

Reflections on the National Literacy and Numeracy Strategy 2011-2020: Evidence from TIMSS and PIRLS (2011-2023)

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Abstract

The *National Strategy to Improve Literacy and Numeracy Among Children and Young People 2011-2020* (hereinafter referred to as the 2011 Strategy) was one of the flagship policy initiatives of the Department of Education and Youth for much of the last 15 years. Amongst other aspects, it set out significant goals relating to initial teacher education, instructional time, parental involvement, assessment practices and use of standardised tests, use of large-scale assessment data for system-level monitoring, and major curriculum reform. The publication of a successor *Literacy, Numeracy and Digital Literacy Strategy* in 2024 – covering the next decade up to 2033 – creates a follow on from the 2011 Strategy. It therefore seems timely now to look back over the 2011-2023 period to examine the extent to which progress towards a set of aims specified in the 2011 Strategy had been accomplished by its endpoint.

For this analysis, we draw on data from multiple cycles of two large-scale assessments: PIRLS 2011, TIMSS 2011, PIRLS 2021, and TIMSS 2023. These studies, which are conducted at Fourth Class in primary school, fulfil three key criteria for the current purpose: (i) they provide population-level data that allow generalisations to be made to the relevant population of pupils across the country as a whole, rather than just a sample; (ii) they provide comparable datapoints on key topics at either side of the lifetime of the 2011 Strategy; and (iii) they provide data relevant to the teaching and learning of both literacy and numeracy. Findings are presented under the six “pillars” alluded to in the 2011 Strategy and a subsequent 2017 Interim Review. Next, the findings are contextualised from an international perspective, highlighting common drivers for policy creation, approaches used when policymaking, and challenges that arise when trying to evaluate the effectiveness of policy. The findings and contextualisation inform a discussion on the changes and progress in the lifetime of the 2011 Strategy while considering the updated goals and objectives set out in the current *Literacy, Numeracy and Digital Literacy Strategy 2024-2033*.

Keywords: National Literacy and Numeracy Strategy 2011-2020, mathematics, reading, TIMSS, PIRLS, Ireland

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Background

The starting point of this paper is the introduction of *Literacy and Numeracy for Learning and Life: The National Strategy to Improve Literacy and Numeracy Among Children and Young People, 2011-2020* (Department of Education and Skills, 2011b), hereinafter referred to as the 2011 Strategy. The 2011 Strategy was, in part, a response to the disappointing results in Ireland in the Organisation for Economic Co-operation and Development (OECD)'s Programme for International Student Assessment (PISA) 2009 study, particularly in the domains of reading and mathematics (Perkins et al., 2010). Although a public consultation on a draft version of the strategy had begun in November 2010, it is clear that the publication of the PISA 2009 results in December 2010 – which generated considerable critical media and political attention – accelerated the process and led to a greater sense of urgency accompanying its final publication in July 2011 (Clerkin, 2017; Conway & Murphy, 2013).

The 2011 Strategy highlighted challenges in the education system at that time and specified goals that were aimed at addressing those challenges. The topics considered fell into several categories, which were referenced in the 2011 Strategy, but structured more explicitly as six “pillars” in a subsequent interim review of the strategy (Department of Education and Skills, 2017b):

- Pillar 1: Enabling parents and communities to support children’s literacy and numeracy development
- Pillar 2: Improving teachers’ and ECCE practitioners’ professional practice
- Pillar 3: Building the capacity of school leadership
- Pillar 4: Improving the curriculum and learning experience

- Pillar 5: Helping students with additional learning needs to achieve their potential
- Pillar 6: Improving assessment and evaluation to support better learning in literacy and numeracy

Some key provisions in the 2011 Strategy and its successors are described next.

The 2011 Strategy: Literacy and Numeracy for Learning and Life (2011-2020)

The underlying aim of the 2011 Strategy was “to improve literacy and numeracy standards among children and young people in the education system [and] to address significant concerns about how well our young people are developing the literacy and numeracy skills that they will need to participate fully in the education system, to live satisfying and rewarding lives, and to participate as active and informed citizens in our society” (Department of Education and Skills, 2011b, p. 7). Notwithstanding broader debates over the ways in which “literacy”, “numeracy”, and related concepts such as “disciplinary literacy” should be defined and operationalised in the curriculum (Burke, 2026; Burke & Welsch, 2018; Ó Breacháin & O’Toole, 2013), and other competing visions for the primary curriculum (Fitzpatrick et al., 2014), a range of reforms and initiatives were recommended by the Department of Education and Skills with this aim in mind. They included:

- Supporting a national public information campaign to highlight the role played by parents and wider communities in children’s development of literacy and numeracy.
- Providing parents and guardians with information and resources about activities that can support their child’s literacy, language, and numeracy development.
- Taking steps to ensure that parents are engaged in their child’s learning, including by having schools foster effective relationships with parents and increase parental expectations for their child’s learning.
- Ensuring that school improvement plans and literacy/numeracy plans include specific actions about communication with parents to support parental understanding of their child’s progress at school.
- Continuing to support family literacy initiatives in socially and economically disadvantaged communities.
- Developing models of engagement between schools and libraries, in collaboration with public library services, to include aspects such as library visits, library membership schemes, and the provision of materials.
- Increasing the duration of initial teacher education programmes for primary teaching from three to four years, to include at least one year of school-based experience, and increasing the duration of postgraduate teacher education programmes from one to two years.

- Increasing the focus on development of pedagogical skills and professional knowledge related to literacy, language development, and numeracy during initial teacher education by reducing the time allocated to elective subjects from other areas of the humanities.
- Providing access to approved, high-quality continuing professional development every five years for primary teachers in the areas of literacy, numeracy, and assessment.
- Providing professional development courses for all serving principals and deputy principals on (i) effective approaches to teaching of literacy and numeracy (including cross-curricular approaches) and (ii) the use of assessment to support learning and reporting of learning difficulties and progress.
- Increasing focus and supports for school self-evaluation, and requiring all schools to engage in self-evaluation and to develop three-year school improvement plans.
- Mandating review and revision of curricula and curricular supports related to language learning, literacy, and numeracy. This includes, for example, ensuring that “explicit and systematic attention” (Department of Education and Skills, 2011b, p. 53) is given to the teaching and assessment of literacy skills such as phonemic awareness, phonics, word identification, reading fluency, and vocabulary, and that the reading tastes of all students, “including boys” (p. 53), are catered for.
- Increasing the time allocated to literacy and numeracy development in primary schools (Department of Education and Skills, 2011b) (later clarified in Circular 0056/2011 [Department of Education and Skills, 2011a] as a one hour per week increase in time for literacy and an additional 70 minutes per week for mathematics instruction), with a concomitant downward revision of time allocation and expected learning outcomes for other subjects. As part of this, the National Council for Curriculum and Assessment (NCCA) was requested to “provide guidance on the possibilities for cross-curricular teaching and learning” (p. 57).
- Supporting the provision of early childhood care and education (ECCE) via the ECCE scheme.
- Providing further support to pupils with additional learning needs, and pupils in alternative education settings such as Youthreach.
- Requiring primary schools to administer and report the results of standardised tests in reading and mathematics to parents and to the Department of Education and Youth at the end of Second Class, Fourth Class, and Sixth Class.
- Setting specific targets for increasing the percentages of pupils reaching the higher levels of achievement in National Assessment of Mathematics and English Reading (NAMER) (at Second and Sixth Class in primary schools) and PISA (among 15-year-olds at post-primary level), and for reducing the percentages of pupils achieving at the lower levels of proficiency in these studies.

Finally, and notably, the 2011 Strategy mandated participation in large-scale international assessments of learning such as the International Association for the Evaluation of Educational Achievement (IEA)'s Progress in International Reading Literacy Study (PIRLS) and Trends in International Mathematics and Science Study (TIMSS), and PISA under Pillar 6 "to enable the achievement of students in reading literacy, mathematics and science to be benchmarked against international standards" (Department of Education and Skills, 2011b, p. 83). This was strengthened further in *Circular 0056/2011* and *Circular 0025/2012*, for primary and post-primary schools, respectively, which specifically mentioned that sampled schools would be required to cooperate with international assessments when requested to do so as part of a nationally representative sample (Department of Education and Skills, 2011a, 2012). This was significant in the context of Ireland's re-joining of TIMSS in 2011 (following a 16-year gap since Ireland's only previous participation in 1995), and Ireland's first ever participation in PIRLS in 2011. Since 2011, Ireland has continued to participate in each subsequent cycle of PIRLS (2016, 2021, 2026) and TIMSS (2015, 2019, 2023, 2027), as well as PISA (2012, 2015, 2018, 2022, 2025).

The phrasing used in the 2011 Strategy in connection with participation in these assessments is clear in its focus on achievement in the domains of reading, mathematics, and science, as measured by the PIRLS, TIMSS, and PISA tests. However, although given less emphasis in the 2011 Strategy, the wide range of questionnaire data collected as part of these studies also represents a key source of information, which can be used to monitor how other relevant outcomes targeted by the 2011 Strategy have evolved since its introduction.

The 2017 Interim Review

An interim review of the 2011 Strategy "commenced in 2015, in order to take stock of the successes and challenges encountered with its implementation to date" and "concluded in late 2016 with the publication of PISA (2015) and TIMSS (2015) reports" (Department of Education and Skills, 2017b, p. 7). Hereinafter referred to as the 2017 Interim Review, this document considered progress made over the first half of the 2011 Strategy and identified new priorities and areas in need of greater emphasis.

For example, the 2017 Interim Review identified that the implementation of the 2011 Strategy in its early years had, in practice, given more attention to literacy than to numeracy, and committed to a stronger focus on numeracy in the following years "to achieve our ambition to be among the top performers in Europe" (p. 7). Other areas that were highlighted as requiring additional attention over the remaining years of the strategy included efforts to tackle educational disadvantage (including via the Delivering Equality of Opportunity in Schools [DEIS] programme of supports¹); a focus

1 DEIS is the Department of Education and Youth's programme aimed at addressing educational disadvantage.

on enabling higher-achieving pupils to reach their full potential (based on findings from national and international assessments); and placing additional emphasis on literacy in the Irish language and on the development of digital literacy skills. The need for further support for the integration of literacy and numeracy development across the full extent of the primary curriculum was highlighted. Specific additional actions that were described included increasing the percentage of parents who set time aside for their child to read for enjoyment on most days, increasing the percentages of pupils who borrow books from a public library at least monthly, and ensuring “continuing access to learning opportunities in literacy and numeracy in pedagogy, subject knowledge and assessment” (p. 32).

In terms of pupil achievement outcomes, it was noted that the results of NAMER 2014 (Shiel et al., 2014) and PISA 2015 (Shiel et al., 2016) showed that the targets for reading and mathematics achievement specified in the 2011 Strategy – in terms of the percentages of pupils at lower and higher benchmarks of performance – had largely been met by the time of the 2017 Interim Review. In response, more ambitious targets were set to replace the previous targets, and in addition, some new targets related to reducing achievement gaps between pupils in DEIS schools and the national average were specified.

At that point, the 2011 Strategy was intended to continue up to 2020, with some modifications and updates based on the 2017 Interim Review. However, due to the onset of the COVID-19 pandemic and the ensuing disruptions to the education system and wider society, the 2011 Strategy effectively remained in place until 2024, when a successor strategy was published.

The 2024 Strategy: Literacy, Numeracy and Digital Literacy Strategy (2024-2033)

Ireland’s Literacy, Numeracy and Digital Literacy Strategy 2024-2033 (Department of Education, 2024a), hereinafter referred to as the 2024 Strategy, was published in May 2024 following an extensive review and consultation process. It was accompanied by an implementation plan to 2028 that specified particular objectives and actions to receive focus during the first five years of the strategy (Department of Education, 2024b).

As the 2024 Strategy is in its early stages of implementation at the time of writing it is largely outside the scope of the current study, as described next. However, in brief, it can be noted that the 2024 Strategy continues many of the priorities of its predecessor. In addition, it places strong emphasis on digital literacy as an area of focus in addition to literacy and numeracy; the need to further support parents in promoting children’s learning in literacy, numeracy, and digital literacy; expanding initiatives related to the use of libraries and reading in early childhood; increasing supports for literacy in Irish and in multilingual contexts; promoting positive dispositions towards the

Irish language; commissioning research and developing policy to address gender differences in attitudes towards reading and mathematics; and providing more opportunities for active learning in schools in areas such as measurement, geometry, shape and space, and data.

The current study

The introduction of the 2024 Strategy provides a timely opportunity to reflect on and consider the potential impacts of the 2011 Strategy in key areas of Ireland's education system at primary level. Here, we focus on two large-scale assessments – TIMSS and PIRLS – that each gathered data at time points close to the beginning of the 2011 Strategy and at its end, prior to the introduction of the 2024 Strategy. TIMSS provides data related to numeracy and mathematics education, while PIRLS provides data related to literacy and reading. Specifically, TIMSS and PIRLS 2011 were conducted as a joint administration in spring 2011 (immediately prior to the publication of the 2011 Strategy), while PIRLS 2021 was administered in autumn 2021 and TIMSS 2023 was administered in spring 2023 (at the endpoint of the 2011 Strategy and prior to the 2024 Strategy). For brevity, we refer to these studies below as PT11, P21, and T23, respectively.

Some parameters setting out the limits of this study should be noted. First, although the 2011 Strategy included elements that focused on early childhood education and post-primary education, we focus here on primary-level education only as the data from PT11 (and the corresponding comparisons from P21 and T23) relate to pupils in Fourth Class in Ireland (Grade 4 internationally). Second, although we do consider outcomes related to literacy and numeracy in the analyses that follow, a particular aim of this study is to examine the extent of changes in areas other than achievement given that extensive reporting on reading and mathematics achievement at primary level has already been provided by previous reports based on successive NAMER, TIMSS, and PIRLS cycles since the early 2010s (Clerkin et al., 2016; Delaney et al., 2023; Eivers & Clerkin, 2012a; Eivers et al., 2010, 2017; Kiniry et al., 2023; McHugh et al., 2024; Perkins & Clerkin, 2020; Shiel et al., 2014). Finally, we acknowledge that other important policies and strategies have also been in operation during the lifetime of the 2011 Strategy that intersect in relevant ways with its aims. These include (but are not limited to) the DEIS programme, which provides additional supports to schools serving more disadvantaged student bodies (Department of Education and Science, 2005; Department of Education and Skills, 2017a), the *STEM Education Policy Statement* (Department of Education and Skills, 2017c), and the *Digital Strategy for Schools* (Department of Education and Skills, 2015a). However, given the difficulties of disentangling the specific effects of one policy among many overlapping policies (for more on this, see Gilleece & Clerkin, 2025), we focus here on an empirical examination of the clear goals specified at the beginning of the 2011 Strategy and the extent to

which measurable changes related to those goals are evident at the endpoint of the strategy.

Our core research aim, therefore, is to examine the extent to which changes are evident in key areas of learning or the educational context that had been identified as goals in the 2011 Strategy. We do this by mapping the Strategy's goals, where possible, onto relevant items in the PIRLS and TIMSS questionnaires (administered to Fourth Class pupils and their teachers and school principals), and comparing the responses received in PT11 to those in P21 or T23. This approach means that the analysis is restricted to items that were (i) common to both the PT11 and P21 or T23 questionnaires and (ii) can be clearly linked to relevant goals in the 2011 Strategy. Next, we describe the data sources and present a mapping of those common items across the study cycles to the 2011 Strategy goals.

Methods

This study primarily draws on data from three international assessment cycles: PT11, P21, and T23.² In Ireland, 4,560 Fourth Class pupils in 151 primary schools participated in PT11³ (Eivers & Clerkin, 2012a), 4,663 pupils in 148 schools participated in P21 (Delaney et al., 2023), and 4,750 pupils in 153 schools participated in T23 (McHugh et al., 2024). The weighted school-level response rate in these studies ranged from 99% to 100%, with weighted pupil-level response rates ranging from 93% to 95%, which, in all cases, met the international sampling and administration quality standards (Delaney et al., 2025). These data can, therefore, be regarded as providing nationally representative snapshots of Fourth Class pupils' educational experiences in 2011, 2021, and 2023. TIMSS and PIRLS data are available at <https://www.iea.nl/data-tools/repository>, and further details on the administration of each study are available from the respective national reports (Delaney et al., 2023; Eivers & Clerkin, 2012a, 2012b; McHugh et al., 2024).

Table 1 presents a mapping of the aims and objectives specified in the 2011 and 2017 Strategy documents against the available data from both PT11 and P21/T23, which are drawn from questionnaires administered to pupils, their teachers, and their school principals. While some items were worded slightly differently between 2011 and 2021/2023, the substance of the question remained sufficiently similar to allow for meaningful and substantive comparisons. Only items that were present in both the 2011 and 2021/2023 datasets are included; items unique to each year are excluded. Where equivalent data are available in both P21 and T23, comparisons between PT11 and T23 are prioritised in order to provide the most recent data prior to the introduction of the 2024 Strategy (Department of Education, 2024a).

2 As noted in Table 1, one variable from TIMSS 2015 was also used as corresponding data from 2011 were not available (see Clerkin et al., 2016, for details on the national administration of TIMSS in that cycle).

3 In PT11, one school was included in the PIRLS dataset but excluded from the TIMSS dataset because of reservations over the administration procedures for TIMSS in the school (Eivers & Clerkin, 2012b).

To enable comparisons across study cycles, data from PT11 and P21/T23 were merged into a single dataset with a new variable (study year) added to facilitate statistical comparison across cycles. Two analytical files were constructed: (1) a file containing pupil achievement test results, pupil-level background data, and school principal responses, which was analysed using the pupil total weight (TOTWGT); and (2) a file containing data from class teachers, analysed using the relevant teacher weights (MATWGT for TIMSS and TCHWGT for PIRLS). These weights are provided in the original datasets and were applied to account for the sampling design of TIMSS and PIRLS and to ensure nationally representative estimates.

Several variables were recoded to facilitate a clear presentation of data in tables. For items measuring attitudes towards literacy and numeracy, the two agreement response categories (“agree a lot” and “agree a little”) were collapsed into a single “agree” category (see Tables 4 and 5). Similarly, for some items related to reading lesson activities and text types, response options “every day or almost every day” and “once or twice a week” were collapsed to create an “at least weekly” category (see Tables 10, 11, 12, 13, and 14).

Percentages and mean achievement scores were computed using the IEA IDB Analyzer (IEA, 2025), which was used to account for the complex sampling design and plausible values within the datasets. Analysis was conducted using the *study year* variable as a categorical factor to enable cross-cycle comparisons. Independent-samples t-tests were conducted to examine whether there were statistically significant differences between cycles. Where a difference between two values is described in text as ‘significant’, it means that the relevant p-value based on this test is <.05.

TABLE 1

Mapping of the 2011 Strategy and 2017 Interim Review objectives to TIMSS and PIRLS questionnaire data

Strategy	Objective	Detail	Q'aire	Items
General aims				
2011	Improve our attitudes to literacy and numeracy	Foster an enjoyment of reading among children and young people	Pupil	How much time do you spend reading outside of school on a normal school day?
			Pupil	How often do you do these things outside of school? [I read for fun; I read to find out things I want to learn]
			Pupil	What do you think about reading? [I like to read things that make me think; I learn a lot from reading; I like it when a book helps me imagine other worlds; I like talking about what I read with other people; I would like to have more time for reading; I enjoy reading]
			Pupil	How well do you read? [I usually do well in reading; reading is easy for me; reading is harder for me than for many of my classmates; reading is harder for me than any other subject]
	Promote better attitudes to mathematics among children and young people		Pupil	How much do you agree with these statements about learning maths? [I enjoy learning maths; maths is boring; I learn many interesting things in maths; I like maths]
			Pupil	How much do you agree with these statements about maths? [I usually do well in maths; maths is harder for me than for many of my classmates; I am just not good at maths; I am good at working out difficult maths problems; maths is harder for me than any other subject]

Strategy	Objective	Detail	Q'aire	Items
Pillar 1: Enabling parents and communities to support children's literacy and numeracy development				
2011	Ensure that parental engagement in children's learning is integrated into each school's <i>School Improvement Plan</i>	Enable schools to build effective working relationships with parents and communities to support learning	School	How would you characterise [parental involvement in school activities] within your school?
2017	Strengthen collaboration for literacy and numeracy	Promote library usage to support family literacy, encouraging all children and families to avail of the free membership of their local library	Pupil	How often do you borrow books from your school or a public [2011]/local [2021] library?
			Teacher	Do you have a library or reading corner in your classroom?
			Teacher	How often do you take or send the pupils to a library other than your classroom library?
Pillar 2: Improving teachers' and ECCE practitioners' professional practice				
2011	Cooperate with the Teaching Council to re-configure the content and duration of initial teacher education (ITE) courses for primary teachers to ensure the development of teachers' skills in literacy and numeracy teaching	Replace the study of humanities (also known as "academic electives") within the BEd programme with a range of optional courses which are more closely related to education and confine the proportion of programme time devoted to these courses to less than 20% of overall programme time in order to allow more time for the development of the professional knowledge and pedagogical skills of teachers	Teacher	Which is the highest level of formal education you have completed?
		Increase the duration of the Post Graduate Diploma in Education (PGDE) programme for primary teaching to a minimum of two years	Teacher	During your third-level education, what was your major or main area(s) of study?

Strategy	Objective	Detail	Q'aire	Items
2011	Focus the provision of Department-supported continuing professional development for teachers on the teaching of literacy and numeracy and the use of assessment	Provide access to approved, high-quality professional development courses of at least twenty hours' duration in literacy, numeracy and assessment (as discrete or integrated themes, provided incrementally or in block) every five years for primary teachers (as an element of the continuing professional development that teachers require to maintain their professional skills)	Teacher	In the past two years, have you participated in professional development in any of the following? [mathematics content; mathematics pedagogy/instruction; mathematics curriculum; integrating technology into mathematics instruction; mathematics assessment; addressing individual pupils' needs]
Pillar 3: Building the capacity of school leadership				
2011	Improve leadership development programmes for new and aspiring principals and deputy principals	Ensure that all newly appointed principals who have not already completed a relevant course in school leadership have access to such a course during their first two years as principal	School	Do you hold the following qualifications or credentials in educational leadership?*
<i>*Comparison is from TIMSS 2015 as these data were not collected in the 2011 cycle. No relevant indicators under Pillar 3 were collected in both the 2011 and 2021/2023 cycles.</i>				
Pillar 4: Improving the curriculum and learning experience				
2011	Revise the English curriculum for primary schools to clarify the learning outcomes to be expected of learners	Ensure that there is explicit and systematic attention in the English curriculum to the teaching and assessment of key literacy skills and strategies, including oral and aural skills, phonological/phonemic awareness, phonics, word identification, reading fluency, vocabulary, comprehension and writing with appropriate attention to the development of lower-order and higher-order skills	Teacher	When you have reading instruction and/or do reading activities with the pupils, how often do you do the following? [read aloud to pupils; ask pupils to read aloud; ask pupils to read silently on their own; teach pupils strategies for decoding sounds and words; teach pupils new vocabulary systematically; teach or model skimming or scanning strategies]
			Pupil	In school, how often do these things happen? [I read silently on my own; I read things that I choose myself]

Strategy	Objective	Detail	Q'aire	Items
		Ensure that the curriculum provides for the development of literacy through engagement with a range of texts (literary and non-literary) and a range of media including digital media	Teacher	How often do you ask the pupils to do the following things to help develop reading comprehension skills or strategies? [locate information; identify the main ideas of what they have read; explain or support their understanding with text evidence; compare what they have read with experiences they have had; compare what they have read with other things they have read; make predictions about what will happen next in the text; make generalisations and draw inferences; describe/evaluate and critique the style or structure of the text they have read; determine the author's perspective or intention]
			Teacher	After pupils have read something, how often do you ask them to do the following? [write something in response to what they have read; answer oral questions or orally summarise what they have read; talk with each other about what they have read; take a written quiz or test about what they have read]
			Teacher	When you have reading instruction and/or do reading activities with the pupils, how often do you have the pupils read the following types of text? [short stories; longer fiction books with chapters; plays; non-fiction subject area books; longer non-fiction books with chapters; non-fiction articles (e.g., newspaper articles, brochures)]

Strategy	Objective	Detail	Q'aire	Items
2011	Increase the amount of time spent on the teaching of literacy and numeracy in primary schools	Issue guidance from the NCCA on a revised time allocation for subjects in the Primary School Curriculum that will provide increased time for literacy and numeracy development	Teacher	In a typical week, how much time do you spend on English language instruction and/or activities with the pupils?
			Teacher	Regardless of whether or not you have formally scheduled time for reading instruction, in a typical week about how much time do you spend on <u>reading</u> instruction and/or activities with the pupils (in any language)?
			Teacher	In a typical week, how much time do you spend teaching mathematics to the pupils in this class?
Pillar 5: Helping students with additional learning needs to achieve their potential				
n/a	n/a	n/a	n/a	n/a
Pillar 6: Improving assessment and evaluation to support better learning in literacy and numeracy				
2011	Benchmark the literacy and numeracy achievement of students in Irish schools with that of students in other developed countries	Participate in international surveys such as PISA, PIRLS and TIMSS to enable the achievement of students in reading literacy, mathematics and science to be benchmarked against international standards at primary and post-primary levels	Tests	TIMSS (mathematics and science) and PIRLS (reading) achievement scores

Results

This section presents findings from TIMSS and PIRLS data that relate to the various objectives and pillars of both the 2011 Strategy and the 2017 Interim Review. First, to provide some additional context, we examine changes in selected pupil background characteristics over the period from 2011 to 2023.

Pupil background characteristics

From 2011 to 2023, notable changes occurred in the background characteristics of pupils. Table 2 presents data from PT11 and T23, based on principals' reports on two key dimensions of school composition: pupils' native language and socioeconomic background. First, school principals were asked to estimate the proportion of pupils with English (or Irish in T23) as their native language. In PT11, approximately two-thirds of pupils (64%) attended schools where more than 90% of pupils spoke English as their native language. By T23, this proportion had declined to approximately half of pupils (51%). Second, principals were asked to report on the socioeconomic background of their pupils. Over the same period, there has been a decrease in the proportion of pupils attending schools where more than 50% of pupils come from economically disadvantaged homes.

TABLE 2

Principals' reports of pupil background characteristics

		2011		2023		Difference
		%	SE	%	SE	(2023-2011)
<i>English/Irish as native language</i>						
25% or less		0.7	0.67	4.3	1.41	3.6
26-50%		2.6	1.54	9.8	2.62	7.2
51-75%		14.1	3.06	12.7	3.00	-1.4
76-90%		19.0	3.52	22.3	3.59	3.3
More than 90%		63.6	3.58	51.0	4.30	-12.7
<i>Socioeconomic background of pupils</i>						
Come from economically disadvantaged homes	0-10%	36.9	3.89	44.5	3.68	7.6
	11-25%	24.4	3.55	24.1	3.18	-0.3
	26-50%	11.6	2.40	14.0	3.28	2.5
	More than 50%	27.1	2.57	17.3	2.35	-9.7
Come from economically affluent homes	0-10%	40.8	4.33	34.4	4.12	-6.4
	11-25%	12.9	3.19	16.8	3.44	3.8
	26-50%	11.9	2.58	14.3	3.32	2.4
	More than 50%	34.4	4.51	34.6	4.03	0.2

Note. Significant differences between cycles are noted in **bold**.

General aims of the 2011 Strategy and the 2017 Interim Review

The 2011 Strategy outlined broad national improvement targets for literacy and numeracy that included the aim to improve children’s attitudes to literacy and numeracy.

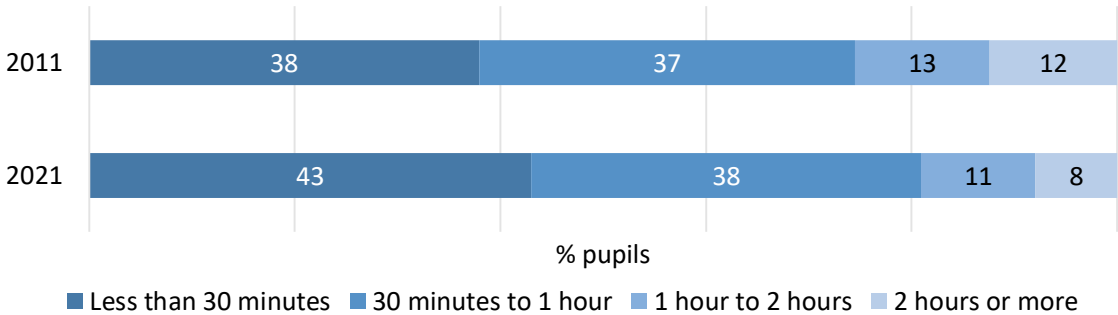
Attitudes towards literacy

Pupils were asked a series of questions designed to capture their engagement with reading and their attitudes towards reading. Specifically, pupils reported on the amount of time spent reading, their general reading habits, as well as their enjoyment of reading and confidence in reading ability.

Figure 1 shows the amount of time pupils reported spending reading outside of school on a normal school day. From 2011 to 2021, there were significant decreases in the proportions of pupils who read for one to two hours (from 13% to 11%) and two hours or more (from 12% to 8%) and a corresponding significant increase in the proportion of those who read for less than 30 minutes (from 38% to 43%).

FIGURE 1

Time spent reading outside of school



Note. See Appendix Table A1 for standard errors and statistical significance.

Regarding reading habits outside of school (Table 3), the proportion of pupils who reported reading daily or almost daily to find out things they want to learn has decreased significantly by 16 percentage points. Similarly, the proportion of pupils who reported reading for fun every day or almost every day decreased significantly by seven percentage points.

TABLE 3*Reading habits outside of school*

	2011		2021		Difference
	%	SE	%	SE	(2021-2011)
I read for fun					
Every day or almost every day	45.1	1.17	37.7	1.26	-7.4
Once or twice a week	32.9	1.05	30.2	0.90	-2.7
Once or twice a month	10.7	0.62	16.5	0.66	5.8
Never or almost never	11.3	0.76	15.6	0.84	4.3
I read to find out things I want to learn					
Every day or almost every day	39.0	1.36	22.8	0.87	-16.2
Once or twice a week	31.7	0.85	33.4	0.78	1.8
Once or twice a month	19.5	0.74	25.3	0.77	5.8
Never or almost never	9.8	0.75	18.4	0.64	8.7

Note. Significant differences between cycles are noted in **bold**.

Table 4 presents the proportion of pupils who agreed (a lot or a little) with various statements about reading, focusing on both enjoyment and confidence. Overall, there is a consistent trend across all items indicating that pupils' enjoyment of reading and confidence in their reading ability has declined since 2011. In line with this trend, the only significant increase in agreement between 2011 and 2021 was in the proportion of pupils who reported that reading was harder for them than for their classmates.

TABLE 4*Pupil attitudes to reading*

Percentage of pupils who agreed to the following statements:	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
Reading is harder for me than for many of my classmates	23.1	0.98	26.9	0.83	3.9
Reading is harder for me than any other subject	13.7	0.74	12.9	0.65	-0.8
Reading is easy for me	92.2	0.57	87.4	0.67	-4.8
I usually do well in reading	95.0	0.44	90.1	0.58	-4.9
I like it when a book helps me imagine other worlds	91.4	0.66	85.8	0.67	-5.6
I like to read things that make me think	87.1	0.77	79.7	0.75	-7.5
I enjoy reading	88.6	0.92	80.9	0.88	-7.7
I like talking about what I read with other people	69.5	1.14	60.4	1.16	-9.1
I would like to have more time for reading	72.5	1.10	63.1	0.98	-9.4
I learn a lot from reading	94.1	0.54	76.0	0.84	-18.1

Note. Significant differences between cycles are noted in **bold**.

Attitudes towards numeracy

Table 5 presents pupils' agreement with various statements relating to enjoyment of mathematics and confidence in mathematics in 2011 and 2023. The largest differences over this period were observed for the items "Maths is boring" and "Maths is harder for me than for many of my classmates", with the proportions agreeing increasing by 12 percentage points in each case. In contrast, the proportions of pupils reporting that they enjoy learning mathematics and that they like mathematics decreased by almost nine percentage points. Overall, the findings indicate a consistent decline in both enjoyment and confidence in mathematics, accompanied by an increase in negative perceptions and self-reported difficulties.

TABLE 5

Pupil attitudes to mathematics

<i>Percentage of pupils who agreed to the following statements:</i>	2011		2023		Difference (2023-2011)
	%	SE	%	SE	
Maths is harder for me than for many of my classmates	27.9	0.78	39.9	1.12	12.0
Maths is boring	32.8	1.26	44.4	1.14	11.5
I am just not good at maths	20.2	0.83	29.0	1.07	8.8
Maths is harder for me than any other subject	26.7	1.07	31.3	1.16	4.5
I usually do well in maths	91.7	0.50	85.6	0.70	-6.1
I am good at working out difficult maths problems	71.8	1.03	65.3	0.80	-6.5
I learn many interesting things in maths	83.6	0.87	77.1	1.13	-6.5
I like maths	76.5	1.12	67.8	1.30	-8.7
I enjoy learning maths	79.3	1.04	70.5	1.20	-8.8

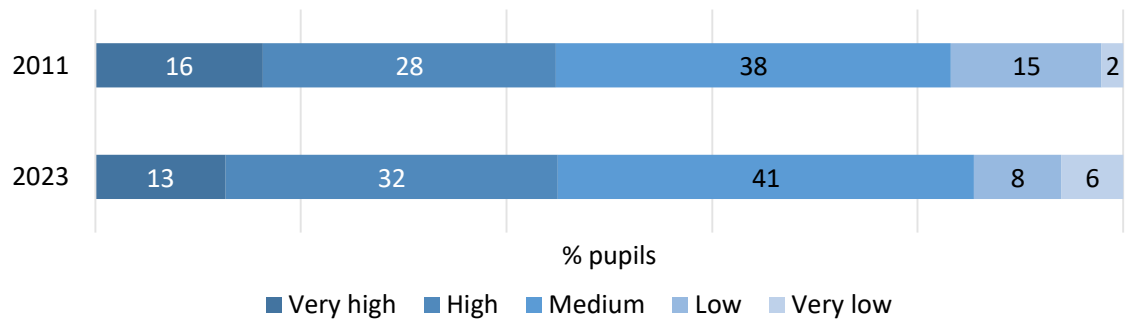
Note. Significant differences between cycles are noted in **bold**.

Pillar 1: Enabling parents and communities to support children's literacy and numeracy development

Pillar 1 focused on enabling parents and communities to support literacy and numeracy development. Questions in TIMSS and PIRLS that related to this include parental involvement in school activities and pupils' and teachers' reports on library usage.

Parental involvement in school activities

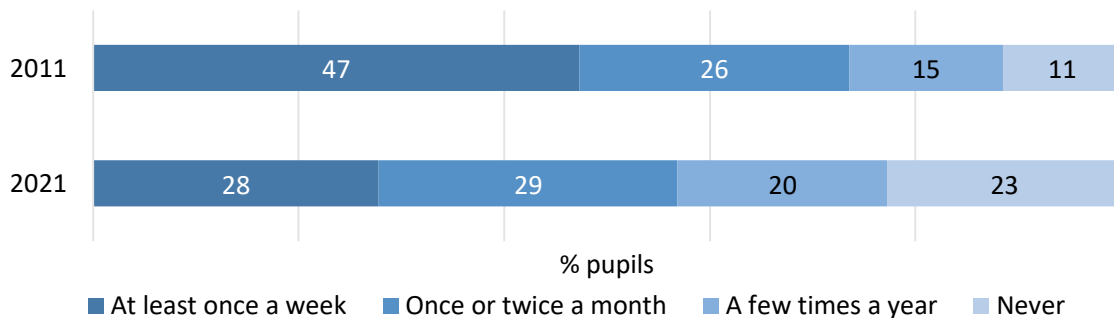
In the school questionnaire, school principals were asked about parental involvement in school activities and whether they would categorise it as very high, high, medium, low, or very low. While some variance is observed, there was no significant change in the level of parental involvement from 2011 to 2023 (Figure 2).

FIGURE 2*Parental involvement in school activities*

Note. See Appendix Table A2 for standard errors and statistical significance.

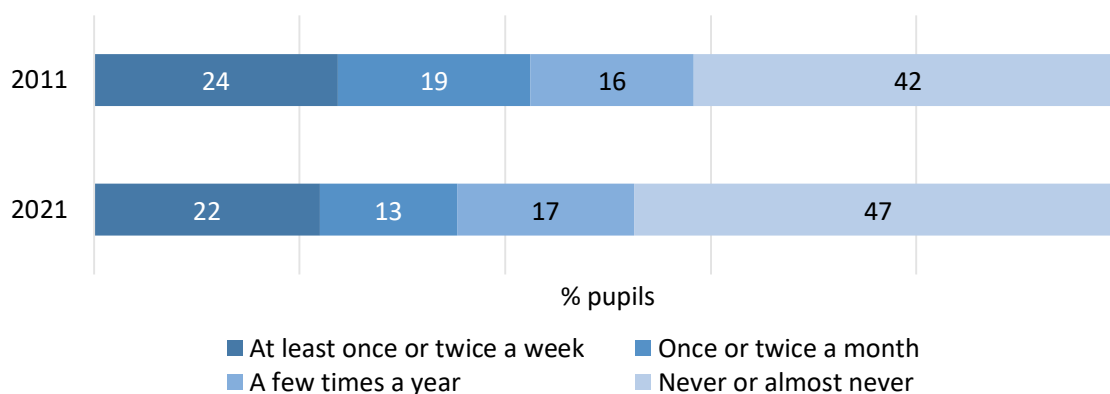
Library usage

Figure 3 presents the frequency with which pupils reported borrowing books from a school or local library in 2011 and 2021. Overall, there has been a significant and marked decline in regular borrowing over the past decade, with the proportion of pupils who reported borrowing books at least once a week dropping from almost half of pupils (47%) to less than one-third of pupils (28%). There was also a significant increase in the proportion of pupils who never borrowed books, from 11% of pupils in 2011 to 23% in 2021.

FIGURE 3*Frequency of borrowing books from school or local library*

Note. See Appendix Table A3 for standard errors and statistical significance.

Teachers were also asked about library usage, including whether they had a classroom library. In 2011, almost all pupils (98%) had a classroom library, which decreased by 10 percentage points by 2021 (88%). In addition, teachers were asked about the frequency with which they took or sent pupils to a library other than a classroom library, which also decreased slightly (though not significantly so) from 2011 to 2021 (Figure 4).

FIGURE 4*Frequency of teachers taking or sending pupils to library (other than classroom library)*

Note. See Appendix Table A4 for standard errors and statistical significance.

Pillar 2: Improving teachers' professional practice

Pillar 2 related to improving teachers' and ECCE practitioners' professional practice. Acknowledging the key role that teachers and practitioners play, this pillar highlighted the importance of providing the necessary skills and professional development to enhance the teaching of literacy and numeracy. In TIMSS and PIRLS, data are collected on teacher qualifications and specialisation, as well as participation in teacher professional learning (TPL). Data relating to ECCE practitioners are not available from these studies.

Teacher qualifications and specialisation

Based on teacher reports about their highest level of formal education (Table 6), the percentage of pupils whose teachers had a postgraduate degree increased significantly between 2011 and 2023, from 18% to 40%.

TABLE 6*Teachers' highest level of formal education*

Percentage of pupils whose teachers had a:	2011		2023		Difference (2023-2011)
	%	SE	%	SE	
Third-level certificate/diploma or below	2.7	1.03	3.4	1.77	0.7
Undergraduate degree (e.g., Bachelor's)	79.3	2.81	56.5	3.63	-22.8
Postgraduate degree (e.g., Master's)	18.0	2.61	40.0	3.41	22.0

Note. Significant differences between cycles are noted in **bold**. Due to rounding, percentages may not sum to 100.

Teachers were also asked about their specialisation, but some caution is needed when interpreting these findings as they are based on teachers' interpretation of specialisation rather than a formal description. The vast majority of pupils in both 2011 and 2023 had teachers who specialised in primary education, while a minority

specialised in post-primary education (Table 7). At the level of subject specialisations, there was a significant decrease in the proportion of Fourth Class teachers with a specialisation in English between 2011 and 2021. Decreases, though to a lesser and non-significant extent, were also seen among those who completed a specialisation in mathematics or science.

TABLE 7*Teacher specialisation*

<i>Percentage of pupils whose teachers had a specialisation in:</i>	2011		2021 or 2023		Difference (2021 or 2023-2011)
	%	SE	%	SE	
Primary education	92.4	1.62	93.2	1.89	0.8
Post-primary education	5.2	1.30	3.7	1.78	-1.5
Mathematics	9.2	2.19	4.4	1.53	-4.8
Science	8.1	1.86	4.3	1.55	-3.8
English	19.0	2.73	9.3	2.25	-9.7

Note. Significant differences between cycles are noted in **bold**. The comparison for English is from 2011 to 2021. All other comparisons are from 2011 to 2023. As respondents could select more than one option, percentages do not sum to 100.

Teacher professional learning (TPL)

While both PIRLS and TIMSS ask questions about TPL, none of the PIRLS items were comparable across cycles. In contrast, TIMSS asked teachers whether they had completed TPL in any of the areas listed in Table 8 during the two years prior to the administration of the study. Overall, the proportion of pupils whose teachers had engaged in recent TPL related to mathematics education declined between 2011 and 2023, starting from an already relatively low base in 2011. In 2011, the proportions ranged from 25% to 33%; by 2023, they ranged from 15% to 33%. Although this general downward pattern is consistent across most of the areas of TPL shown, the reduction in engagement in TPL related to mathematics assessment (measured by the percentage of pupils whose teachers had recently participated) was the only significant change.

TABLE 8*Mathematics teacher professional learning in the previous two years*

<i>Percentage of pupils whose teachers completed TPL in:</i>	2011		2023		Difference (2023-2011)
	%	SE	%	SE	
Addressing individual pupils' needs	33.3	3.82	33.0	3.98	-0.3
Mathematics content	31.5	3.41	30.2	3.85	-1.3
Integrating technology into mathematics instruction	31.3	3.41	26.9	3.47	-4.4
Mathematics pedagogy/instruction	32.4	3.68	24.2	3.54	-8.2
Mathematics curriculum	34.4	3.55	25.4	3.72	-9.0
Mathematics assessment	24.9	3.39	14.8	2.86	-10.2

Note. Significant differences between cycles are noted in **bold**.

Pillar 3: Building the capacity of school leadership

Pillar 3 focused on strengthening school leadership capacity, including enhancing leadership development programmes for principals. The 2011 Strategy outlined the need to enable newly appointed principals to complete a relevant course in school leadership, and TIMSS, since 2015, has asked school principals whether they hold any qualifications in educational leadership. Table 9 shows a significant increase from 2015 to 2023 in the proportion of Fourth Class pupils whose school principals hold a master's degree or equivalent in educational leadership, as well as a significant increase in the proportion whose principals hold a postgraduate diploma or equivalent.

TABLE 9*Principals' qualification in educational leadership*

<i>Percentage of pupils whose principals had a:</i>	2015		2023		Difference (2023-2015)
	%	SE	%	SE	
Postgraduate diploma or equivalent	32.6	4.49	45.6	4.46	13.0
Master's degree or equivalent	20.3	3.94	34.4	4.67	14.1
Doctorate or equivalent	0.0	-	0.7	0.68	0.7

Note. Significant differences between cycles are noted in **bold**. Comparison is from TIMSS 2015 as these data were not collected in the 2011 cycle. Due to the item format, percentages do not sum to 100.

Pillar 4: Improving the curriculum and learning experience

Pillar 4 focused on enhancing the curriculum and improving the learning experience of pupils by prioritising literacy and numeracy across all aspects of the school curriculum. Relevant data from TIMSS and PIRLS provide insights into this area by capturing information on teaching activities and strategies used in reading lessons, the types of texts used in reading lessons, and the time allocated to literacy and numeracy instruction.

Activities and strategies in reading lessons

Teachers of PIRLS classes were asked about the frequency with which they used various activities in reading lessons. Table 10 presents the percentages of pupils whose teachers engaged in these activities at least weekly. Over the period examined (2011-2021), a significant increase was observed for two activities: teaching or modelling skimming or scanning strategies, and teaching pupils new vocabulary systematically. In contrast, teaching strategies for decoding sounds and words had significantly declined in 2021. The three other activities continued to be employed by teachers of nearly all pupils in both years.

TABLE 10

Activities in reading lessons

Percentage of pupils whose teachers completed the following activities at least weekly:	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
Teach or model skimming or scanning strategies	50.1	3.36	67.4	3.51	17.3
Teach pupils new vocabulary systematically	81.0	3.02	90.1	2.58	9.1
Read aloud to pupils	94.4	1.49	97.7	1.12	3.3
Ask pupils to read aloud	99.3	0.69	100.0	0.00	0.7
Ask pupils to read silently on their own	98.5	0.83	99.0	0.57	0.6
Teach pupils strategies for decoding sounds and words	83.9	2.64	76.9	2.86	-7.0

Note. Significant differences between cycles are noted in **bold**.

Pupils were also asked about the frequency with which they engaged in silent reading on their own and in reading books of their own choosing in school. Table 11 shows the percentage differences from 2011 to 2021. The proportion of pupils who reported reading silently remained relatively stable, whereas the frequency with which pupils read books of their own choosing declined somewhat over this period.

TABLE 11*Reading habits in school*

	2011		2021		Difference
	%	SE	%	SE	(2021-2011)
<i>I read silently on my own</i>					
Every day or almost every day	60.9	1.63	62.3	1.34	1.4
Once or twice a week	30.5	1.55	27.9	1.08	-2.6
Once or twice a month	5.2	0.46	5.6	0.41	0.4
Never or almost never	3.4	0.38	4.3	0.41	0.9
<i>I read books that I choose myself</i>					
Every day or almost every day	63.8	1.56	59.5	1.59	-4.2
Once or twice a week	25.8	1.19	24.1	0.97	-1.7
Once or twice a month	7.4	0.67	9.7	0.74	2.3
Never or almost never	3.0	0.30	6.7	0.56	3.6

Note. Significant differences between cycles are noted in **bold**.

Table 12 presents the percentages of pupils whose teachers reported using specific strategies to support the development of reading comprehension at least weekly between 2011 and 2021. Overall, the proportion of pupils whose teachers used these strategies weekly remained relatively stable over the decade examined here. Four activities were used by almost all teachers: locating information within the text, identifying the main ideas of what they have read, explaining or supporting their understanding with text-based evidence, and making predictions about what will happen next in the text they are reading. However, one notable change over this period was a significant increase in the proportion of pupils whose teachers reported asking pupils to compare what they had read with other things they had read, from 69% to 85%. This activity was used by teachers of the vast majority of pupils on at least a weekly basis in 2021.

TABLE 12*Reading strategies*

<i>Percentage of pupils whose teachers asked pupils to do the following things to help develop reading comprehension skills or strategies at least weekly:</i>	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
Compare what they have read with other things they have read	68.9	3.34	84.8	2.44	15.9
Determine the author's perspective or intention	51.9	4.01	60.4	3.93	8.5
Evaluate and critique the style or structure of the text they have read	57.4	3.61	62.5	3.81	5.1
Compare what they have read with experiences they have had	86.9	2.42	90.6	2.22	3.7
Make generalisations and draw inferences based on what they have read	82.6	3.01	85.0	2.66	2.3
Make predictions about what will happen next in the text they are reading	91.3	1.69	93.4	2.13	2.1
Locate information within the text	98.4	0.83	98.2	0.87	-0.2
Identify the main ideas of what they have read	96.9	1.15	96.1	1.29	-0.8
Explain or support their understanding with text-based evidence	95.8	1.74	93.4	2.04	-2.4

Note. Significant differences between cycles are noted in **bold**.

PIRLS teachers were also asked about the frequency with which they used post-reading activities to enhance pupils' learning (Table 13). A high proportion of pupils had teachers who engaged in these activities at least weekly, with the exception of taking a quiz or test about what they had read, which was relatively infrequent. Notably, the proportion of pupils whose teachers engaged them to talk with each other about things they had read increased significantly between 2011 and 2021.

TABLE 13*Post-reading activities*

<i>Percentage of pupils whose teachers asked them to do the following after pupils had read something at least weekly:</i>	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
Talk with each other about what they have read	74.0	3.13	85.6	2.45	11.6
Take a written quiz or test about what they have read	27.7	3.21	37.3	3.94	9.6
Write something about or in response to what they have read	89.2	2.08	89.5	2.19	0.3
Answer oral questions about or orally summarise what they have read	97.6	1.42	97.7	0.72	0.0

Note. Significant differences between cycles are noted in **bold**.

Text types in reading lessons

Teachers in PIRLS were asked about the text types they used in reading lessons (Table 14). The proportions of pupils whose teachers used non-fiction subject area books or textbooks, longer fiction books with chapters, and longer non-fiction books with chapters on a weekly basis increased significantly between 2011 and 2021. Minor fluctuations were observed for the frequency of reading other text types over this period. Plays were used very rarely as a text type in Fourth Class reading lessons in both years.

TABLE 14*Text types in reading lessons*

<i>Percentage of pupils whose teachers use the following text types at least weekly:</i>	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
Non-fiction subject area books or textbooks	71.2	3.22	84.6	3.01	13.4
Longer fiction books with chapters	58.9	3.89	69.0	3.46	10.1
Longer non-fiction books with chapters	31.3	3.42	39.4	3.50	8.0
Short stories (e.g., fables, fairy tales, action stories, science fiction, detective stories)	81.8	2.78	87.3	2.35	5.4
Plays	1.5	0.75	4.4	2.27	2.6
Non-fiction articles that describe and explain about things, people, events, or how things work (e.g., newspaper articles, brochures)	48.4	3.77	46.9	3.46	-1.5

Note. Significant differences between cycles are noted in **bold**.

Time spent on literacy and numeracy

TIMSS and PIRLS collect information on the weekly instructional time spent by classroom teachers on English language (PIRLS), reading (PIRLS), and mathematics (TIMSS). For English language instruction, the average weekly time allocated increased by one hour over the period examined, from 287 minutes in 2011 (4 hours and 47 minutes) to 347 minutes in 2021 (5 hours and 47 minutes). Similarly, the average time allocated to mathematics instruction increased by 25 minutes, from 247 minutes in 2011 (4 hours and 7 minutes) to 272 minutes in 2023 (4 hours and 32 minutes). In contrast, the average time spent on reading instruction remained essentially unchanged from 2011 to 2021 (263 and 264 minutes, respectively).

Pillar 5: Helping students with additional learning needs to achieve their potential

Pillar 5 of the 2011 Strategy related to enhancing the educational experiences of pupils with additional learning needs. There are no data gathered by the PIRLS and TIMSS questionnaires that enable comparisons of change over time in areas relevant to this pillar.

Pillar 6: Improving assessment and evaluation to support better learning in literacy and numeracy

Ireland has consistently participated in TIMSS and PIRLS at primary level since 2011. Figure 5 presents the mathematics and reading scores achieved by Fourth Class pupils in TIMSS and PIRLS from 2011 to 2023. In the 2011 cycle, Ireland achieved a mean score of 552 for reading (PIRLS) and 527 for mathematics (TIMSS). Achievement in both studies increased significantly in the subsequent cycles, with notable gains in PIRLS 2016 and TIMSS 2015. For TIMSS, since 2015, however, the mean achievement scores for Fourth Class pupils in Ireland has remained stable, with no statistically significant changes observed.

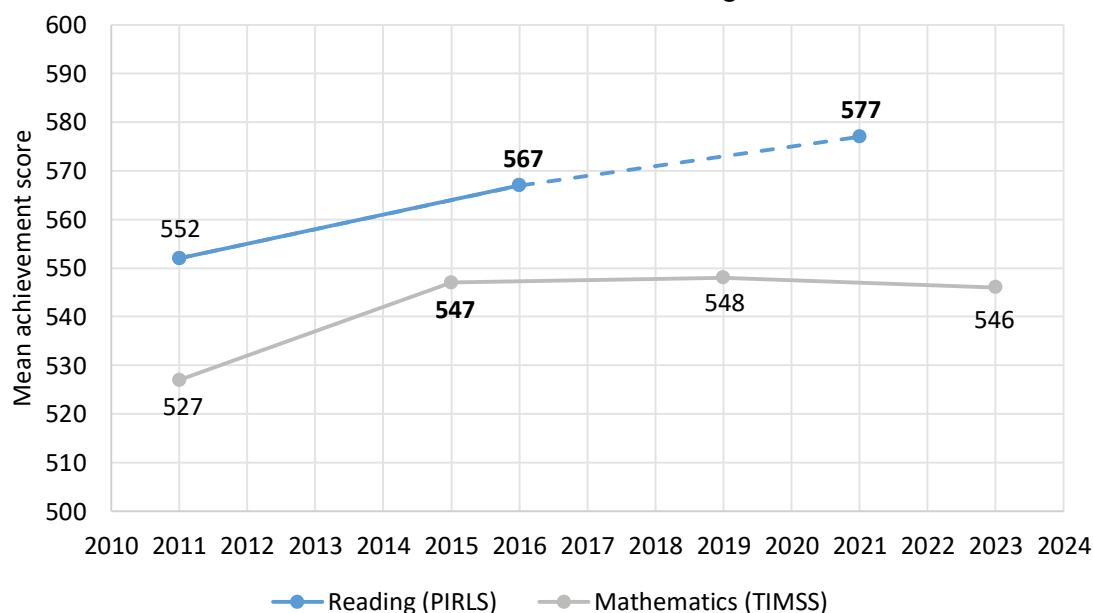
The P21 cycle was a unique study due to the COVID-19 pandemic. Pupils in Ireland participated in the assessment six months later than usual, at the start of Fifth Class rather than at the end of Fourth Class. Internationally, countries that conducted testing at the same delayed time as Ireland tended to perform better than those who tested during the regular testing window. On this basis, despite a statistically significant 11-score-point increase in Ireland's mean reading score in P21, Delaney et al. (2023) noted that there was insufficient evidence to conclude that reading achievement had improved on a like-for-like basis since 2016 – in other words, the difference in scores between 2016 and 2021 cannot be attributed to an improvement in reading ability among Fourth Class pupils.

Overall, the results from both PIRLS and TIMSS indicate a similar trend: a period of substantial improvement in reading and mathematics proficiency among Fourth

Class pupils during the first half of the 2010s, followed by relative stability in pupil achievement from the mid-2010s to the early 2020s (up to the time of writing).

FIGURE 5

Achievement scores for mathematics (TIMSS) and reading (PIRLS)



Note. Scores that are significantly different from the previous cycle are noted in **bold**. The trend line between P16 and P21 is dashed to reflect the change in administration from end of Fourth Class to beginning of Fifth Class. See Appendix Table A5 for standard errors and statistical significance.

Contextualising the findings for Ireland: International experiences of implementing long-term strategies

The previously reported results show how international large-scale assessments like TIMSS and PIRLS are embedded and used in educational policies in Ireland. However, to reflect on these findings from a more general perspective, we would like to describe some general guidelines on the usage of large-scale assessment data and how other countries have used the data for informing policy. To align with the focus of this paper, we will continue to focus primarily on TIMSS and PIRLS.

Connecting educational research and educational policies is a challenging enterprise. When linking outcomes from educational research, one has to keep in mind that there is always a policy negotiation process and it is rarely that outcomes from educational research translate into direct policy actions. Educational policies are influenced by teachers and teacher unions, parents and students, public debates, and last but not least, available resources.

The European Union has changed its phrasing from *data-driven policies* to *data- or*

evidence-informed policies to reflect that data are only one input to policies, but there is no deterministic process that turns data—or research results—into policies. Whereas the foreword of the 2017 Education and Training Monitor highlighted the report as “a relevant, data-rich, policy-oriented comparative analysis of the state of education across the European Union’s 28 Member States, which I trust will help drive reform and modernisation further” (European Commission, 2017, p. 3), the foreword of a 2023 report on the outcome of the P21 study stated: “However, the results of PIRLS 2021 can help policymakers, educators, and researchers identify areas of strength and areas for improvement in literacy education. The findings can promote the development of evidence-informed policies to support students’ reading achievement at an early stage of their educational career” (European Commission, 2023, p. 6).

In rare cases, studies are mentioned when new policies are announced. A very prominent example is the PISA shock in Germany, where some negative results surrounding average achievement, and also the strong relationship between students’ socioeconomic background and their results, triggered many policy reforms, including the funding of an institute that regularly monitors educational outcomes (see Institut zur Qualitätsentwicklung im Bildungswesen, n.d.). However, a detailed analysis of the policy debates undertaken by Tillmann et al. (2008) shows that the PISA results were to a large extent used to implement policy reforms that were already planned and to justify what was already on the way.

More often, results from international studies are used to evaluate the impact of educational policies on educational outcomes or are used to monitor educational targets. However, this is challenging for two reasons. First, international studies are limited with respect to the scope of the study. The IEA’s TIMSS study assesses the mathematics and science achievement of Grade 4 and Grade 8 students (Mullis et al., 2021). The IEA’s PIRLS study assesses the reading competencies of Grade 4 students (von Davier & Kennedy, 2024). The OECD’s PISA study assesses the reading, mathematics, and science competencies of 15-year-old students (OECD, 2023). Apart from these large-scale international studies that assess basic competencies, fewer countries participate in IEA’s International Civic and Citizenship Education Study (ICCS), which investigates Grade 8 students’ civic and citizenship knowledge, beliefs, attitudes, and behaviours (Schulz et al., 2023) or IEA’s International Computer and Information Literacy Study (ICILS), which assesses digital competencies of Grade 8 students (Fraillon & Rožman, 2024). Consequently, the results from these studies can only be regarded as indicators of education systems—and to be even more precise, indicators of specific outcomes of education systems.

Worryingly, in some countries a specific average score or a rank in international assessments has been set as a target for the education system. For example, the Minister of Education in Wales had set a target national average score of 500 in PISA (BBC, 2014). This bears the risk that the educational aims and goals will be limited to

what is assessed in these international studies—in this case the reading, mathematics, and science achievement of 15-year-old students, or to be even more precise, achievement as it is measured in the international study—which would even exclude Welsh literature.

The other major obstacle to using results from international studies like the ones mentioned above is the time lag between changes in educational policy and the availability of study results. International studies measure the cumulative outcomes of education after four (e.g., TIMSS and PIRLS assessing students in Grade 4) or eight (e.g., TIMSS assessing students in Grade 8) years of education—or in the case of PISA (assessing 15-year-old students) even around nine or 10 years. This makes it difficult to attribute student outcomes to a particular change in educational policies if the students have attended some of these years under one educational policy and some years under the changed policy – so, the outcomes will be a mixture of students' learning experiences across different educational policies.

This principle is even more complicated in practice, given that it is difficult to determine the exact time when a change in educational policies impacts students' learning directly (for example, having been translated via curriculum documentation and TPL into teaching practice). If a policy change affects the country's curriculum, then new teaching and learning materials need to be developed, the teachers need to be trained in using these, and then the implementation starts. This usually takes at least a couple of years. If the policy change affects teacher education, this can take even longer. Then, the students' learning will start to be impacted, and cumulative results seen, after students are exposed to this reform for some years. The exact time for this change in students' learning experiences is difficult to determine and might even differ between students in a country. Additionally, we need to consider that students' educational outcomes are strongly impacted by the students' home background, which also limits the impact of educational reforms on educational outcomes.

However, considering all these constraints, there are policy impacts that could be attributed to outcomes from international large-scale assessments. Since the data used earlier in this research focus on studies from IEA, we will also focus the policy impact research on studies from IEA. Several researchers have conducted impact studies, such as Aggarwala (2004), Elley (2002), Gilmore (2005), Schwippert (2003), and Schwippert and Lenkeit (2012). A short summary of policy implications based on these references is shown in Table 15.

As can be seen, the impacts vary substantially. Some countries changed their curricula, others have seen reforms of their teacher education programmes, increased the investments in education, developed new teaching materials, or implemented regular assessments of students' achievement. Some of these changes were based on achievement outcomes from IEA studies, but interestingly, implications from earlier phases of the studies could also be seen. For example, TIMSS—as with all IEA studies—

is based on a curriculum model which sets them apart from other international studies (see Rocher & Hastedt, 2020). This means that first the curricula of the countries are examined (*intended curriculum*), and then in the data collection phase, there is an evaluation of what teachers teach (*implemented or enacted curriculum*), and what students learned (*attained curriculum*). Some countries found that their expectations (*intended curriculum*) deviated from those of most other countries and, based on this finding, changed their curriculum—even without investigating the attained curriculum.

TABLE 15

Selected national policy implications of IEA studies

Country	Policy implication after analysing IEA data
Belgium	Special support policies for low socioeconomic status and immigrant students
Botswana	Curriculum changes: including topics from TIMSS that were not covered, teacher support programmes with an emphasis on student-centred learning approaches, guidelines for classroom testing
Canada (Ontario)	Curriculum changes: increasing the intensity of mathematics and reading instruction with daily lessons; special emphasis on students with special needs
Czech Republic	Development of a series of teacher manuals that contain materials (activities, tasks) based on the analysis of the most common misconceptions or errors of Czech pupils
Egypt	Curriculum changes: introducing new materials; greater stress on applying knowledge to solve problems; introduction of new teaching methods to foster interaction between students and teachers
England	Teacher training programmes to stimulate positive attitudes towards reading since PIRLS revealed the relationship between positive attitudes towards reading and student achievement as well as a low attitude of English students towards reading
France	Implementing two national assessment systems to monitor education outcomes more closely
Germany	Provision of remedial programmes for low-performing students; several teacher training programmes
Hong Kong	Teacher training programmes focusing on teacher reading and on initiatives to foster children's reading up to age 9, including one with a particular emphasis on encouraging boys to read
Hungary	Extended reading teaching from grades 1-4 to 1-6
Indonesia	Increase of budget for the education system
Iran	Curriculum changes especially targeting students with Farsi not being their mother tongue; diverse programmes to stimulate reading
Jordan	New reform project named "Education Reform for a Knowledge Economy"

Country	Policy implication after analysing IEA data
Latvia	Development of new guidelines for teaching reading at ages 1-4; school entry age lowered from 7 to 6
Lithuania	Seminars for primary school teachers to improve teaching methods
Malaysia	Curriculum reforms: early introduction of science in schools from grade 1; more emphasis on application of knowledge
New Zealand	Special programmes to support reading achievement for Maori and Pasifika children with goals for improvements linked to PIRLS
North Macedonia	Development of "National Program for Educational Development 2005-2015" with a special emphasis on making teaching of reading in primary school more efficient
Norway	Earlier start of reading instruction; early actions for weak learners; more focus on reading instruction in primary levels
Palestine	Educational reform including curriculum changes; introduction of teacher certification programmes
Romania	Curriculum changes in mathematics and science by enhancing topics to be covered; new teacher guides and new science textbooks; changes in the way reading is taught; emphasis on informational texts
Russian Federation	Extensive reforms of the system with achievement goals set in relation to international assessments, including TIMSS and PIRLS
Singapore	Policies to better support lower-performing, lower socioeconomic status students
Slovak Republic	Inventing the New Education Act of 2008 with a special emphasis on the support of students with low socioeconomic backgrounds
Slovenia	Establishment of the "State Commission for Literacy"
South Africa	Harmonising the number of school days per year and lessons per day; special support programmes for school and classroom libraries; welcome packages for students entering the school system to encourage participation
Spain	Project LEER.ES to promote reading; emphasis on school libraries
Syria	Foundation of an Education Research Center
United Arab Emirates	Programmes for sharing best practices of teaching
Yemen	Reforms in teaching methodology and in the format and style of school tests

The *IEA Compass: Briefs in Education* series⁴ includes some further examples of policy implications in selected countries, such as those from Clerkin and Delaney (2025) for Ireland or Lin (2018) for Chinese Taipei.

4 <https://www.iea.nl/publications/series-journals/iea-compass-briefs-education-series>

Discussion

Next, we highlight some of the main findings arising from our analysis of changes observed over the lifetime of the 2011 Strategy. In considering these findings, it is important to note that the context over this period includes some changes in the diversity of schools' linguistic environments and, to a lesser degree, in their socioeconomic compositions. For example, the percentage of Fourth Class pupils in schools where fewer than 50% of pupils had English (or Irish) as their native language, as reported by principals, increased from about 3% in 2011 to 14% in 2023, while the percentage in schools with more than 90% native English/Irish speakers decreased from 64% to 51%. Over the same period, the percentage of pupils attending schools where principals reported the highest concentrations of economic disadvantage decreased.

Although the latter change can be viewed as a positive sign, it should be viewed in light of other research findings highlighting the complex relationships between indicators of socioeconomic disadvantage and educational outcomes. For example, a study of three cycles of TIMSS in Ireland found that, between 2011 and 2019, inequality of achievement reduced (e.g., differences in mathematics and science performance between disadvantaged and non-disadvantaged schools became smaller), while at the same time inequality of opportunity increased (e.g., the relationship between pupils' home resources for learning and achievement strengthened) (Duggan et al., 2023). In addition, we note that the available data from PT11 and P21/T23 do not facilitate an analysis of the ways in which the educational experiences of students with additional learning needs (i.e., Pillar 5), or their outcomes, have changed over this period.

Pupil attitudes and behaviours

Comparison of data for both reading (from 2011 to 2021) and mathematics (from 2011 to 2023) presented here reveal similar downward trends in pupils' enjoyment of and confidence in these subjects. Beyond these attitudinal indicators, pupils' reports of their own behaviours also provide insights into the role of reading in their lives (although pupils are asked about their attitudes to mathematics in the TIMSS questionnaires, they are asked fewer questions about mathematical or numeracy-related behaviours). Based on their responses to the PIRLS questionnaires in 2011 and 2021, we can see significant changes in the ways pupils engage in reading outside school. Findings of concern include the observations that significantly fewer pupils are now reading for fun (almost) every day, and that fewer pupils now read for two hours or more on a normal day outside school, with a corresponding increase in the proportion of pupils reading for only half an hour or less outside school.

Given that "less than 30 minutes" was the lowest response option offered to pupils on their reading time outside school, it is impossible to say how many of the 43% of pupils who selected this option in P21 engaged in no reading at all in their own time.

However, figures from NAMER 2021 – with data collected five months before P21 – indicate that more than one-fifth of Second Class pupils said that they never read for fun (Kiniry et al., 2025). Of equal concern is the fact that the proportion of pupils never reading for fun had increased significantly since 2014 (Kiniry et al., 2025). In addition, as we report above, there has been a notable decline between 2011 and 2021 in the extent to which pupils read to find information outside of school and, in parallel, a large decrease in the proportion of pupils who say that they learn a lot from reading.

In these aspects, the aims of fostering more positive attitudes to literacy and numeracy that were espoused in the 2011 Strategy – and in other key documents such as the *STEM Education Policy Statement* (Department of Education and Skills, 2017c) – have not been fulfilled. Indeed, the challenge now appears to be greater than it was in 2011. Other recent research, drawing on trend analysis of TIMSS data between 2015 and 2023, has shown that similar declines in attitudes relating to science and in pupils' sense of school belonging more generally can also be seen in Ireland (Denner et al., 2025). Notably, Denner et al.'s (2025) study finds that these declines have occurred among pupils at both primary and post-primary levels. Taken as a whole, this suggests that the changes observed here since 2011 are not limited just to attitudes towards reading and mathematics at primary level, but instead reflect a broader shift in attitudes towards school and learning up to 2023. This phenomenon may not be limited to Ireland, with some recent evidence suggesting that attitudes have declined in many countries across successive cycles of TIMSS (Dobosz-Leszczynska et al., 2025).

More recently, the 2024 Strategy in Ireland places a renewed emphasis on the importance of reading for fun, as well as confidence in and enjoyment of literacy- and numeracy-related activities. Fitzpatrick et al.'s (2014) analysis of public submissions to a consultation on the redevelopment of the primary curriculum also identified learning for fun in general, as well as fostering enjoyment and confidence related to literacy and numeracy, as central themes raised by respondents. Research evidence shows that reading for enjoyment is positively associated with higher reading achievement (Delaney et al., 2023), supporting the view that educators, parents, and policymakers should continue to promote enjoyment and to encourage pupils to engage in leisure reading at all levels of the education system.

Another aspect of note is the addition of digital literacy as a core component of the 2024 Strategy, placing a more explicit emphasis on the ways in which pupils interact with literacy- and numeracy-related texts and other materials in the modern world, both in school and outside. This addition may be relevant in light of some of the changes observed in pupils' reading behaviours between 2011 and 2021. For example, while the changes observed in pupils' reading habits suggest a decrease in engagement with various reading activities, many of the changes may reflect a broader societal change with increased accessibility to, and use of, digital devices in everyday life. For instance, pupils' reports of reading less often to find information outside school

could be linked to greater use of online search engines for everyday activities and specific facts, partially displacing the reading of non-fiction texts. In school, too, digital technologies are playing an ever-greater role in teaching and learning (Donohue et al., 2024), as well as assessment and research (Delaney et al., 2024). To the extent that activities online and on digital devices do now play a greater role in children's daily lives, questions of how "literacy" is conceptualised and measured become increasingly interconnected with concepts of "digital literacy". The importance of considering both domains, their interplay, and the distinctions between the processes involved in digital reading and print reading are being increasingly recognised as a consideration for both educational policymaking (Department of Education, 2024a) and practice (Bruggink et al., 2025).

Parental involvement and use of libraries

Reports from school principals over the 2011 to 2021/2023 period indicate no major changes in the extent or nature of parental involvement in school activities (at least among the types of activities included in the TIMSS and PIRLS questionnaires). In general, parents in Ireland consistently report a high degree of satisfaction with their child's school, and principals mostly report that parents are involved in supporting learning in their schools (Piccio et al., 2025).

However, over the period covered by the 2011 Strategy we can see a substantial decline in the frequency with which pupils borrow books from a school or local library, as well as a less marked decline in the frequency with which teachers take or send their pupils to a library. Data from the most recent cycle of NAMER show that most pupils in primary schools in Ireland in 2021 had access to a classroom library, and just under one-quarter of pupils were in a school with a central school library (Kiniry et al., 2025). Moreover, despite a slight decline in the proportion of pupils with access to libraries in school, these proportions have not significantly changed since 2014 (Kiniry et al., 2025). However, based on the data from PIRLS, there now appears to be a substantial cohort of pupils (about one-quarter of pupils up to 2021, and potentially continuing to increase over time) who have no experience of borrowing books from a library, while about half of pupils are (almost) never taken to a library by their teacher.

These findings are notable in light of the explicit aims described in the 2024 Strategy that relate to the use of libraries, which are seen as helping to "foster a supportive learning environment and reinforce education's importance in society" (Department of Education, 2024a, p. 18). Specific aims set out for the decade to 2023 include increasing the number of books, including library books, which children can access at home; increasing the percentage of young children with library membership; increasing the number of early learning centres that engage with their local libraries; and increasing the use of library services by both primary and post-primary students, teachers, and schools. These aims will be supported by initiatives such as the *National Public Library*

Strategy 2023-2027 (Department of Rural and Community Development, 2023) and the *My Little Library* scheme (Department of Children, Disability, and Equality, 2026) that emerged in 2024 as part of the government's broader *First 5* policy, which places a particular focus on holistic development during the first five years of a child's life (Government of Ireland, 2019).

Qualifications and professional development of teachers and school principals

Many of the changes observed here in relation to teachers' education qualifications and areas of specialisation can be traced to reforms in initial teacher education programmes. In particular, the introduction of the Professional Masters of Education in 2014 was in response to the objective to extend the duration of the PGDE programme for primary teaching to a minimum of two years, while the removal of the academic electives in the Bachelor of Education programmes since 2012 reflected another objective set out in the 2011 Strategy. Research on the perspectives of graduates and school principals suggests that these reforms have supported a "more gradual and reflective process of identity formation, as student teachers were able to engage in sustained periods of practice and reflection" (Ní Ríordáin et al., 2025, p. 18). The findings also referenced increased professional confidence and the benefits of extended school placements. However, Ní Ríordáin et al.'s (2025) report also highlights challenges associated with these changes, particularly the increased financial burden and workload for student teachers.

The 2011 Strategy also aimed to strengthen school leadership by providing opportunities for newly appointed principals to complete a relevant course in school leadership within two years of their appointment. The findings presented here indicate a significant increase since then in the proportion of pupils whose principals had undertaken a qualification in education leadership. Murphy (2020) explored the perspectives of school leaders and found that many reported that formal preparation broadened their outlook, enhanced their confidence, and increased their credibility. However, school leaders also highlighted the need for a more unified and consistent approach to leadership provisions, particularly to address the diverse needs of principals across different school settings.

Finally, these findings suggest a decrease in teachers' engagement in TPL relating to mathematics. It is important to note that these data were collected in spring 2023 and the new Primary Mathematics Curriculum was published in September 2023, alongside a comprehensive suite of TPL opportunities being rolled out by Oide over three years. The importance of continuing to develop teachers' professional content and pedagogical knowledge on both pupil outcomes and experiences is well established in the research literature (Copur-Gencturk & Tolar, 2022; Darling-Hammond et al., 2017). Consequently, it is important that access to high-quality professional learning

is embedded as a consistent feature for teachers, rather than being concentrated only at times of curriculum change.

Classroom practices

In 2011, the majority of primary school teachers were already employing a wide range of teaching strategies regularly in reading lessons and these high levels of use have remained relatively steady over time. For example, the frequent practice of asking pupils to read silently on their own continues to be reported by both teachers and pupils. More notable, however, is the significant increase in the reported use of “skimming or scanning strategies” during reading lessons, an approach which supports the locating and identifying of explicitly stated information (von Davier & Kennedy, 2024). Alongside this, there is now a greater emphasis on vocabulary instruction, while strategies focused on decoding sounds and words are less frequently reported. Given that NAMER 2021 reported frequent teaching of phonemic awareness and basic phonic rules and processes at Second Class (Kiniry et al., 2025), this may suggest that, by Fourth Class, such foundational skills are already well established, thereby reducing the need for explicit emphasis. Teachers also more frequently reported asking pupils to compare texts and to discuss their reading with their peers. These developments reflect an increased focus on higher-level cognitive skills such as integration of information from multiple sources and evaluation of an author’s perspective or motivations. This is also borne out in PIRLS data, where pupils in Ireland performed significantly above the national average in the *Interpret/Evaluate* cognitive domain in 2021 (Delaney et al., 2023) but not in 2011 (Eivers & Clerkin, 2012a).

Teachers reported significantly greater use of longer fiction books and longer non-fiction books (with chapters), as well as non-fiction subject area books or textbooks during reading lessons in 2021 compared to 2011. In particular, the increased use of longer texts with chapters suggests a move towards more sophisticated reading materials. At the same time, there has been a decrease in pupils reading books of their own choosing. However, when considered together, this may indicate a shift towards engaging with such texts collectively as a class and a lesser need for differentiated reading materials within class groups.

Between 2011 and 2021/2023, the time allocated to English language and mathematics instruction increased, reflecting mandated changes (Department of Education and Skills, 2011a). However, evidence indicates that this shift largely occurred between 2011 and 2015/2016 (Clerkin et al., 2017; Delaney et al., 2022), with little change in subsequent years (Pitsia et al., 2024, 2025). Over the same period, data from TIMSS shows a decline in time devoted to science instruction between 2011 and 2015, representing one of the subject areas that seems to have been deprioritised (Clerkin et al., 2017).

These changes in instruction time devoted to literacy and numeracy have prompted

concerns about curriculum narrowing. Ó Breacháin and O'Toole (2013) argue that the increased emphasis on literacy and numeracy risked undermining the holistic vision of the 1999 Primary School Curriculum, which was celebrated for its broad and child-centred approach to learning (Department of Education and Science, 1999). Nonetheless, the vast majority of primary teachers responding to a survey conducted by Burke (2026) regarded the time allocation for literacy in the curriculum to be about right or in need of an increase, with very few responses suggesting that it should be decreased. About two-thirds of the same respondents reported that they regularly exceed the recommended time allocation for literacy in their classroom practice (Burke, 2026), underlining the challenges faced by teachers who are tasked with prioritising literacy and numeracy development as part of a much broader – and recently re-developed – curriculum (Department of Education, 2023; Fitzpatrick et al., 2014).

Literacy and numeracy achievement from 2011-2023

An area where some clear progress has been made since 2011 relates to pupil achievement in reading and mathematics. Fourth Class pupils' performance in TIMSS and PIRLS improved significantly between 2011 and 2015/2016, coinciding with the first few years covered by the 2011 Strategy. Since then, subsequent cycles of both studies have found that pupils' reading and mathematics proficiency has remained more or less stable, remaining at a higher level than was the case in 2011.

Contemporaneous National Assessments also found a significant improvement in primary-level pupils' reading and mathematics achievement between 2009 and 2014 (Shiel et al., 2014), also coinciding with the introduction of the 2011 Strategy. These increases were especially notable given that previous National Assessments had shown little change in the decades up to 2009 (Eivers et al., 2010). However, as new baselines were established in 2009, direct comparisons between the 2014 cycle and those prior to 2009 cannot be made. Similarly, gains in performance to varying degrees were also seen in the results of large-scale assessments of science at primary level and assessments of reading, mathematics, and science at post-primary level (Clerkin & Delaney, 2025; McHugh et al., 2024). Despite the consistency of this broad pattern, it must be noted that it is difficult to attribute the observed improvements directly to any particular policies or initiatives that were contained within the 2011 Strategy itself (see Gilleece & Clerkin, 2025). Nonetheless, many teachers at both primary and post-primary levels view it as having had a beneficial impact on literacy standards (Burke, 2026).

Although significant improvements in mean scores were observed in the early years of the 2011 Strategy and the revised targets for achievement that were specified as a result in the 2017 Interim Review, similar gains in subsequent years have proven elusive. At the same time, findings of stability of pupil performance in Ireland over the years of the COVID-19 pandemic – which were characterised by major disruptions

to education and pupils' lives more widely – can be seen as a positive in the context of those disruptions. By contrast, declines in performance in PIRLS, TIMSS, and PISA – linked to school closures and other pandemic-related factors – have been reported as a major source of concern for many other countries over the same period (Crato & Patrinos, 2024) and have been characterised as a global “learning crisis” (Gajderowicz et al., 2024).

Nonetheless, more detailed national reporting of the Irish national data has highlighted some points of concern. For example, earlier findings from TIMSS 2015 suggested that increases in average achievement at that time were largely driven by improvements among lower-achieving pupils, with few gains in performance seen among higher-achieving pupils (Clerkin et al., 2016). This led to a narrowing distribution of achievement – that is, a narrowing gap between the lowest- and highest-performing pupils – at that time, which may have contributed to a greater emphasis being placed on supporting high-achieving pupils in both the 2017 Interim Review and 2024 Strategy. The most recent available data from P21 (Delaney et al., 2023) and T23 (McHugh et al., 2024) show that the distribution of achievement has been widening again in recent years. This partly reflects recent increases in the performance of higher-achieving pupils, which in itself is a welcome finding that is in line with the priorities expressed by the 2017 Interim Review and the 2024 Strategy. However, efforts to support higher-achieving pupils to reach their full potential must be accompanied by a continued focus on supporting pupils at lower levels of proficiency, and pupils who may be in need of additional resources, to avoid exacerbating existing inequalities of opportunity (Duggan et al., 2023) over the next decade.

Conclusions

The 2011 Strategy has had a major influence on education in Ireland over the last 15 years, acting as a central focus for teaching and learning in schools around the country (Burke, 2026). As we show above (see Table 15), many of the measures that were implemented as part of the 2011 Strategy – for example, curriculum updates or reforms, changes to initial teacher education, and emphasis on TPL – have also featured in other countries' efforts to improve educational outcomes and experiences. However, comparisons with reforms in other countries are instructive in emphasising the challenges that are inherent to evaluating the impact of specific policies or initiatives on specific educational outcomes. These challenges include the complex social and personal contexts in which learning takes place and the (often long) time between when a policy is introduced and when its effects could reasonably be expected to become evident.

In this regard, it is worth acknowledging that the NCCA have led a comprehensive programme of curriculum redevelopment since the 2011 Strategy was introduced. These reforms have included an update of the *Aistear* framework for early childhood

learning (Government of Ireland, 2024); a revised primary curriculum framework (Department of Education, 2023) and associated revisions to subject specifications for primary schools; a revised framework for Junior Cycle education (Department of Education and Skills, 2015b) and associated revisions to subject specifications for post-primary schools; and an ongoing rollout of reforms to Senior Cycle education (NCCA, 2022), which together represent a significant re-imagining of education in Ireland from the early years through to the completion of post-primary education and entry to adult life.

Our analysis of key characteristics of Ireland's education system prior to (2011) and after (2021/2023) the implementation of the 2011 Strategy reveals a mixture of positive and negative changes. In line with the caveats presented above, we are cautious about attributing these changes directly, in whole or in part, to the impact of the 2011 Strategy. However, we can see that some of the changes from 2011 to 2023 are in line with the aims espoused by the 2011 Strategy (for example, relating to higher standards of pupil achievement in reading and mathematics, expansion of varied teacher practices and strategies, and increased teacher and school leadership qualifications), while others have moved in the opposite direction (for example, relating to declines in pupil attitudes towards reading and mathematics, and to behaviours related to reading for enjoyment or use of libraries). Another notable feature is that the increases in pupil achievement observed between 2011 and 2021/2023 were mostly evident within the first few years of the 2011 Strategy (by 2015/2016), with more stable performance since then. This suggests that the strong emphasis placed on literacy and numeracy instruction in all schools – accompanied by increased instructional time in both cases – may have been effective in supporting at least some pupils to improve reading and mathematics outcomes within a relatively short period, but that additional sustained gains in pupil performance at a national level have been more difficult to accomplish.

This mixed view is reflected to some extent in the successor of the 2011 Strategy, which runs over the decade from 2024 to 2033 (Department of Education, 2024a), and acknowledges the improvements seen in some areas while renewing focus on remaining challenges with an implementation plan based on cross-Departmental and multi-agency support (Department of Education, 2024b). Our aim here has been to examine the extent to which progress towards a set of specified aims had been accomplished by the end of the 2011 Strategy. While this analysis has focused primarily on outcomes rather than implementation processes, future research could explore how particular procedures and practices contributed to observed changes in behaviours or outcomes. Despite the inherent difficulties highlighted in isolating the impact of a single policy within a complex education system – where outcomes are shaped by a myriad of interacting factors, including evolving curriculum implementation and broader socioeconomic trends (Gilleece & Clerkin, 2025) – a sustained emphasis on literacy and numeracy remains a necessary focus of education policy as these skills contribute to an essential foundation for pupils' future learning, participation, and success.

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Appendix

TABLE A1

Time spent reading outside of school

	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
Less than 30 minutes	37.9	1.25	43.0	1.11	5.1
30 minutes to 1 hour	36.6	0.87	37.9	0.97	1.4
1 hour to 2 hours	13.1	0.65	11.1	0.61	-2.0
2 hours or more	12.4	0.69	8.0	0.46	-4.5

Note. Significant differences between cycles are noted in **bold**.

TABLE A2

Parental involvement in school activities

	2011		2023		Difference (2023-2011)
	%	SE	%	SE	
Very high	16.3	3.09	12.7	3.21	-3.6
High	28.5	4.07	32.3	3.80	3.8
Medium	38.5	4.49	40.5	4.39	2.1
Low	14.7	2.98	8.5	2.24	-6.2
Very low	2.1	1.34	6.0	2.13	4.0

Note. Significant differences between cycles are noted in **bold**.

TABLE A3

Frequency of borrowing books from school or public library

	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
At least once or twice a week	47.3	1.80	27.8	1.69	-19.5
Once or twice a month	26.2	1.15	29.1	1.31	2.8
A few times a year	15.0	1.18	20.4	0.89	5.4
Never or almost never	11.5	1.06	22.7	1.19	11.3

Note. Significant differences between cycles are noted in **bold**.

TABLE A4*Frequency of teachers taking or sending pupils to library (other than classroom library)*

	2011		2021		Difference (2021-2011)
	%	SE	%	SE	
At least once or twice a week	23.7	3.60	22.0	3.87	-1.7
Once or twice a month	18.7	2.92	13.3	2.74	-5.4
A few times a year	15.9	2.64	17.2	3.16	1.3
Never or almost never	41.6	4.05	47.5	4.11	5.8

Note. Significant differences between cycles are noted in **bold**.

TABLE A5*Achievement scores for mathematics (TIMSS) and reading (PIRLS)*

	2011		2015		2019		2023	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
TIMSS	527.4	2.60	547.3	2.14	548.5	2.48	545.8	2.91
	2011		2016		2021			
	Mean	SE	Mean	SE	Mean	SE		
PIRLS	551.6	2.27	566.6	2.48	577.3	2.47		

Note. Significant differences from the previous cycle are noted in **bold**. P21 was administered at the beginning of Fifth Class, while P16 was administered at the end of Fourth Class.