Chapter 3
Context Questionnaire Development

INTRODUCTION

This chapter describes the PISA 2018 questionnaire framework and its linking to the overarching (cross-cycle) structure of previous PISA assessments and questionnaires, as set out in the PISA 2012 and 2015 questionnaire frameworks (Klieme et al., 2013; Klieme and Kuger, 2014; OECD, 2013, p. 168). The constructs that need to be covered for monitoring trends in education are discussed in the context of research into the effectiveness of education systems. These measures have been used previously in PISA reports, as international indicators (published in Education at a Glance) and in secondary analyses. For more information about the PISA Questionnaire Development, see OECD (2019).

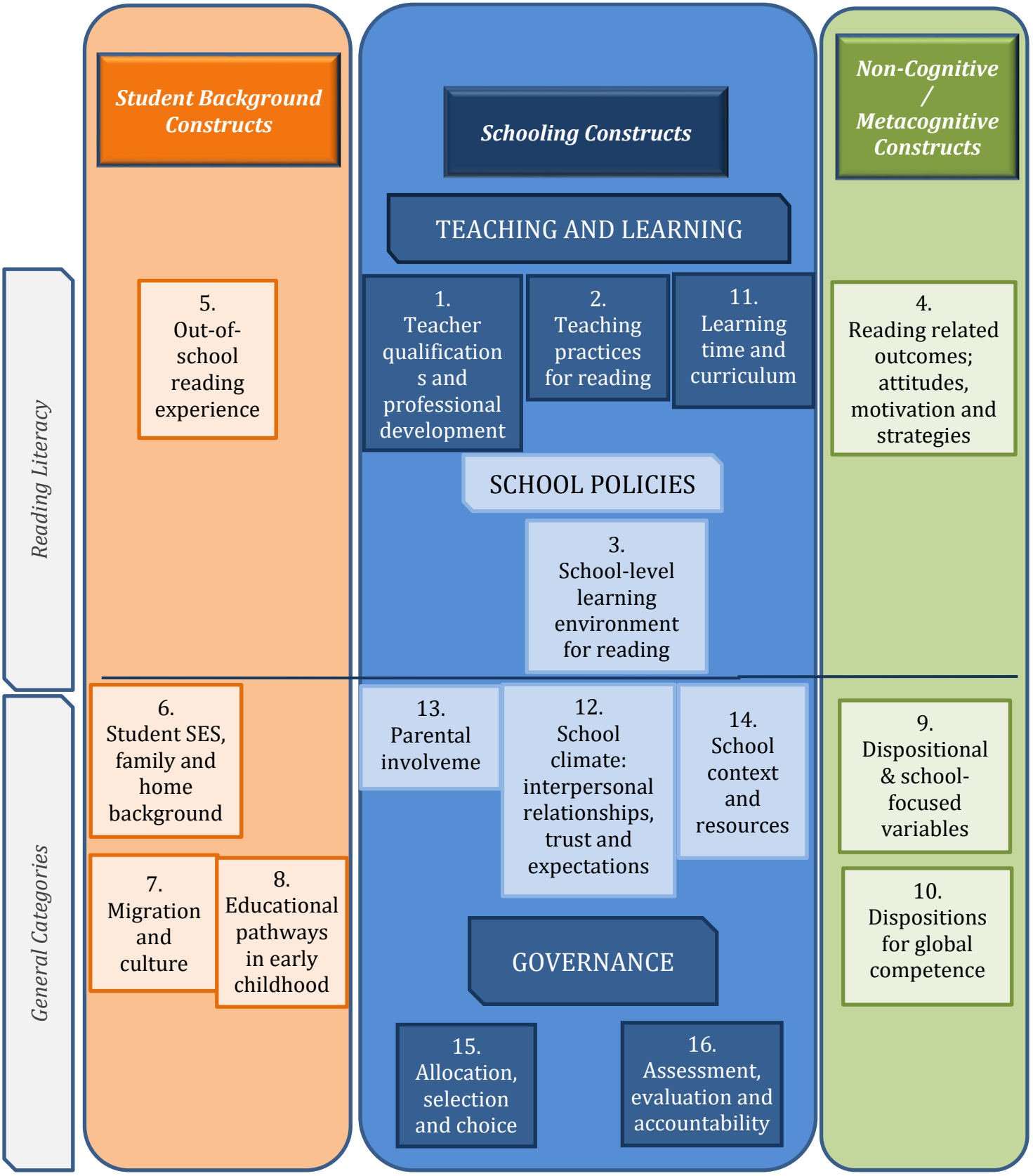
One of the major features of the implementation of PISA is the cyclical change in focus of the cognitive assessment: reading literacy was the major domain of assessment in PISA 2000 and 2009 and is so again in PISA 2018, whilst mathematics was the major domain of PISA 2003 and 2012 and science in PISA 2006 and 2015. The major domain of the cognitive assessment is also the focus of domain-specific context assessment in the associated questionnaire – in other words, various reading-related constructs are assessed in the 2018 questionnaire since reading is the major domain. However, there is also a need for stability in measures administered in different waves in order to gauge and understand trends in education. Stability has to be considered at two levels: across waves of three years (various questions in the questionnaires tend to recur in every cycle) and in subject-specific constructs across waves of nine years (reading-specific constructs assessed in the 2009 wave could be reused in 2018). This framework, which specifies the constructs and measures in more detail and provides arguments that support the choice of core content for PISA 2018, is described in Figure 3.1.

THE PISA CONTEXT QUESTIONNAIRE FRAMEWORK

The orange columns on the left-hand side of Figure 3.1 (student background constructs; modules 5 to 8) summarise students' family background and the education they have received to date. The items associated with these columns are typically asked of students or parents. The constructs in the blue columns in the middle of Figure 3.1 (modules 1 to 3 and 11 to 16), refer to educational processes on different levels (system, school and classroom). Most of the questions associated with these columns are answered by schools but some may be answered by students or parents. The last green column on the right of Figure 3.1 (modules 4, 9 and 10) asks students about various non-cognitive and metacognitive (strategy awareness) constructs. The upper half mainly deals with domain specific (in this case, reading) topics, while the lower half of the figure deals with general topics not focusing on a specific domain or those domains other than reading.

Every module represents a focus of policy making, and the set of 16 modules covers a wide and comprehensive array of policy issues that are relevant across countries/economies. This framework first discusses non-cognitive and metacognitive constructs, followed by student background constructs, teaching and learning constructs, and finally school policy and governance constructs. PISA treats the mandatory core questionnaires (school questionnaire and student questionnaire) separately from the optional questionnaires, which countries may opt out of.

Figure 3.1. PISA 2018 Questionnaire Framework and Modules



The framework attempts to make the connections among the questionnaires as transparent as possible. It also describes what is conceptually covered in each questionnaire, which constructs are examined at the student and at the school levels, and who responds to each individual question.

As in previous cycles, the Questionnaire Expert Group (QEG) guided the development of the PISA context questionnaires and framework through regular meetings. The members reviewed questionnaire drafts as well as feedback from countries and economies and discussed the material together with the OECD Secretariat and the international contractors to ensure the link between the assessment, the context questionnaires, and the frameworks. As is typically done, the QEG for PISA 2018 liaised with the other expert groups, guarantying a close link between the development of the assessment framework and tests and the questionnaire development process.

THE PISA 2018 CONTEXT QUESTIONNAIRES

The following context questionnaires were obligatory in the PISA 2018 main survey:

- The Student Questionnaire (STQ) (computer-based and paper-based)
- The School Questionnaire (SCQ) (computer-based and paper-based)

The following questionnaires were optional in the PISA 2018 main survey:

- The General Teacher Questionnaire (TGQ) (computer-based)
- The Teacher Questionnaire for Test Language Teachers (TTQ) (computer-based)
- The Parent Questionnaire (PAQ) (paper-based)
- The ICT Familiarity Questionnaire (ICQ) (computer-based)
- The Educational Career Questionnaire (ECQ) (computer-based)
- The Well-Being Questionnaire (WBQ) (computer-based)
- The Financial Literacy Questionnaire (FLQ) (computer-based)

Questionnaire development for PISA 2018 aimed at a broad coverage of policy issues, organized by 16 modules which were firmly based on state-of-the-art research on educational policy and educational effectiveness (ref. OECD, 2016). In addition to the core content of the PISA questionnaires, most of which has already been used in previous cycles, particular emphasis was placed on modules that were judged as high priority by the participating countries. Altogether, the selected MS content allows for assessing some information on all modules while providing more in-depth information on modules which have been prioritized by the PISA Governing Board.

One important guiding principle for the development of the PISA 2018 context questionnaires was that all policy modules (see Figure 3.1) should be represented in several questionnaires, thus gathering important information from different, and if possible, the most knowledgeable, sources. Field trial data were used to choose the most reliable approach and source of information for each construct and module. Figure 3.2 highlights the coverage of policy issues across questionnaires for the final main survey context questionnaires. All PISA 2018 context questionnaire scales are described in more detail in chapter 16.

Figure 3.2. Overview of the 16 policy areas (modules) covered by the questionnaires as described in the PISA 2018 questionnaire framework.

	STQ	SCQ	TGQ	TTQ	PAQ	ICQ	ECQ
Policy area: Reading education							
Teacher qualifications and professional development		X	X	X			
Teaching practices for reading	X		X	X		X	
School-level learning environment for reading	X	X					
Reading related outcomes; attitudes, motivation and strategies	X		X	X	X		
Out-of-school reading experiences	X					X	
Policy area: Equity							
Student SES, family and home background	X				X	X	
Migration and culture	X	X					
Educational pathways in early childhood	X				X		X
Policy area: Broader Educational outcomes beyond achievement							
Dispositional & school-focused variables	X					X	X
Dispositions for global competence	X	X	X	X	X		X
Policy area: Supportive school context							
Learning time and curriculum	X	X	X	X			X
School climate: interpersonal relation, trust and expectations	X	X					
Parental involvement	X	X			X		X
School context and resources		X	X	X		X	
Policy area: Educational governance							
Allocation, selection and choice		X			X		
Assessment, evaluation and accountability	X	X	X	X			

The Student Questionnaire

As in previous cycles, the PISA Student Questionnaire was administered to all students participating in the PISA assessment. It was administered on computer, while countries/economies testing on paper administered a parallel paper version.

The School Questionnaire

As in previous cycles, the PISA School Questionnaire was administered to the principal for those schools participating in PISA. It was administered on computer, while countries/economies using paper-based testing administered a parallel paper version.

The Educational Career Questionnaire

This questionnaire was first introduced in 2003 and was administered to all students participating in PISA if a country/economy chose to implement this option. It included additional questions on students' past and current education. The Educational Career option was administered after the main Student Questionnaire. This was administered only on computer.

The ICT Familiarity Questionnaire

This questionnaire was first introduced in PISA 2003 and was administered to all students participating in PISA if a country/economy chose to implement this option. It included additional questions on students' usage of electronic and digital devices, as well as their confidence and attitudes towards ICT. The ICT option was administered after the main Student Questionnaire. This questionnaire was administered only on computer.

The Financial Literacy Questionnaire

This questionnaire was administered to all students participating in PISA if a country/economy chose to implement this option. It included additional questions on students' access to financial information and education as well as their practical financial experiences. The Financial Literacy Questionnaire option was administered after the main Student Questionnaire. This questionnaire was administered only on computer.

The Well-Being Questionnaire

This questionnaire was administered to all students participating in PISA if a country/economy chose to implement this option. It included additional questions on students' health and well-being, as well as activities together with friends and family. The Well-Being Questionnaire option was administered after the main Student Questionnaire. This questionnaire was administered only on computer.

The Parent Questionnaire

The Parent Questionnaire was administered on paper and targeted the parents of all students participating in PISA. It enquired about learning contexts, support, and resources at home as well as spending on education and parents' reading -related interests and attitudes. This questionnaire was administered only on paper.

The Teacher Questionnaire

The Teacher Questionnaire was introduced for the first time in PISA 2015 and further developed for PISA 2018. The underlying idea was that important predictors of academic achievement, such as teacher qualification and quality of teaching and learning settings, are best assessed by asking teachers directly. Resulting data can be used to analyse differences between countries/economies and schools. Although some of these aspects were also covered by the School Questionnaire or the Student Questionnaire, administering a questionnaire to teachers was likely to improve the objectivity, reliability, and validity of information. Teachers were addressed as experts for teaching and student learning in the Teacher Questionnaire. The framework and item development for the Teacher Questionnaire were integrated into the overall development process of the PISA questionnaires, thus fitting in with the overall design and the policy issues mentioned above.

Considering the major domain of reading as well as general differences in teacher characteristics and practices, PISA 2018 implemented two different versions of the teacher questionnaires. One questionnaire addressed teachers eligible for teaching the test language to 15-year-olds in PISA schools, the other one addressed teachers of all other subjects.

Implementing a Teacher Questionnaire into PISA yields several opportunities, as it can deliver information on:

- the professional background of teachers
- the education and training of teachers, including school-based professional development
- teachers' beliefs and attitudes
- school level policies such as teacher co-operation, and shared values
- teachers' perception of school culture, school management and leadership, parental involvement, and school development
- domain-specific and domain-general instructional policies and practices
- the curriculum and opportunity-to-learn.

The Teacher Questionnaire was implemented as an international option and was administered via an electronic online platform. Teachers were given individual access to this platform, providing each eligible teacher within a school with an individual password to access and respond to the questionnaire. This procedure guaranteed nondisclosure of teacher identity to any stakeholder, including the school principal.

QUALITY ASSURANCE IN THE DEVELOPMENT OF QUESTIONNAIRES

Specific standards underlie the PISA questionnaire development process as well as the implementation of the material into the final instruments. These standards aim at quality assurance as well as comparability of the data across countries/economies. Mechanisms for PISA 2018 included a review by the countries/economies, cognitive labs, linguistic translatability assessment, centralized transfer of trend material, negotiation of adaptations and linguistic verification. The following sections each give a short introduction to these procedures.

Review by countries/economies

PISA questionnaires aim at covering topics of education that are important to all participating countries and economies and that can help to explain student achievement both within and between countries/economies. To achieve this goal, newly developed material was shared with representatives of countries/economies at an early stage in the development process to obtain in-depth feedback. This process not only helps to ensure comparability, but asks for ratings on several important factors for each question to be implemented in PISA. Each participating country/economy was asked to judge the relevance of the specific topic for their educational system. The review also aimed to establish whether the addressee that is targeted in the questionnaire (e.g. teachers, principals) is indeed the best person to answer. A very important aspect of ratings touched on issues of sensitivity. Feedback was collected on whether a topic might be sensitive, i.e. was politically acceptable, complied with data privacy regulations in the country/economy or could lead to cultural bias. Potential translation and adaptation difficulties were also addressed in this review. Finally, countries/economies were asked to give an overall rating of each proposed question. Based on these reviews, proposed questions were rephrased or even deleted.

Cognitive labs

Newly developed questionnaire material for the Student questionnaire was pre-tested in English and French during the development stage. This pre-testing was implemented in the form of cognitive labs with small groups of students. The respondents first answered selected, newly-developed questions. During this phase, the test administrator recorded the time it took to read and answer the questions. In a second step, respondents were asked about the answering process including whether they understood the questions, if they could answer these based on the response options given and about any other comment they might want to give. All feedback was collected and led to revision of the proposed questionnaire material.

Translatability assessment

To enhance comparability, a translatability assessment of the questionnaire material was carried out. Linguistic experts evaluated the material with due consideration for the Ask-the-Same-Question (ASQ) model (Harkness, 2003). This approach seeks to optimize the wording in the source questionnaire so that the items can be translated into all relevant languages while maintaining the construct covered, and therefore maintaining the intended measurement properties. The newly-developed questionnaire material was translated into several languages representing the most common language groups, including an East-Asian language (Korean), a Slavic language, an Indo-German language (German), a Romance language (French), and Modern Standard Arabic. Translators highlighted any linguistic issues related to the translation of the questionnaire content that could lead to non-translatability or possible bias in later meaning of a question. Questionnaire developers then revised the material based on this feedback.

Centralised trend material transfer

With the transition to computer-based assessment, the international contractors implemented a centralized transfer process for national trend material. All questionnaire material from previous cycles that was chosen to be administered again for PISA 2018 was centrally transferred into the electronic platform. Any changes to these questions needed to be requested

and justified by the country/economy. This process allowed for external control to preserve national trend material in PISA 2018.

Adaptation negotiation and verification

In some cases, cultural traditions, local understanding of a question or features of the education system vary largely, leading to the need for adaptations to the questionnaires. As in previous PISA cycles, the National Centres in each country/economy were asked to document which adaptations they needed or wished to implement in the materials by describing them in specially designed standardized forms. For the questionnaires, a Questionnaire Adaptation Spreadsheet (QAS) was provided describing all adaptations that a country or economy wished to implement. For each country/economy and each questionnaire, all adaptations were checked by the international contractors and documented in the QAS. After translation and negotiation of adaptations, all national material was verified by the international contractors. Linguistic checks were performed, and any unclear translation was discussed with the international questionnaire developers, the country/economy, and the linguistic quality control team.

All final questionnaire material was then implemented into the paper-based or computer-based versions, tested, and provided to the PISA participants.

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