

CHAPTER 2

Developing the PIRLS 2016 Context Questionnaires

Martin Hooper
Bethany Fishbein

To provide insight into students' contexts for learning across participating countries, PIRLS context questionnaires are completed by students and their parents, teachers, and principals. National Research Coordinators (NRCs) from participating countries document national policies by completing a curriculum questionnaire.

The context questionnaire results form the basis for seven of the ten chapters of the *PIRLS 2016 International Results in Reading* report and one of the four chapters of the *ePIRLS International Results in Online Informational Reading* report, and the descriptive data collected through the PIRLS Curriculum Questionnaire complement each country's chapter in the *PIRLS 2016 Encyclopedia*. The data are also made available through the [PIRLS 2016 International Database](#), providing data that researchers can use for secondary analysis.

This chapter documents the PIRLS 2016 questionnaire development process. Information on the analysis of the context questionnaire scales can be found in [Chapter 14](#).

Development Process for the PIRLS 2016 Context Questionnaires

Developing the PIRLS 2016 context questionnaires was a collaborative process involving multiple rounds of reviews by staff at the TIMSS & PIRLS International Study Center, experts on the PIRLS 2016 Questionnaire Development Group (QDG), and the NRCs from the participating countries. In broad strokes, the PIRLS 2016 context questionnaire development process for the student, home, school, and teacher questionnaires included:

- Updating the context questionnaire framework for 2016
- Developing new context questionnaire items and modifying existing items by staff at the TIMSS & PIRLS International Study Center
- Reviewing and revising successive draft questionnaires by the QDG and NRCs
- Administering the PIRLS 2016 field test

- Using the field test results to refine the questionnaires by staff at the TIMSS & PIRLS International Study Center and the QDG
- Final review by NRCs

Developing the Curriculum Questionnaire followed a collaborative process similar to other PIRLS questionnaires, including identifying important framework topics, developing questionnaire items, and undergoing reviews by the QDG and NRCs.

Exhibit 2.1 presents the PIRLS 2016 context questionnaire development schedule. The development process was directed and managed by the staff of the TIMSS & PIRLS International Study Center at Boston College, including Executive Directors Ina V.S. Mullis and Michael O. Martin, and the PIRLS Questionnaire Coordinator, Martin Hooper. NRCs had an essential role in updating the questionnaires, providing feedback and ideas at NRC meetings. The QDG made major contributions in updating the PIRLS 2016 questionnaires with the 1st QDG meeting focused on developing PIRLS items/scales, and the 2nd meeting focused on refining the questionnaires in light of the field test results. Exhibit 2.2 lists the members of the QDG.

PIRLS 2016 included PIRLS Literacy, a less difficult version of PIRLS, and ePIRLS—a computer-based assessment of online informational reading. Countries participating in PIRLS Literacy administered the PIRLS questionnaires. All students taking ePIRLS also took PIRLS, and these students were administered a short ePIRLS questionnaire in addition to the PIRLS questionnaire.

Exhibit 2.1: PIRLS 2016 Context Questionnaire Development Schedule

Date(s)		Group and Activity
February	2013	NRCs reviewed PIRLS 2011 context questionnaires and provided ideas for new questionnaire topics at the 1 st NRC meeting (Hamburg, Germany)
June	2013	1 st meeting of the Questionnaire Development Group (QDG) to develop the PIRLS 2016 questionnaires (Singapore). Meeting was held jointly with the TIMSS Questionnaire Item Review Committee (QIRC)
July–August	2013	TIMSS & PIRLS International Study Center revised the draft context questionnaires to incorporate QDG/QIRC feedback and drafted the PIRLS 2016 Context Questionnaire Framework chapter
September	2013	NRCs reviewed draft PIRLS 2016 context questionnaires and the draft PIRLS 2016 Context Questionnaire Framework chapter at the 2 nd NRC meeting (Portorož, Slovenia)
October	2013	TIMSS & PIRLS International Study Center finalized the PIRLS 2016 Context Questionnaire Framework chapter incorporating NRC feedback
October–April	2013–2014	TIMSS & PIRLS International Study Center updated the draft PIRLS 2016 context questionnaires incorporating NRC feedback
November	2013	TIMSS & PIRLS International Study Center published <i>PIRLS 2016 Assessment Frameworks, 1st Edition</i> , which includes the chapter on the Context Questionnaire Framework
May	2014	NRCs reviewed and approved the proposed field test context questionnaires for PIRLS at the 3 rd NRC meeting (Dublin, Ireland)
June–July	2014	TIMSS & PIRLS International Study Center finalized field test context questionnaire instruments
July	2014	TIMSS & PIRLS International Study Center provided field test context questionnaires to NRCs
February	2015	<i>PIRLS 2015 Assessment Framework, 2nd Edition</i> published online
March–April	2015	Countries conducted PIRLS 2016 field test
April–May	2015	Countries submitted field test data for analysis and review
June	2015	TIMSS & PIRLS International Study Center conducted a review of field test results
July	2015	QDG reviewed questionnaire field test data and the draft PIRLS 2016 Curriculum Questionnaire at 2 nd QDG meeting (Hamburg, Germany)
August	2015	NRCs reviewed and approved context questionnaires for PIRLS and ePIRLS 2016 data collection as well as the PIRLS 2016 Curriculum Questionnaire at 5 th NRC meeting (Jyväskylä, Finland)
August	2015	TIMSS & PIRLS International Study Center distributed PIRLS 2016 and ePIRLS 2016 context questionnaire instruments for data collection to NRCs for translation
October–December	2015	Southern Hemisphere countries conducted PIRLS 2016 data collection
March–June	2016	Northern Hemisphere countries conducted PIRLS 2016 data collection
March–August	2016	PIRLS 2016 Curriculum Questionnaire administered online to NRCs

Exhibit 2.2: PIRLS 2016 Questionnaire Development Group (QDG)

Joanne Latourelle Sanction des Études Ministère de l'Éducation, et de L'Enseignement Supérieur Canada	Megan Chamberlain Comparative Education Research Unit Ministry of Education New Zealand
Hwa Wei Ko Graduate Institute of Learning and Instruction National Central University Chinese Taipei	João Maroco Instituto de Avaliação Educativa, I. P. Portugal
Marc Colmant Direction de l'Évaluation, de la Prospective et de la Performance (DEPP) Ministère de l'Éducation Nationale France	Sarah Howie Centre for Evaluation and Assessment (CEA) University of Pretoria South Africa
Maryam A. Al-Ostad National Centre for Education Development Kuwait	

Background of PIRLS 2016 Context Questionnaire Development

Similar to the development process for the PIRLS 2016 achievement booklets (see [Chapter 1](#)), questionnaire development balanced the dual purposes of maintaining continuity with previous assessments and evolving to reflect the current contexts for student learning. Following from this, the PIRLS 2016 questionnaires were based on the questionnaires from PIRLS 2011 and informed by developments for TIMSS 2015, with updates as appropriate to align the questionnaires with more recent research on favorable contexts for learning to read.

In 2011, the TIMSS and PIRLS cycles coincided, and 34 countries chose to administer both TIMSS and PIRLS to the same fourth grade students. Accordingly, the TIMSS 2011 and PIRLS 2011 questionnaires were developed in tandem (see [Methods and Procedures in TIMSS and PIRLS 2011](#) for details). Overall, this joint development process produced a synergy that led to advancements in questionnaire development for both projects, and shared items across TIMSS and PIRLS 2011 allowed results to be compared across projects.

PIRLS 2016 made an effort to maintain the consistency with TIMSS by holding the 1st meeting of the QDG with its TIMSS equivalent—the Questionnaire Item Review Committee (QIRC). Because TIMSS is on a four-year cycle and PIRLS is on a five-year cycle, much of the

TIMSS 2015 development occurred in advance of the PIRLS 2016 development, allowing PIRLS 2016 to capitalize on improvements made to the TIMSS 2015 questionnaires. As such, the [PIRLS 2016 Context Questionnaire Framework](#) built upon the research conducted for the TIMSS 2015 framework, and the PIRLS 2016 questionnaire development benefitted from revisions to overlapping TIMSS/PIRLS questionnaire items made at TIMSS NRC meetings. PIRLS 2016 development also was informed by results from the TIMSS 2015 field test.

A major methodological innovation in PIRLS 2011 (and TIMSS 2011) was using context questionnaire scales to measure key educational research topics (Martin, Mullis, Foy, & Arora, 2012). To improve scales for PIRLS 2016, questionnaire development focused on writing items to strengthen the measurement properties of the PIRLS 2011 scales as well as developing new scales to measure emerging areas of educational research.

Updating the PIRLS 2016 Context Questionnaire Framework

The [PIRLS 2016 Context Questionnaire Framework](#), Chapter 2 of the *PIRLS 2016 Assessment Framework*, provided the foundation for updating the PIRLS context questionnaires for 2016. The chapter presents a review of the educational research that identifies key context questionnaire topics and gives the rationale for asking about these topics within the 2016 questionnaires.

At the 1st NRC meeting in February 2013 in Hamburg, Germany, NRCs described topics they thought should be covered in the PIRLS 2016 questionnaires, including which PIRLS 2011 topics should be retained to measure trends. Taking into account feedback garnered in the meeting and insights from the drafting of the TIMSS 2015 framework, the PIRLS Questionnaire Coordinator conducted a literature review and drafted the PIRLS 2016 Context Questionnaire Framework. Because the primary purpose of the context questionnaires is to identify factors that may contribute to differences in achievement within and between countries, the framework focuses on topics in educational research found to be related to achievement across a variety of settings and contexts.

The NRCs reviewed the draft framework chapter at the 2nd NRC meeting in September 2013 in Portorož, Slovenia. Staff at the TIMSS & PIRLS International Study Center refined the draft based upon the recommendations received at the meeting and published the *PIRLS 2016 Assessment Framework* online in November 2013, with printed copies distributed thereafter. A second edition of the framework was published in February 2015, which included updates to the PIRLS Literacy assessment design.

Field Test Questionnaire Development

With the draft Context Questionnaire Framework at hand, staff at the TIMSS & PIRLS International Study Center focused the questionnaire development process on improving and expanding the PIRLS context questionnaire scales and updating items to align with more recent technological innovations.

For many of the scales retained from PIRLS 2011, modifications for 2016 focused on increasing the number of items to optimize reliability and content coverage. For example, a number of new items were written for the *School Emphasis on Academic Success* scale, with item development influenced by existing scales in the academic optimism literature (Hoy, Hoy, & Kurz, 2008; McGuigan & Hoy, 2006; Wu, Hoy, & Tarter, 2013). New items asking teachers about their strategies for engaging students were revamped, with item development influenced by Applebee, Langer, Nystrand, and Gamoran (2003). Additional items were also included for the student engagement scales, with one item sourced from Fauth, Decristan, Rieser, Klieme, and Büttner (2014).

Staff at the TIMSS & PIRLS International Study Center worked with the PIRLS QDG/ TIMSS QIRC at their joint meeting in June 2013 to recast a number of scales. For instance, the QDG and QIRC revamped the *Teacher Job Satisfaction* scale to integrate insights gained from the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). The questionnaire committees also suggested a new item for the *Parents Like Reading* scale, sourced from PISA 2000 (OECD, 2000).

Updating questionnaires to “keep up with the times” was an essential part of the 2016 development process. Staff at the TIMSS & PIRLS International Study Center worked with the QIRC and QDG to ensure that the questionnaires included items on the availability of prevalent digital resources for education such as ebooks, tablets, and interactive whiteboards.

Finally, staff at the TIMSS & PIRLS International Study Center developed a short ePIRLS student questionnaire to focus on students’ experiences using computers and finding and reading information on the Internet as well as their self-efficacy using computers, typing, and finding information on the Internet.

Prior to the field test, the PIRLS NRCs reviewed draft PIRLS 2016 questionnaires at their 2nd NRC meeting in September 2013 in Portorož, Slovenia, as well as at their 3rd NRC meeting in May 2014 in Dublin, Ireland. The ePIRLS questionnaire was also reviewed at the 3rd NRC meeting.

Review Field Test Results and Refine Questionnaires for Data Collection

PIRLS 2016 countries administered an ambitious field test, eliciting questionnaire data from 64,873 students, 62,716 parents, 1,840 school principals, and 3,287 teachers from the 49 countries and seven benchmarking entities for PIRLS and across seven countries and one benchmarking entity for PIRLS Literacy. The ePIRLS field test questionnaire was administered to 13,701 students from 15 countries as well as five benchmarking entities.

Following field test administration, staff at the TIMSS & PIRLS International Study Center produced data almanacs and scale summaries to facilitate the review of the field test data:

- Data almanacs document for each country the use of response categories for each context questionnaire item as well each item's relationship with achievement
- Scale summaries detail each scale's reliability, dimensionality, fit to the item response theory model, and relationship with achievement in each country

In June 2015, staff at the TIMSS & PIRLS International Study Center reviewed the field test context questionnaire results, proposing revisions to the QDG. At their 2nd meeting in July 2014, the QDG accepted many of the recommendations and suggested a few additional changes. In August 2015 at their 5th meeting, NRCs reviewed the final draft questionnaires and accepted the questionnaires with a few minor revisions. Following the NRC meeting, staff at the TIMSS & PIRLS International Study Center implemented the revisions and posted the final PIRLS instruments on August 27, 2015, so that countries could begin the [translation process](#).

Developing the PIRLS 2016 Curriculum Questionnaire

The PIRLS Curriculum Questionnaire complements the student, teacher, school, and home questionnaires by collecting information from NRCs about country-level contexts. The Curriculum Questionnaire covers each country's reading curriculum, goals and standards for instruction, and other national or regional policies such as the preprimary education process and the teacher education process.

Similar to the other PIRLS 2016 questionnaires, the process for updating the PIRLS Curriculum Questionnaire started with the PIRLS 2016 Context Questionnaire Framework. Then, the QDG identified the information from the PIRLS 2011 Curriculum Questionnaire and the TIMSS 2015 Curriculum Questionnaires that they thought was useful to continue collecting. Based on the framework and QDG feedback, staff at the TIMSS & PIRLS International Study Center updated the PIRLS 2016 Curriculum Questionnaire for review by NRCs at their 5th meeting in August 2015. Following the NRC meeting, staff at the TIMSS & PIRLS International Study Center finalized the questionnaire, incorporating the suggestions that emerged from the meeting. NRCs completed the online Curriculum Questionnaire between March 30, 2016 and August 31, 2016.

References

- Applebee, A.N., Langer, J.A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal*, 40(3), 685-730.
- Fauth, B., Decristan, J., Rieser, S., Klieme, E., & Büttner, G. (2014). Student ratings of teaching quality in primary school: Dimensions and prediction of student outcomes. *Learning and Instruction*, 29, 1-9.
- Hoy, A.W., Hoy, W.K., & Kurz, N.M. (2008). Teacher's academic optimism: The development and test of a new construct. *Teaching and Teacher Education*, 24, 821-835.
- Martin, M.O., Mullis, I.V.S., Foy, P., & Arora, A. (2012). Creating and interpreting the TIMSS and PIRLS 2011 context questionnaire scales. In M.O. Martin & I.V.S. Mullis (Eds.), *Methods and Procedures in TIMSS and PIRLS 2011*. Retrieved from Boston College, TIMSS & PIRLS International Study Center website: https://timssandpirls.bc.edu/methods/pdf/TP11_Context_Q_Scales.pdf
- McGuigan, L. & Hoy, W.K. (2006). Principal leadership: Creating a culture of academic optimism to improve achievement for all students. *Leadership and Policy in Schools*, 5, 203-229.
- Organisation for Economic Co-Operation and Development (OECD) (2000). Student Questionnaire. Programme for International Student Assessment. Retrieved from OECD website: <http://www.oecd.org/pisa/pisaproducts/database-pisa2000.htm>
- Schaufeli, W.B., Bakker, A.B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701-716.
- Wu, J.H., Hoy, W.K., & Tarter, C.J. (2013). Enabling school structure, collective responsibility, and a culture of academic optimism: Toward a robust model of school performance in Taiwan. *Journal of Educational Administration*, 51(2), 176-193.