

# Insights on Equity in Mathematics and Reading Skills

## Ireland's performance in large-scale assessments at primary level

### Introduction

As part of its programme of work, the Educational Research Centre (ERC) conducts large-scale national and international assessments of education. In 2023 it published findings from the 2021 cycles of two major studies: the National Assessments of Mathematics and English Reading (NAMER) and the Progress in International Reading Literacy Study (PIRLS). This article looks at the achievement of Ireland's primary pupils in both studies and at the findings' implications for equity in Irish education.

Previous Irish research has shown that national and international assessments provide valuable alternative perspectives when examining educational inequality (Karakolidis et al., 2021). Having comparable data from two high-quality studies conducted around the same time presents a rare opportunity to gain important insights into key policy priorities.

### NAMER and PIRLS

Irish education policy emphasises equity in education. The 2017 DEIS Plan includes targets to increase the percentages of high achievers and reduce the percentages of low achievers in reading and mathematics in DEIS schools (DES, 2017). Targets for primary pupils are based on snapshots of achievement in the National Assessments of Mathematics and English Reading (NAMER), a curriculum-based assessment most recently administered by the Educational Research Centre (ERC) in 2021. Over 10,000 pupils from 188 primary schools participated: Second Class pupils completed English



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**In 2023 the Educational Research Centre published findings from recent cycles of two major studies that assess pupils' mathematics and reading skills at primary level. This article describes the studies, summarises their findings, and outlines the implications for educational policy in Ireland.**

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reading tests, and Sixth Class pupils were assessed in mathematics (Kiniry et al., 2023).

While the percentages of high and low achievers in DEIS and non-DEIS schools offer one perspective on the socio-economic achievement gap in Ireland, an alternative is provided by the Progress in International Reading Literacy Study (PIRLS) – an international assessment of the reading achievement of pupils in Fourth (or Fifth) Class. PIRLS was carried out in 57 countries in 2021 and administered by the ERC in Ireland, where 4,663 pupils from 148 schools participated.

Due to Covid-19, the assessment was administered in Ireland to pupils starting Fifth Class, rather than finishing Fourth Class as is typical. Thus, comparisons between cycles require caution. PIRLS 2021 included a new measure of individual home socio-economic status, based on what parents said about their own education, their occupation, and the numbers of books (including children's) at home (Mullis et al., 2023). This is a key strength of PIRLS, as this detailed information supports a nuanced understanding of associations between family background, school context, and achievement.

## Findings

Findings from NAMER 2021 show no significant change since 2014 in average reading or mathematics scores overall (Kiniry et al., 2023) or in urban DEIS or non-DEIS schools (Nelis & Gilleece, 2023). Very similar numbers of Second Class pupils in urban band 1 schools had low reading scores in 2014 (44%) and 2021 (43%), indicating little progress towards the target of 40% set out in the 2017 DEIS Plan. In contrast, the target for high reading achievers (25%) was met in 2021. At Sixth Class, almost 49% of pupils in urban band 1 schools had low mathematics scores in 2021, slightly below the figure in 2014 and still above the target value of 42%. The percentage of high mathematics achievers (22%) remained below the target value of 27%.

Although not statistically significant in either case, welcome findings included a small reduction between 2014 and 2021 in the reading achievement gap between urban non-DEIS and urban band 1 schools, and a slight narrowing of the mathematics achievement gap between urban non-DEIS and urban band 2 schools. It was heartening that there was no evidence of average scores declining in urban DEIS schools in 2021, given the substantial disruptions to education as a result of Covid-19.

In PIRLS 2021, pupils in Ireland achieved a high average reading score relative to pupils in most other countries (Delaney et al., 2023). Performance in Ireland was at least as strong as in 2016. As in NAMER, average achievement was substantially lower for pupils in urban band 1 and band 2 schools compared to

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those in non-DEIS schools. Gaps by DEIS status were somewhat (although not significantly) wider in PIRLS 2021 compared to 2016 – in contrast to NAMER, where gaps became slightly (but not significantly) narrower in 2021 relative to 2014.

## Socio-economic status

Average socio-economic status (SES) in Ireland was relatively high compared to other PIRLS countries. In most countries, including Ireland, there was a moderate or moderate-to-strong association between SES and reading achievement. Twelve countries, including Bulgaria and Hungary, had stronger correlations than Ireland. Germany, Singapore, and Israel were similar to Ireland, while weaker associations were observed in countries including Hong Kong, the Netherlands, and Finland.

PIRLS 2021 findings suggest that the lowest-SES pupils (bottom quartile) in Ireland are consistently disadvantaged whether reading narrative or informational texts. Compared to the highest-SES pupils (top quartile), the lowest-SES pupils were *somewhat less* likely to show mastery of basic skills and *much less* likely to show mastery of more complex skills. Over half of low-SES pupils did not reach the high benchmark, which requires pupils to integrate information across texts and critically evaluate content, whereas only one in eight high-SES pupils did not show this level of skill.

In summary, NAMER and PIRLS findings point towards stability in overall achievement at primary level and stability in urban DEIS schools, despite Covid-19 disruptions. Nonetheless, substantial socio-economic-related achievement gaps persist, although there is limited evidence from NAMER or PIRLS that these were exacerbated by the pandemic. These gaps indicate an ongoing need for equity-related policy intervention, which in 2024 will be further informed by findings from other international studies administered by the ERC and the OECD *Strength Through Diversity* review.

## REFERENCES

- Delaney, E., McAteer, S., Delaney, M., McHugh, G., and O'Neill, B. (2023) *PIRLS 2021: Reading Results for Ireland*. Dublin: Educational Research Centre. [www.erc.ie/wp-content/uploads/2023/05/PIRLS-2021\\_Reading-Results-for-Ireland.pdf](http://www.erc.ie/wp-content/uploads/2023/05/PIRLS-2021_Reading-Results-for-Ireland.pdf).
- Department of Education and Skills (DES) (2017) *DEIS Plan 2017: Delivering Equality of Opportunity in Schools*. Dublin: DES. [www.gov.ie/en/publication/0fea7-deis-plan-2017/](http://www.gov.ie/en/publication/0fea7-deis-plan-2017/).
- Karakolidis, A., Duggan, A., Shiel, G., and Kiniry, J. (2021) 'Examining educational inequalities: Insights in the context of improved mathematics performance on national and international assessments at primary level in Ireland', *Large Scale Assessments in Education*, 9(5). DOI: 10.1186/s40536-021-00098-1

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Kiniry, J., Duggan, A., Karakolidis, A., Cunningham, R., and Millar, D. (2023) *The National Assessments of Mathematics and English Reading 2021: Performance Report*. Dublin: Educational Research Centre. [www.erc.ie/wp-content/uploads/2023/05/NAMER2021\\_Performance-Report\\_Digital.pdf](http://www.erc.ie/wp-content/uploads/2023/05/NAMER2021_Performance-Report_Digital.pdf).

Mullis, I.V.S., von Davier, M., Foy, P., Fishbein, B., Reynolds, K.A., and Wry, E. (2023) *PIRLS 2021 International Results in Reading*. TIMSS & PIRLS International Study Center and International Association for the Evaluation of Educational Achievement (IEA). <https://pirls2021.org/results>.

Nelis, S.M. and Gilleece, L. (2023) *Ireland's National Assessments of Mathematics and English Reading 2021: A Focus on Achievement in Urban DEIS Schools*. Dublin: Educational Research Centre. [www.erc.ie/NAMER2021DEIS](http://www.erc.ie/NAMER2021DEIS).

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Frank Krysiak (age 9) and Rían McGovern (age 8), pupils from **Little Island National School** in Cork pictured at the launch of the AbbVie STEM Prize, a new science education initiative by the biopharmaceutical company, **AbbVie**, promoting the value of STEM subjects.