

Educational Research Centre

Press Release – January 12, 2015

Improved Performance among Primary School Pupils in National Assessments of English Reading and Mathematics

A performance report on reading and mathematics in the primary sector, based on the results of the 2014 National Assessments of English Reading and Mathematics, was launched by the Minister for Education and Skills, Jan O’Sullivan, T.D., today.

The report is based on a study of the performance of over 8,000 pupils in 150 primary schools conducted in May 2014 by the Educational Research Centre. The report shows that performance on English reading and mathematics has improved significantly at Second and Sixth classes since the last National Assessments in 2009. This is the first time that average performance has improved significantly in National Assessments at primary level since the early 1980s.

In 2014, significant but small gender differences were observed in Second class, favouring girls on English reading and boys on mathematics. Gender differences at Sixth class were not statistically significant. Pupils in DEIS schools also performed at higher average levels in 2014 compared with their counterparts in 2009, though there are still gaps in performance between pupils in DEIS and non-DEIS schools.

These results follow the publication in December 2013 of the outcomes of the OECD PISA 2012 study. In PISA 2012, pupils in post-primary schools in Ireland achieved scores on reading literacy, mathematics and science that were significantly above the corresponding OECD average scores, with particularly strong performance on reading literacy.

The findings in relation to pupils in DEIS schools in the 2014 National Assessments are consistent with those reported in a recent large-scale evaluation of performance in DEIS schools, published by the Educational Research Centre, which also found significant improvements on English reading and mathematics (see http://www.erc.ie/documents/deis2013_bulletinreport.pdf).

Today’s report also confirms that targets for literacy and numeracy set out in the *National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020* have already been achieved. A welcome result is that smaller proportions of pupils are performing at the lowest reading and mathematics proficiency levels in 2014, and more pupils are performing at the highest levels, than in the 2009 National Assessments.

Gerry Shiel, one of the report’s authors, commented that “the results suggest that considerable improvement has been made in both reading and mathematics since 2009, in schools in general and in DEIS schools in particular. It should be possible to build on this

progress over the remainder of the National Strategy, especially in the Senior primary classes, where children would not have experienced the full benefits of the Strategy throughout their schooling”.

Lauren Kavanagh, another of the authors, said “the results for mathematics are encouraging. This is an area in which Ireland has not always done well in international assessments. However, we can now look forward to building on the progress that has been made to date, and supporting more pupils to apply their skills in problem-solving contexts”.

Notes:

About the National Assessments

The 2014 National Assessments of English Reading and Mathematics were administered by class teachers, under the supervision of inspectors of the Department of Education and Skills, to a representative sample of over 8,000 pupils in the Second and Sixth classes in 150 primary schools in May 2014. In addition to taking tests of English reading and mathematics, the pupils, their principal teachers, their class teachers and their parents completed questionnaires. At Second class, 94% of selected pupils completed the tests, while at Sixth class, 93% of pupils did so. Just 1% of pupils at each class level were exempted from testing because of special educational needs or lack of proficiency in English, while the remainder were absent from school.

Today’s Performance Report is the first of two reports based on the study. A Context Report will be issued later in 2015. The Context Report will examine factors associated with performance on English Reading and Mathematics, based on data gathered on the questionnaires completed by school principals, teachers, pupils and their parents.

The tests used in the 2014 National Assessments were secure curriculum-based instruments developed for the 2009 National Assessments and updated for 2014 through the inclusion of a small number of new items to replace those that were released in 2009. At each grade level, there were multiple test booklets in each domain, allowing for greater coverage of content and processes. Item Response Theory scaling was used to link booklets, and to place performance in 2014 on the same scales developed in 2009. In that year, the mean score for each scale and subscale was set at 250, and the standard deviation at 50. In addition, fixed percentages of pupils were assigned to proficiency levels in each domain at each grade level, such that 10% of pupils performed below Level 1, 25% at Level 1, 30% at Level 2, 25% at Level 3 and 10% at Level 4.

Interpreting Effect Sizes

Effect sizes are standardised differences between mean scores, expressed as decimal numbers. According to the US Department of Education, effect sizes of 0.25 or greater can be considered ‘substantively important’, even if not statistically significant. In the current

study, where there were insufficient numbers of DEIS schools, and several differences involving pupils in DEIS schools did not reach statistical significance, the obtained effect sizes nonetheless indicate that good progress has been made.

Performance on English Reading

Overall performance on English reading in Second and Sixth classes class was significantly higher in 2014 compared with 2009, by 14 score points and 13 score points respectively. The corresponding effect sizes or standardised differences of 0.29 and 0.26 can be interpreted as being substantively important. Significant performance increases were also observed for the Reading Vocabulary and Reading Comprehension component subscales at both class levels. Increases at Second class were about the same for the Retrieve, Infer and Interpret & Integrate reading processes, while pupils at Sixth class made more progress on Retrieve, Infer and Interpret & Integrate than on Examine & Evaluate (an additional reading process assessed at that level).

In 2014, 22% of pupils in Second class performed at or below Proficiency Level 1, compared with 35% in 2009 (indicating fewer lower-achieving pupils in the system), while 46% performed at Levels 3-4, compared with 35% in 2009 (indicating more higher achievers). At Sixth class, 25% performed at or below Level 1, again compared with 35% in 2009, while 44% performed at Levels 3 and 4 combined, compared with 35% in 2009. These data indicate that the targets established in the *National Strategy* were reached for pupils described as lower-achieving (those at or below Level 1) and higher-achieving (those at Levels 3 and 4) at both grade levels

Performance on Mathematics

Overall performance on mathematics in Second and Sixth classes was significantly higher in 2014 than in 2009, by 14 and 12 score points, respectively. The effect size at Second class was 0.28, and the effect size at Sixth class was 0.24, both of which can be interpreted as being substantively important. At Second class, significant increases in performance were observed on three of four content areas assessed, and on all five mathematics processes. The exception was the Data content area.

At Sixth class, there were significant increases on all content areas, and all processes. Twenty-six percent of pupils in Second class performed at Proficiency Level 1 or below compared with 35% in 2009. Forty-seven percent performed at Levels 3-4, compared with 35% in 2009. At Sixth class, 27% performed at or below Level 1, and 42% performed at Levels 3-4. Again, the targets set out in the *National Strategy* were reached for both lower- and higher-achieving pupils.

Gender Differences

In 2014, girls in Second class significantly outperformed boys on the overall English reading scale by 7 score points, whereas there was a difference of 14 points in favour of girls in 2009. At Sixth class, girls in 2014 had a higher overall reading score than boys (by 4 points), but the difference was not statistically significant, though girls did have a significantly higher mean score on reading comprehension (by 5 points). In 2009, there were no significant differences between girls and boys on Reading Vocabulary, Reading Comprehension or overall reading at Sixth class.

Boys in Second class had a higher mean score on overall mathematics than girls in 2014, and the difference (5 points) was statistically significant. This represents a change from 2009, where no overall gender difference was found for Second class mathematics. Boys significantly outperformed girls on the Measures, Data, and Apply & Problem Solve subscales in 2014, but did not differ significantly from girls on any of the other content or process subscales. At the Sixth class level, boys in 2014 had a 4-point advantage over girls on overall mathematics, but the difference was not statistically significant. Boys were significantly ahead of girls in 2014 on just one process subscale (Apply & Problem Solve, by 7 points), and on one content subscale (Measures, also by 7 points). Other subscale differences were not statistically significant.

Performance of Pupils in DEIS Schools

Pupils in Second class in DEIS Band 1 schools achieved a mean score on overall reading in 2014 that was 14 points higher than in 2009, and the difference was statistically significant. The corresponding effect size (0.35) can be interpreted as being substantively important. In Sixth class, the mean overall reading score of pupils in Band 1 schools in 2014 was 233 – some 13 points higher than in 2009. The difference was not statistically significant, but converts to an effect size (0.29) than can be interpreted as being substantively important. Pupils in Second class DEIS Band 2 schools had a significantly higher mean overall reading score in 2014 (27 points), compared with 2009. The corresponding effect size was 0.60, which can be considered large. The overall mean reading score of pupils in Sixth class in Band 2 schools was significantly higher, by 14 score points (effect size = 0.29), in 2014, compared with 2009.

In Second class mathematics, pupils in Band 1 schools in 2014 had a mean score that was 13 points higher than in 2009. Again, the difference was not statistically significant. However, the effect size (0.28) can be considered substantively important. In Band 2 schools, there was a significant increase of 29 score points, and an effect size of 0.62, which can be interpreted as being large. Pupils in Sixth class in Band 1 schools in 2014 had a mean score on overall mathematics (233) that was higher than that of pupils at the same class level in 2009 (219). While the difference (14 points) was not statistically significant, the effect size of

0.29 can be interpreted as being substantively important. There was a smaller increase in Band 2 schools (from 231 points to 241 points), which was not statistically significant.

Although fewer pupils in DEIS schools performed at the lowest proficiency levels in 2014, compared with 2009, large proportions continued to perform poorly, especially in Band 1 schools. For example, at Second class, 44% of pupils in Band 1 schools performed at or below the lowest proficiency level on overall reading, compared with 28% in Band 2 schools, and 22% across all schools.

The National Strategy to Improve Literacy and Numeracy 2011-2020

The *National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020* was launched by the Department of Education and Skills in 2011 in response to concerns about standards in literacy and numeracy. The Strategy outlined a range of measures designed to raise standards in literacy and numeracy at all levels in the educational system and is being rolled out over a number of years. Measures include the allocation of additional time to teaching literacy and numeracy, as well as a stronger focus on using assessment results in the contexts of whole-school and classroom planning. The Strategy included targets for improvements in English reading and mathematics in the National Assessments, such that, by 2020, there would be a reduction (by 5 percentage points) in the percentages of pupils performing at or below Proficiency Level 1, and an increase (also by 5 points) in the percentages performing at Levels 3-4 (combined) at Second and Sixth classes, compared with 2009.

DEIS Schools

DEIS (Delivering Equality of Opportunity in Schools) is an action plan put in place by the Department of Education and Skills in 2005 to address the effects of educational disadvantage. The School Support Programme, which comprises a set of measures and provides schools with additional human and material resources, is a key element of DEIS. Urban primary schools in DEIS are allocated to Band 1 or Band 2, depending on their average level of disadvantage. There is a separate set of measures for rural schools in the School Support Programme. The Educational Research Centre recently published reports on the performance of pupils in DEIS urban and rural schools (see http://www.erc.ie/documents/deis2013_bulletinreport.pdf and http://www.erc.ie/documents/rural_report2013.pdf)

Accessing the Report and Sample Materials

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

The report launched today can be accessed at www.erc.ie/na2014

Sample texts and questions from the 2014 National Assessments can also be viewed at www.erc.ie/na2014

Further Information

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