

CHAPTER 7

Translation and Layout Verification for PIRLS 2016

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Introduction

The TIMSS & PIRLS International Study Center developed the international versions of the PIRLS 2016 assessment instruments, context questionnaires, and procedural manuals in English. Using the international source versions, participating countries translated the materials into their languages of instruction and adapted them to their cultural context as necessary. To ensure that the translations were of the highest quality and comparable across all of the participating countries and benchmarking entities, countries followed standard internationally agreed-upon procedures in preparing national versions of the assessment instruments (see [Chapter 6: Survey Operations Procedures](#)). The ultimate goal of the translation and adaptation process was to create national versions of the PIRLS 2016 instruments that accommodate national languages and context while maintaining international comparability.

As part of the PIRLS international quality assurance program, each country's instruments underwent a formal external review of the translations and adaptations by linguistic and assessment experts. The review included two stages: translation verification and layout verification. Translation verification was managed by IEA Amsterdam and layout verification was conducted by the TIMSS & PIRLS International Study Center. Each verification was conducted twice—once before the field test and again before the main data collection.

During translation verification, verifiers compared the national text to the international text and provided detailed feedback to improve the accuracy and comparability of the national translations. Once the verification was completed, the National Research Coordinators (NRCs) reviewed the feedback, revised their national materials as needed, and documented their changes. Following translation verification, the national instruments were sent to the TIMSS & PIRLS International Study Center for layout verification. During layout verification, verifiers checked to

ensure that all national instruments conformed to the international format and that any national adaptations made to the PIRLS 2016 international instruments did not unduly influence their international comparability.

The PIRLS assessment materials that underwent verification are:

- Student achievement passages and items for PIRLS and PIRLS Literacy
- Context questionnaires for students, parents, teachers, and school principals
- Covers and directions (for each achievement booklet and context questionnaire)
- Online covers and directions (for countries administering questionnaires to parents, teacher, and/or schools online)

Countries participating in ePIRLS also submitted translated and adapted tasks and items for ePIRLS. ePIRLS utilized a comprehensive online translation system that accommodated the translation and verification processes. All ePIRLS translations were submitted directly into the online translation system and verifiers used the system to conduct their reviews and enter their feedback.

Providing the Instruments for Translation and Adaptation

For PIRLS, the TIMSS & PIRLS International Study Center provided each country's NRC with electronic files consisting of all materials to be translated and adapted, as well as the National Adaptation Forms for documenting each step of the adaptation, translation, and verification processes. For countries that participated in ePIRLS, the TIMSS & PIRLS International Study Center provided NRCs with PDF storyboards of the ePIRLS tasks as well as documentation on accessing the ePIRLS Online Translation System.

As part of the PIRLS assessment design, most of the achievement passages appeared in several booklets, therefore the component parts of the booklets (blocks, covers, and directions) were prepared as separate files for translation and translation verification to facilitate these processes. This approach allowed countries to translate each component only once before assembling the booklets.

Following verification and approval of each country's translations, the blocks, covers, and directions were assembled into booklets to be reviewed during layout verification. To assist in this process, the TIMSS & PIRLS International Study Center provided NRCs with detailed manuals and instructional videos containing information on how to work with the electronic files, support materials for right-to-left languages, guidelines for adaptation, instructions for booklet assembly, and PDF versions of the final instruments and questionnaires for reference.

Blocks of Achievement Items Designated to Measure Trends

According to the PIRLS design, about half the passages and items are carried over from one cycle to the next for the purpose of measuring changes in student achievement over time. Accordingly, PIRLS 2016 included some passages and items previously used in PIRLS 2011 and 2006. To ensure the quality of the PIRLS trend measurement, these “trend” passages and accompanying achievement items must be administered in exactly the same way in every cycle. For countries that previously participated in PIRLS 2011 or PIRLS 2006, the PIRLS 2016 trend materials were reviewed during translation and layout verification in comparison with those from the last cycle in which the country participated. Any deviations from the previous cycle were documented by the verifiers. If a country determined that changes to an item in a trend block were absolutely necessary (e.g., in order to correct a mistranslation discovered in a previous version), they were instructed to document the change for further review during the verification process. A trend item that underwent changes was not included in the scaling process or the estimation of the achievement scores for that country.

The National Adaptations Forms

Each country prepares one National Adaptations Forms (NAFs) for each set of PIRLS assessment instruments and questionnaires for each language in which they administer the assessment and questionnaires. NAFs are Excel documents formatted to contain the complete translation, adaptation, and verification history of each set of national instruments.

When countries translated and adapted their national PIRLS and PIRLS Literacy instruments, the NAFs were filled out by the translators, reviewers, and NRCs. The translator and reviewer documented the initial adaptations made to the instruments, which the NRCs then reviewed and consolidated. Once the NAFs were updated and revised, they were reviewed again during layout verification. NRCs were responsible for responding and updating the documentation within the NAFs after each round of international verification.

Documenting an adaptation in the NAFs required entering the identifying information (location and/or question number), an English back translation of the adaptation, and recoding instructions (if applicable). To ease the process of documentation and review, NAFs include designated areas for each respondent to comment on each item within each instrument.

For ePIRLS, NAFs were not external worksheets but built into the ePIRLS Online Translation System. All national adaptations and documentation for the ePIRLS instruments were recorded directly into the Translation System, and the system has a function to export all documentation including translations, adaptations, and comments from the translators, verifiers, and NRCs.

Guidelines for Translation and Adaptation

The TIMSS & PIRLS International Study Center provided guidelines for translating and adapting the PIRLS assessment instruments. The purpose of the guidelines was to ensure that, when countries translated and adapted the international versions, the meaning and difficulty level of the instruments remained the same. All participating countries were expected to follow these guidelines, including countries that administer the instruments in English. English-speaking countries were required to adapt the international text to their national contexts to conform with English usage in the country.

In accordance with the guidelines, translators and reviewers ensured that:

- The translation is at an appropriate level for the target population
- No information is omitted, added, or clarified in the translated text
- The translated text has the same meaning as the international version and uses equivalent terminology
- The translated text has the same register (language level and degree of formality) and level of difficulty as the international version
- Idiomatic expressions are translated appropriately, not necessarily word for word
- The translated text uses correct grammar, punctuation, qualifiers, and modifiers, as appropriate for the target language

After the field test, the TIMSS & PIRLS International Study Center provided NRCs with a list of changes to the international version that they could refer to while preparing their assessment instruments for the main data collection. This information minimizes the translation burden while highlighting the necessary change to the translation before the assessment.

The Target Language

For many countries, identifying the language of assessment, referred to as the “target” language, was relatively straightforward because there is a primary language used in the education system. Other countries use more than one language of instruction in their education systems, and in these cases they translated the PIRLS instruments into multiple languages. These multilingual countries also translated the context questionnaires and administration scripts for each language assessed, and some countries also translated the home questionnaire into additional languages in order to make the questionnaire more accessible to parents from different backgrounds.

Scope of Translation and Layout Verification in PIRLS 2016

Exhibits 7.1 through Exhibit 7.3 show the languages utilized for the PIRLS, PIRLS Literacy, and ePIRLS assessments. The PIRLS 2016 assessment instruments were translated into 40 different languages, across 50 participating countries and 6 benchmarking entities, the PIRLS Literacy assessment instruments were translated into 10 languages across 6 countries, and the ePIRLS assessment instruments were translated into 14 languages across 14 countries and 2 benchmarking entities.¹ Of these participants, 24 countries and 4 benchmarking entities administered the instruments in more than one language.

Exhibit 7.1: Languages used for the PIRLS 2016 Assessment Instruments

Country	Language	Instruments				
		Achievement Test	Student Questionnaire	Home Questionnaire	Teacher Questionnaire	School Questionnaire
Australia	English	●	●	●	●	●
Austria	German	●	●	●	●	●
Azerbaijan	Azerbaijani	●	●	●	●	●
	Russian	●	●	●	●	●
Bahrain	Arabic	●	●	●	●	●
	English	●	●	●	●	●
Belgium (Flemish)	Dutch	●	●	●	●	●
Belgium (French)	French	●	●	●	●	●
Bulgaria	Bulgarian	●	●	●	●	●
Canada	English	●	●	●	●	●
	French	●	●	●	●	●
Chile	Spanish	●	●	●	●	●
Chinese Taipei	Traditional Chinese	●	●	●	●	●
Czech Republic	Czech	●	●	●	●	●
Denmark	Danish	●	●	●	●	●
England	English	●	●	●	●	●
Finland	Finnish	●	●	●	●	●
	Swedish	●	●	●	●	●
France	French	●	●	●	●	●
Georgia	Georgian	●	●	●	●	●
	Azerbaijani	●	●	●	●	●
Germany	German	●	●	●	●	●

¹ Counts may be inconsistent with Exhibits 7.1, 7.2, and 7.3 due to omission of benchmarking entities that share instruments with the national country participant and did not require additional translation and layout verification.

Exhibit 7.1: Languages used for the PIRLS 2016 Assessment Instruments (Continued)

Country	Language	Instruments				
		Achievement Test	Student Questionnaire	Home Questionnaire	Teacher Questionnaire	School Questionnaire
Hong Kong SAR	Traditional Chinese	●	●	●	●	●
Hungary	Hungarian	●	●	●	●	●
Iran, Islamic Rep. of	Farsi	●	●	●	●	●
Ireland	English	●	●	●	●	●
	Irish		●	●	●	●
Israel	Arabic	●	●	●	●	●
	Hebrew	●	●	●	●	●
Italy	Italian	●	●	●	●	●
Kazakhstan	Kazakh	●	●	●	●	●
	Russian	●	●	●	●	●
Latvia	Latvian	●	●	●	●	●
	Russian	●	●	●	●	●
Lithuania	Lithuanian	●	●	●	●	●
	Russian	●	●			
	Polish	●	●			
Macao SAR	Traditional Chinese	●	●	●	●	●
	English	●	●	●	●	●
	Portuguese	●	●	●	●	●
Malta	Maltese	●	●	●		
	English				●	●
Morocco	Arabic	●	●	●	●	●
Netherlands	Dutch	●	●	●	●	●
New Zealand	English	●	●	●	●	●
	Maori	●	●	●	●	●
Northern Ireland	English	●	●	●	●	●
Norway	Bokmål	●	●	●	●	●
	Nynorsk	●	●	●	●	●
Oman	Arabic	●	●	●	●	●
	English	●	●	●	●	●
Poland	Polish	●	●	●	●	●
Portugal	Portuguese	●	●	●	●	●
Qatar	Arabic	●	●	●	●	●
	English	●	●	●	●	●

Exhibit 7.1: Languages used for the PIRLS 2016 Assessment Instruments (Continued)

Country	Language	Instruments				
		Achievement Test	Student Questionnaire	Home Questionnaire	Teacher Questionnaire	School Questionnaire
Russian Federation	Russian	●	●	●	●	●
Saudi Arabia	Arabic	●	●	●	●	●
	English	●	●	●	●	●
Singapore	English	●	●	●	●	●
	Chinese			●		
	Tamil			●		
	Malay			●		
Slovak Republic	Hungarian	●	●	●	●	●
	Slovak	●	●	●	●	●
Slovenia	Slovene	●	●	●	●	●
Spain	Spanish	●	●	●	●	●
	Galician	●	●	●	●	●
	Valencian	●	●	●	●	●
	Basque	●	●	●	●	●
	Catalan	●	●	●	●	●
	English	●				
Sweden	Swedish	●	●	●	●	●
Trinidad & Tobago	English	●	●	●	●	●
United Arab Emirates	Arabic	●	●	●	●	●
	English	●	●	●	●	●
	French (Dubai only)	●	●	●	●	●
United States	English	●	●	●	●	●
Benchmarking Participants						
Buenos Aires, Argentina	Spanish	●	●	●	●	●
Eng/Afr/Zulu – RSA (5)	Afrikaans	●	●	●	●	●
	English	●	●	●	●	●
	IsiZulu	●	●	●	●	●

Exhibit 7.2: Languages used for the PIRLS Literacy 2016 Assessment Instruments

Country	Language	Instruments				
		Achievement Test	Student Questionnaire	Home Questionnaire	Teacher Questionnaire	School Questionnaire
Egypt	Arabic	●	●	●	●	●
Iran, Islamic Rep.of	Farsi	●	●	●	●	●
Kuwait	Arabic	●	●	●	●	●
	English (US)	●	●	●	●	●
	English (UK)	●	●	●	●	●
Morocco	Arabic	●	●	●	●	●
South Africa	Afrikaans	●				
	English	●				
	IsiZulu	●				
	Setswana	●	●	●	●	●
	Sesotho	●	●	●	●	●
	Sepedi	●	●	●	●	●
	isiXhosa	●	●	●	●	●
Benchmarking Participants						
Denmark (3)	Danish	●	●	●	●	●

Exhibit 7.3: Languages used for the ePIRLS 2016 Assessment Instruments

Country	Language
Canada	English
	French
Chinese Taipei	Traditional Chinese
Denmark	Danish
Georgia	Georgian
	Azerbaijani
Ireland	English
Israel	Arabic
	Hebrew
Italy	Italian
Norway (5)	Bokmal
	Nynorsk
Portugal	Portuguese
Singapore	English
Slovenia	Slovene
Sweden	Swedish
United Arab Emirates	Arabic
	English
United States	English
Benchmarking Participants	
Abu Dhabi, UAE	Arabic
	English
Dubai, UAE	French

Translators and Reviewers

All countries and benchmarking participants were advised to hire highly qualified translators and reviewers well suited to the task of working with the PIRLS materials.

Essential qualifications for translators and reviewers included:

- Excellent knowledge of English
- Excellent knowledge of the target language
- Experience of the country's cultural context
- Experience in translating literary texts, preferably at the level of the target grade

The primary responsibility of the reviewer was assessing the readability and accuracy of the translation for the target population. In addition to excellent language skills and knowledge of the country's cultural context, reviewers were expected to have experience with students in the target grade (preferably as a school teacher).

In cases where several translators and reviewers were needed for each language to distribute the work, NRCs were responsible for maintaining the consistency of the translations within and across instruments. When countries administer the assessment in more than one language, the NRCs were advised to employ translators and reviewers highly proficient in the various languages to ensure the consistency of the translations and adaptations across the different language versions.

Translation and Adaptation of the Achievement Test

When translating the PIRLS achievement passages and items, one of the main challenges is finding appropriate terms and expressions in the target language(s) that convey the same meaning and style of text as the international version. When adapting and translating expressions with more contextually appropriate terms or phrases, translators ensured that the meaning and difficulty of the passage or item remained the same as the international version. For example, it was important that adaptation/translation does not simplify or clarify the text in such a way as to provide a hint or definition of the meaning of a question. Translators also ensured the consistency of adaptations and translations from item to item. For multiple choice items, translators were instructed to pay particular attention to the literal and synonymous matches of text in both the question stem and answer options; matches in the international version were required to be maintained in the translated national version.

Although NRCs were strongly advised to keep adaptations to a minimum, some adaptations were necessary in order to prevent students from facing unfamiliar contexts or vocabulary that could hinder their ability to read and understand the passage or item. In some cases, changes to the instruments were necessary to follow national conventions of measurement, punctuation, and

expressions of date and time. For example, a reference to the working week as Monday to Friday might be adapted according to national customs; similarly, a word such as “flashlight” in American English would be adapted to “torch” in British English. In addition, fictional names of characters and places were modified to similar names in the target language. When adapting the names of fictional cities or towns, translators were advised against using real names of places to prevent student responses’ from being influenced by their perceptions and knowledge of the real locations.

Within the PIRLS text, some terms could not be adapted or changed beyond translation. Examples included proper names of actual people and places. To aid in the standardization of the most common adaptations across countries, the TIMSS & PIRLS International Study Center provided a list of specific examples of acceptable and unacceptable adaptations, including a list of measurement conversions.

Translation and Adaptation of the Questionnaires

Translation procedures for the questionnaires differed from the assessment passages and items in that participating countries were required to adapt some terms to ensure that questions were appropriate for the national context and education system. The terms requiring adaptation were listed in angle brackets in the international version with a description of what country-specific information was needed. For example, <language of test> and <fourth grade> would be adapted to the actual language and grade in which the assessment is administered—in the Netherlands, these terms would be replaced by equivalents “Nederlands” (Dutch) and “groep 6” (grade 4).

The guidelines for translation and adaptation contained detailed descriptions of the questionnaire adaptations, including the intent of each required adaptation, to clarify the meaning of the terms used and to enable the translators to select the appropriate national term or expression to convey the intended meaning. For PIRLS 2016, the main difficulties encountered in adapting the questionnaires involved terminology, specific educational contexts, and, for a few countries, consistency across multiple languages of administration.

Countries were permitted to add a limited number of questions to the questionnaires that were of national interest. To avoid influencing responses to the international questions, NRCs were advised to place these national questions at the end of the corresponding module or questionnaire and to ensure these questions adopt the same format as the rest of the questionnaire. The inclusion of national questions in the final questionnaires were required to be approved by the TIMSS & PIRLS International Study Center during Layout Verification.

International Translation Verification

The national translations of the international instruments were required to undergo international translation verification. IEA Amsterdam managed the international translation verification process in coordination with external translation verification companies—for PIRLS, cApStAn Linguistic

Quality Control (based in Brussels, Belgium) and for ePIRLS, EasyTranslate (based in Copenhagen, Denmark).

The required qualifications for verifiers included:

- Fluency in English
- Mother tongue proficiency in the target language
- Formal credentials as translators working in English
- University-level education and (if possible) familiarity with the subject area
- Residency in the target country, or close contact with the country and its culture

The IEA trained all international translation verifiers and supplied them with a comprehensive set of instructional materials to support their work. For PIRLS 2016, verifiers were trained through web-based seminars and were provided with information about PIRLS and the assessment instruments. Each verifier received a document containing the translation and adaptation guidelines, relevant manuals and instruments, and an instructional document containing the directions and guidelines for reviewing the national instruments and documenting deviations from the international version.

The Translation Verification Process

The instruction and training given to the verifiers emphasized the importance of maintaining the same meaning and difficulty level in the translations and adaptations as in the international versions and ensuring that translations and adaptations were adequate and consistent within and across national instruments. The translation verification process involved:

- Checking the accuracy, linguistic correctness, and comparability of the translation and adaptations of the achievement items and questionnaires
- Documenting any deviations between the national and international versions, including additions, deletions, and mistranslations
- Suggesting an alternative translation/adaptation to improve the accuracy and comparability of the national instruments

For PIRLS 2016, verifiers provided feedback from translation verification in both the sets of instruments and the associated NAFs and were asked to correct the text of the assessment items and questionnaires and to add comments describing the errors. For ePIRLS the verifiers were able to edit the text and add comments by using the ePIRLS Online Translation System.

During translation verification, some of the typical errors identified by the verifiers included typographical and grammatical errors, omissions/additions of text, mistranslations, adaptations of names (fictional versus real), gender agreement issues, and inconsistent translations (literal

versus synonymous matches). After reviewing the documented comments and suggestions from the verifiers, NRCs were able to revise and improve their national versions.

The translation verifiers were also instructed to document any discrepancies found in the trend items in the NAFs. Upon completion of the translation verification process, NRCs were advised to carefully review all discrepancies and to discuss any documented changes to the trend passages with the TIMSS & PIRLS International Study Center.

All comments from the verifiers included a description of the adaptation or a suggestion for revision and a code indicating the severity of the change (see Exhibit 7.4). The code was assigned by the verifier to help the NRC prioritize the necessity of each suggested revision. Comments from the verifiers that indicated major deviations, national adaptations, or incorrect adaptations were documented in the NAFs for review by the NRC and the TIMSS & PIRLS International Study Center.

Exhibit 7.4: Verification Feedback Codes for PIRLS 2016

The criteria for coding are as follows:

CODE 1 indicates a major change or error. Examples include the omission or addition of a question or answer option; incorrect translation that changes the meaning or difficulty of the item or question; and incorrect order of questions or answer options in a multiple-choice question.

If in any doubt, verifiers are instructed to use **CODE 1?** so that the error can be referred to the TIMSS & PIRLS International Study Center for further consultation

CODE 2 indicates a minor change or error, such as a spelling or grammar error that does not affect comprehension.

CODE 3 indicates that while the translation is adequate, the verifier has a suggestion for an alternative wording.

CODE 4 indicates that an adaptation is acceptable and appropriate.

Layout Verification

Following translation verification, all national instruments were required to undergo layout verification by the TIMSS & PIRLS International Study Center. Layout verification is the final external review and ratification of each participating country's assessment instruments, questionnaires, and corresponding National Adaptations Forms. During the layout verification process, staff at the TIMSS & PIRLS International Study Center reviewed all national instruments to ensure international comparability of overall layout and proper documentation of any and all adaptations.

In particular, layout verification focused on the following:

- Reviewing the national assessment instruments for acceptable layout structure including pagination, page breaks, item sequence, response options, text formats, and graphics
- Reviewing the national adaptations applied to both the international achievement booklets and context questionnaires with respect to how they may influence the international comparability of the data

Layout Verification of Achievement Booklets and ePIRLS Tasks

The primary goal of layout verification of achievement materials is to ensure that students in different countries experience the assessment instruments in the same way. Thus, the PIRLS and PIRLS Literacy national achievement booklets were checked against the international versions to identify any deviations from the international format. Similarly, the national ePIRLS tasks were checked in comparison to the international ePIRLS tasks to detect any deviations that may interfere with the assessment.

Due to differences in languages, the PIRLS and PIRLS Literacy national assessment instruments varied slightly in length and format across countries. The international versions, however, were designed with this in mind, and extra space was provided in the margins of the pages to facilitate the use of longer text and different paper sizes (letter versus A4) without necessitating extensive changes to the layout of each page. For ePIRLS, the length of the assessment tasks remained the same for all countries but differences between languages did result in minor spacing issues for some tasks.

In addition to reviewing the overall layout of each page, verifiers also checked for proper implementation of headers, footers, section titles, graphics and number of scoring boxes displayed for each item. This included a careful review of all right to left languages to ensure that no elements of the assessment were incorrectly altered in adjusting the layout to a right to left alignment. Any layout deviations or errors, as well as any concerns of international incomparability of assessment items, were documented by the verifiers in the NAFs.

Following layout verification, the NAFs containing the verifiers' comments were sent back to the NRCs for consideration. The National Research Coordinators were asked to confirm that each of the suggested changes was implemented or provide an explanation for not implementing the suggested change.

Layout Verification of Context Questionnaires

As with the achievement booklets, the context questionnaires were checked against the international versions to identify any potential layout issues as well as to ensure the international comparability of the questionnaire data. During the layout verification, the verifiers took into consideration any national adaptations documented by the NRCs. Instances of internationally incomparable adaptations or errors were recorded by the verifiers in the NAFs along with recommendations for recoding or rewording.

In an effort to make the questionnaires general enough for international analyses but appropriate for each intended audience, participating countries were required to adapt certain phrases and designations in the text of the questionnaires. For example, items asking about levels of education were expressed in terms of the current version of the International Standard

Classification of Education (ISCED) system, ISCED 2011 (UNESCO Institute for Statistics, 2012), and required adaptation to the nationally equivalent educational terms by each participating country. During layout verification these items were reviewed in comparison to the ISCED level classifications, and if deemed internationally comparable, suggestions were made by the verifier to revise or recode their education categories.

Additionally, the verifiers ensured that all items requiring adaptations were accompanied by proper English back translations. The documentation for these universally adapted questionnaire items was intended for later use in the National Adaptations Database. The database is a compilation of each country's intended adaptations, to be used during data processing by IEA Hamburg (see [Chapter 9](#)), and the information included in the database is reported as a supplement to the [User Guide for the PIRLS 2016 International Database](#).

Outcomes and Summary for PIRLS 2016

As with previous cycles of PIRLS, PIRLS 2016 incorporated stringent procedures for translation, adaptation, and verification to ensure the production of high quality and internationally comparable national instruments. In addition to the manuals and documents for instrument preparation, the TIMSS & PIRLS International Study Center provided NRCs with comprehensive guidelines about their responsibilities, from appointing highly skilled and experienced translators, to ensuring the accuracy of the documentation of national adaptations recorded in the NAFs, and responding to feedback from the verifications.

During translation and verification procedures for PIRLS 2016, translation verifiers made comments and suggestions on the following types of errors: typographical, grammar, omissions/additions of text, mistranslations, adaptations of names (fictional versus real), gender agreement, and inconsistent translations (literal versus synonymous matches, adaptation of ISCED levels). The translation verification feedback helped NRCs to improve the quality and comparability of their national instruments. Similarly, the feedback from the layout verification provided NRCs with explanations for the adjustments requested and helped ensure the international comparability of instruments across countries. From the verification feedback and outcomes to the thorough documentation of national adaptations in the NAFs, the results indicate that countries followed the rigorous guidelines, policies, and procedures in producing high quality national instruments for PIRLS 2016.

Reference

UNESCO Institute for Statistics. (2012). *ISCED: International standard classification of education*. Retrieved January 20, 2016, from <http://uis.unesco.org/en/topic/international-standard-classification-education-isced>.