as all of their pupils had been exempted on the basis of special educational needs.

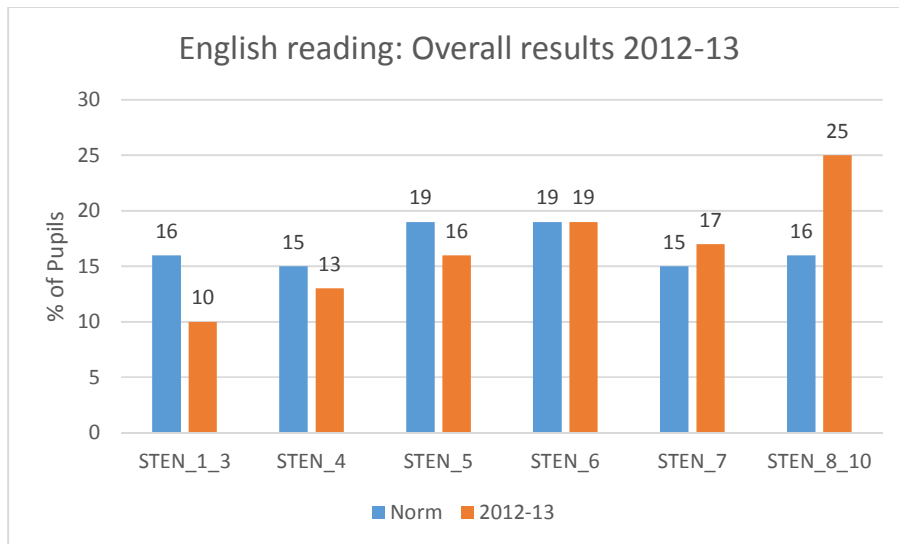
⁸ Results that were submitted by post only were not included in the analysis.

Chart 3a: English reading- Overall results 2011-12



Pupil achievement in 2012-13, as presented in Chart 3b, was better than would have been anticipated from tests that have been normed for the Irish population. The results at the lower end of the mid-ranging STens (STen 4: 13%, STen 5: 16%) indicate that slightly fewer children are achieving these STens than the 15% and 19% respectively than would have been anticipated. Pupil performance at STen 6 is in line with the theoretical normal distribution whilst the achievement of 17% at STen 7 is slightly ahead of the anticipated 15%. Considerably fewer pupils than anticipated achieve a STen in the region STen 1-3 (10% versus 16%) and considerably more achieve a STen in the STen 8-10 range (25% versus 16%).

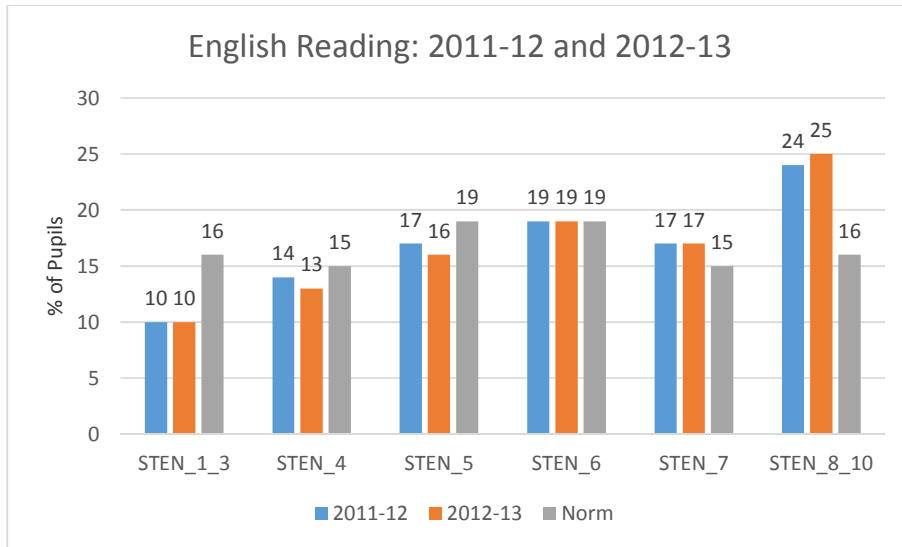
Chart 3b: English reading- Overall results 2012-13



As indicated in Chart 3c, the overall results in English reading are almost identical in 2011-12 and 2012-13. In both instances, the achievement at national level is well to the right of the theoretical normal distribution, indicating higher than expected performance. The 2012-13

results are very slightly higher than those of 2011-12. However, it is not feasible to establish trends with only two years' data.

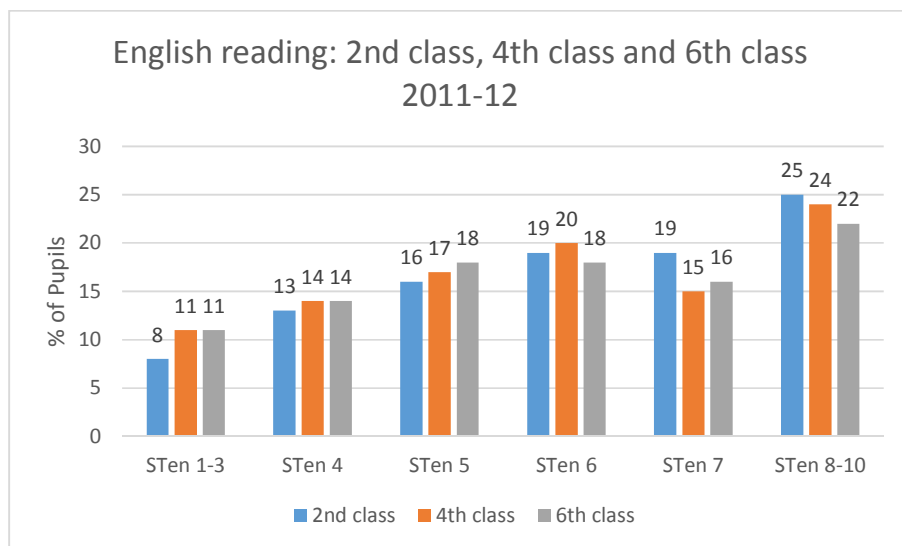
Chart 3c: English reading- Overall results 2011-12 and 2012-13



4.2.2 English reading- Achievement at class level

The above charts presented the collated data at national level for all three class groups. In order to establish whether the pattern is replicated at each class level, Charts 4a and 4b present the data at class level.

Chart 4a: English reading- Class results 2011-12

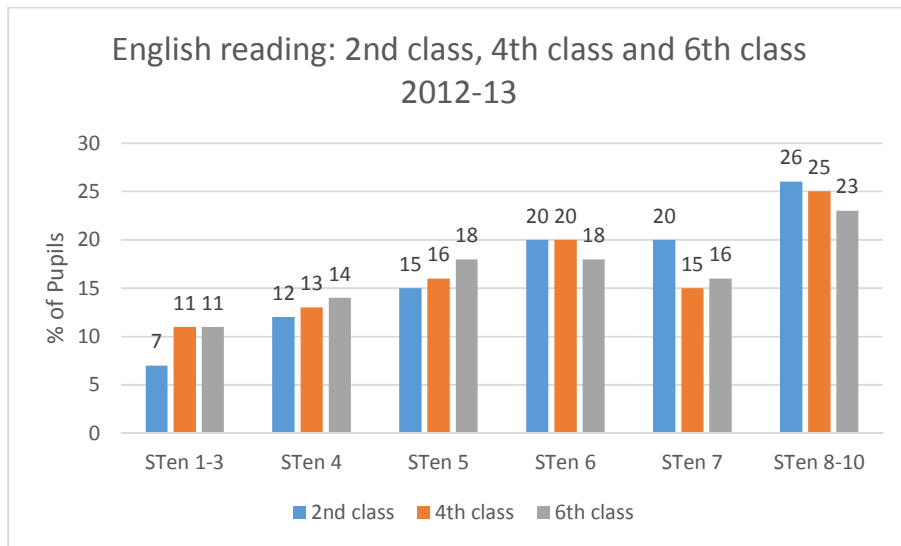


As Chart 4a indicates, the results for English reading in 2011-12 are broadly similar across all three class groups. However, it appears that the achievement diminishes progressively, albeit slightly, from second to sixth class. 25%, 24% and 22% of pupils in second class, fourth class and sixth class respectively achieved scores in the 8-10 STen range. However, a greater

difference appears at STen 7; 19% of pupils in second class achieved a STen of 7 whilst 15% and 16% of pupils in fourth and sixth class respectively achieved this STen.

The results at individual class level in 2012-13, as presented in Chart 4b, are broadly similar to those of 2011-12. Once again, it appears that the achievement of pupils in second class is higher than that of pupils in both fourth class and sixth class. The differences are particularly noteworthy at both STens 1-3 and STen 7. 7% of second class pupils achieved STen 1-3 in comparison with 11% of pupils at both fourth class and sixth class. Meanwhile, 20% of second class pupils achieved STen 7 whilst 15% and 16% of pupils in fourth class and sixth class respectively achieved this STen. The difference is slightly more pronounced than in 2011-12 when 8% of second class pupils achieved a STen 1-3 and 19% achieved STen 7.

Chart 4b: English reading- Class results 2012-13



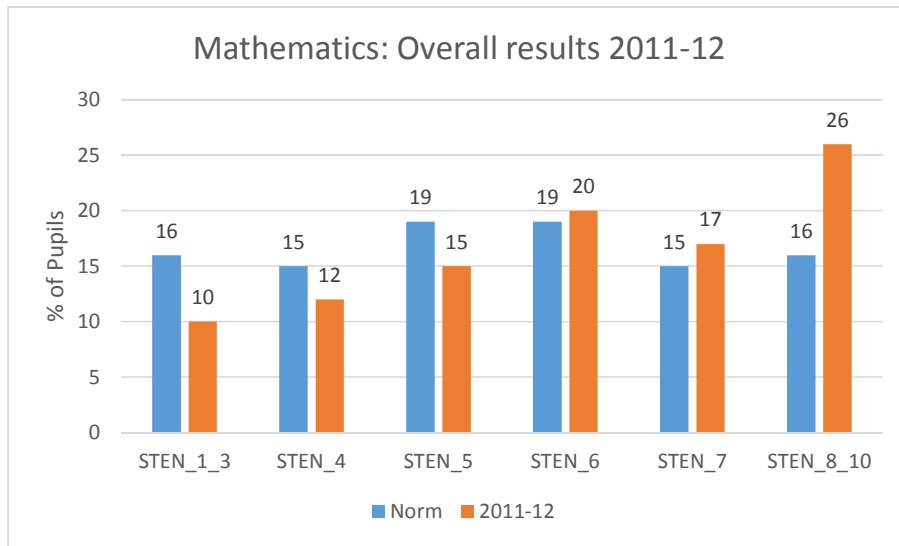
4.3 Mathematics

In this section, the overall results in Mathematics are presented and analysed for 2011-12 and 2012-13.

4.3.1 Mathematics- Overall achievement

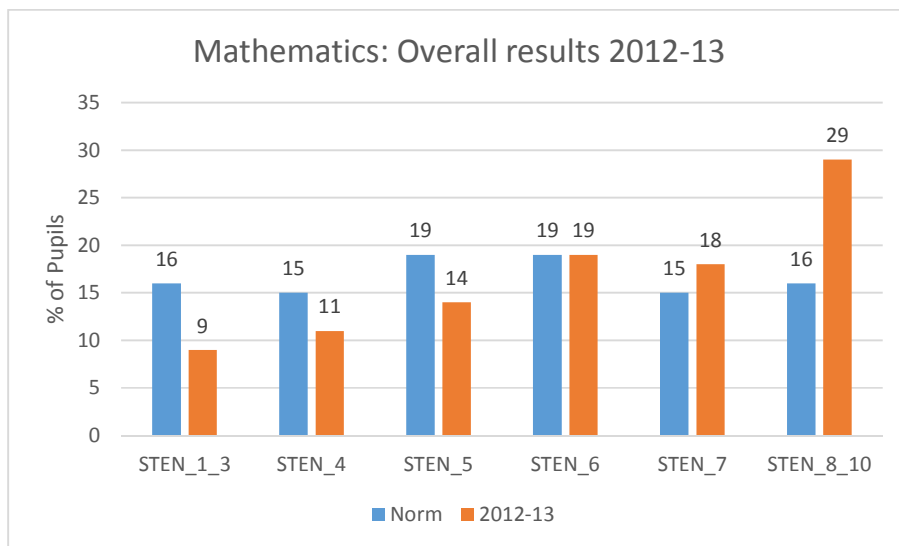
As Chart 5a indicates, in 2011-12, the overall achievement in Mathematics, similar to that for English reading, is well to the right of the theoretical normal distribution, indicating higher than expected performance. This is particularly pronounced at the upper and lower STen ranges; 10% of pupils achieved STens 1-3 whilst 26% of pupils achieved STens in the range 8-10 in contrast with the 16% expected at both STen ranges. At the mid-ranging STens, the pupil performance is also to the right of what would have been anticipated; 12% and 15% of pupils achieved STens of 4 and 5 respectively unlike the 15% and 19% that would have been expected at these two levels. Meanwhile, 20% of pupils (versus the anticipated 19%) and 17% (versus the anticipated 15%) achieved STen 6 and STen 7 respectively.

Chart 5a: Mathematics- Overall results 2011-12



As indicated in Chart 5b, the pupils' performance on Mathematics in 2012-13 is well to the right of the theoretical normal distribution, indicating higher than expected performance. With the exception of STen 6, where the results are in line with the anticipated 19%, the results at each other level are well in advance of the norm. Unlike the anticipated 16%, only 9% of pupils achieved a STen in the range of 1-3. The difference is most pronounced at the STen 8-10 range with almost twice as many (29%) achieving a STen in this range as the 15% anticipated.

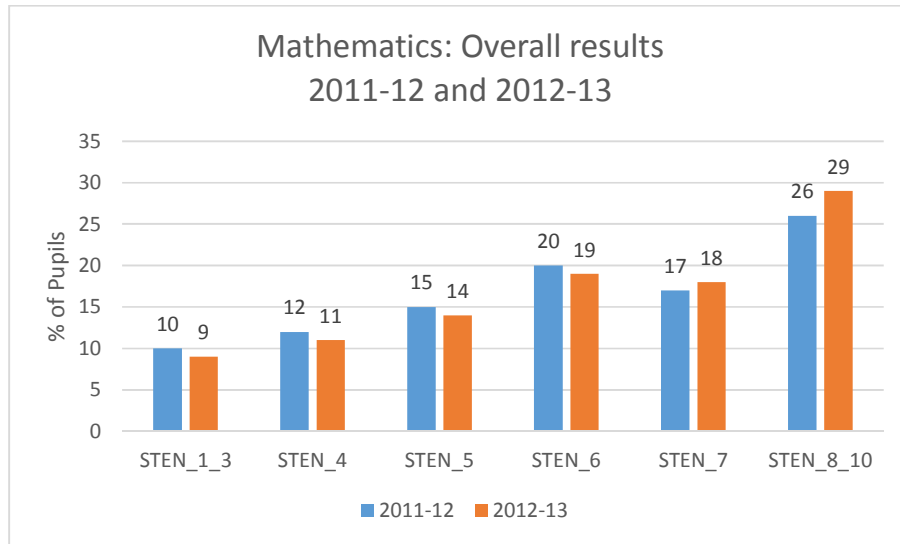
Chart 5b: Mathematics- Overall results 2012-13



When the Mathematics results for 2011-12 and 2012-13 are juxtaposed, as presented in Chart 5c, it appears that pupil performance in 2012-13 is slightly higher than that of 2011-12. This is evident at each STen level with the exception of STen 6; in 2012-13, 19% achieved STen 6 whereas 20% of pupils achieved this STen in 2011-12. However, the slight decrease at this level is redressed by the increase at both STen 7 and STens 8-10. In 2012-13, 29% of pupils achieved a STen 8-10 whilst 26% of pupils achieved STens in this range in 2011-12. Because

the STens 8-10 have been grouped, it is not possible to establish whether the increased achievement is concentrated at one of these STens or spread equitably across them. In both 2011-12 and 2012-13, the achievement at all STens, in particular STen 8-10, is considerably in advance of the national norm.

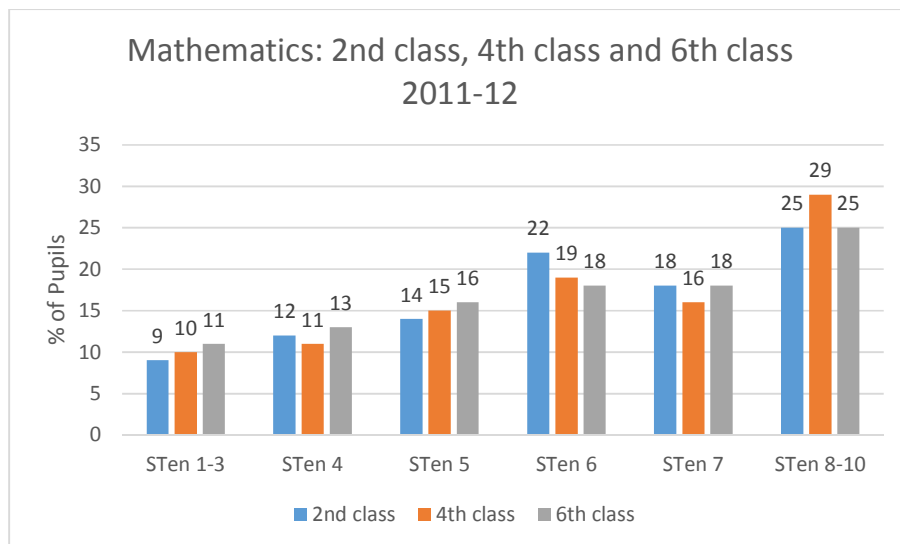
Chart 5c: Mathematics- Overall results 2011-12 and 2012-13



4.3.2 Mathematics- Achievement at class level

The above charts presented the collated data at national level for all three class groups. In order to establish whether the pattern is replicated at each class level, Charts 6a and 6b present the data at class level.

Chart 6a: Mathematics- Class results 2011-12

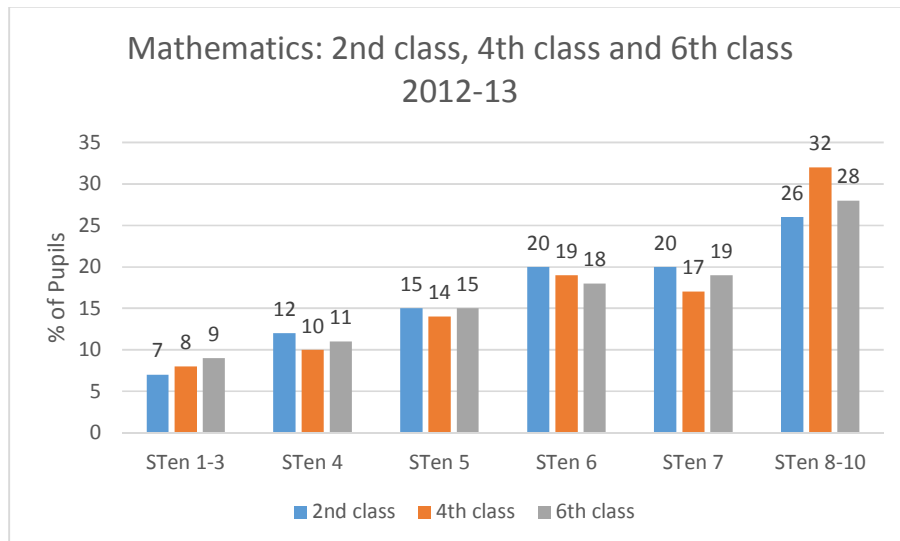


As indicated in Chart 6a, the achievement in Mathematics across all three class groups in 2011-12 is broadly similar in the lower ranging STens: STens 1-3, STen 4 and STen 5. However,

more pronounced differences emerge in the higher STens. Pupils in fourth class appear to outperform those in both second class and sixth class with 29% of them achieving STens in the 8-10 range in comparison with 25% at both other class levels. Pupils in second class also appear to slightly outperform those in sixth class; whilst 18% and 25% in both year groups achieve STens 7 and 8-10 respectively, 22% of pupils in second class achieved a STen of 6 in comparison with 18% in sixth class.

With the exception of STen 5, the pattern of pupil achievement in 2012-13, as presented in Chart 6b, is almost identical at each class level with that of 2011-12. At STen 5, there is a very small shift with slightly more pupils in second class than fourth class achieving this STen. What is particularly noteworthy in both 2011-12 and 2012-13 is the high percentage of pupils in fourth class who achieve a STen of 8-10. Because these STens have been grouped, it is not possible to establish whether this is represented at each of the three levels (STen 8, STen 9 or STen 10) or clustered at one.

Chart 6b: Mathematics- Class results 2012-13



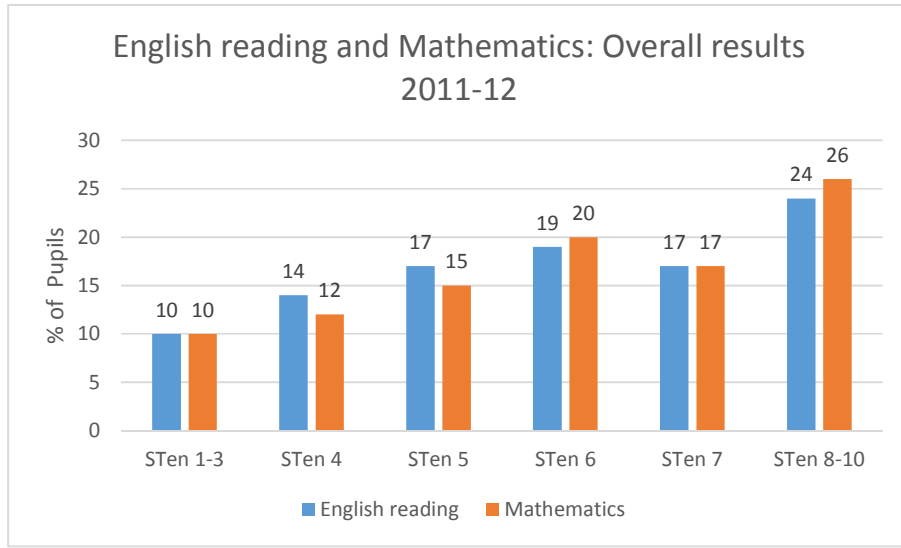
4.4 Achievement in English reading compared with achievement in Mathematics

As the English reading and Mathematics standardised tests were normed separately, the relative performance of pupils in English and Mathematics cannot be compared directly. What can be compared is the performance of pupils in English reading in relation to the norms for English reading and the performance of pupils in Mathematics in relation to the norms for Mathematics.

This section explores how achievement in English reading relative to the norm for reading compares with that of Mathematics relative to the norm for Mathematics.

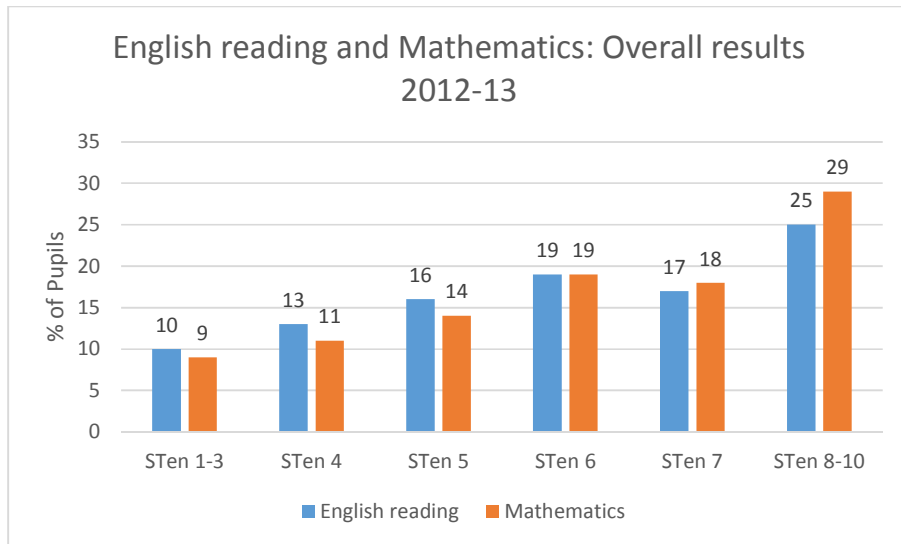
As Chart 7a indicates, in 2011-12, the overall achievement in English reading and Mathematics relative to their respective norms is very similar, with achievement in Mathematics appearing to be slightly higher than that in English reading. 24% and 26% of pupils achieved STens 8-10 in English reading and Mathematics respectively. Meanwhile, 10% of pupils achieved STens 1-3 in English reading and Mathematics respectively.

Chart 7a: English reading and Mathematics- Overall results 2011-12



The pattern of achievement that emerged in 2012-13, as presented in Chart 7b, repeats that of 2011-12. Once again, the performance in Mathematics, relative to the norm for Mathematics, was higher than that in English reading, relative to the norm for English. As no increase or decrease at any STen level with the exception of STens 8-10 in Mathematics, was greater than 1%, these variations are in line with what would be expected from year to year. What is noteworthy is the apparent growing gap in performance at STens 8-10. Whilst there is an increase of 1% in pupils achieving this STen in English reading (24% in 2011-12 and 25% in 2012-13), there is an increase of 3% in pupils achieving STens 8-10 in Mathematics from 26% (2011-12) to 29% (2012-13).

Chart 7b: English reading and Mathematics- Overall results 2012-13



The data in Chart 7a and Chart 7b does not support the conclusion that pupils' performance in Mathematics in the standardised tests is actually better than their performance in English reading. What can be concluded is that the performance of pupils in relation to the anticipated

performance in Mathematics appears to be better than their performance in English reading in relation to the anticipated performance in English reading.

4.5 Conclusions: Achievement of pupils in English reading and Mathematics

The overall results for English reading in 2011-12 and 2012-13 are similar although the results for 2012-13 are slightly higher. In both instances, the achievement at national level is well to the right of the theoretical normal distribution (Bell Curve), indicating higher than expected performance. This is particularly pronounced at the upper and lower STen ranges. While the results are broadly similar across the three class groups, the achievement of pupils in second class in English reading is higher than that of pupils in both fourth class and sixth class.

The overall results for Mathematics in 2011-12 and 2012-13 are similar although the level of pupil performance in 2012-13 is slightly higher than in 2011-12. For both years, the achievement at national level is well to the right of the theoretical normal distribution (Bell Curve), indicating higher than expected performance. As for English reading, this is particularly pronounced at the upper and lower STen ranges.

In both 2011-12 and 2012-13, pupils' performance in Mathematics exceeded their performance in English reading relative to the respective expected norms for these domains. In contrast, the results over the years of National Assessments, including those for 2014, and international tests have indicated that the performance of Irish pupils in English reading is considerably in advance of their achievement in Mathematics.

The fact that pupil performance on tests normed for the Irish population for English reading and Mathematics is so far to the right of the theoretical normal distribution for two consecutive years could indeed be reflective of an actual improvement in the achievement of pupils in line with the implementation of the National Literacy and Numeracy Strategy. The National Assessments 2014 (NA 2014) indicate that there has been a significant improvement in the achievement of pupils in English reading and Mathematics relative to their performance in 2009. This contrasts with the relatively stable performance since National Assessments in both English and Mathematics commenced in the seventies and eighties.

On the other hand, the extent of the divergence in the results from the theoretical normal distribution could be reflective of the fact that the current tests have been in use for at least seven years and the distributions of performance would have changed from the distributions obtained at standardisation. Teacher and pupil familiarity with the format of the tests could also have contributed to divergence from the theoretical normal distribution. While the conditions for the administration of the tests are specified in the test manuals, the arrangements for their administration may vary from school to school and this could also impact on the results.

It is difficult to explain the anomaly where pupils' achievement on standardised tests of Mathematics appears to exceed their achievement on the standardised tests of English reading relative to the respective expected norms for these domains, in contrast with the consistently superior performance of pupils on English reading in national and international assessments. This anomaly may be reflective of mathematics tests being more sensitive to instructional changes in schools in recent years and/or greater test familiarity. It may also be related to structural and content differences between the standardised tests available to schools and external tests. These issues merit further investigation.

5. Results of analysis-type of school

The analysis compared schools on the basis of type: DEIS/non-DEIS status, school gender composition and medium of instruction, while conscious of the limited potential for such analysis.

5.1 DEIS status

Delivering Equality of Opportunity in Schools (DEIS), the Action Plan for Educational Inclusion, which was launched in May 2005, is the DES policy instrument to address educational disadvantage. The action plan focuses on addressing and prioritising the educational needs of children and young people from disadvantaged communities, from pre-school through to second-level education (3 to 18 years). Primary and post-primary schools participating in DEIS receive significant additional supports and resources, including additional staffing, to assist them in achieving the aims of the initiative.

This section compares the relative performance of pupils in schools that have DEIS status (DEIS schools) with that of pupils in schools that do not have DEIS status (i.e., non-DEIS schools).

Table 3: School DEIS status 2011-12 and 2012-13

DEIS Status	Academic Year	Number of Schools	% of Total Schools		Number of Pupils	% of Total Pupils
DEIS	2011	645 ⁹	20.72%		76,564	19.87%
non-DEIS	2011	2468	79.28%		308,721	80.13%
DEIS	2012	645	20.67%		76,855	19.81%
non-DEIS	2012	2474	79.32%		311,034	80.19%

As shown in Table 3, the number of DEIS schools (645) that have submitted data has remained constant over 2011-12 and 2012-13 whilst the number of non-DEIS schools that have submitted data has increased by 6 from 2468 in 2011-12 to 2474 in 2012-13. The number of pupils in both categories has also increased. However, the relative percentage of both schools and pupils remains almost the same. In both years, DEIS and non-DEIS schools comprised 21% and 79% respectively of the total number of schools, Meanwhile DEIS pupils and non-DEIS pupils comprised 20% and 80% respectively of the total number of pupils.

The following section compares the relative performance of DEIS and non-DEIS pupils in both English reading and Mathematics in both 2011-12 and 2012-13.

5.1.1 English reading- DEIS status

As indicated in Chart 8a, pupil performance in 2011-12 varies considerably across both types of school with pupils in non-DEIS schools outperforming their peers in DEIS schools. This is particularly pronounced in both the lower and the higher STen bands; 19% of pupils in DEIS schools achieve STens 1-3 whilst 8% of pupils in non-DEIS schools do so. It should be noted that at 19%, this is only 3% higher than the 16% that would have been anticipated nationally in a standardised test. Meanwhile, 26% of non-DEIS pupils achieve a STen in the range of 8-10 in comparison with 13% of pupils in non-DEIS schools. The performance of pupils in DEIS

⁹ 658 primary schools nationally have DEIS status. As some schools did not have a second, fourth or sixth class, they were not required to submit standardised test results. 645 schools with DEIS status were required to make a return.

schools is broadly similar across STens 1-3 (19%), STen 4 (19%), STen 5 (18%) and STen 6 (18%) with a lower percentage (13%) attaining either STen 7 or STens 8-10. This is in contrast to the achievement of pupils in non-DEIS schools where the results more closely resemble an upward slant than a curve.

Chart 8a: English reading- DEIS and non-DEIS pupils 2011-12

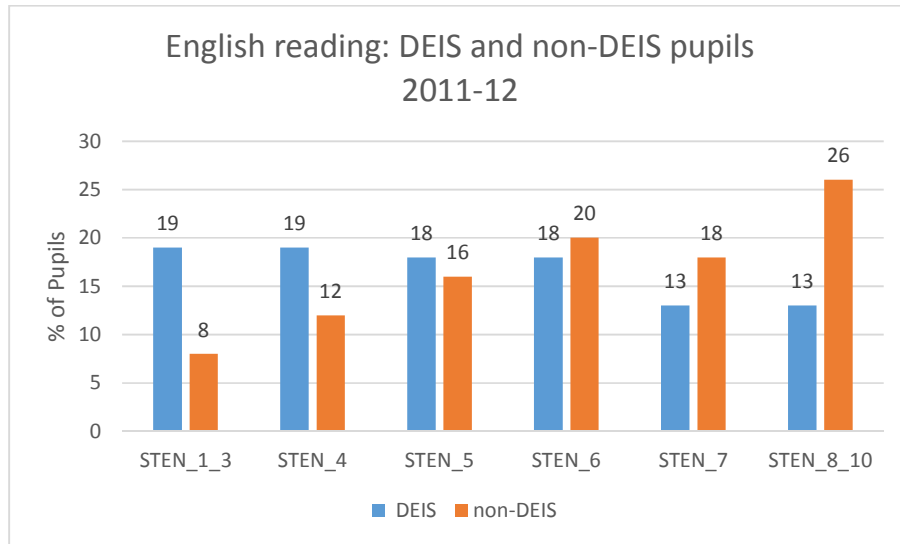
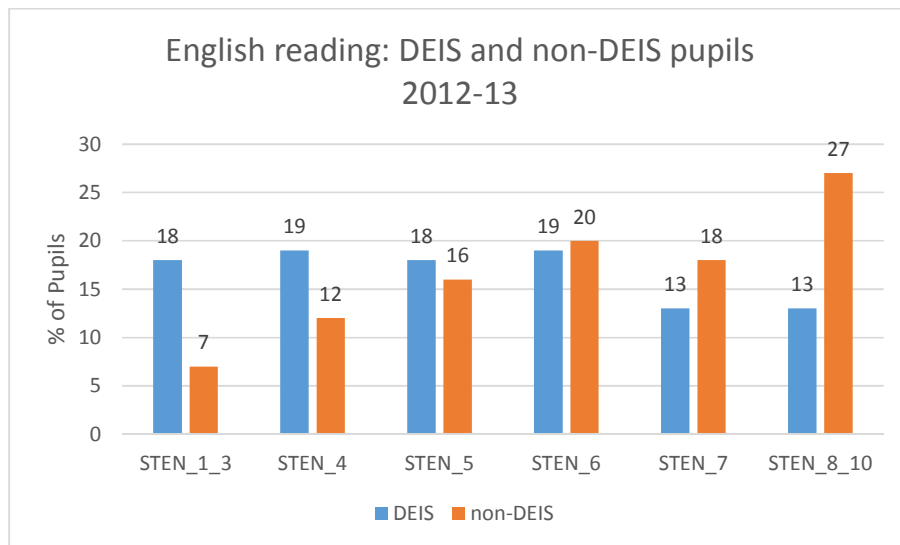


Chart 8b: English reading- DEIS and non-DEIS pupils 2012-13



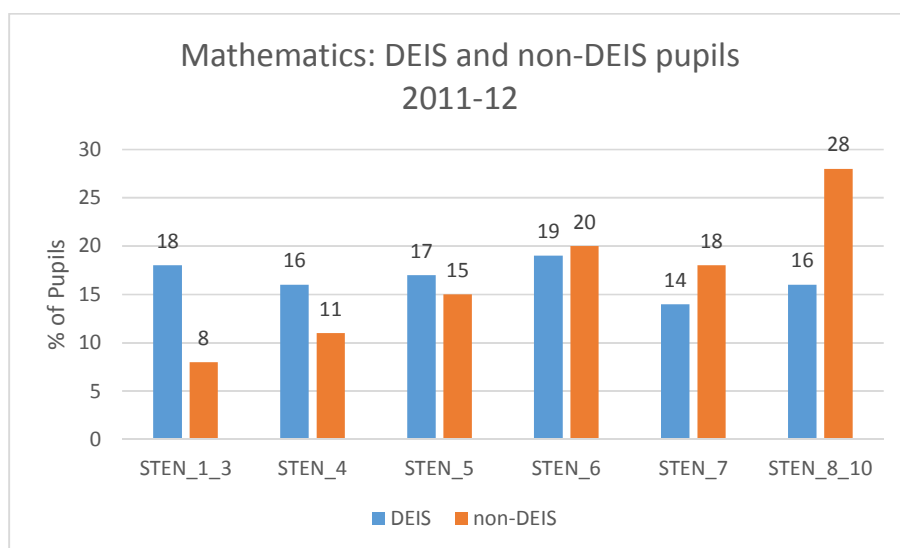
The achievement in English reading of pupils in DEIS and non-DEIS schools in 2012-13, as presented in Chart 8b, essentially mirrors the achievement of pupils in these schools in 2011-12. In 2012-13, 1% fewer pupils attain STens 1-3 than in 2011-12 that is, 18% (DEIS schools) and 7% (non-DEIS schools) in 2012-13 versus 19% (DEIS schools) and 8% (non-DEIS schools) in 2011-12. A considerable gap exists again between the schools at STen 4 with 19% of pupils in DEIS schools versus 12% of pupils in non-DEIS schools achieving this STen. The gap narrows at both STens 5 and 6 but it widens again at STens 7 and 8-10. Whilst the percentage

of pupils achieving STens 8-10 in non-DEIS schools increased by 1% to 27%, the percentage of pupils in DEIS schools achieving STens 8-10 remained constant at 13%.

5.1.2 Mathematics- DEIS status

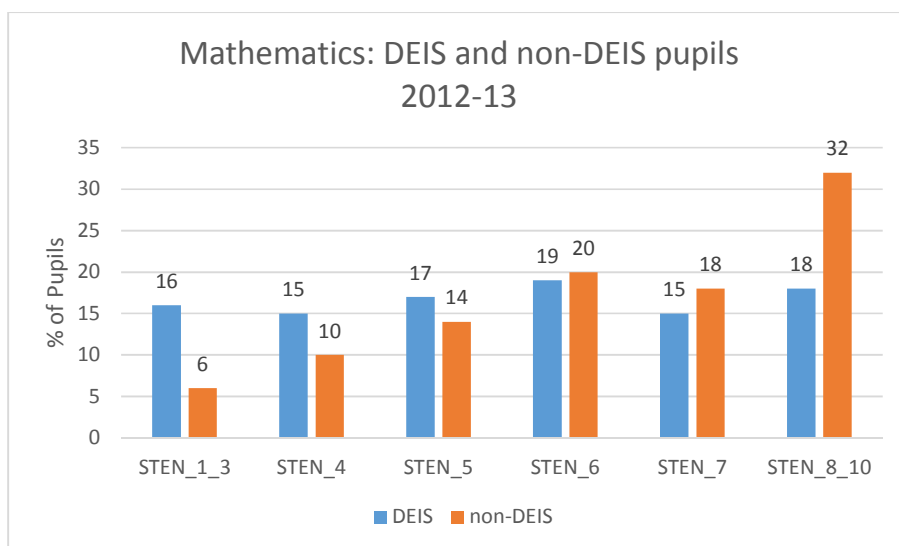
As indicated in Chart 9a, in 2011-12, achievement in Mathematics in relation to DEIS/non-DEIS status essentially mirrors that of achievement in English with pupils in both school types, achieving marginally higher scores in Mathematics. Overall, pupils in non-DEIS schools achieve considerably higher scores than those in DEIS schools; 28% and 16% of pupils attending non-DEIS and DEIS schools respectively achieved STens 8-10. Once again, the achievement of pupils in non-DEIS schools is distributed quite evenly amongst the mid-ranging STens. Of note is the greater percentage of pupils in DEIS schools who attain STens 8-10 (16%) in Mathematics versus English (13%).

Chart 9a: Mathematics- DEIS and non-DEIS pupils 2011-12



In 2012-13, the achievement in Mathematics in relation to DEIS/non-DEIS status, as presented in Chart 9b, is very similar to that in 2011-12. Once again, a considerably greater percentage of pupils in DEIS schools (16%) achieved a STen 1-3 than in non-DEIS schools (6%) and there is also quite a large difference in achievement at STen 4; 15% of pupils in DEIS schools achieved this STen versus 10% in non-DEIS schools. However, it should be noted that the achievement of pupils in DEIS schools at these lower STen levels is broadly in line with the theoretical normal distribution. Whilst there is no more than a 3% difference in achievement between DEIS schools and non-DEIS schools at STen levels 5 to 7 inclusive, a considerable gap emerges again at the upper STen level of 8-10 with 18% of pupils in DEIS schools versus 32% of pupils in non-DEIS schools achieving this level.

Chart 9b: Mathematics- DEIS and non-DEIS pupils 2012-13



5.1.3 Conclusions- DEIS status

In both 2011-12 and 2012-13, the overall performance in English reading and Mathematics of pupils in non-DEIS schools is considerably better than that of pupils in DEIS schools. This is particularly pronounced in both the lower and the higher STen bands. Nevertheless, the percentage of pupils in DEIS schools achieving STens in the lower range (STens 1-3) is, at most, only 3% above the theoretical normal distribution (i.e. Bell Curve) for that range. Similarly, the percentage of pupils achieving STens 8-10 is, at most, only 3% below the theoretical normal distribution (i.e. Bell Curve) for that range.

Although it is not possible to track trends on the basis of two years of data, the initial standardised test results data indicate that the achievement in English reading and Mathematics of pupils in DEIS schools has remained relatively constant over the two years. However, the findings of recent DEIS evaluations by both the Inspectorate and the Educational Research Centre highlight achievement gains in the literacy and numeracy levels of pupils in DEIS primary schools. Similarly, the TIMSS 2011 data indicate improved performance in Mathematics among low-achieving pupils. The NA 2014 also indicate an improved performance in the achievement of pupils in DEIS schools, particularly those in DEIS Band 2 schools. It is noted that this is reflective of a general improvement in reading and mathematics achievement nationally rather than from participation in the programme itself. An ongoing challenge for DEIS schools is to reduce the number of pupils achieving the STens in the lower ranges and increase the number achieving the upper STens. As collated data has been submitted for STens 1-3 and STens 8-10, it is not possible to establish whether the results within these bands have remained constant or whether there has been an improvement.

5.2 School gender composition

This section presents the analysis of the data in accordance with school gender composition. In making their returns, schools self-categorised in accordance with the groups outlined in Table 4-below: All Boys; All Girls; Co-educational; Senior Girls/Infant co-educational schools.

As Table 4 indicates, the vast majority of the schools (86%) are Co-educational schools. 7% of the schools are All Boys schools whilst the remaining schools are divided between All Girls' schools (4%) and Senior Girls/Infant co-educational schools (3%). This imbalance needs to be borne in mind in any comparison of the results across these schools.

Table 4: School gender composition 2011-12 and 2012-13

	2011-12 Totals	2011-12 %	2012-13 Totals	2012-13 %
All Boys	217	7%	214	7%
All Girls	133	4%	132	4%
Co-educational	2,668	86%	2678	86%
Senior Girls/ Infant co-educational	95	3%	95	3%
Total	3,113	100%	3, 119	100%

Table 5 presents the same schools in relation to both pupil gender and DEIS status. It shows that the percentage of schools with DEIS status is not constant across the various school types. Although the vast majority of the schools are Co-educational, only 18% of them have DEIS status. This differs to the contexts of the other schools as 36% of All Boys schools, 34% of All Girls schools and 36% of the Senior Girls/Infant Co-educational schools have DEIS status.

Table 5: School gender composition and DEIS status

	Totals	DEIS		non-DEIS	
		Number	%	Number	%
All Boys: 2011-12	217	78	36%	139	64%
All Boys: 2012-13	214	77	36%	137	64%
All Girls: 2011-12	133	45	34%	88	66%
All Girls: 2012-13	132	45	34%	87	66%
Co-educational: 2011-12	2668	488	18%	2180	82%
Co-educational: 2012-13	2678	489	18%	2189	82%
Senior Girls/Infant co-educational: 2011-12	95	34	36%	6	64%
Senior Girls/Infant Co- educational: 2012-13	95	34	36%	6	64%

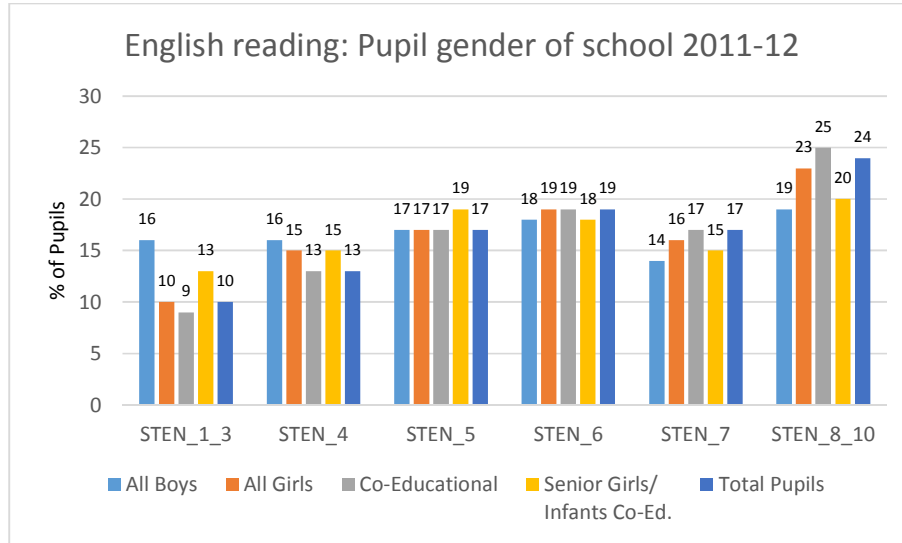
As the single-sex schools are over-represented in DEIS in relation to the Co-educational schools, there may be factors other than pupil gender composition that may account for any differences in pupil achievement across the schools. Consequently, the following section presents descriptive statistics in relation to both English reading and Mathematics but does not draw conclusions.

5.2.1 English reading- School gender composition

Bearing in mind the limitations outlined above, pupils in Co-educational schools and All Girls schools, as indicated in Chart 10a, appear to outperform pupils in All Boys and Senior Girls/Infant co-educational schools in English reading. For example, smaller percentages of pupils in both Co-educational and All Girls schools (9% and 10% respectively) achieved STens 1-3 than pupils in either All Boys or Senior Girls/Infant co-educational schools(16% and 13% respectively). Greater percentages of pupils in both Co-educational and All Girls schools (25%

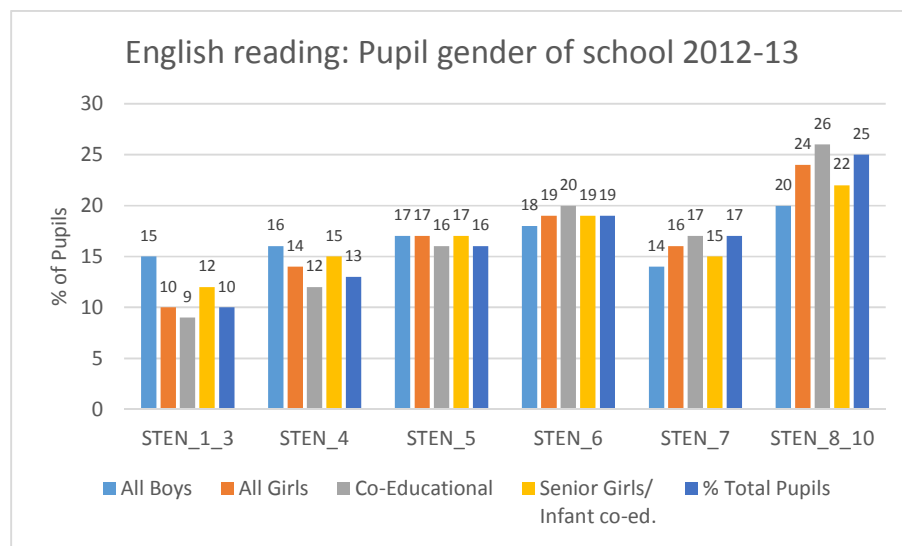
and 23% respectively) achieved STens 8-10 than did pupils in the other two school types. The greatest percentage of pupils achieving STens 1-3 (16%) were pupils attending All Boys schools.

Chart 10a: English reading- School gender composition 2011-12



In 2012-13, the pattern of achievement in English reading in relation to school gender composition, as presented in Chart 10b, is almost identical to that in 2011-12. There are some small variations; for example, in All Boys schools, the percentage of pupils who achieved a STen 1-3 decreased from 16% to 15% whilst the percentage of those who achieved a STen 8-10 increased from 19% to 20%. Similarly, in Senior Girls/Infant co-educational schools, the percentage of pupils who achieved a STen 1-3 decreased from 13% to 12% whilst the percentage of those who achieved a STen 8-10 increased from 20% to 22%. However, these and other similar small variations are in line with what could be expected from year to year.

Chart 10b: English reading- School gender composition 2012-13

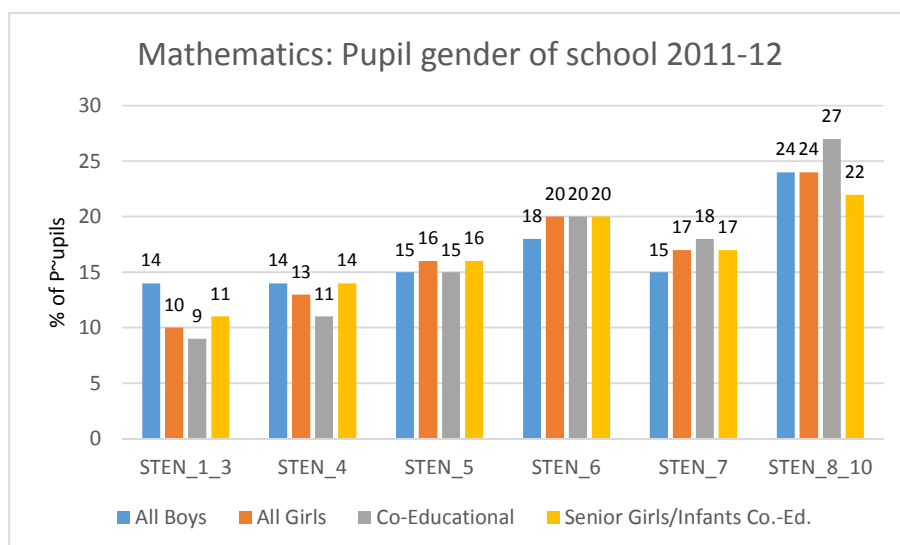


5.2.2 Mathematics- School gender composition

For reasons outlined above, this section presents descriptive statistics in relation to achievement in standardised tests in Mathematics.

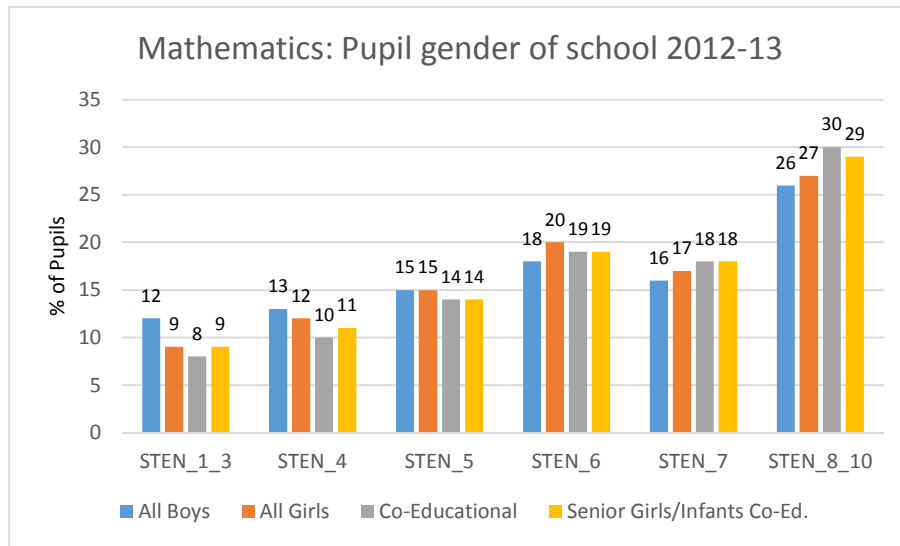
In Mathematics for 2011-12, as indicated in Chart 11a, Co-educational schools appear to outperform all other gender types with the smallest percentage (9%) achieving the lower STens and the greatest percentage (27%) achieving in the highest STen range (8-10). A greater percentage of pupils in All Boys schools (14%) achieved STens 1-3 than any of the other school types, All Girls (10%), Co-educational (9%) or Senior Girls/Infant co-educational (11%). The performance of pupils in both All Boys and All Girls schools is broadly similar across all STens with the exception of the lower STen range of 1-3. What is particularly noteworthy is the greater percentage of pupils in All Boys schools who achieved STens (8-10) in Mathematics (24%) than in English (19%).

Chart 11a: Mathematics- School gender composition 2011-12



As presented in Chart 11b, relative achievement across the schools in Mathematics in 2012-13 is, once again, broadly similar across the schools with the overall achievement for each school type rising. At the STen range 1-3, the gap between the All Girls (9%), Co-educational (8%) and Senior Girls/Infant co-educational schools (9%) has levelled out. Meanwhile, the percentage of pupils in All Boys schools (12%) achieving STens in this range remains the highest albeit having reduced from 14% in 2011-12. In the mid-ranging STens 4, 5 and 6, the achievement of all four school types has also levelled out. Of note is the achievement of Senior Girls/Infant co-educational schools; the percentage of pupils in these schools achieving STens 1-3 has reduced from 11% in 2011-12 to 9% whilst the percentage of pupils achieving STens 8-10 has increased from 22% to 29%. On the basis of only two years' data, it is not feasible to determine whether or not a trend is emerging at this point.

Chart 11b: Mathematics- School gender composition 2012-13



5.2.3 Conclusions- School gender composition

In English reading for 2011-12 and 2012-13, pupils in Co-educational schools and All Girls schools appear to outperform pupils in All Boys and Senior Girls/Infant co-educational schools. Lower percentages of pupils in Co-educational and All Girls schools achieved STens 1-3 than pupils in either All Boys or Senior Girls/Infant co-educational schools. Higher percentages of pupils in both Co-educational and All Girls schools than in the other two school gender types achieved STens 8-10.

In Mathematics for 2011-12 and 2012-13, Co-educational schools appear to outperform all other gender types with the smallest percentage achieving the lower STens and the highest percentage achieving in the highest STen range (8-10). While the relative achievement in Mathematics across the schools was broadly similar over the two years, there was a reduction in the percentage of pupils in Senior Girls/Infant co-educational schools achieving STens 1-3, and an increase in the percentage achieving STens 8-10. On the basis of two years' data, it is not possible to determine whether or not a trend is emerging at this point.

Pupils in Co-educational schools appear to outperform pupils in other school gender types in both English reading and Mathematics. Because a greater percentage of single-sex schools (34%-36%) have DEIS status than the Co-educational schools (18%), factors other than pupil gender could have contributed to the achievement of pupils in these schools.

Nonetheless, it is notable that in the standardised tests for both English reading and Mathematics, considerably more pupils in All Boys schools achieved STens 1-3 than any other school gender type including All Girls and Senior Girls/Infant co-educational schools where there is a similar proportion of schools with DEIS status. Similarly, NA 2009 found that second class pupils in All Boys schools performed significantly less well than any other school gender type. Consequently, the performance of pupils in All Boys schools merits ongoing monitoring.

5.3 Medium of instruction

The section presents the results of the analysis of the standardised tests returns in accordance with the medium of instruction.

Pupils in Ireland attend schools where the medium of instruction is either through English, or through Irish or through the medium of both English and Irish. Irish-medium education takes place in Irish-medium schools located in the Gaeltacht and in Scoileanna Lán-Ghaeilge (SLG) that are outside the official Gaeltacht areas. Schools self-report their medium of instruction on the annual School Census form by selecting one of the following criteria:

- Irish as the normal language of communication with the class for all subjects (activities) except the teaching of English
- Irish used as the normal language of communication with the class for at least one subject (activity) other than Irish
- Irish not used as the normal language of communication with the class for any subject (activity) other than Irish.

As Table 6 indicates, the medium of instruction in the vast majority of schools (91%) is English. Approximately 3% of schools are Irish-medium schools in the Gaeltacht, approximately 4% of schools are SLG and 1% are schools where instruction is conducted partly through Irish. The category 'partly through Irish' may refer to teaching one subject through Irish or a concerted effort by all staff to teach several subjects through Irish. As this category comprises only 1% of pupils, it was considered too small for inclusion in the analysis below.

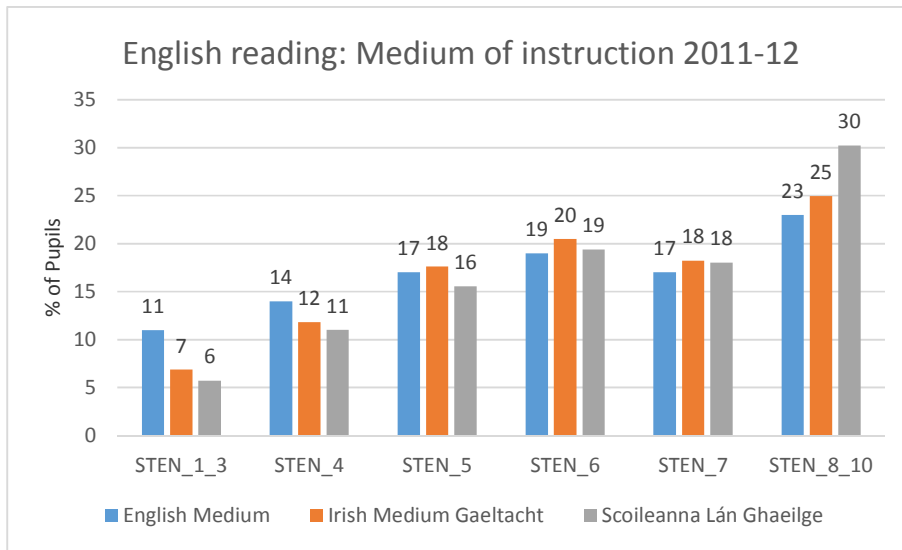
Table 6: Schools- Medium of instruction 2011-12 and 2012-13

Medium of Instruction	Academic Year	Number of Schools	% of Total
Irish: Gaeltacht	2011-12	103	3.3%
Irish: Gaeltacht	2012-13	103	3.3%
Irish: SLG	2011-12	138	4.4%
Irish: SLG	2012-13	140	4.5%
English	2011-12	2,840	91.2%
English	2012-13	2843	91.2%
English and Irish	2011-12	32	1%
English and Irish	2012-13	32	1%

5.3.1 English reading- Medium of instruction

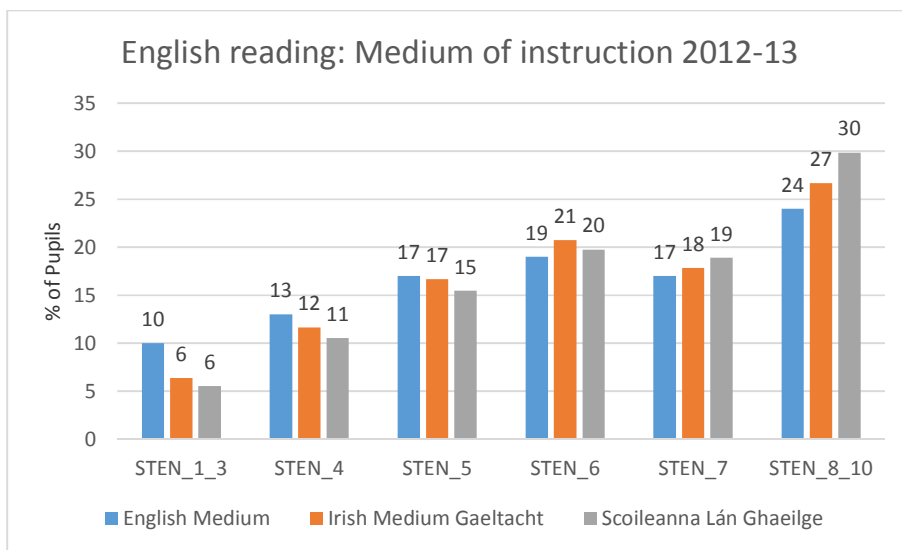
As indicated in Chart 12a, in 2011-12, the achievement of pupils across the mid-ranging STens (STens 4-7 inclusive) is similar across all three school types. At both STen 6 and STen 7, there is only 1% difference between the performance of pupils in these schools. This difference increases to 3% at STen 4 with 14% of pupils in English-medium schools achieving this STen in comparison with 11% in SLG. Overall, the pupils attending SLG appear to outperform their peers attending either Gaeltacht schools or English-medium schools. Although similar percentages of pupils in SLG (6%) and Gaeltacht schools (7%) achieve STen 1-3 in comparison with 11% in English-medium schools, a considerably greater percentage of pupils attending SLG (30%) achieve a STen 8-10 than in either SLG (25%) or English-medium schools (23%).

Chart 12a: English reading- Medium of instruction 2011-12



The overall pattern of achievement in English reading in 2012-13 in relation to the medium of instruction, as presented in Chart 12b, is very similar to that of 2011-12. At the mid-ranging STens, the overall pattern of achievement remains largely unchanged. From STen 4 to STen 7 inclusive, variations of 1%-2% have occurred in the achievement of pupils across the three school types but such changes of 1%-2% are within the range that would be expected from year to year. Once again, a notably smaller percentage of pupils in both Gaeltacht schools (6%) and SLG (6%) achieve a STen 1-3 than in English-medium schools (10%). Although the gap has narrowed at the upper STen range of 8-10, the achievement remains highest amongst the SLG with 30% of their pupils achieving a STen in this range in comparison with 24% of English-medium schools and 27% of Gaeltacht schools. However, as collated data were submitted for STens 1-3 and STens 8-10, it was not possible to establish whether variations may have occurred within these ranges.

Chart 12b English reading- Medium of instruction 2012-13



5.3.2 Mathematics- Medium of instruction

In considering the performance of pupils in Mathematics in relation to the medium of instruction, it should be noted that no data are available on the language on which tests were administered. Consequently, it is not possible to determine whether pupils in Irish-medium schools took these tests in either English or Irish and this could have impacted on the observed data patterns.

As indicated in Chart 13a, the achievement in Mathematics in 2011-12 in relation to the medium of instruction is broadly similar across all three school types. At each STen level from STen 4 to STen 8-10 inclusive, there is never more than a 3% difference between the schools. The gap is widest at the lower STen range of 1-3; 10% of pupils in English-medium schools attain STens in this range in comparison with 6% and 7% in Gaeltacht schools and SLG respectively. Overall, the variation in achievement in Mathematics is smaller than that in English reading in 2011-12.

Chart 13a: Mathematics- Medium of instruction 2011-12

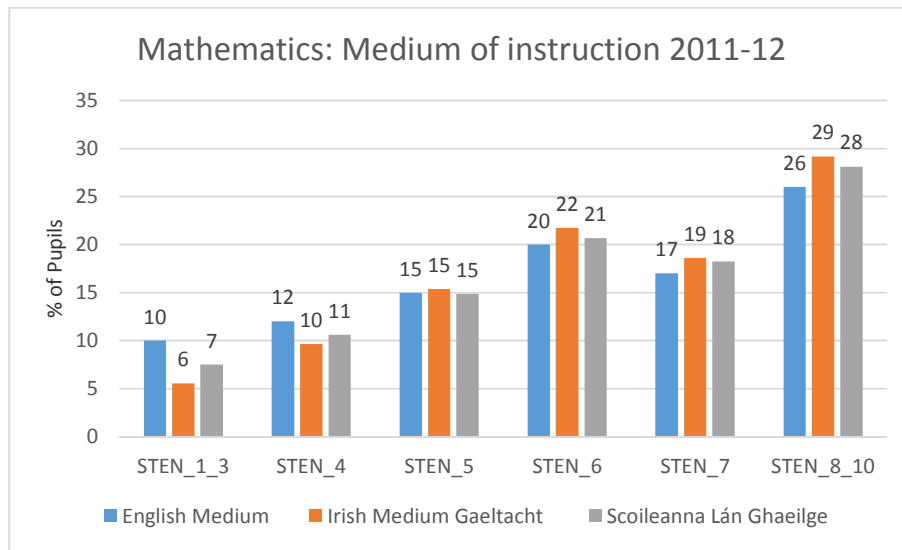
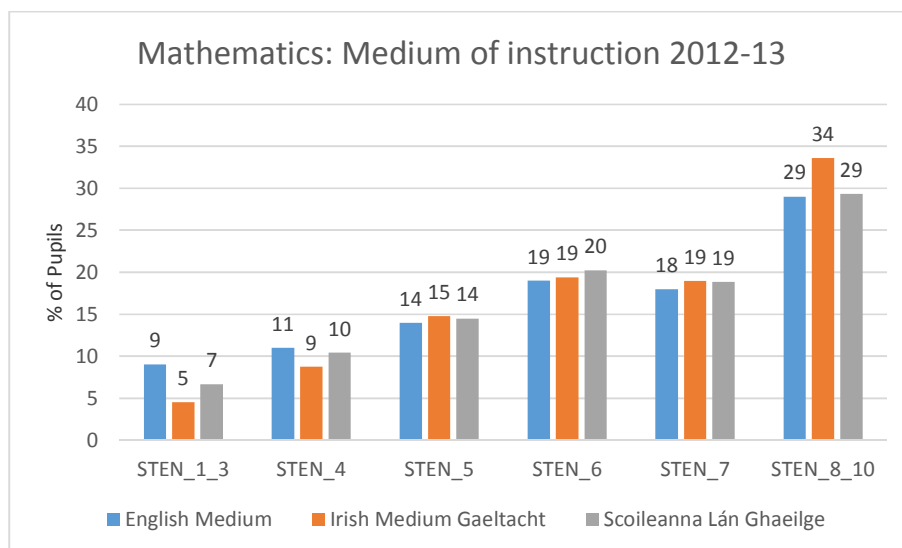


Chart 13b: Mathematics- Medium of instruction 2012-13



In 2012-13, the overall pattern of pupil performance in Mathematics, as presented in Chart 13b, closely resembles that of 2011-12 albeit with enhanced achievement overall. The main difference in pattern arises at STen 8-10. Whilst the percentage of pupils achieving scores in this STen range has increased in all three school types, the largest increase is in the Gaeltacht schools where 34% of pupils achieve scores in this STen range in comparison with 29% in both English-medium schools and SLG.

5.3.3 Conclusions- Medium of instruction

In English reading, pupils in SLG performed better relative to their peers in English-medium and Gaeltacht schools on the standardised tests administered in both 2011-12 and 2012-13.

This higher achievement in English reading among pupils in Irish-medium schools is also reflected in the National Assessment of Irish-medium schools 2010 (NAIMS). In NAIMS, pupils in second class in SLG achieved significantly higher scores than pupils in National Assessment 2009 (NA 2009). Sixth class pupils in SLG also achieved significantly higher mean scores on English reading than pupils in NA 2009. While sixth class SLG pupils achieved higher mean scores than sixth class pupils in Gaeltacht schools, the difference was not significant.

The standardised achievement tests results in English reading for 2011-12 and 2012-13 also show that there are fewer lower achieving pupils (i.e. attaining STens 1-3) in SLG and Gaeltacht schools relative to English-medium schools. Similarly, the NAIMS report noted that at sixth class, fewer pupils in SLG or Gaeltacht schools (4% and 5% respectively) performed below Level 1 (the lowest level of attainment) compared with 10% in NA 2009.

Achievement in Mathematics in the standardised tests among pupils across the three school types is broadly similar. This contrasts somewhat with the findings in NAIMS where some differences in achievement were noted between the three school types. For example, sixth class pupils in Gaeltacht schools achieved a significantly higher mean score than pupils in NA 2009, while the mean scores of pupils in SLG and NA 2009 were not significantly different from one another. In addition, second class pupils in SLG achieved a significantly higher mean score in Mathematics than pupils in NA 2009, while the mean scores of pupils in Gaeltacht schools and NA 2009 were not significantly different.

It needs to be borne in mind that factors other than the medium of instruction, such as socio-economic status, can impact on the performance of pupils in standardised tests and that other factors associated with the schools also need to be taken into consideration. The NAIMS report noted that the results of the pupils in the SLG in the case of English reading appeared to be associated with the higher socio-economic status (SES) of the pupils in these schools. The same may be true in the case of the results of the standardised tests for English reading.

The findings of NAIMS also noted that the achievement of SLG pupils in Mathematics was somewhat lower than what would be expected, given the average school-level SES of these schools. NAIMS concluded that there may be a weaker relationship between SES and mathematics achievement compared to reading achievement, and/or the association may be mediated by language of instruction, the nature of instruction, or the language of the test. The standardised test results for Mathematics merit monitoring over time to establish whether such a trend emerges.

6. Results of analysis- Test instrument

This section presents the results of the analysis of the standardised test returns in accordance with the test instrument, the Drumcondra test and Micra-T test in English reading and the Drumcondra test and Sigma-T test in Mathematics. For the purposes of this report, they will be referred to as Provider A and Provider B, but not necessarily respectively. As both sets of tests have been normed for the Irish population, it could be anticipated that achievement on both sets might have been similar.

6.1 English reading- Test instrument

As indicated in Table 7, in 2011-12, approximately 60% of schools administered the Provider B reading test and approximately 40% of schools administered the Provider A test. There was an increase in the percentage of schools that administered the Provider A test (43%) in 2012-13 with a corresponding decrease in the percentage of schools that administered the Provider B test (57%). As the total number of schools using one or other of the tests (3,228 in 2011-12 and 3,287 in 2012-13) exceeds the actual number of schools that submitted results (3,113 in 2011-12 and 3,119 in 2012-13), this implies that some schools may have administered the Provider A test in some classes and the Provider B test in others.

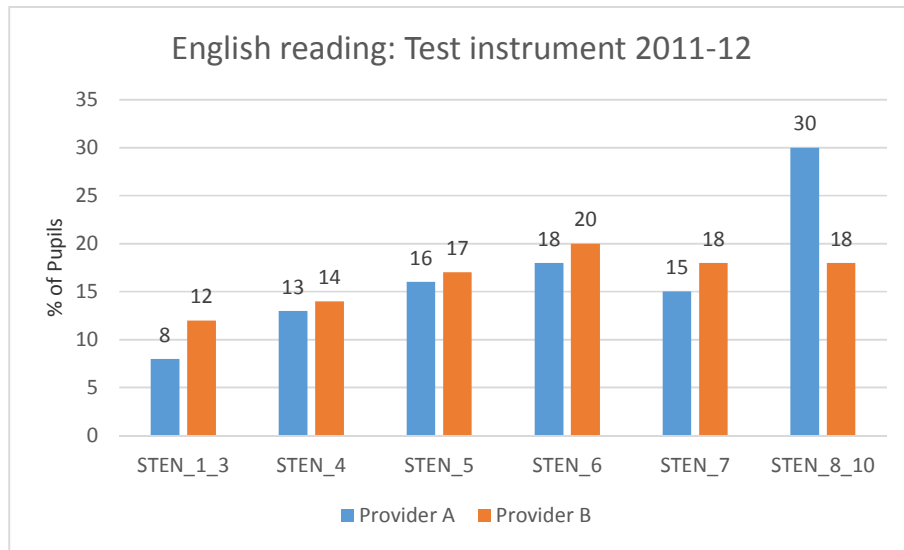
Table 7: English reading test instrument

Academic Year	Subject	Test	No. of schools that administered tests	%
2011	English Reading	Provider A	1,330	40.45%
2011	English Reading	Provider B	1,958	59.54%
2011	English Reading	Total	3,288 ¹⁰	
2012	English Reading	Provider A	1417	43.10%
2012	English Reading	Provider B	1870	56.89%
2012	English Reading	Total	3,287	

As indicated in Chart 14a for the year 2011-12, the achievement of pupils in both tests in English reading appears to be broadly similar in the mid-ranging STens (STen 4 to STen 7 inclusive), with a slightly greater percentage of pupils who sat the Provider B test at each level. However, a greater difference emerges at the outer STens; a greater percentage of pupils who sat the Provider B test (12% versus 8%) achieved STens 1-3 whilst a much greater percentage of pupils who sat the Provider A test (30% versus 18%) achieved STens 8-10.

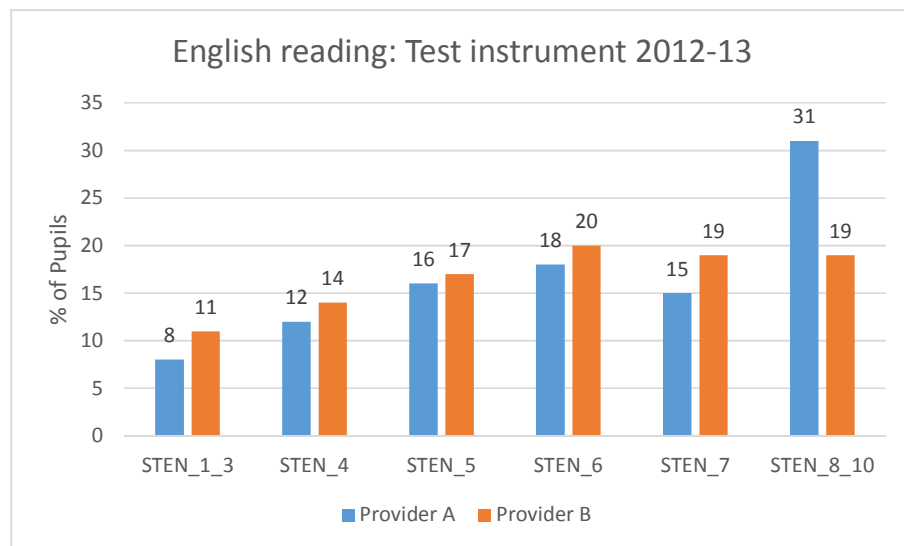
¹⁰ 3, 288 is in excess of the 3,113 schools that made standardised test returns in 2011-12. Similarly, 3287 is in excess of the 3119 schools that made test returns in 2012-13. The discrepancy is explained by the fact that some schools may have administered the Provider A test in some classes and the Provider B test in others.

Chart 14a: English reading- Test instrument 2011-12



The pattern of achievement in English reading in 2012-13 in relation to the test instrument, as presented in Chart 14b, was similar to that of 2011-12. There was no more than 1% variation in the achievement on either test at any STen level between 2011-12 and 2012-13.

Chart 14b: English reading- Test instrument 2012-13



6.2 Mathematics- Test instrument

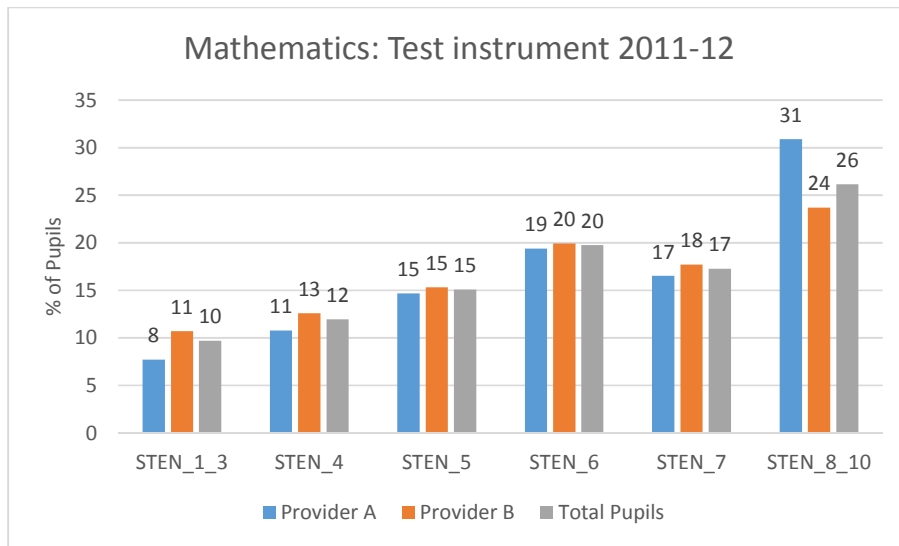
As Table 8 indicates, an equal number of pupils did not sit each test which is similar to the English reading test. In 2011-12, 33% of pupils sat the Provider A test whilst 66% of pupils sat the Provider B test. There was a small increase in the percentage of pupils who sat the Provider A test in 2012-13 (35%) with a decrease in the percentage of pupils who sat the Provider B test (65%).

Table 8: Mathematics- Test instrument

Academic Year	Subject	Test	No. of schools that administered tests	%
2011-12	Mathematics	Provider A	1,093	33.33%
2011-12	Mathematics	Provider B	2,186	66.66%
2011-12	Mathematics	Total	3,279 ¹¹	
2012-13	Mathematics	Provider A	1,142	34.85%
2012-13	Mathematics	Provider B	2,134	65.14%
2012-13	Mathematics	Total	3,276	

As indicated in Chart 15a, overall pupil performance in Mathematics on both test instruments in 2011-12 was broadly similar. The achievement was identical at STen 5 (15%) whilst there was no more than 1% difference between the achievement on the Provider A test and the Provider B test, at STen 6 (19% versus 20%) and STen 7 (17% versus 18%) respectively. There was a slightly greater difference at STens 1-3 (8% versus 11%) and STen 4 (11% versus 13%) respectively. The greatest difference was at STens 8-10 which was achieved by 31% of pupils who sat the Provider A test and 24% of pupils who sat the Provider B test.

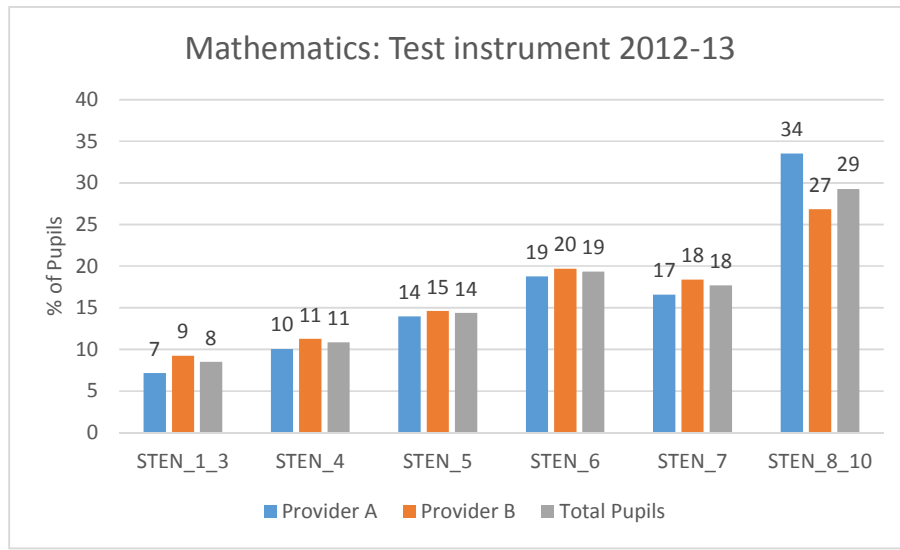
Chart 15a: Mathematics- Test instrument 2011-12



In 2012-13, the pattern of achievement in relation to the test instrument, as presented in Chart 15b, was almost identical to that of 2011-12. At each STen level from STen 3 to STen 7 inclusive, there was no more than 2% difference between the achievements on both tests. Once again, the greatest difference was at STens 8-10; 34% of the pupils who sat the Provider A test achieved this STen versus 27% of the pupils who sat the Provider B test.

¹¹ 3, 279 is in excess of the 3,113 schools that made standardised test returns in 2011-12. Similarly, 3276 is in excess of the 3119 schools that made standardised test returns in 2012-13. The discrepancy is explained by the fact that some schools may have administered the Sigma-T test in some classes and the Drumcondra Primary Mathematics Test in others.

Chart 15b: Mathematics- Test instrument 2012-13



6.3 Conclusions- Test instrument

In both 2011-12 and 2012-13, it would appear that there was less variation in the achievement of pupils in relation to the test instrument in Mathematics than in English reading. However, differences have occurred, particularly at STens 8-10 in both domains and at STens 1-3 for English reading. Higher proportions of pupils who took the Provider A reading and mathematics tests achieved STens 8-10 than took the Provider B tests. A lower proportion of pupils who took the Provider A reading test achieved STens 1-3 than took the Provider B reading test.

It is clear, however, that many complexities arise when comparing the results of two different tests despite the fact that both have been normed for the Irish population. It cannot be assumed that the variations in performance on the tests described above are attributable to the test instruments. There are many factors that could contribute to variations in achievement. A key factor could relate to whether a particular test is favoured by higher achieving and lower achieving schools respectively. Other factors could include the gender of pupils, the medium of instruction and familiarity with the test. The exploration of these possible multiple factors, including whether a particular test is favoured by a particular type of school, would require additional data from schools.

As differences have clearly arisen between the tests, this raises issues in relation to collating and analysing the findings of both tests at national level. In future, it may be desirable to have one set of normed tests, one for English reading and one for Mathematics, which would be administered by all schools.

7. Results of analysis-Irish reading

The Irish reading test is undertaken by pupils in Irish-medium schools - both Scoileanna lán-Ghaeilge (SLG) and Gaeltacht schools.

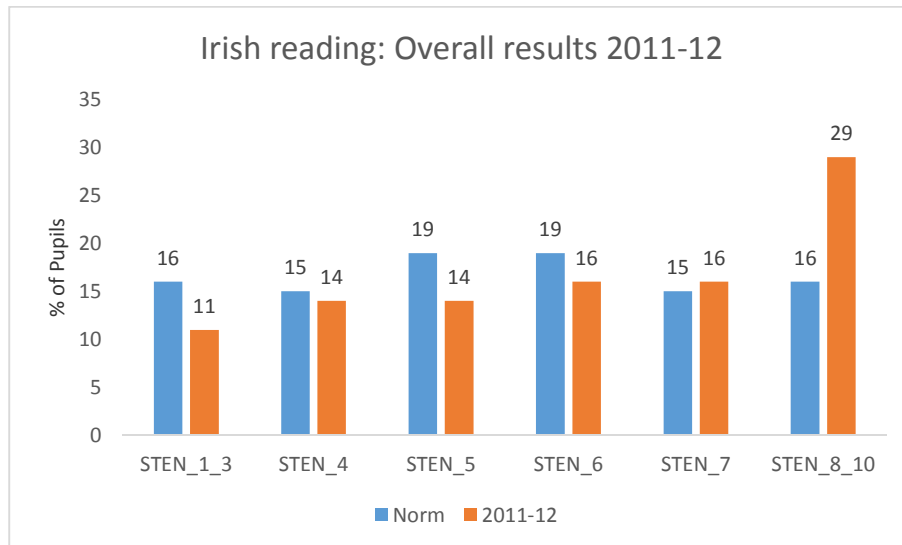
In addition to the Irish-medium schools, results were also submitted by eleven Part-Irish-medium schools and two English-medium schools. Due to the small numbers in question and the fact that there are separate norms for Irish reading for Irish-medium and English-medium schools, these schools have not been included in the analysis below.

This section firstly outlines the overall results for pupils in Irish-medium schools including both Scoileanna lán-Ghaeilge (SLG) and Gaeltacht schools. Later, the performance of pupils attending SLG and Gaeltacht schools respectively in Irish reading is compared with their performance in English reading.

7.1 Irish reading- Overall achievement

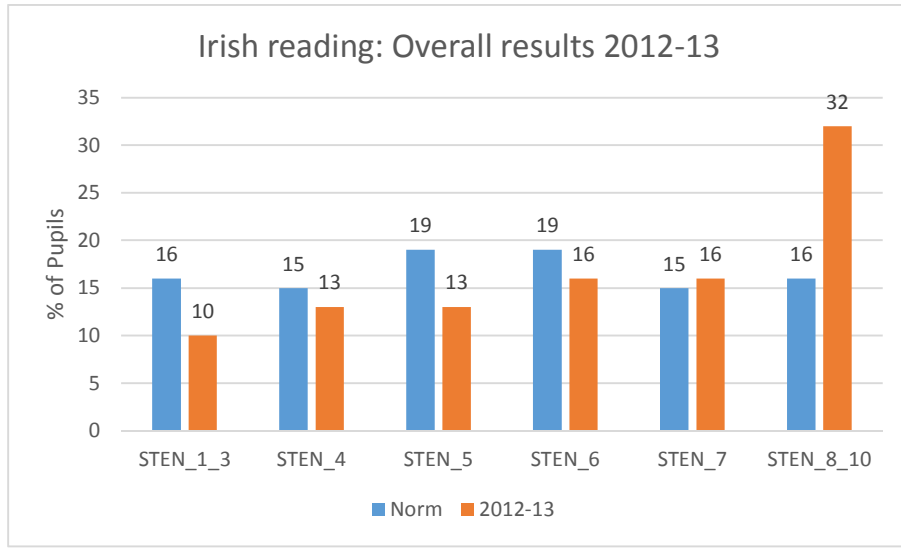
As indicated in Chart 16a, achievement in Irish reading in 2011-12 was well to the right of the theoretical normal distribution, indicating higher than expected performance. Whilst achievement at STen 4 (14%) was close to the theoretical normal distribution (15%), fewer pupils than anticipated achieved either STens 1-3 (11%) or STen 5 (14%) than the 16% and 19% anticipated respectively. Almost equal percentages of pupils achieved STen 4 (14%), STen 5 (14%), STen 6 (16%) and STen 7 (16%). Almost twice the anticipated percentage (29%) achieved STens 8-10. As these STens were grouped, it is not possible to establish whether this was spread evenly across these three STens or clustered at one.

Chart 16a: Irish reading- Overall results 2011-12



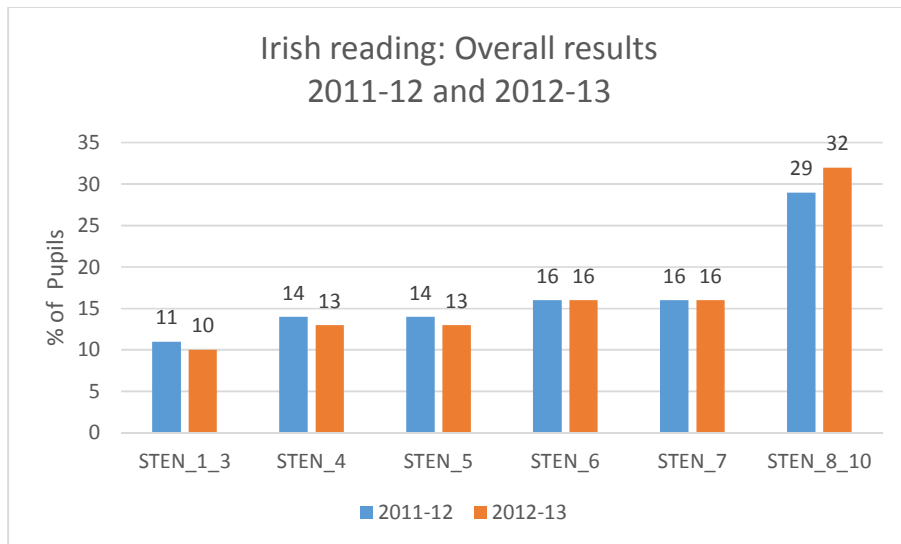
As presented in Chart 16b, 32% of pupils achieved STens 8-10 in 2012-13. Fewer pupils than anticipated achieved STens 1-3 (10%), STen 5 (13%) or STen 6 (16%) than the 16%, 19% and 19% anticipated respectively. The overall achievement appears to be considerably better than would have been anticipated in accordance with empirically established norms for the Irish-medium primary school population.

Chart 16b: Irish reading- Overall results 2012-13



As presented in Chart 16c, the achievement of pupils in 2011-12 and 2012-13 was almost identical. The percentage of pupils achieving STen 6 and STen 7 remained constant at 16% each. The overall achievement improved slightly with 1% fewer pupils achieving at STens 1-3 (10%), at STen 4 (13%) and at STen 5 (13%). In both years, the percentage of pupils who achieved STens 8-10 (29% and 32% respectively) is well in excess of the theoretical normal distribution (15%). This is a surprising result as this is a relatively new test that was standardised on a nationally representative sample of almost 13,000 pupils in SLG and Gaeltacht schools in 2010.

Chart 16c: Irish reading- Overall results 2011-12 and 2012-13

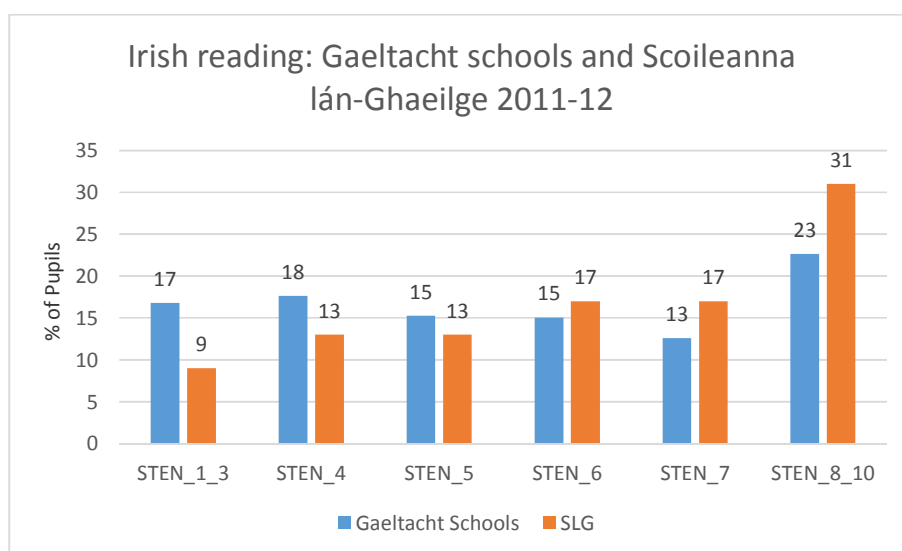


7.2 Irish reading- Pupil achievement in Gaeltacht schools and Scoileanna lán-Ghaeilge

In 2011-12, data were submitted for 11,681 pupils attending Irish-medium schools (9,296: SLG and 2385: Gaeltacht schools) and in 2012-13 for 13,195 pupils (10,720: SLG and 2,475: Gaeltacht schools).

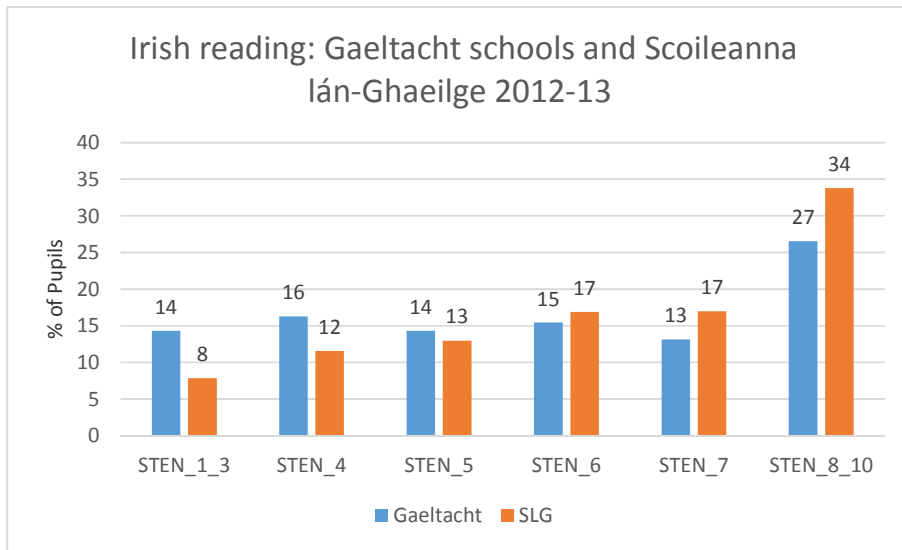
As presented in Chart 16d, the achievement of pupils in Irish reading who attended SLG in 2011-12 is considerably higher than that of pupils attending Gaeltacht schools, particularly at the lower and the upper STen ranges. 17% of pupils attending Gaeltacht schools achieved a STen 1-3 in comparison with 9% attending SLG. At STen 4, there is still a noticeable gap (18%: Gaeltacht schools versus 13%: SLG). Meanwhile, 23% of pupils attending Gaeltacht schools achieved a STen 8-10 in comparison with 31% of pupils attending SLG. In both instances, this is considerably above the 16% anticipated in tests that have been normed for this population.

Chart 16d: Irish reading- Gaeltacht schools and Scoileanna lán-Ghaeilge 2011-12



In 2012-13, the achievement in both Gaeltacht schools and SLG, as presented in Chart 16e, improved but the overall pattern of achievement remained similar to that in 2011-12. Once again, the achievement of pupils in Irish reading who attended SLG was considerably better than that of pupils attending Gaeltacht schools. As in 2011-12, this is particularly evident at both the lower and the upper STen ranges. 14% of pupils attending Gaeltacht schools (versus 17% in 2011-12) achieved a STen 1-3 in comparison with 8% (versus 9% in 2011-12) attending SLG. A noticeable gap remains at STen 4 (16%: Gaeltacht schools versus 12%: SLG). The achievement across STens 5-7 inclusive is almost identical to that of 2011-12. Meanwhile, the gap that emerged at STens 8-10 in 2011-12 remains similar with 27% of pupils attending Gaeltacht schools achieving a STen 8-10 in comparison with 34% of pupils attending SLG.

Chart 16e: Irish reading- Gaeltacht schools and Scoileanna lán-Ghaeilge 2012-13



7.3 Achievement in Irish reading compared with achievement in English reading- Irish-medium schools

As the Irish reading and English reading standardised tests were normed on different populations, this limits the capacity to compare the data for both domains in relation to achievement. The relative performance of pupils cannot be compared directly. What can be compared is the performance of pupils in Irish reading in relation to the norms for Irish reading relative to the performance of pupils in English reading in relation to the norms for English reading.

The following section explores how achievement in Irish reading relative to the norm for Irish reading compares with that of English reading relative to the norm for English reading.

As indicated in Chart 17a, in 2011-12, the achievement of pupils attending SLG in Irish reading was very similar to their achievement in English reading relative to the expected norms for the two domains. This was particularly evident at the upper STens as there was only 1% difference in pupil achievement in both domains at STen 7 (17% Irish reading; 18% English reading) and STens 8-10 (31% Irish reading and 30% English reading). At each of the other STen levels STen 1-3 to STen 6 inclusive, there was no more than 2% to 3% difference between pupil achievement in both domains.

In 2012-13, the achievement in English reading and Irish reading of pupils attending SLG relative to the expected norms for both domains, as presented in Chart 17b, was almost identical to achievement in 2011-12. From STens 1-3 to STen 7 inclusive, there was no more than 1% difference between their achievement in each domain between 2011-12 and 2012-13. The key difference is at STen 8-10. The percentage of pupils who achieved STen 8-10 in Irish reading increased from 31% in 2011-12 to 34% in 2012-13 whilst the percentage of pupils who achieved STen 8-10 in English reading remained constant at 30% across the two years.

Chart 17a: Irish reading and English reading- Scoileanna lán-Ghaeilge 2011-12

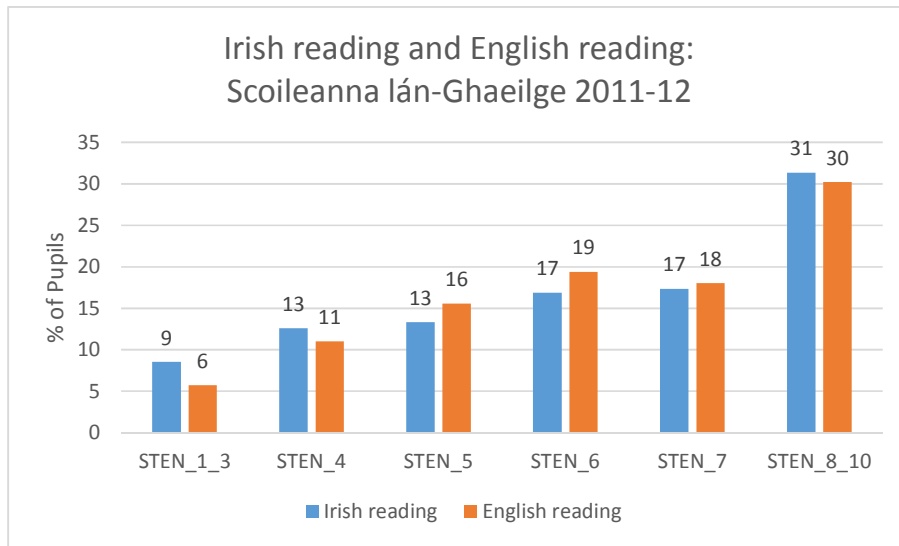
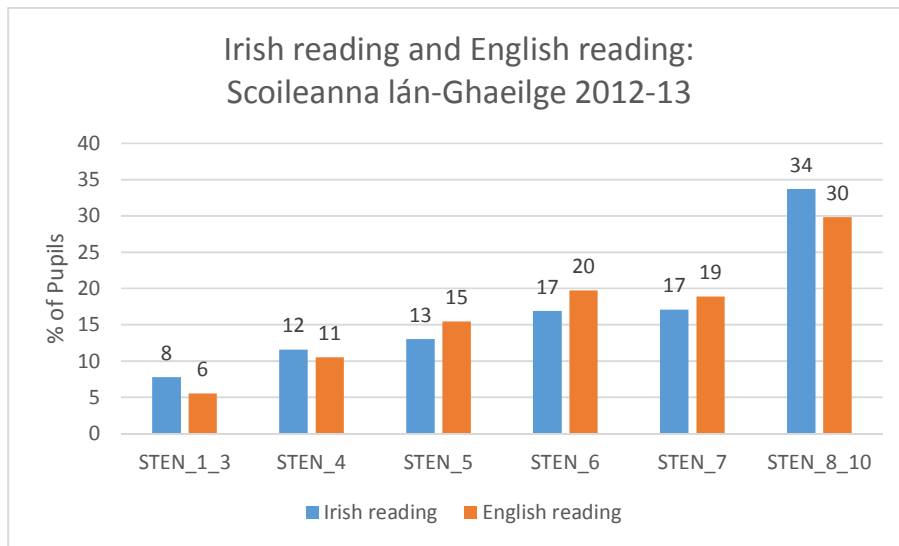
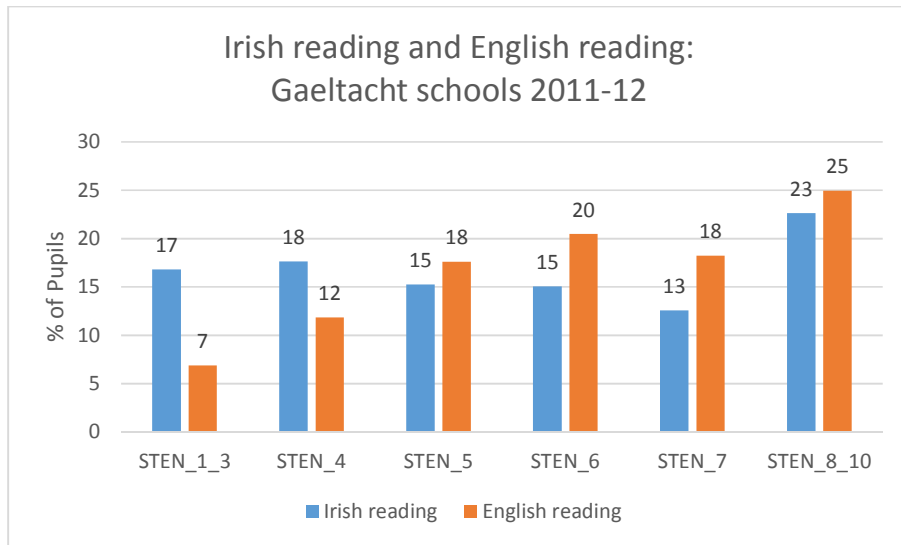


Chart 17b: Irish reading and English reading: Scoileanna lán-Ghaeilge (SLG) 2012-13



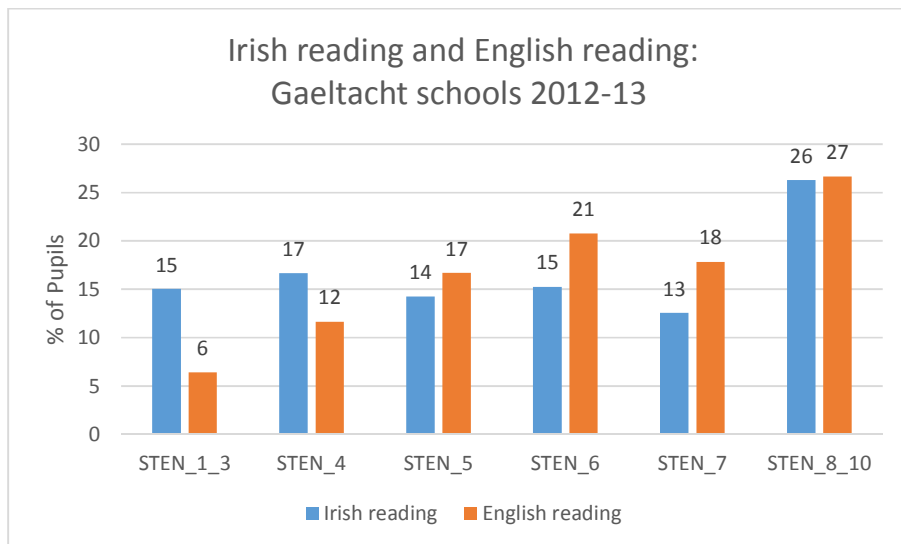
As indicated in Chart 17c, there was a noticeable difference in 2011-12 between the achievement of pupils attending Gaeltacht schools in Irish reading and English reading relative to expected norms for both domains. Their achievement in English reading relative to expected norms was considerably better than their achievement in Irish reading relative to expected norms. Whilst their achievement relative to expected norms in both domains is similar at STen 8-10, there is a bigger gap between their performance at STen 6 (15%: Irish reading and 20%: English reading) and STen 7 (13%: Irish reading and 18%: English reading). The biggest gap in achievement relative to expected norms between the two domains is noted at STen 1-3. 17% of pupils attending Gaeltacht schools achieve STen 1-3 in Irish reading whilst 7% achieve this STen in English reading.

Chart 17c: Irish reading and English reading- Gaeltacht schools 2011-12



In 2012-13, the overall pattern of achievement in Irish reading and English reading of pupils attending Gaeltacht schools relative to expected norms, as presented in Chart 17d, is very similar to that of 2011-12. Whilst the percentage of pupils achieving STens 8-10 has increased from 23% and 25% to 26% and 27% in Irish reading and English reading respectively, there remains a gap between their attainment in both areas relative to expected norms at each STEN from STen 1-3 to STen 7 inclusive. Once again, the biggest gap in achievement relative to expected norms is at STen 1-3 with 15% of pupils achieving this STen in Irish reading in contrast with 6% of pupils in English reading.

Chart 17d: Irish reading and English reading- Gaeltacht schools 2012-13



7.4 Conclusions: Irish reading

There is little change in overall achievement in Irish reading of pupils in Scoileanna lán Ghaeilge (SLG) and Gaeltacht schools across 2011-12 and 2012-13. The achievement in Irish reading among pupils in these schools is well to the right of the theoretical normal distribution, indicating higher than expected performance. This is a surprising result as this is a relatively new test that was standardised on a nationally representative sample of pupils in SLG and Gaeltacht schools in 2010. Given the challenges involved in developing a representative sample for a relatively small cohort of pupils with a heterogeneous profile, it would be advisable for exploratory work to be carried out in order to determine whether the tests in Irish reading for pupils in Irish-medium schools need to be revised.

In both years, the achievement of pupils in Irish reading who attended SLG is considerably higher than that of pupils attending Gaeltacht schools. However in interpreting these scores, it must be borne in mind that NAIMS established that the socio-economic status (SES) of pupils attending SLG is considerably higher than that of pupils attending Gaeltacht schools. As NAIMS established that SES is associated with achievement in English reading, it is also likely that SES is associated with attainment in Irish reading.

In both 2011-12 and 2012-13, the achievement of pupils attending SLG in Irish reading relative to expected norms is very similar to their achievement in English reading relative to expected norms. In contrast, there is a noticeable difference between the achievement relative to expected norms of pupils attending Gaeltacht schools in Irish reading and English reading across the two years. The biggest gap in the achievement relative to expected norms between the two domains in Gaeltacht schools is at STen 1-3 where in 2011-12, 17% of pupils achieved STen 1-3 in Irish reading whilst 7% achieved this STen in English reading.

NAIMS found that, on average¹², fewer than 2% of pupils in Gaeltacht schools received Learning Support/Resource Teaching (LS/RT) in Irish reading from a sanctioned Special Needs teacher whereas 18% were in receipt of LS/RT for English reading. If the emerging trend of greater percentages of Gaeltacht pupils attaining a STen 1-3 in Irish reading than in English reading continues, Gaeltacht schools may need to reconsider their provision of LS/RT for Irish reading.

8. Summary of findings

Returns

In 2011-12, 3,117 (99.9%) submitted a return to the DES. All 3,119 eligible schools submitted a return for 2012-13.

Absent pupils

The percentage of pupils for whom data was not submitted because they were absent from school decreased from 2% in 2011-12 to 1% in 2012-13. This is a noticeable improvement. Nevertheless, as the tests should be taken by all pupils unless they have been exempted on

¹² Note, however, that in NAIMS, there was a high level of missing or invalid data on questions relating to the provision of LS/RT for Irish reading

the basis of special educational needs or language, it is important that schools make every effort to make additional provision for pupils who are absent on the day of testing.

Pupil achievement in English reading and Mathematics

The results for English reading and Mathematics in 2011-12 and 2012-13 are similar although the results for 2012-13 are slightly higher in both domains. In both domains, the achievement at national level is also well to the right of the theoretical normal distribution (Bell Curve), indicating higher than expected performance. This is particularly pronounced at the upper STen ranges and at the lower STen ranges. While the results in English reading are broadly similar across the three class groups tested, the achievement of pupils in second class is higher than that of pupils in both fourth class and sixth class.

In the standardised test returns for both 2011-12 and 2012-13, pupils' achievement in Mathematics exceeded their achievement in English reading relative to the respective expected norms for these domains. However, this does not correspond with the findings of either national or international assessments which indicate that performance in English reading is stronger than that of Mathematics.

The fact that pupil performance on tests normed for the Irish population for English reading and Mathematics is so far to the right of the theoretical normal distribution for two consecutive years may be indicative of an actual improvement in the achievement of pupils. The findings of the NA 2014 indicate significant increases in average performance on overall English reading and Mathematics in Second and Sixth classes between NA 2009 and NA 2014. However, the extent of the divergence in the standardised achievement test results is so great that other factors such as the age of the tests and consequent familiarity with the tests by teachers and pupils needs to be taken into account. Inconsistency in the administration of the standardised achievement tests may also be a factor.

The unexpected patterns of performance outlined above suggest that there is need for updating of the standardised achievement tests at the earliest possible opportunity as well as the provision of additional support to schools and teachers regarding the administration of the tests.

DEIS versus non-DEIS schools

In both 2011-12 and 2012-13, the overall performance in English reading and Mathematics of pupils in non-DEIS schools is considerably higher than that of pupils in DEIS schools. This is particularly pronounced in both the lower and the higher STen bands. Nevertheless, in DEIS schools, the percentage of pupils achieving STens in the lower range (STens 1-3) is, at most, only 3% above the theoretical normal distribution (i.e. Bell Curve) for that range. Similarly, the percentage of pupils achieving STens 8-10 is, at most, only 3% below the theoretical normal distribution (i.e. Bell Curve) for that range.

Pupil gender composition of schools

In English reading for 2011-12 and 2012-13, pupils in Co-educational schools and All Girls schools appear to outperform pupils in All Boys and Senior Girls/Infant co-educational schools. In particular, there was a larger proportion of higher performing pupils (STens 8-10) and a smaller proportion of lower performing pupils (STens 1-3) in Co-educational and All Girls schools than in the other school types.

In Mathematics for 2011-12 and 2012-13, Co-educational schools appear to outperform all other school gender types with the smallest percentage achieving the lower STens and the highest percentage achieving in the highest STen range (8-10).

While the Co-educational schools outperform the other school types, the stronger performance may be accounted for by the fact that relative to the other school types, a smaller proportion of Co-educational schools relative to the other school types have DEIS status. Co-educational schools also comprise the vast majority of schools.

Analysis of the standardised tests results for both English reading and Mathematics in 2011-12 and 2012-13 also shows that there is a higher proportion of lower performing pupils in All Boys schools than in any other school gender type including Senior Girls/Infant co-educational schools and All Girls schools, where similar proportions have DEIS status. This reflects the findings of NA 2009. Consequently, the performance of pupils in these schools merits ongoing monitoring.

Medium of instruction

Irish reading in Irish-medium schools

The patterns of achievement in Irish reading in Irish-medium schools were similar for both 2011-12 and 2012-13. The overall achievement was well to the right of the theoretical normal distribution (Bell Curve), indicating higher than expected performance. This was particularly pronounced at the upper STen ranges.

In Irish reading in both 2011-12 and 2012-13, the achievement of pupils who attended Scoileanna lán-Ghaeilge (SLG) was considerably better than that of pupils attending Gaeltacht schools. As highlighted in NAIMS (2010) in relation to the superior performance in English reading of children in SLG relative to pupils in Gaeltacht schools, this difference may be due to the higher socio-economic profile of children in the SLG. That said, given the larger proportion of pupils in Gaeltacht schools who come from homes that are either Irish speaking or where one parent at least is a fluent speaker of the language, the results for the pupils in Gaeltacht schools are surprising. On the other hand, they may very well be reflective of the ongoing decline in competence in the language more generally among Gaeltacht pupils as highlighted in recent research.

English reading in Irish-medium schools

For both 2011-12 and 2012-13, pupils attending Irish-medium schools, both Gaeltacht schools and SLG, outperformed their peers attending schools where English was the medium of instruction. Irish-medium schools had a lower proportion of lower performing pupils (STen 1-3) and a higher proportion of higher performing pupils (STen 8-10) than English-medium schools. SLG had a higher proportion of higher performing pupils (STen 8-10) than either English-medium schools or Gaeltacht schools.

The better performance of pupils in SLG in English reading is also reflected in the National Assessment of Irish-medium schools (NAIMS) in 2010. The higher socio-economic status (SES) of pupils attending SLG is cited as a contributory factor to the performance of pupils in SLG. Similarly, SES may have contributed to the higher achievement of pupils in SLG in both English reading than in the other school types.

In both 2011-12 and 2012-13, the achievement of pupils attending SLG in Irish reading relative to expected norms is very similar to their achievement in English reading relative to expected norms. In contrast, there is a noticeable difference between the achievement relative to expected norms of pupils attending Gaeltacht schools in Irish reading and English reading across the two years particularly at STen 1-3. The proportion of pupils in these schools performing at STen 1-3 is considerably higher in Irish reading than in English reading. However, LS/RT provision in Gaeltacht schools is mainly allocated to English reading. If the higher proportion of pupils at STens 1-3 for Irish reading relative to the proportion of pupils at this level for English reading in Gaeltacht schools is established as a trend, Gaeltacht schools may need to reconsider their provision of LS/RT for Irish reading.

Mathematics in Irish-medium schools

Attainment in Mathematics in the standardised tests among pupils across the three school types, English-medium, Scoileanna lán-Ghaeilge (SLG) and Gaeltacht schools is similar. This contrasts somewhat with the findings in NAIMS where some differences in achievement were noted between the three school types.

The findings of NAIMS (2010) noted that the achievement of SLG outside the Gaeltacht was somewhat lower than what would be expected given the average school-level SES of these schools. This also appears to be the case in the standardised achievement test results. There may also be, as noted by NAIMS, a weaker relationship between SES and mathematics achievement (compared to reading achievement). The standardised test results for Mathematics for pupils in SLG merit monitoring over time to establish whether such is the case.

Test instrument

In both 2011-12 and 2012-13, it would appear that there was less variation in the achievement of pupils in relation to the test instrument in Mathematics than in English reading. However, differences have occurred, particularly at STens 8-10 in both domains and at STens 1-3 for English reading.

It cannot be assumed that the variations in performance on the tests are attributable to the test instruments. There are many factors that could contribute to variations in achievement including whether a particular test is favoured by higher achieving and lower achieving schools respectively.

As differences have clearly arisen between the tests, this raises issues in relation to the collection, collation and the analysis of the findings of both tests at national level. In future, it may be desirable to have one set of normed tests (one for English reading and one for Mathematics) that would be administered by all schools.

9. Conclusions and recommendations

The collection and analysis of standardised achievement test data is a long-term project that will contribute to the monitoring of standards in literacy and numeracy over time. However, much has been learned from the collection and analysis of the data for 2011-12 and 2012-13. It is evident that the potential of standardised tests for monitoring achievement and quality and promoting improvement within schools and within the educational system is not being fully realised.

This section outlines the challenges identified and provides recommendations on how these might be addressed.

Collection of data

Because the data submission grouped STens 1-3 and STens 8-10 respectively, it was neither possible to compare the findings at these upper and lower ranges with the theoretical normal distribution (Bell Curve) nor to establish at which of the individual STens at these grouped levels any improvements had taken place. However, this issue has since been addressed; since 2013-2014, schools have been required to submit data at each STen level.

As schools were requested to submit collated data for pupils regardless of gender, it was not possible to compare the relative performance of girls and boys in co-educational schools which comprise 85% of the population of primary schools. To address this, consideration should be given to requesting schools to submit collated data at gender level for pupils.

Test instrument

Tests for English reading and Mathematics

The achievement of pupils on all the tests for English reading and Mathematics for both 2011-12 and 2012-13 is well above the theoretical normal distribution (Bell Curve). While such achievement patterns could indeed be reflective of an actual improvement in the achievement of pupils as evidenced in NA 2014, the extent of the divergence from the normal distribution would suggest that other factors have contributed, namely the age of the tests, and the associated likelihood of both teachers and pupils becoming overly familiar with the test items. The arrangements for the administration of tests may also vary from school to school and this could also impact on the results.

It would therefore be prudent for revised tests in English reading and Mathematics to be developed at the earliest opportunity. When developing the new tests, consideration should be given to the production of additional forms of the tests at each class level rather than the two forms that are currently provided. This would enable the test developer to update items on a gradual basis without affecting the norms, thus increasing the validity of the results while also addressing reliability issues.

Consideration should also be given to the design of standardised achievement tests that are both norm referenced and criterion referenced. Criterion-referenced tests would enable schools to set targets relating to pupils' achievement of specific learning outcomes or sets of outcomes and to monitor the extent to which cohorts of pupils achieve these outcomes over time. The current norm-referenced standardised tests where the achievement of pupils on such tests is in relation to the achievement of other pupils nationally were not designed for the purposes of such target setting.

It should be noted, however, that the provision of revised tests would take about three years before publication. It should also be noted that there are significant cost implications associated with more frequent test development as well as with the development of additional forms of the test, and the development of tests that are both norm referenced and criterion referenced.

There are currently two tests, supplied by separate providers, available for schools to use. Whilst these have been normed empirically, they were not designed to facilitate comparison with one another. Now that schools are expected to engage in more robust data analysis and

that data is also being analysed at national level, consideration should be given to the design of one test that is updated regularly and administered by all schools. Exploration of options to advance this should be taken at the earliest opportunity.

Tests for Irish reading

The achievement in Irish reading among pupils in SLG and Gaeltacht schools is also well to the right of the theoretical normal distribution, indicating higher than expected performance. As this is a relatively new test and in light of the challenges in getting a representative sample for a relatively small cohort of pupils with a heterogeneous profile, it would be advisable for exploratory research to be carried out in order to determine whether the tests in Irish reading for pupils in Irish-medium schools need to be revised.

Computer-based adaptive testing

A move to computer-based, adaptive testing, for administration at least at the senior classes, would address the challenges outlined above. Computer-based, adaptive testing gives access to a pool of test items and has the capacity to vary the items presented and the order in which they appear. It also adapts to the pupil's ability level and most of the items that they are asked to respond to are at a level at which they have a reasonable chance of being successful. The use of computer-based adaptive testing would reduce the likelihood of teacher and pupil familiarity with the content, reduce or remove opportunities for pupils to copy, and reduce the opportunity to teach to the test, or even to practise the test. As a result, the actual results achieved by pupils would be more reflective of their ability than their familiarity with a test. All pupils, irrespective of their ability, would also be enabled to engage more fully with the tests.

Another advantage of computer-based testing is that it would facilitate the updating of the tests on an ongoing basis. In addition, it would support the requirement in the National Literacy and Numeracy Strategy in relation to digital testing and/or a test of digital literacy.

It should be noted, however, that the information, communication and technology (ICT) infrastructure in primary schools is currently not sufficient to facilitate the introduction of adaptive computer-based testing, at least in the short to medium term. Ensuring that all primary schools have the broadband capacity necessary for the administration of computer-based tests will take some time but this is a solution that should be worked towards as the National Digital Strategy is being rolled out. In the interim, consideration could be given to setting up a mobile network for the purpose of testing pupils; after testing, data could be uploaded to the internet for analysis and reporting purposes. Alternatively, tests could be offered via USB key.

Administration of the tests

The standardised achievement tests are usually administered by class teachers to their own pupils. This approach relies on teachers delivering them in line with the published guidelines. A lack of consistency with regard to administration of the test may be a factor contributing to the performance of pupils being well ahead of the normal theoretical distribution. Consequently, the importance of administering the tests in the correct manner needs to be reinforced possibly through the issuing of a reminder by the DES to schools highlighting the importance of adhering to the guidelines when administering the tests.

Role of national and international assessments

The National Assessments together with participation in Progress in International Reading Literacy Study (PIRLS) and Trends in Mathematics and Science Study (TIMSS) should be maintained as an additional means of monitoring quality in the educational system and in schools. As these tests are secure, they can provide an accurate and fair assessment of pupils' achievement on a rolling basis. Like the standardised achievement tests, they enable participating schools to locate their individual pupils and their schools within national norms. However, it should be noted that, as they are confined to a sample of approximately 150 schools, the NAs do not provide the same opportunity as the standardised achievement test to identify higher-performing and lower-performing schools.

Frequency of standardised achievement testing

In accordance with the National Literacy and Numeracy Strategy, primary schools are currently expected to administer standardised achievement tests in English reading and Mathematics, and also in Irish reading in the case of Irish-medium schools, at three points of the primary school cycle and report the results to parents, the board of management and the DES. The vast majority of schools also administer the standardised tests to classes other than those specified by the DES. While there are many benefits to standardised testing, it should be borne in mind that they are one set of tests performed at a moment in time and their outcomes need to be considered with other assessment evidence. It is therefore important that their use is not overemphasised at the expense of other valuable sources of information about pupils' achievement and progress in learning.

The DES is also committed to the administration of National Assessments every five years at least, if not more frequently. It is also committed to participation in the TIMSS and PIRLS international assessments every four and five years respectively. These provide valuable external benchmarks with which to review the quality of educational outcomes in Ireland. However, there is a danger that the intensity of this assessment activity and the demands that it places on schools and the educational system at primary level could lead to assessment fatigue and adversely affect teaching and learning. The question arises whether the requirements on primary schools to administer standardised achievement tests should be reduced from three points to two points in the primary school cycle. Options include removing the requirement to administer the tests to pupils in second class or removing the requirement for 4th class to sit the tests; this approach would reflect the National Assessments, which are also administered to these two classes.

Questions about the administration of standardised achievement tests, including the frequency of administration and the target areas for assessment also need to take account of emerging policy initiatives and developments at system level, and evidence from reviews of policy initiatives and emerging research. For example, the decision to allow Scoileanna Ián-Ghaeilge and Gaeltacht schools to implement a total early immersion approach up to the end of senior infants will in turn potentially involve a reconsideration of the requirement that Irish-medium schools administer standardised tests in English reading to pupils in second class. The interim review of the National Literacy and Numeracy Strategy also points to the need to consider the role of the Irish language in the promotion of learners' literacy skills in English-medium schools; in light of this, consideration may need to be given to the potential contribution that standardised tests in Irish reading may make to the development of pupils' overall competence in literacy and expectations regarding administration of such tests in English-medium schools need to be articulated. In addition, emerging findings from the research literature highlights the inappropriateness of standardised achievement testing for younger pupils which in turn raises

the question of whether it is correct to continue with the requirement to administer standardised achievement tests to pupils in second class.

Continuing professional development (CPD) for teachers

The *Chief Inspector's Report 2010-2012* indicates that there is a need for schools to make more effective use of assessment information, including standardised test data, to inform teaching and set targets for school improvements. It also indicates the need for ongoing continuing professional development (CPD) for the enhancement of teachers' formative assessment skills. Such CPD would increase teachers' understanding of Assessment for Learning (AfL) and Assessment of Learning (AoL) and provide additional guidance on the administration of standardised tests, interpretation of the results, and use of the results to inform teaching and learning.

Recommendations

It is important to ensure that the standardised achievement tests reliably measure the performance of individual pupils against national norms and that the data provided to parents and other relevant parties about pupils' achievement are accurate. It is also important that the standardised tests result in the generation of reliable and valid data that support the monitoring of quality and the promotion of improvement at system level, at school level and at the level of the individual pupil.

With this in mind, the following actions are recommended:

Short-term

- The existing tests in English reading and Mathematics should be updated and the updated tests introduced as soon as possible. The tests should be revised on a frequent basis, ideally every three years, thereafter.
- Consideration should be given to the design of one set of normed tests (one for English reading and one for Mathematics), that can also facilitate criterion referencing, which all primary schools will be required to administer. Exploration of options to advance this should be taken at the earliest opportunity.
- Exploratory research should be carried out in order to determine whether the tests in Irish reading for pupils in Irish-medium schools need to be revised.
- The collection of the standardised data systematically from schools should continue with a view to monitoring their ongoing administration by schools. However, the analysis of the results should be put on hold until revised tests are introduced that will allow for the generation of more reliable baseline data.
- The DES should issue a circular to schools advising of the importance of adhering to the test guidelines when administering the standardised achievement tests. Schools should also be reminded to make every effort to make additional provision for pupils who are absent on the day of testing.
- Schools and teachers should be provided with CPD support in their administration of the tests and their use of the data. The Professional Development Service for Teachers (PDST) should be requested to provide face-to-face and additional online support in this regard.
- To avoid assessment fatigue, the frequency with which schools are required to administer standardised achievement tests should be reviewed, possibly as part of the interim review of the National Literacy and Numeracy Strategy and in light of relevant policy initiatives and emerging research.

Long-term

- The National Assessments (NAs) and participation in PIRLS and TIMSS should be maintained as a means of monitoring quality in the educational system and in schools.
- Proposals should be sought on the introduction of computer-based adaptive testing.

Acronyms and Abbreviations:

AfL:	Assessment for Learning
AoL:	Assessment of Learning
CPD:	Continuous Professional Development
DEIS:	Delivering Equality of Opportunity in Schools
DES:	Department of Education and Skills
ERC:	Educational Research Centre
DPMT:	Drumcondra Primary Mathematics Test
DPRT:	Drumcondra Primary Reading Test
NA:	National Assessments
NAIMS:	National Assessment of Irish Medium Schools
NCSE:	National Council for Special Education
PDST:	Professional Development Service for Teachers
PIRLS:	Progress in International Reading Literacy Study
SEN:	Special educational needs
SES:	Socio-economic status
SSE:	School Self-Evaluation
SLG:	Scoileanna lán-Ghaeilge
TGD:	Triail Ghaeilge Dhroim Conrach
TIMMS:	Trends in International Mathematics and Science Study

Bibliography

Department of Education and Skills (2011a) *Literacy and Numeracy for Learning and Life. The National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020*, Dublin: Author

Department of Education and Skills (2011b) *Circular letter 0056/2011: Initial steps in the implementation of the national literacy and numeracy strategy*, Dublin: Author

Department of Education and Skills (2011c) *An Evaluation of Planning Processes in DEIS Primary Schools*, Dublin: Author

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

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 and Clerkin, A. (2012) *PIRLS and TIMSS 2011: Reading, Mathematics and Science Outcomes for Ireland*, Dublin: Educational Research Centre

Eivers, E and Clerkin, A. (2013) *National Schools, international contexts: Beyond the PIRLS and TIMSS test results*, Dublin: Educational Research Centre

Gilleece, L., Shiel, G., Clerkin, A. and Millar, D. (2012) *The 2010 National Assessments of English Reading and Mathematics in Irish-medium Schools*, Dublin: Educational Research Centre

Isaacs, T., Zara, C., Herbert, G., Coombes, S.J., & Smith, C. (2013) *Key Concepts in Educational Assessment*, London: Sage

Perkins, R., Cosgrove, J., Moran, G., & Shiel, G. (2012) *PISA 2009: Results for Ireland and changes since 2000*. Dublin: Educational Research Centre

Péteváry, T.; Ó Curnáin, B.; Ó Giollagáin, C. & Sheahan, J. (2014). *Iníúchadh ar an gCumas Dáttheangach: An Sealbhú Teanga i measc Ghlúin Óg na Gaeltachta*, An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta (tuarascáil dháttheangach).

Shiel, G., Surgenor, P., Close, S., & Millar, D. (2006) *The 2004 National Assessment of Mathematics Achievement*, Dublin: Educational Research Centre

Shiel, G., Kavanagh, L., & Millar, D. (2015) *The 2014 National Assessments of English Reading and Mathematics. Volume 1: Performance Report*, Dublin: Educational Research Centre

Weir, S. and McAvinue, L. (2013) *The Achievements and Characteristics of Pupils Attending Rural Schools Participating in DEIS*, Dublin: Educational Research Centre

Weir, S. & Denner, S. (2013) *The Evaluation of the School Support Programme under DEIS: changes in pupil achievement in urban primary schools between 2007 and 2013*, Dublin: Educational Research Centre