

## 4 Assessment Design

### 4.1 The ICCS 2016 instruments

The ICCS 2016 instruments collect data relative to outcome, as well as contextual variables. Given the specific nature of a study on civic and citizenship education, outcome variables are assessed through cognitive test materials and a student questionnaire. Contextual data that explain variation in outcome variables are collected through student, teacher, and school questionnaires, as well as through the national contexts survey.

Table 4.1 lists the instruments administered as part of the ICCS 2016 survey, their approximate administration times, and their respondents. The student assessment instrument consists of two parts: (i) an international core, including the cognitive test and the student questionnaire; and (ii) an optional regional questionnaire for European and Latin American countries.

Table 4.1: ICCS 2016 instruments

Instrument	Length	Respondent
International cognitive test	45 min.	Student
International student questionnaire	40 min.	Student
Regional module instrument	~15 min.	Student
Teacher questionnaire	~30 min.	Teacher
School questionnaire	~30 min.	Principal
National contexts survey	N/A	NRC

**Note:** N/A = not applicable; NRC = national research coordinator or designate.

Test items from four clusters included in ICCS 2009 are used to estimate changes over time for those countries participating in both surveys. They are integrated across all eight ICCS 2016 test item clusters to ensure an appropriate content balance across content and cognitive domains within each cluster.

The student, teacher and school questionnaires also include larger numbers of items reflecting aspects that were also measured in ICCS 2009 through identical or slightly modified sets of items.

Table 4.2 records the numbers and respective percentages of ICCS 2009 and newly developed items for each of the main survey instruments. In the student test and the school questionnaire, about half of the item material was newly developed. This proportion is lower in the international student and teacher questionnaires, where only about one-third of the material was added. The European regional student questionnaire includes 70 percent of new item material, while this percentage is much lower in the Latin American regional student questionnaire, for which four-fifths of the items were retained from ICCS 2009.

Table 4.2: Numbers and percentages of ICCS 2009 and newly developed items in the ICCS 2016 main survey instruments

Instruments	ICCS 2009 items	ICCS 2016 items	Total
International student test	42 (48%)	46 (52%)	88
International student questionnaire	115 (64%)	64 (36%)	179
European student questionnaire	21 (30%)	50 (70%)	71
Latin American student questionnaire	55 (79%)	15 (21%)	70
Teacher questionnaire	49 (66%)	25 (34%)	74
School questionnaire	57 (54%)	49 (46%)	106

**Note:** The table does not include optional questionnaire items.

## 4.2 Item types

The ICCS 2016 instruments include a range of different item types in order to assess a diversity of cognitive, affective-behavioral or contextual aspects.

The cognitive test is expected to contain the following two item types:

- *Multiple-choice (MC)*: Each item has four response options, one of which is the correct response and the other three of which are distracters.
- *Open-ended response (OR)*: Students are requested to write a short response to an open-ended question. The responses are scored by scorers working for the national centers.

As in the previous survey, most test items have a multiple-choice format, while a small proportion of the items (about 10%) are open-ended response items. Differing qualities of student knowledge and reasoning will be evaluated across the full item set by using items with a range of difficulties, and within selected constructed response items through the application of a partial-credit scoring guide to students' responses. Student responses to each of these items can be assessed according to the level of sophistication demonstrated against a hierarchy of distinct substantive categories that relate to the fixed context within the item. Typically, test questions are organized in units in which the content of all items refers to a stimulus describing a particular situation or problem, in a few cases accompanied by a graphic.

As in ICCS 2009, the student, teacher, and school questionnaires for ICCS 2016 include the following item types:

- *Likert-type items*: For each item, respondents are asked to rate a number of statements, typically on a four-point scale. For most of these items, the rating scale ranges from (1) strongly agree to (4) strongly disagree. The rating scales for other questions indicate frequencies (never, rarely, sometimes, often) or levels of interest, trust, or importance.
- *Multiple-response items*: Respondents are asked to indicate the three aspects they view as most important.
- *Categorical response items*: Respondents are required to choose one out of two or more response categories that they view as most appropriate. These questions are primarily used for collecting contextual information (for example, on gender,

educational level of parents, books in the home, subjects taught at school, and public or private school management).

- *Open-response items*: Respondents are asked to write a short response that is coded by the national centers; these items are used only for collecting information on parental occupation.

### 4.3 Coverage of framework domains

The ICCS 2016 main survey instruments were developed to cover the cognitive, affective-behavioral and content domains defined in the civics and citizenship framework. Table 4.3 illustrates the number of items in student test and questionnaire instruments relating to the framework domains. The numbers of attitude items included in the regional questionnaire for European and Latin American countries are presented in separate rows. Test and questionnaire items in ICCS 2009 and ICCS 2016 were developed to address aspects related to all cognitive, affective-behavioral and content domains, Table 4.3 shows that items are not evenly spread across all cells in the table.

As in ICCS 2009, about three quarters of the test items pertain to the cognitive domain *analyzing and reasoning*, and most test items of the cognitive domain knowing relate to the content domain *civic society and systems*. The content domain receiving least coverage in the cognitive test is *civic identities* with only four out of 88 items, which resembles the representation of this content domain in the ICCS 2009 test.

Among affective-behavioral items in the international student questionnaire, about three fifths measure attitudes and two fifths were designed to collect data on student engagement. The European and Latin American regional questionnaires only include items related to the affective-behavioral domain *attitudes*. Across international and regional instruments, about a third of affective-behavioral items relates to the contents domain *civic society and systems*, and another third to *civic principles*. About a quarter of these items pertain to civic participation while one tenth relates to *civic identities*.

Table 4.3: Coverage of the cognitive, affective-behavioral and content domains

	Content domains				Total
	Civic Society and systems	Civic principles	Civic participation	Civic identities	
<b>Cognitive domains</b>					
Knowing	12	9	2	0	23
Reasoning and applying	24	18	19	4	65
<b>Total</b>	<b>36</b>	<b>27</b>	<b>21</b>	<b>4</b>	<b>88</b>
<b>Affective-behavioral domains</b>					
Attitudes	42	21	5	5	73
Engagement	5	8	35	2	50
Attitudes (in the European questionnaire)	21	22	6	9	58
Attitudes (in the Latin American questionnaire)	11	35	16	8	70
<b>Total</b>	<b>79</b>	<b>86</b>	<b>62</b>	<b>24</b>	<b>251</b>

**Note:** The table does not include optional questionnaire items.

#### 4.4 The ICCS 2016 test design and the described achievement scale

For the student test, ICCS 2016 uses a rotated design for test administration, making it possible to include more test material and thus ensure greater coverage of the assessment framework without increasing the testing time for each student. This procedure also enables a sufficient number of score points to be generated to provide the basis for comprehensive descriptions of the scale. Rotating the clusters throughout the booklets ensures that the different tests are linked.

Table 4.4 shows the test booklet design for the ICCS 2016 main survey. All eight clusters contain ICCS 2009 items. The booklet design is balanced to the extent that each cluster appears in three booklets in three different positions (A, B and C).

Table 4.4: Main survey test booklet design

Booklet	Position		
	A	B	C
1	C01	C02	C04
2	C02	C03	C05
3	C03	C04	C06
4	C04	C05	C07
5	C05	C06	C08
6	C06	C07	C01
7	C07	C08	C02
8	C08	C01	C03

Test items will be scaled using IRT (item response theory) (Hambleton, Swaminathan, & Rogers, 1991; Rasch, 1960). The cognitive test items will be scaled to obtain scores of *civic knowledge and understanding*. The scale will cover student knowledge and understanding encompassing the four content domains (*civic systems and society, civic principles, civic participation, and civic identities*) and the two cognitive domains (*knowing and applying and reasoning*). Items will be used to describe student knowledge and understandings at different levels of student proficiency.

As in the previous survey cycle, test items were designed to provide the basis for deriving a described scale of civic knowledge, which consists of three levels of proficiency. The proficiency-level descriptions are syntheses of the item descriptors within each level. They describe a hierarchy of civic knowledge in terms of increasing sophistication of content knowledge and cognitive process. Because the scale was derived empirically rather than from a specific model of cognition, increasing levels on the scale represent increasingly complex content and cognitive processes as demonstrated through performance. The scale does not, however, simply extend from simple content at the bottom to reasoning and analyzing at the top.

The cognitive processes of knowing and of reasoning and analyzing can be seen across all levels of the scale, depending on the issues to which they apply. The scale includes a synthesis of the common elements of civic and citizenship content at each level and the typical ways in which students use that content. Each level of the scale references the degree to which students appreciate the interconnectedness of civic systems, as well as

the sense students have of the impact of civic participation on their communities. The scale broadly reflects development encompassing the concrete, familiar, and mechanistic elements of civics and citizenship through to the wider policy and institutional processes that determine the shape of our civic communities, with the following three levels (see Appendix B for a more detailed description):

1. Level 1 of the scale is characterized by students' engagement with the fundamental principles and broad concepts that underpin civics and citizenship. Students operating at this level are familiar with the "big ideas" of civics and citizenship; they are generally able to accurately determine what is fair or unfair in familiar contexts and to demonstrate some knowledge of the most basic operations of civic and civil institutions. Students working at Level 1 also typically demonstrate awareness of citizens' capacity to influence their own local context. The key factors that differentiate Level 1 achievement from that of higher levels relate to the degree of specificity of students' knowledge and the amount of mechanistic rather than relational thinking that students express in regard to the operations of civic and civil institutions.
2. Students working at Level 2 typically demonstrate some specific knowledge and understanding of the most pervasive civic and citizenship institutions, systems, and concepts. These students generally understand the interconnectedness of civic and civil institutions, and the processes and systems through which they operate (rather than only being able to identify their most obvious characteristics). Level 2 students are also able to demonstrate understanding of the connection between principles or key ideas and how these operate in policy or practice in everyday, familiar contexts. They can relate some formal civic processes to their everyday experience and are aware that the potential sphere of influence (and, by inference, responsibility) of active citizens lies beyond their own local context. One key factor differentiating Level 2 from Level 3 is the degree to which students use knowledge and understanding to evaluate and justify policies and practices.
3. Students working at Level 3 demonstrate a holistic rather than a segmented knowledge and understanding of civic and citizenship concepts. They make evaluative judgments about the merits of policies and behaviors from given perspectives, justify positions or propositions, and hypothesize outcomes based on their understanding of civic and citizenship systems and practices. Students working at Level 3 demonstrate understanding of active citizenship practice as a means to an end rather than as an "automatic response" expected in a given context. These students are thus able to evaluate active citizenship behaviors in light of their desired outcomes.

## 4.5 Questionnaire scales

ICCS reports on outcomes of civic and citizenship education and contexts based on a number of scales derived from the international and regional student questionnaire and the teacher and school questionnaires. Typically, items will be scaled using the IRT Rasch partial credit model (see Schulz, & Friedman, 2011).

The (international) student questionnaire includes items that will be used to obtain the following indices or sets of indices<sup>14</sup> related to affective-behavioral and contextual factors:

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<sup>14</sup> The numbers of items measuring each index or set of indices (in brackets) do not include (individual) optional items and some may include items which could be discarded from scaling when deriving the final indices depending on the outcomes of main survey data analyses.

### **Attitudes**

- Students' perceptions of good citizenship (17 items, three dimensions expected)
- Students' trust in institutions (12 items)
- Students' perceptions of threats to the world's future (13 items)
- Students' attitudes towards democratic values (9 items)
- Students' attitudes toward gender rights (7 items)
- Students' attitudes toward equal rights for all ethnic/racial groups (5 items)
- Students' valuing of student participation at school (5 items)
- Students' attitudes toward their country of residence (5 items)
- Students' attitudes toward the influence of religion in society (international option, 6 items)

### **Engagement**

- Students' sense of citizenship self-efficacy (7 items)
- Students' expectations to participate in civic action in support of or protest against important issues (11 items, two dimensions expected)
- Students' expectations of participation as adults (10 items, three dimensions expected)
- Students' expectations of future school participation (5 items)
- Students' engagement with social media (3 items)
- Students' (past or present) involvement in organizations and groups outside of school (7 items)
- Students' (past or present) involvement in school activities (6 items)

### **Context**

- Students' perceptions of open classroom climates for discussion of political and social issues (6 items)
- Students' reports on civic learning at school (7 items)
- Students' perceptions of teacher-student relationships at school (6 items)
- Students' perceptions of social interaction between students at school (4 items)
- Students' reports on verbal and physical abuse (bullying) at school (6 items)
- Students' reports of discussions about political and social issues with parents and peers (4 items)

The European regional student questionnaire includes items that will be used to obtain the following indices:

- Students' perceptions of future of Europe (8 items)
- Students' attitudes toward cooperation between European countries (8 items)
- Students' attitudes toward the European Union (5 items)
- Students' perceptions of discrimination in European societies (7 items)
- Students' views on age limitations for young people (11 items)
- Students' attitudes toward political and ethical consumerism (6 items)
- Students' sense of European identity (4 items)
- Students' perceptions of their own individual future (5 items)
- Students' attitudes towards immigration (5 items)

- Students' views on freedom of European citizens to reside and work within Europe (6 items)
- Students' reports on opportunities to learn about Europe at school (4 items)

The Latin American regional student questionnaire includes items that will be used to obtain the following indices:

- Students' attitudes toward authoritarian government practices (11 items)
- Students' perception of discrimination of minorities in Latin American societies (9 items)
- Students' attitudes toward disobedience to the law (10 items)
- Students' sense of empathy (11 items)
- Students' attitudes toward homosexuality (5 items)
- Students' attitudes toward corrupt practices (6 items)
- Students' attitudes toward violence (10 items, two dimensions expected)
- Students' acceptance of diversity (8 items)

The teacher questionnaire includes items to derive the following contextual indices :

- Teachers' participation in school governance (5 items)
- Teachers' perceptions of social problems at school (9 items)
- Teachers' perceptions of student activities in the community (9 items)
- Teachers' perceptions of student behavior at school (6 items)
- Teachers' perceptions of classroom climate (4 items)
- Teachers' perceptions of bullying at school (8 items)
- Teachers' reports on activities related to environmental sustainability (7 items)
- Teachers' reports on class activities related to civic and citizenship education (international option, 8 items)
- Teachers' preparation for teaching related to civic and citizenship education (international option, 11 items)
- Teachers' reports on their training in topics related to civic and citizenship education (international option, 11 items)
- Teachers' reports on their training in teaching methods (international option, 5 items)

The school questionnaire includes items to derive the following contextual indices:

- Principals' perceptions of teacher participation in school governance (5 items)
- Principals' perceptions of student sense of belonging to the school (4 items)
- Principals' perception of teacher sense of belonging to the school (4 items)
- Principals' perceptions of student opportunities to participate in community activities (9 items)
- Principals' perception of bullying at school (6 items)
- Principals' reports on activities to prevent bullying at school (8 items)
- Principals' perceptions of the engagement of the school community (6 items)
- Principals' reports on activities related to environmental sustainability (5 items)
- Availability of resources in local community (10 items)
- Principals' perceptions of social tension in the community (12 items)
- Principals' perceptions of school autonomy in CCE delivery (8 items)

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