

Friday November 15 2019

**Data error and subsequent correction
PISA 2015 national analysis comparing DEIS and non-DEIS schools**

Background

The Educational Research Centre (ERC) administers the OECD's Programme for International Assessment (PISA) in nationally representative samples of students aged 15. The study is conducted every three years since 2000, and assesses reading literacy, mathematics and science. The results are published by the OECD and by the ERC in early December of the year following the survey administration.

Description of error and implications

- The ERC identified the error in the course of a review of PISA 2015 data which was conducted in preparation for secondary analysis of the PISA 2018 results.
- The error involved using the wrong indicator variable to compare (students in) DEIS and non-DEIS schools in PISA 2015 national reporting. The PISA 2015 national report and its accompanying e-Appendix were published by the ERC in December 2016.
- The DES has been informed of the nature of the error and steps taken to address and correct it. The ERC has also met with the relevant DES representatives to fully brief them and agree on remedial actions.
- As a result of this error, the published analyses in the PISA 2015 national report that compare DEIS and non-DEIS schools are incorrect. This means, for example, that the reported progress in closing the achievement gap for students between DEIS and non-DEIS schools has been somewhat overstated.
- A second consequence of this error is that the post-primary literacy and numeracy targets in the DEIS 2017 Action Plan and in the Interim Literacy and Numeracy Strategy Review document, which are based on PISA proficiency levels, are incorrect. The figures should have presented a lower baseline of achievement than what was published at the time.
- While the revised figures still represent improvements on the equivalent data for 2012, those improvements are somewhat less than previously reported. Specifically: the percentage of pupils in DEIS schools below Level 2 in reading proficiency stood at 21.8 per cent in 2015 (down from 25.5 in 2012) and not 15.6 per cent as previously reported; the results for mathematics show that 29.0 per cent of students scored below Level 2 (down from 37.4 in 2012), compared to the previously reported figure of 22.1 per cent.

Steps taken to correct the error

- This error is the first of its kind to have been identified in the data management processes of the ERC. However, the ERC accepts that the fault lies with it and it alone and has apologised to the Department of Education and Skills for the error.
- The incorrect variable has been removed from the relevant database and a thorough series of internal checks were performed to confirm that the error is entirely confined to national analysis of the PISA 2015 data. The ERC can confirm that the error affects only the results which compare DEIS and non-DEIS schools; all other results (for example, overall performance means and comparisons of other sub-groups such as males and females) are correct.

- The affected analyses have been re-run and checked and the ERC website now includes the corrected national report and e-Appendix together with a list of errata.
- Also in response to identification of this error, the ERC is in the process of a broader internal review of its data management processes to mitigate the recurrence of such an error.

The corrected national report is here:

<http://www.erc.ie/wp-content/uploads/2019/11/PISA2015-FutureReady-15112019.pdf>

The corrected e-Appendix is here:

<http://www.erc.ie/wp-content/uploads/2019/11/E-Appendix-15112019.pdf>

The list of errata is here:

<http://www.erc.ie/wp-content/uploads/2019/11/Errata-15112019.pdf>

Additional information

The PISA 2015 report is only one of several pieces of information used to evaluate the DEIS programme. Other evidence confirms improvements in the performance of students in DEIS post-primary schools. For example, a report published in 2018 by the ERC (<http://www.erc.ie/wp-content/uploads/2019/01/Weir-Kavanagh-2018-DEIS-post-primary.pdf>) included an examination of 15-year trends in English and mathematics Junior Certificate examination performance. A significant positive trend in performance on these subjects was observed across *all* schools between 2002 and 2017, but this trend was significantly higher in DEIS compared to non-DEIS schools, meaning that students in DEIS schools showed comparatively larger gains in Junior Certificate English and mathematics performance than their non-DEIS counterparts. The report noted other positive findings that point towards the effectiveness of DEIS, for example significant positive trends in retention rates to Junior and Leaving Cert levels in DEIS schools between 1995 and 2011.

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