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## What is PIRLS?

The *Progress in International Reading Literacy Study* (PIRLS) assesses reading comprehension and monitors trends in reading literacy at **five-year intervals**. PIRLS has assessed fourth year reading comprehension in over **60 countries** since 2001 and set international benchmarks for reading comprehension. To monitor **learner reading and comprehension**, PIRLS assessments offer the **opportunity to track progress** in reading comprehension within and across **languages** as well as in **provinces**. The PIRLS international scale has a range that is set from 0 to 1 000, a centre point of 500 and a Standard Deviation of 100 (reading literacy achievement scale).

## What is ePIRLS?

As a new extension to PIRLS 2016, ePIRLS is an innovative assessment of **online reading** that makes it possible for countries to understand the success of their preparation of Grade 4 and Grade 5 learners to **read, comprehend, and interpret online information** (see TIMSS & PIRLS International Study Center, 2014).

In South Africa, ePIRLS was conducted in 2016 as a **multiple case** study with **nine schools in Gauteng**. Schools had English as the language of learning and teaching (LoLT) from Grade 1 onwards. Each school was required to have a functioning computer room. Originally intended to be a survey comprising a randomly selected sample of 25 schools, severe limitations restricted ePIRLS in South Africa and consequently, the study was not featured in the International ePIRLS report as it did not meeting the sampling requirements. Only 14 other countries participated in ePIRLS. In ePIRLS 2016, learners completed **both the paper-based PIRLS booklets** and the **computer-based online reading tasks**. This required two days of assessment, one for paper-based and another for the electronic assessment.

## Main ePIRLS 2016 Objectives

- To assess **reading literacy achievement** and compare it to **online-reading achievement** in a small convenience sample of South African Grade 5 learners.
- To use ePIRLS 2016 to investigate the **feasibility** of conducting an ICT study of this type in South Africa.



## Paper-based Achievement Assessments

Each child completes an assessment booklet. Each booklet has 2 passages:

- Literary (fiction) passage
- Informational (non-fiction) passage

Passages were translated into 10 languages. The international versions in US English were changed to UK English and the English passages were also contextualised for South Africa. Each passage is followed by about 13-15 questions. There are 12 passages used, and the passages are spread across 16 different booklets in a Rotated Test Design. Children seated next to one another answer different booklets. Learners are tested in the language of learning and teaching (LoLT) used in Grade 1-3 in their school.

## Two types of Achievement Assessments in ePIRLS

- PIRLS:** passages and items in **paper booklets** which assess reading literacy at the international fourth year level.
- ePIRLS:** informational tasks in a **synthesised online** environment which learners complete on a computer or laptop. Each learner completes two tasks.

## Questionnaires (Contextual)

Approximately half of the *School, Teacher and Home Questionnaires* were returned, limiting analyses of contextual factors. There were five questionnaires:

- Learning to Read Survey* (parent/home)
- School Questionnaire* (principal)
- Teacher Questionnaire* (classroom)
- Learner Questionnaire* (student)
- Curriculum Questionnaire* (national)



## ePIRLS sample

A total of **277** Grade 5 learners in **nine schools** were assessed in English in Gauteng. The learners cannot be generalised to any population and the study is viewed as a multiple case study and designed as an exploratory study. There were fewer **girls (44%)** than **boys (57%)**. Only **eight percent** of the learners said they never speak the language of the test (English) at home.

## ePIRLS 2016 achievement

South African results are shown in Figure 1. As South Africa participated in ePIRLS only as a multiple case study, comparison with other countries is not valid and not advisable (see Appendix A for full details of countries participating in ePIRLS).

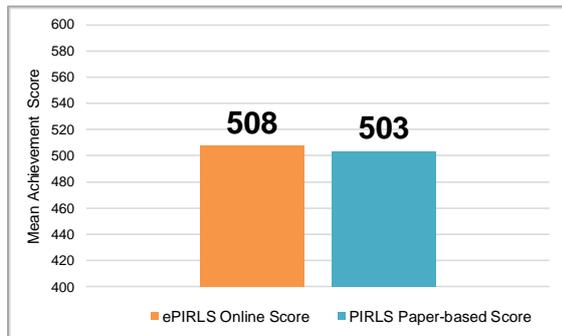


Figure 1: ePIRLS online score compared to paper-based

There was **no statistically significant** difference between the **online reading (508)** and **paper-based reading achievement (503)**. The results from the small sample in Gauteng had achievement equivalent to the international PIRLS centre point of 500.

## ePIRLS Performance by Gender

Figure 2 displays the ePIRLS achievement by gender.

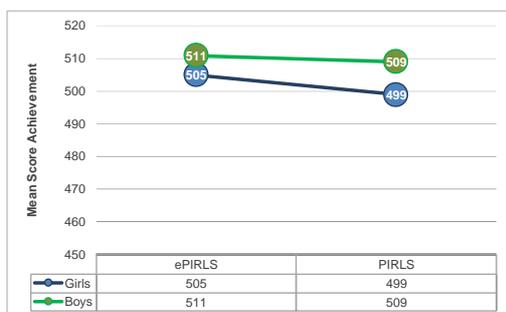


Figure 2: ePIRLS achievement by gender

Unlike PIRLS Literacy and PIRLS in the main study, there was no statistically significant difference between the achievement of boys and girls in either ePIRLS or PIRLS as shown in Figure 2.

## School Utilises Computer Room

Only schools with computer rooms participated in ePIRLS. However, during data collection for ePIRLS South Africa, it was discovered that some schools have computer rooms but do not utilise them. **Five out of the nine schools (55%)** used their computer laboratories. In Figure 3, the difference in learner achievement is shown for the two types of schools.



Figure 3: Use of computer room in ePIRLS study

In schools where the computer room is used, both **paper-based reading (541)** and **on-line reading (541)** is much higher (93-100 points) than in schools where this is not the case.

## PIRLS International Benchmarks

- **Those learners that did not reach the lowest benchmark (below 400 points):** cannot read for meaning or retrieve basic information from the text to answer simplistic questions
- **Low International Benchmark (400 - 474):** can read to locate and retrieve explicit information
- **Intermediate Benchmark (475 - 549):** begin to interpret and identify obvious reasons events in text as well as giving basic explanations for actions or information
- **High International Benchmark (550 - 625):** make intricate connections between events in the text. Identify crucial features and make generalisations. Interpret complex text and tables
- **Advanced International Benchmark (625 and above score points):** integrate ideas as well as evidence across a text to appreciate overall themes, understand the author's stance and interpret significant events

## ePIRLS 2016 Benchmark Attainment

In Figure 4, the attainment of benchmarks for ePIRLS is shown for the paper-based reading (PIRLS) and the online reading (ePIRLS).

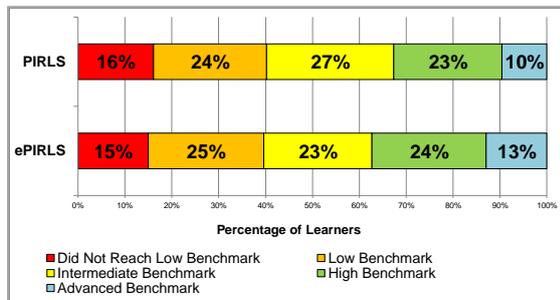


Figure 4: ePIRLS 2016 benchmark attainment

Learners who did not reach the lowest benchmark could not locate explicit information or reproduce information from a text at the end of Grade 5. Only **15-16%** of learners **could not reach** the Low Benchmark in both the ePIRLS and PIRLS assessments. Interestingly, a larger percentage of learners attained the **Advanced Benchmarks** on the online reading as opposed to the paper-based version.

## ePIRLS efficacy with using computers

Grade 5 learners were asked how confident they felt in using a computer, typing and finding information on-line. In Figure 5 the self-efficacy for computer use index and associated achievement ePIRLS scores are shown.

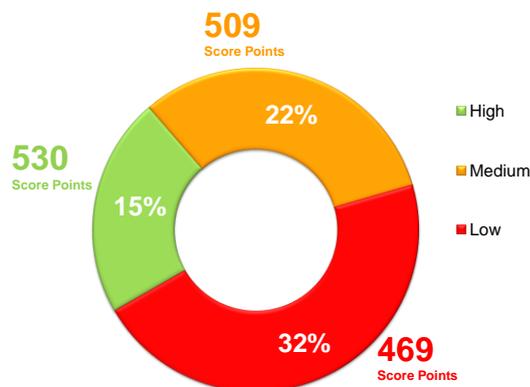


Figure 5: Self-efficacy for computer use

The learners who reported a **high level of self-efficacy** (15%) had higher mean scores (530) than those with medium or low self-efficacy.

## Summary of ePIRLS 2016 Achievement Findings

This initial analysis of the achievement data from the multiple case study did not find any significant difference between on-line reading (ePIRLS) and paper-based reading (PIRLS). There was **no significant difference** in reading achievement for girls compared to boys in either on-line or paper-based reading.

There was a **large difference** when learners attended a school where the computer room was being utilised, and in such schools learner achievement in **both on-line and paper-based** reading was much higher. In addition to formal teaching and possible effective use of the computer room, the use of the computer room may be an indicator of the overall functionality of the school, good management, and availability of many other resources.

## Challenges with implementing ePIRLS 2016

The ePIRLS 2016 multiple case study in South Africa had many implementation challenges. This offers the opportunity to understand the challenges facing eLearning as well as research related to this type of study.

- The information on national level was insufficient to use as a sampling frame
- The provincial list of schools with computer facilities was difficult to obtain and inaccurate on original database. This led to random sampling not being possible
- Some schools have old computers that could not run the software or too few computers were available in the computer room. Ports (USB) that did not work also presented problems
- Schools have computer rooms but are not used and/or have a lack of hardware (mouse or keyboard not working or missing)
- Two sessions on two days can be disruptive to schools and is also the reason two schools declined to participate. Large classes had to be split into two sessions or tested over two days, which was also disruptive to the schools
- In schools where computer rooms were established but not used, learners struggled with

navigating and using the computers. This may be linked to the self-efficacy levels seen in this report.

- Problems for implementing the study in schools included #feesmustfall, causing the university to close for a number of weeks. The unexpected implementation of the Annual National Assessments (ANAs) in December 2015 also delayed implementation. The sampling challenges of finding schools that met the criteria of the study was another challenge. All of this delayed the ePIRLS data collection to the beginning of 2016.

## Main recommendations for ICT Studies in South Africa

If ePIRLS or similar studies are to be conducted in South Africa, the following recommendations are offered.

- A province be selected for which a current and accurate database of school LoLT and IT capacity is available;
- School LoLT and IT capacity be verified before sampling;
- Provide incentives to schools for participating, considering the inconvenience caused by two days of testing;

### How to reference this report:

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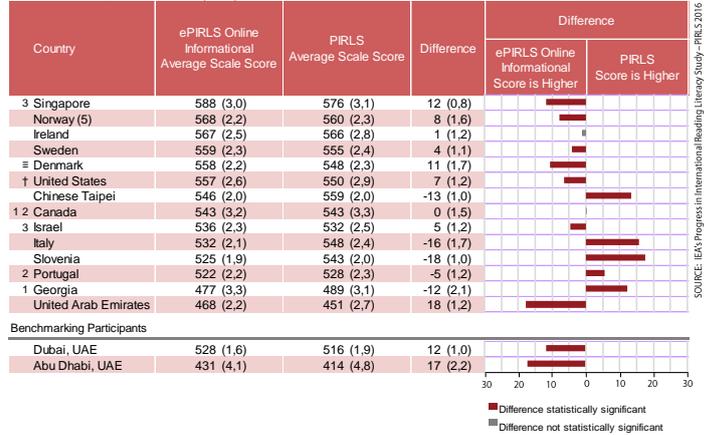
### References:

TIMSS & PIRLS International Study Center. (2014). *ePIRLS: Reading Assessment for an Online World*. Boston College. Download from: [http://www.iea.nl/fileadmin/user\\_upload/Studies/PIRLS\\_2016/ePIRLS\\_2016\\_Brochure.pdf](http://www.iea.nl/fileadmin/user_upload/Studies/PIRLS_2016/ePIRLS_2016_Brochure.pdf)

## APPENDIX A:

### ACHIEVEMENT OF ePIRLS 2016 COUNTRIES

Note: Results based on students who participated in both PIRLS and ePIRLS.



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