

**Oxford University Centre for Educational Assessment**

## **Review of National Reports on PIRLS**

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## **(1) Introduction**

PIRLS 2016 is the fourth cycle of the *Progress in International Reading Literacy Study*, coordinated by the International Association for the Evaluation of Educational Achievement (IEA) (Mullis & Martin, 2015). PIRLS provides internationally comparative data about how well children from different countries read after four years of primary schooling. In England, Year 5 pupils are assessed. OUCEA and Pearson have been appointed in partnership by the Department for Education to administer PIRLS 2016 in England. OUCEA will deliver the national report for PIRLS 2016 in England. Reports from previous PIRLS 2001 and 2011 cycles added limited information to that presented in the international reports published by the IEA. As a consequence data and findings from PIRLS in England have been insufficiently contextualized to specific national interests.

The purpose of this report is to review previous national reports on PIRLS for the education systems of the United Kingdom and other countries. It thereby aims to:

- (1) Give an overview of how results from previous PIRLS cycles have been reported in England, Northern Ireland and Scotland;
- (2) Show how other countries produce relevant knowledge with PIRLS data and how they present it;
- (3) Identify ‘best practices’ with a particular focus on reports from leading countries in educational research.

This report will consequently explain the methodological approach of the review (2) and elaborate on the results, focussing on the relationship between authoring institution, study focus and report length (3.1), the link between theoretical background and methodological complexity (3.2), report structure (3.3), integration of findings in national contexts (3.4) and the reporting of PIRLS results in the UK (3.5). Section (4) will argue for the ‘best practice’ in reporting PIRLS results.

## **(2) Methodology**

In 2011 55 countries and education systems from across the globe participated in PIRLS. Not all national reports are of course easily accessible or written in a language that we are able to understand. However, within our team<sup>1</sup> we are able to comprehend the following: Arabic, English, Danish, German, French, Italian, Norwegian, Spanish and Swedish. Although

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<sup>1</sup> Daniel Caro, Yasmine El Masri and Therese N. Hopfenbeck have contributed to this report by reviewing documents in Danish, French, Italian, Norwegian, Spanish and Swedish.

Arabic was within our scope no official reports were found for the Arabic speaking countries, with the exception of UEA Dubai, which published its report in English. We thus reviewed accessible PIRLS 2011 national reports from 19 education systems (Table 1). In addition we included three reports from previous cycles in England (2001/2006) and Scotland (2006). Thus a total of 22 documents were reviewed. From each document the following information was extracted:

- authoring institution
- whether the authoring institution is a governmental, academic or independent research organisation/institution
- whether the report considered both PIRLS and TIMSS<sup>2</sup> or just PIRLS
- the number of pages
- the topics addressed in each chapter
- whether any theoretical background to the topics or evidence from alternative research literature is presented
- whether the analysis includes descriptive statistics, intermediate statistical analysis (e.g. regression analysis) or more advanced statistical analysis (e.g. multilevel modelling)

**Table 1: Reports reviewed by language and cycle**

English	German	French	Spanish	other languages
<b>PIRLS 2001</b>				
England				
<b>PIRLS 2006</b>				
England				
Scotland				
<b>PIRLS 2011</b>				
Australia Canada Dubai (UAE) England Ireland Malta New Zealand Northern Ireland United States	Austria Germany	France Belgium (French)	Colombia Spain	Denmark Italy Norway Sweden

<sup>2</sup> In 2011 PIRLS and TIMSS were conducted at the same time and many countries implemented both assessment studies.

### **(3) Results**

#### ***3.1 Authoring institution, study focus and report length***

Of the 19 documents reviewed from the PIRLS 2011 cycle, ten are authored by governmental or ministerial institutions, four by independent research institutions and five by an academic institution. Twelve reports focus on PIRLS only and the remaining seven combine the reporting of PIRLS and TIMSS findings for the 2011 cycle. Whether a combination of the two studies is reported is independent of the overall length of the report. Six documents are of book length with over 200 pages, three of which are authored by an academic institution (Germany, Italy and Norway), one by an independent research institution (Australia) and two by a governmental institution (Spain, New Zealand). Extended reports in the length of 141 to 165 pages have been produced in Malta (governmental), Northern Ireland (independent research institution) and Canada (governmental). Shorter reports of 50 up to 100 pages have been published in seven countries, five of which are authored by governmental (Austria, Columbia, Sweden, UAE Dubai, United States) and two by independent research institutions (England, Ireland). Three documents have fewer than 50 pages and are published by one governmental (France) and two academic institution (Belgium (French), Denmark).

#### ***3.2 Theoretical background and methodological complexity***

PIRLS provides a vast amount of information on pupils and their home environment, their teachers, classrooms and schools in addition to attainment in reading. A data set combining all background information yields approximately 500 variables. Theoretical elaborations on the educational structures, processes and mechanisms under investigation arguably help justifying and contextualising the choices made about which variables to analyse. Also, theoretical backgrounds support the interpretations of results related to those variables and help understand their relevance in the wider context of teaching and learning. Ultimately, context, interpretation and relevance foster a better understanding of potential consequences drawn from those results. Only three reports – all produced by academic institutions in Germany, Italy and Norway – provided a theoretical background in order to frame and interpret PIRLS findings and their interpretations.

A theoretical background based on the educational research literature is bound to paint a more complex picture of the realities of teaching and learning in institutional settings. It may be worthwhile showing that pupils with lower levels of reading interest, motivation and confidence have on average lower reading skills. However, this information only becomes

relevant when accompanied by findings showing for example that certain teaching practices can support pupils' interest, motivation and confidence and how this relates to their reading skills. Descriptive analysis of the data provided in PIRLS is insufficient to make such important and complex links between intertwined factors associated with affective and cognitive outcomes. Thus, the complexity of methodological approaches is linked to theoretical elaborations established in the reports and all three reports including a theoretical background also conduct either intermediate statistical modelling (e.g. multiple regression analysis) (Italy, Norway) or more advanced statistical modelling that includes multilevel modelling, path analysis and latent class modelling (Germany). Those reports consider for example the interaction between multiple disadvantaging factors or model mechanisms through which a minority status affects learning outcomes. With the exception of Denmark all reports without a theoretical background also only conduct descriptive analysis.

### ***3.3 Report structures***

The majority of reports provide an executive summary of their results as their first chapter and almost all reports start with a description of PIRLS that includes the aims, framework, design, sample, implementation and participating countries. Some countries such as Australia and Ireland provide a reader's guide, explaining basic principles of reading numerical results from international assessment studies and issues around standard errors. All reports then proceed in a fairly similar way of building the chapters: national results of the overall reading scale as well as scales relating to reading purposes and processes in an international comparison; performances on benchmarks; attainment differences by gender; attainment differences by student family/home background characteristics and/or minority status; description of trends for those countries that participated in earlier cycles. In the somewhat longer reports (50 pages and more) information is presented on students affective characteristics (interest, confidence, motivation, engagement), teachers and the classroom environment (e.g. teacher training, career satisfaction) and the school environment (e.g. climate, safety, discipline). Some countries like Germany, New Zealand, England and the United States provide appendices that feature more technical aspects of the study and analysis as well as sample passages and items. The Norwegian report somewhat stands out regarding its contents as it very much focuses on specific issues of reading (as opposed to reading as one in many attainment measures) and discusses for example why boys specifically underachieve, the relationship between word recognition and comprehension, how this is

related to item formats and what programs schools provide to support poor readers, specifically.

### ***3.4 Integration of findings in their national contexts***

Almost half of the reports have made an effort to integrate findings from PIRLS in their national contexts in order to increase relevance for their audience. Germany is discussing the results in relation to the school track recommendations given during Grade 4; Australia particularly focuses on the urban-rural divide; multi-linguistic countries like Canada and Malta consider second language programs and foreign language teaching; Spain evaluates the data by regions and school types; Sweden compares its results mainly to other Scandinavian countries as their education systems appear more similar; UAE Dubai analyses data for different school types that have different curricula; and the United States make a link to their national NAEP assessment to contextualise PIRLS results.

### ***3.5 Reporting of PIRLS results in the UK***

We were able to access reports for England (2001, 2006, 2011), Northern Ireland (2011) and Scotland (2006). Reports for England and Northern Ireland were produced by NFER (independent research institution) and have a length of 90-172 pages, while the document for Scotland is a short highlight report produced by a governmental institution. None provides a theoretical background to the analysis conducted, although the 2006 England report provides boxes with other research evidence in England for each chapter. This is also the only report with advanced statistical analysis. It includes a multilevel modelling to investigate multiple disadvantaging factors and a structural equation model to show how different affective pupil characteristics interact with gender to predict reading skills. All other reports provide basic descriptive statistics (means, standard deviations; group differences). Regarding the report structure and covered topics the five documents follow what has been described in section 3.3. No obvious integration of the results to the specific national contexts has been conducted.

### **(4) Best practice of reporting on PIRLS results**

From a scholarly perspective we find that reports produced in Germany and Norway are good examples of best practice. More advanced statistical analysis is intended to capture the complexities of educational processes and is accompanied by the respective theoretical background, clearly outlining the relevance of the conducted analysis.

Moreover, we see merit in including a reader's guide explaining basic principles of interpreting numerical results from international assessment studies and explaining issues around standard errors. This has been done for example in the Irish and Australian report and would make a sensible contribution to the PIRLS 2016 report for England as such a section would support lay readers in interpreting numerical findings correctly. Further, Australia's last chapter summarises the main findings and focuses on policy considerations. This is a valuable approach to raise the relevance of the study and give meaning to the efforts invested to evaluate structures and processes of teaching and learning in primary schools. Additionally, an integration of the results to specific national contexts is considered a substantial contribution for raising the importance of PIRLS. This can either be done by linking the study to already existing national data and/or findings from national studies (as has been done in the United States) or by focussing topics that are of particular interest within national educational contexts (as has been done e.g. in Germany, Australia and UAE Dubai).

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