

Civic and Citizenship Education in 2009 (ICCS): A Comparative Study

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Introduction

It is over the ten years since IEA last investigated civic education, and in that time new challenges have emerged in educating young people for their roles as citizens in the 21st century. These challenges have stimulated renewed reflection on the meanings of citizenship and the roles of and approaches to civic and citizenship education. In many countries there is a growing interest in using evidence to improve policy and practice in civic and citizenship education.

The purpose of the *International Civic and Citizenship Education Study* (ICCS) is to investigate the ways in which young people are prepared to undertake their roles as citizens in a range of countries. The study will report on student achievement on a test of conceptual understandings and competencies in civic and citizenship education. It will also collect and analyse data about student dispositions and attitudes relating to civic and citizenship education. The study builds on the previous IEA study of civic education (CIVED) undertaken in 1999. A website with information about ICCS can be found at <http://iccs.acer.edu.au/>.

It is recognised that there is substantial diversity in the field of civic and citizenship education within and across countries. Consequently, maximising the involvement of researchers from participating countries in this international comparative study is deemed to be of particular importance for the success of this study. Input from national research centres will be sought throughout the study and the consortium will develop strategies to encourage country contributions to instrument development as well as to the dissemination of results.

This document will give an overview of the study and summarise the different aspects of its implementation. It also outlines the structure of the assessment framework and the process of the development and implementation of instruments as well as the benefits for participating countries.

Research Questions and Study Coordination

The purpose of the International Civic and Citizenship Education Study (ICCS) is to investigate the ways in which young people are prepared to undertake their roles as citizens in a range of countries in the 21st century. In pursuit of this purpose, the study will report on student achievement in a test of knowledge, conceptual understandings and competencies in civic and citizenship education. It will also collect and analyse data about student attitudes to civics and citizenship and participation in civic activities. The study builds on the previous IEA studies of civic education, particularly the CIVED study in 1999. Crucially, it acknowledges the need for a new study and is a direct response to the challenges of educating young people across the world in changed contexts of democracy and participation. This purpose is reflected in the key research questions for the study.

The key research questions for the study concern student achievement, dispositions to engage, participation in civic-related activities and attitudes related to civic and citizenship education. Specifically the key research questions are as follows.

RQ 1 *What variations exist between countries, and within countries, in student achievement in conceptual understandings and competencies in Civic and*

Citizenship? Analysis to address this research question would focus on the distribution of student achievement based on test data.

- RQ 2 *What changes in civic knowledge and engagement have occurred since the last international assessment in 1999 and what is the variation in those changes?* This research question is mainly concerned with analysing trends from CIVED to ICCS and would be limited to data from countries participating in both assessments.
- RQ 3 *What is the extent of interest and disposition to engage in public and political life among adolescents and which factors within or across countries are related to it?* This research question will address the issue of apathy with indicators of civic engagement being compared within and across countries and related to explanatory variables at various levels.
- RQ 4 *What are adolescents' perceptions of the impact of recent threats to civil society and responses to these threats on its future development?* The analysis would be primarily based on student comprehensions of the relationship between securing societies and safeguarding civil liberties and student attitudes towards citizenship rights.
- RQ 5 *What aspects of schools and education systems are related to achievement in and attitudes to Civic and Citizenship including:*
- (a) *General approach to civic and citizenship education, curriculum or program content structure and delivery.* The analysis requires additional data to be collected at the national level data on curriculum and programmes as well as reports from school and teacher questionnaires.
 - (b) *Teaching practices such as those that encourage higher order thinking and analysis in relation to civic and citizenship.* The analysis would be based on data about student perceptions of and teacher reports on instructional practices.
 - (c) *Aspects of school organisation including opportunities to contribute to conflict resolution, participate in governance processes, and being involved in decision making.* The analysis requires data on student perceptions of school governance and reports from school principals or civic education head teachers (where appropriate).
- RQ 6 *What aspects of student personal and social background, such as sex, socioeconomic background, language background, are related to student achievement in and attitudes towards Civic and Citizenship education?* The analysis would be based on data from the student background questionnaire, the attitude questionnaire and the assessment of knowledge, understanding and competencies.

It is important to recognise that the International Civic and Citizenship Education Study (ICCS) is a collaborative project involving groups of researchers and individual scholars around the world. Staff from research centres in participating countries, the consortium, the IEA and its institutions, expert consultants and funding agencies will work together on this study.

Table 1 shows those educational systems which are currently participating or have expressed interest in the International Civic and Citizenship Education Study. More countries or educational systems may still join prior to the field trial in the second half of 2007.

Table 1 Countries that are currently participating or have expressed in interest in participation

- | | | |
|----------------------|------------------------|----------------------|
| • Australia | • France | • Northern Ireland |
| • Austria | • Germany | • Norway |
| • Brazil | • Greece | • Paraguay |
| • Canada | • Guatemala | • Poland |
| • Chile | • Hong Kong SAR, China | • Portugal |
| • Chinese Taipei | • Indonesia | • Russian Federation |
| • Colombia | • Italy | • Scotland |
| • Cyprus | • Latvia | • Slovenia |
| • Denmark | • Lithuania | • Spain |
| • Dominican Republic | • Luxembourg | • Sweden |
| • England/Wales | • Mexico | • Switzerland |
| • Estonia | • Netherlands | |
| • Finland | • New Zealand | |

National Research Coordinators (NRC) play a major role in the IEA projects and coordinate the work at the national centres responsible for implementing the study in each participating country. In addition to the national coordinator, additional staff members are required in to undertake the study at the national level including data managers, data entry staff, experts for instrument translation, test administrators and other office staff. The national coordinator is the main contact in each country for the international study coordination and is responsible for coordinating all tasks within the country.

It is envisaged that regional modules will be implemented for groups of participating countries from the same region. Currently, two regional modules for Europe and Latin America are being established. For each regional module, region-specific instrument components are being developed, which will be administered after the international items material.

The study is organized around a consortium of three partner institutions, which cooperates with the *IEA Secretariat*, the *IEA Data Processing Center* (DPC) and the national research coordinators (NRCs): The *Australian Council for Educational Research* (ACER), the *National Foundation for Educational Research* (NFER) in the United Kingdom and the *Laboratorio di Pedagogia sperimentale* (LPS) at the Roma Tre University.

The consortium combines expertise in the field of civic and citizenship education, experience in internationally comparative large-scale assessments and broad research capacities and key staff members from ACER, NFER and LPS have expertise in civic and citizenship, at national, regional and international levels, which can be combined with experience in test development, coordination of international as well as national large-scale assessments, scaling and statistical analysis.

Communication between the partners, IEA institutions and national research is facilitated by a secure Internet website which can be accessed by national research

centres, international consortium partners and IEA institutions. Relevant study documentation (meeting documents, manual, instruments, contact addresses etc.) are posted on this website.

The international study will be organised by the following organisations:

- The International Study Centre (ISC) has been established at the *Australian Council for Educational Research* (ACER) in Melbourne/Australia. Apart from providing general technical direction and coordination for the study, the International Study Centre will be responsible for the International Test development, the development of the Student Background Questionnaire, scaling procedures, analysis and reporting.
- The *National Foundation for Educational Research* (NFER) in Slough/United Kingdom will be mainly responsible for the coordination of the development of the National Contexts Survey and the Student Perceptions Questionnaire as well as the coordination, development, and reporting of a European Regional Component.
- The *Laboratorio di Pedagogia sperimentale* (LPS) at the Roma Tre University (Italy) will be mainly responsible for the development of the Teacher and School Questionnaire and contribute to the development of the international test.
- The *IEA Data Processing Center* (DPC) in Hamburg (Germany) will be responsible for the development of field procedures, data management, sampling and weighting.
- The *IEA Secretariat* in Amsterdam (Netherlands) will manage the relationships with participating countries and coordinate the translation verification of survey instruments and the implementation of quality monitoring.

The *Joint Management Committee* (JMC) of the project is chaired by the Project Coordinator (John Ainley, ACER) and includes the research directors at the International Study Centre (Wolfram Schulz, ACER) and its partner institutions (David Kerr, NFER and Bruno Losito, LPS) as well as representatives from the IEA Data Processing Center and the IEA Secretariat. The committee is responsible for the overall management of ICCS and meets in regular video- and teleconferences on a monthly basis.

The *Project Advisory Committee* (PAC) consists of experts in civic and citizenship education and international comparative research and provides advice on the conceptual framework, instrument development, measurement issues, data analysis and reporting. Members of this committee represent different cultural backgrounds and educational systems bringing expertise from a variety of relevant disciplines in the field.

ICCS also makes use of a number of expert consultants at appropriate points in the study. Expert consultants are identified based on their specialist expertise in relation to a number of areas of relevance to the study.

The Assessment Framework

The International Civic and Citizenship Education Study (ICCS) incorporates an Assessment Framework. This Framework builds upon and extends the range of the

previous IEA Civic Education Study in 1999 (hereafter CIVED) as well as reflect recent developments in *civic and citizenship education* assessment (Torney-Purta *et al.*, 1999; Torney-Purta *et al.*, 2001; Amadeo *et al.*, 2002). Formal curricula and underlying concepts in *civic and citizenship education* are different a decade after the commencement of CIVED (Banks, 2004; Kymlicka, 2001; Menezes *et al.*, 2004). Articulated learning outcomes, clarified curricula and explicit frameworks are now more common (Birzea *et al.*, 2004; EURYDICE, 2005; Lee *et al.*, 2004).

The framework takes account of the research literature in the field, especially in relation to the connections between the concepts of civic and citizenship and accommodates the core concepts and themes or issues contained in the relevant curricula from those member countries which provided material for consideration during the proposal development in 2005¹.

The Assessment Framework comprises a Civics and Citizenship framework, which will guide the development of cognitive test and student perceptions questionnaire, and a contextual framework, which will serve as a reference point for the development of student background, teacher, school and national context questionnaires.

Given the central role of the Assessment Framework in the process of instrument development, it has been important to:

- maintain a strong connection to the constructs used in the IEA CIVED study in 1999;
- reflect contemporary research understandings of manifestations of civic and citizenship education in school students;
- meet the needs of participating countries;
- address the research questions outlined in the ICCS proposal for the IEA General Assembly 2005;
- include only content that can be measured;
- comprise content descriptors that are agreed to be significant, discrete and that describe the breadth of civic and citizenship education in school students; and
- address the contexts within which civic and citizenship education takes place.

The Assessment Framework is divided into two parts:

- The *Civics and Citizenship Framework* outlines the aspects that will be addressed when collecting the outcome measures through the cognitive test and the student perceptions questionnaire.
- The *Contextual Framework* provides a mapping of context factors that may influence outcome variables and explain their variation.

¹ The countries that responded to the invitation to provide materials were Belgium, Germany, Czech Republic, France, Macedonia, Estonia, the Netherlands, Palestine, Scotland, and Sweden. Information was also provided by Australia, Chile and Hong Kong.

Both parts of the Assessment Framework provide a conceptual underpinning for the international instrumentation for ICCS and they are also points of reference for regional assessment components.

It is expected that many of the secure CIVED trend cognitive items and items from (some of) the attitude and concept CIVED scales will be included in the ICCS assessment instruments. The three domains of the CIVED conceptual model of civics and citizenship are:

- Domain I: Democracy/Citizenship
- Domain II: National Identity/International Relations
- Domain III: Social Cohesion/Diversity

The ICCS Civics and Citizenship Framework is organised around three dimensions: a content dimension specifying the subject matter to be assessed within civics and citizenship; an affective-behavioural dimension that describes the types of student perceptions and activities that will be measured; and a cognitive dimension that describes the thinking processes to be assessed.

The four content domains in the ICCS Civics and Citizenship Framework are:

- Content Domain 1: Civic Society and Systems
- Content Domain 2: Civic Principles
- Content Domain 3: Civic Participation
- Content Domain 4: Civic Identities

It is important to distinguish the different types of student perceptions and behaviours that are relevant in the context of civics and citizenship. For this purpose, three affective-behavioural domains in the ICCS Civics and Citizenship Framework are identified in this assessment framework:

- Affective-behavioural Domain 1: Value beliefs
- Affective-behavioural Domain 2: Attitudes
- Affective-behavioural Domain 3: Behavioural intentions
- Affective-behavioural Domain 4: Behaviours

Similar to the assessment framework for TIMSS (Mullis et. al., 2005), cognitive domains define the cognitive processes assessed with test items. The two cognitive domains in the ICCS Civics and Citizenship Framework are:

- Cognitive Domain 1: Knowing
- Cognitive Domain 2: Reasoning and Analysing

The ICCS assessment of the outcomes of civic and citizenship education comprises three instruments:

- A cognitive test
- A student perceptions questionnaire

- A section of the student background questionnaire dealing with active citizenship behaviours.

The data from the cognitive test are to be used to construct a scale of civic and citizenship knowledge and understandings as described by the two cognitive domains, and representing the substance of the four content domains.

The data from the student perceptions questionnaire are to be used to articulate constructs pertaining to the four affective-behavioural domains and relating to the substance of the four content domains. The amount and type of assessment information accessed by each instrument will vary across the four content domains.

The data from the student background questionnaire dealing with active citizenship behaviours are used both as indicators of active citizenship and as possible explanatory variables of civic and citizenship achievement. Indicators of student activities are also important context variables and are included in the contextual framework.

Table 2 Relationship between cognitive or affective-behavioural and content domains

	Content domain 1: Civic Society and Systems	Content domain 2: Civic principles	Content domain 3: Civic Participation	Content domain 4: Civic Identities
Cognitive domains				
Knowing	I	II	III	IV
Analysing and reasoning	V	VI	VII	VIII
Affective-behavioural domains				
Value beliefs	A	B	C	D
Attitudes	E	F	G	H
Behavioural intentions			I	
Behaviours			J	

Table 2 shows a mapping for items that may be placed in different cells and relate to either cognitive or affective-behavioural domains as well as content domains. Cognitive items from both domains (knowing; reasoning and analysing) and affective-behavioural items from two domains (value beliefs and attitudes) will be developed in the contexts of all four content domains. These mappings will be guided by the compatibility of each content domain to the different affective-behavioural and cognitive domains and will therefore not necessarily be evenly spread across the content domains. Items developed to measure behavioural intentions or actual behaviours will only relate to content domain 3.

A study of civic-related learning outcomes and indicators of civic engagement needs to be set in the context of the different factors influencing them. Young people develop their understandings about their roles as citizens in contemporary societies through a number of activities and experiences that take place within the contexts of home, school, classrooms, and the wider community.

Therefore, it is important to recognise that young people's knowledge, competencies, dispositions and self-beliefs are influenced by variables that can be located at different levels in a multi-level structure. The individual student is located within overlapping contexts of school and home. Both contexts form part of the local community which, in turn, is embedded in the wider sub-national, national and international context. For the contextual framework for ICCS the following levels will be distinguished:

- Context of the wider community: This level comprises the wider context within which schools and home environments work. Factors may be found at local, regional and national levels. It should be noted that for some countries the supra-national level might also be of relevance, as for example in member countries of the European Union.
- Context of schools and classrooms: This level comprises factors related to the instruction students receive, the school culture and the general school environment.²
- Context of home environments: This level comprises factors related to the home background and the social out-of-school environment of the student (for example, peer-group activities).
- Context of the individual: This level includes individual characteristics of the student.

Another important distinction can be made by grouping contextual factors in those related to either antecedents or processes:

- Antecedents are those factors that affect how student learning and acquisition of civic-related understandings and perceptions takes place. It should be noted that these factors are level-specific and may be influenced by antecedents or processes at a higher level (for example, civic-related training of teachers may be affected by historical factors and/or policies implemented at the national level).
- Processes are those factors related to the civic-related learning and the acquisition of understandings, competencies and dispositions. They are constrained by antecedents and also influenced by factors on higher levels of the multi-level structure.

Antecedents and processes are factors that shape the outcomes at the level of the individual student. It should be noted that learning outcomes related to civics and citizenship education at the student level can also be viewed as aggregates at higher levels (school, country) where they can have an effect on factors related to process (for example, higher levels of civic understandings and engagement among students can influence the way civic and citizenship education is taught at school).

² It is important to note that given the sampling design for ICCS school level and classroom level cannot be disentangled as (generally) only one classroom will be selected within each sampled school.

Figure 1 Contexts for the Development of Learning Outcomes related to Civics and Citizenship

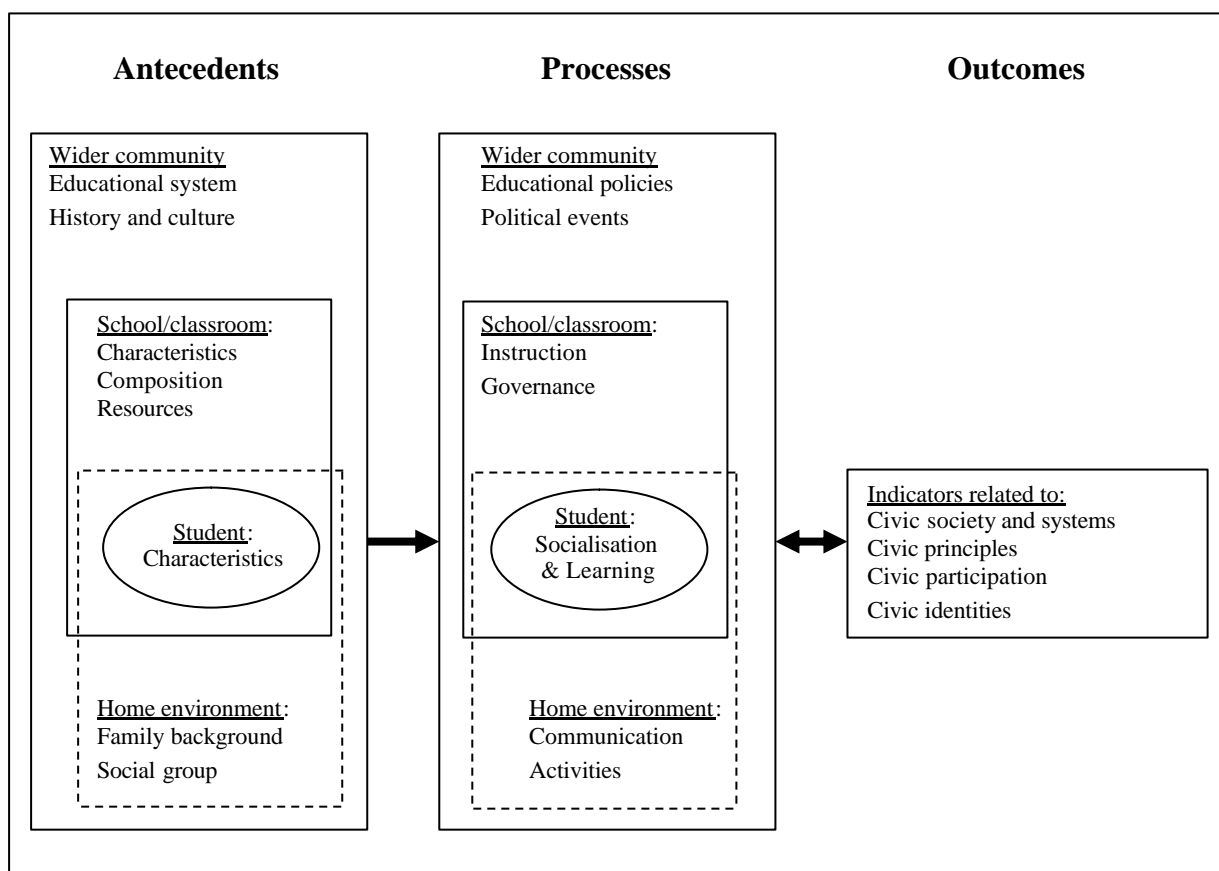


Figure 1 illustrates which contextual factors may influence learning outcomes of civic and citizenship education. It should be noted that the (double-headed) arrow between processes and outcomes signals that there is a reciprocal relationship: It is important to emphasise that there is a "feedback" between civic-related learning outcomes and processes; for example, students with higher levels of civic knowledge and engagement are also more likely to participate in activities (at school, at home and within the community) promoting these outcomes.

The (single-headed) arrow between antecedents and processes describes the relationship between these two types of factors at each level as uni-directional. However, higher-level processes can influence antecedents and it is also likely that in a long-term perspective outcomes may affect variables that are antecedents for learning processes.

Within this general contextual framework for ICCS, it is now possible to map variables for which data are collected to a three-by-four grid with antecedents, processes and outcomes as columns and the levels of nation/community, school/classroom, and home environment as rows. The last column for outcomes is not split into levels though it should be recognised that for analysis purposes aggregated data may also be used at country- and school/classroom levels.

Table 3 Mapping of variables to contextual framework (examples)

Level of...	Antecedents	Processes	Outcomes
<i>National and other communities</i>	NCQ & other sources: Democratic history Structure of education	NCQ & other sources: Intended curriculum Political developments	StT & StPQ & StBQ: Test results Student perceptions Student behaviours
<i>School/classroom</i>	ScQ & TQ: School characteristics Resources	ScQ & TQ: Implemented curriculum Policies and practices	
<i>Student</i>	StBQ: Gender Age Language	StBQ: Learning activities Practised engagement	
<i>Home environment</i>	StBQ: Parent SES Ethnicity	StBQ: Communication Peer-group activities	

NCQ: National Context Survey; ScQ: School Questionnaire; TQ: Teacher Questionnaire; StBQ: Student Background Questionnaire; StPQ: Student Perceptions Questionnaire; StT: Student Test; SES : Socio-Economic Status

Table 3 provides a mapping of examples of potential variables (or groups of variables) collected with different ICCS instruments to each cell in this grid. Variables related to the context of the nation/community would be primarily collected through the National Context Survey and other possible data sources. Variables related to the context of schools and classrooms would be collected through school and teacher questionnaires. The Student Background Questionnaire provides information on antecedents of the individual student and the home environment as well as about some process-related variables (for example: learning activities). Student Test and Student Perceptions Questionnaire would collect data on outcomes. In addition, the Student Background Questionnaire will include questions regarding student participation in civic-related activities, which will also be used as indicators of active citizenship related to Domain 3 (Civic Practices).

It should be noted that there are some potential variables that may be measured at one level pertaining to another level and that are not included in the mapping in Table 3: Student observations of learning practices in the classroom may be aggregated and used as classroom or school variables. Furthermore, student, school and teacher questionnaires may also provide civic-related information about the context of the local community.

Instrument Development

The following instruments will be developed for ICCS:

- *International cognitive test* (60 minutes): This instrument will contain of a rotated booklet design with up to 80 test items (including multiple-choice and open-ended response item types).
- *International student background questionnaire* (15 minutes): This instrument will collect information on student characteristics, family background, classroom practices and civic-related activities.
- *International student perceptions questionnaire* (30 minutes): This instrument will be designed to measure students' beliefs and perceptions related to civic and citizenship education.

- *Regional cognitive test component* (10-30 minutes): There may be region-specific test components which would consist of up to 20 multiple-choice items measuring student knowledge related to region-specific issues.
- *Regional student questionnaire* (10-20 minutes): This questionnaire will be specifically designed for particular regional modules and will only be administered in countries participating in a regional module. It will contain student background and perceptions questions related civic and citizenship relevant for the regional module.
- *Teacher questionnaire* (30 minutes): This questionnaire will be administered to teachers and ask about their perception of civic and citizenship education at school.
- *School questionnaire* (30 minutes): This questionnaire will be administered to school principals and capture school-level variables related civic and citizenship participation.
- *National Contexts Survey*: This questionnaire will be administered on-line to National Research Coordinators and be designed to collect data on the background for civic and citizenship education in each participating country.

The primary aims of the instrument development process are to create instruments which:

- unambiguously map the entire agreed assessment framework;
- are of the highest technical and psychometric quality; and
- provide data that address the key research questions outlined in the ICCS proposal endorsed by the IEA General Assembly in 2005.

Underpinning the process of development of all instruments and the assessment framework in this study is the recognition of the need to facilitate contributions from multiple stakeholders and the iterative review process. The process is also designed to accommodate those variations, which will be deemed necessary by the stakeholders according to the particularities of the individual instruments. The development process involves members of the International Study Centre, its partner institutions, the Project Advisory Committee, and (where appropriate) expert consultants in partnership with national research centres and other parties involved.

Pilot study

The pilot study will be conducted during March and April 2007 in a subset of participating countries. The purpose of the pilot study is primarily to gain preliminary qualitative and quantitative information about the quality of the cognitive test and the student perceptions questionnaire. These data will be used to further evaluate and refine the instruments.

Field trial

The field trial will be conducted in all participating countries between October and November 2007. The purpose of the field trial is to collect sufficient quantitative data to make accurate judgements about the substantive and psychometric properties of the instruments and to evaluate and later refine the administration and data collection processes.

Main study instrument finalisation

The results of the post-field trial review will be submitted to a meeting of NRCs for discussion before submission to the PAC and the JMC.

All stakeholders - consortium staff, members of the JMC, the PAC and project expert consultants - will have an integral role in the final instrument selection process.

Target Population, Sampling and Weighting

Sampling activities will be coordinated by the *IEA Data Processing Centre* (IEA DPC) in cooperation with the International Study Centre (ISC). Jean Dumais from *Statistics Canada* has been appointed sampling referee for ICCS. He gives advice on sampling methodology, makes binding decisions in case of any conflicts, reviews and approves national sampling plans, adjudicates the sampling implementation and decides on whether countries will have met the sampling requirements in the main data collection.

In order to reduce the burden on national centres and to ensure sampling accuracy, IEA DPC will undertake the drawing of all national school samples. Manuals describing sampling procedures and appropriate software to facilitate within-school sampling will be distributed to national centres.

The population definition of students surveyed in the ICCS follows the definitions as used in TIMSS (2007) and includes all students enrolled in the grade that represents eight years of schooling, counting from the first year of ISCED Level 1, provided the mean age at the time of testing is at least 13.5 years. According to this definition, for most countries the target grade would be the eighth grade, or its national equivalent. In order to enable a link to CIVED, participating countries, which tested a different grade in the previous IEA survey in 1999, are encouraged to assess the same grade in addition to the internationally defined target grade.

In some countries, national centres might want to restrict the coverage (for example by including only students taught in the dominant language in a country or by excluding smaller regions). In these cases, the *national desired target population* might be only a larger subset of the *international desired target population* described above. Decisions about changes in the population definition of a country have to be discussed with the IEA DPC and the International Study Centre.

For the first pilot studies during the initial phase of instrument development, smaller convenience samples are used in a subset of participating countries; institutions involved in the instrument development will pilot material in their respective countries and an additional number of national centres will do further piloting.

The international field trial material should be administered to convenience samples of 600-1000 students in all participating countries. The field trial samples will cover different school types and study programmes in each country and within-school sampling will be applied as part of trialling of administrative procedures.

The sample sizes for the main data collection would be determined according to the sampling efficiency information from CIVED or from national surveys in the domain of citizenship education in order to achieve an *effective sample size* of 400 students

per country.³ A minimum sample size of 150 schools should be drawn for each country using PPS (probability proportional by size) sampling procedures and student samples sizes will range from 3500 to 5000 students.

Within schools intact classrooms in the target grade will be selected. Sampling of intact classrooms is seen as the more appropriate approach to within-school sampling as it reduces the administrative burden on schools and allows questions related to instructional practices to be unequivocally linked to the instructional context.

Within-school exclusions should be similar to the ones established for the TIMSS study: (a) Intellectually disabled students, (b) functionally disabled students and (c) non-native language speakers. Exclusion categories would need to be adapted to the national context in cooperation with the sampling referee, the IEA DPC and the International Study Centre.

In many countries where an additional upper grade needs to be sampled for the purpose of trend comparisons with CIVED, students from this grade could be sampled from the same set of sampled schools. However, in other countries it may be the case that the upper grade is taught at a different school type and that an additional sample of schools could be required using the same approach to determine sample size as outlined above.

In accordance with the IEA standards, sampling requirements should be established and sampling outcomes will be monitored to ensure that data from participating countries meet these requirements. It is envisaged that countries will need to have response school participation rates of 85 percent (before replacement) as well as student-level participation rates of 85 percent. The overall participation rate should not be lower than 75 percent.

The ICCS teacher survey will include all teachers teaching regular school subjects to the students in the target grade (typically grade 8) at each sampled school. It will only include teachers who teach in grade 8 *during the testing period* and have been employed at school since the beginning of the school year. Teachers are defined as school staff members who provide student instruction through the delivery of lessons to students. Teachers may work with students as a whole class in a classroom, in small groups in resource rooms or one-to-one inside or outside of classrooms.

It should be noted that there will be no link between teacher information and individual students and that both teachers from civic-related and not civic-related subjects will be surveyed. 13. In each sampled school, a minimum of 20 teachers will be included in the survey. It is recognised that such a relatively large sample size order will cause a census surveys in many schools.

Field Operations and Quality Assurance

As in other international studies, it will be necessary to translate the instruments (international test, student background questionnaire, student perceptions questionnaire, teacher questionnaire, school questionnaire, regional instrument

³ The *effective sample size* for a given multi-stage sample is equal to the size of the simple random sample with the same level of sampling accuracy as the multi-stage sample. The ratio between *effective sample size* and the *total sample size* of the multi-stage sample is called the *design effect* (see Ross, 1997).

components) into different languages. In addition, many questions will have to be adapted to the national context of a country.

A Translation Procedures Manual (TPM) will be elaborated which will detail the guidelines for translation. It is envisaged that the translation will be carried out within each participating country by two independent translators, who should be language experts with appropriate knowledge in education and preferably with expertise in the area of civic and citizenship education. Translators would be identified and contracted by the national centre. The final version would be achieved by reconciling the two versions with the help of a third language expert in case of disagreements.

Translation verifications of national instruments should be carried out both prior to field trial and main study data collections. The translation verification of instruments would be coordinated by the IEA Secretariat. Language experts (independent of the national centres) will be contracted to carry out rigorous checks of linguistic equivalence for each translated instrument. Results of the verification will be discussed between the IEA Secretariat and national centres in order to improve translation. Final instruments should be submitted for a final layout verification coordinated by the International Study Centre.

In view of the diverse nature of civic and citizenship education and educational systems across participating countries, the instruments used in ICCS will be characterised by substantial national adaptations. In order to ensure comparability it is deemed important to review and discuss national adaptations prior to the translation of instruments. *National Adaptations Forms* (NAF) will be prepared which include all questions in the instruments highlighting those questions which require national adaptation (for example questions on parental education). Decisions about the range of acceptable adaptations for each instrument would be made in close cooperation between the International Study Centre and its partner institutions.

The field operations for the data collection in ICCS will need to be guided by standardised procedures that ensure the comparability of data across participating countries. The *IEA Data Processing Center* (DPC) in cooperation with the International Study Centre (ISC) will elaborate manuals that detail the procedures for different aspects of the data collection process. The following documents will be distributed among national centres prior to data collection (both for field trial and main study):

- *Sampling Procedures Manual (SMP)*: This document describes procedures for obtaining a school sample including procedures for drawing within-school samples of teachers and students.
- *Field Operations Manual (FOM)*: This document will contain a comprehensive description of procedural aspects of ICCS in a country from the delivery of instruments through to cleaning and delivery of data sets.
- *School Coordinator Manual (SCM)*: This document will describe the activities to be undertaken by the school coordinator for organising test administration and distribution of the *Teacher* and *School Questionnaire* within schools. It will have to be translated in the national language.
- *Test Administrator Manual (TAM)*: This document details the survey procedures from the beginning of test administration to the returning of materials to the national centre. It will have to be translated in the national language.

- *Marking Procedures Manual (MPM)*: This document will specify guidelines for the marking of possible open-ended responses in the ICCS test. It will have to be translated in the national language.
- *Data Entry Manual (DEM)*: This document provides necessary description of all activities related to data entry and data verification at the national centres. It will also contain variable description and file formats, instruction for data verification using the data entry software provided by the DPC and assist national centres with subsequent analysis of national data sets.

Manuals would usually be accompanied by forms to be completed at national centres or schools, which will assist with sampling procedures, data collection and data verification.

It is recognised that high levels of school participation within participating countries are crucial for the success of the study. Therefore, it is important to assist national centres with advice on how to prepare the field trial, contact schools and increase the willingness of schools to participate in such a study. Lessons from previous national or international large-scale assessments and experience with the field trial will help to inform about problems with refusals and ways of addressing this issue. This could be addressed at NRC meetings through the exchange of experiences and plenary or small-group discussions.

Data collection at sampled schools will need to be undertaken by staff recruited by national centres within participating countries. NRCs may use external test administrators as well as teachers at the sampled school. In some countries, national centres may prefer to have school coordinators who also act as test administrators. In this case a combined “school coordinator and test administrator” manual would be provided for these countries.

Teacher and School Questionnaires need to be administered through the school coordinator and appropriate procedures will be implemented to ensure high response rates. Consideration will also be given to the feasibility of an on-line administration of these questionnaires based on the experiences in other IEA studies (SITES, TIMSS). However, it is recognised that this approach will only be feasible in a sub-group of participating countries.

Standards for IEA studies require that certain quality control measures be implemented during the process of data collection. The following activities described in other sections would all form part of quality assurance:

- Verification of instrument translation (see section on *National Adaptations and Translation Verification*).
- Verification of national data and marking procedures (see section on *Data Management and Scaling*).
- Verification of population coverage and sampling requirements (see section on *Target Population and Sampling*).

Field procedures will be monitored by observers who are independent of the national centres and nominated by national research coordinators. It is envisaged to arrange interviews with national coordinators in order to obtain information about how ICCS is being implemented and that a selection of 15 selected schools be visited on their respective testing dates by quality monitors. During the school visit independent

observers will record test administration, give a general impression of how procedures were followed and interview the school coordinator.

A Manual for International Quality Control Monitors, elaborated in close cooperation between the IEA Secretariat and the ISC, will detail the envisaged monitoring activities and serve as a guideline for the independent observers. The IEA Secretariat will arrange the quality control monitoring in cooperation with International Study Centre and DPC and arrange an international training session for quality monitors from participating countries.

After each data collection in the field trial and main study, NRCs will be requested to submit a standardised survey report describing how ICCS was implemented in each participating country. Together with the Test Administrator Session Report Forms these data will provide an additional source for quality assurance.

Data Management and Scaling

Data collected in the ICCS study will be entered into data files with a common international format at the national centres using data entry software provided by the IEA Data Processing Center (DPC). National data files (together with all relevant information) will be submitted to the DPC for cleaning and verification. After checking and processing the national data the DPC will provide the International Study Centre (ISC) with summary statistics and upon feedback from national countries and the International Study Centre it will construct the international database. These procedures will be applied (at different levels of scope) for both field trial and main data collection.

The reliability of marking procedures for open-ended test questions in participating countries will be monitored through the analysis of data derived from the multiple marking of random student sub-samples. These analyses give information on the degree of consistency across markers in each country and will be carried out by the International Study Centre in cooperation with the DPC.

Sampling weights will be computed by the DPC in cooperation with the International Study Centre and added to the final international database. In order to allow the use of replication methods for the estimation of correct standard errors, it will also be necessary to provide the necessary information on sampling variance strata and replication indicators. It is envisaged that (similar to CIVED, TIMSS and PIRLS) the *jackknife repeated replication* (JRR) be used for the estimation of standard errors in ICCS (see Schulz and Lehmann, 2004).

The cognitive test data will be scaled using of IRT methodology (see Rasch, 1960; Hambleton and Swaminathan, 1991) and ability estimates will be plausible values in order to allow the estimation of measurement error and the estimation of latent correlations (see Mislevy, 1991; Adams, Wu and Macaskill, 1997).

Further scales will be derived from student background and student perception questionnaires. Student estimates for constructs could be derived as “Weighted Likelihood Estimates” (WLE) (see Warm, 1989) using a partial credit IRT scaling model.

The scaling review for ICCS items will comprise the following procedures:

- Review of national and international item statistics provided by the IEA DPC (both field trial and main study). Item statistics should include classical item

statistics (discrimination, point biserials, percentages) and IRT statistics (item parameter(s), item fit, item-by-country interaction).

- Analysis of item dimensionality using Exploratory Factor Analysis, Confirmatory Factor Analysis and Multi-dimensional IRT scaling (both field trial and main study). Appropriate software should be used to deal with the problem of non-normality and the non-continuous nature of variables in covariance-based analyses.
- Item selection (piloting, field trial) based on criteria developed regarding scaling properties and model fit. Here, a larger set of items will be scrutinised in order to select the most appropriate items for the main study.
- Item adjudication (main study) both at the international (selection of final set of items) and national level (exclusion of national items from scaling in case of translation errors or misprints).

Item calibration will be carried out based on an international calibration sample (500 students per country, equivalent sub-samples of teacher and school data in case of scaling any items from these instruments). International item parameters derived from this calibration will then be used to scale the national datasets. Student (as well as potential teacher or school) estimates could be transformed to an international metric.⁴

For the reporting of trends it will be necessary to equate test scores from ICCS with those from CIVED. Equating would be facilitated through including all (or the largest possible subset) of the cognitive items used in CIVED (excepting those which were released in subsequent reports). A thorough analysis will be implemented in order to review the behaviour of link items comparing item parameters from both assessments and to ensure that only those items are selected for equating that have similar item difficulties.

Data Analysis, Reporting and Dissemination

The analysis of the field trial data will be coordinated by the International Study Centre (ISC) in close cooperation with the IEA Data Processing Centre (DPC) and guided by advice from the Project Advisory Committee (PAC) and the IEA Secretariat. It is envisaged that the analyses would be carried out by the International Study Centre in close cooperation with the DPC, expert consultants and staff working at the institutions associated with the International Study Centre and its partner institutions.

It is deemed essential to elaborate a detailed draft analysis plan about half a year prior to the analysis phase in order to have sufficient time to discuss and organise the different analysis tasks between expert groups, IEA Secretariat and the International Study Centre and its partner institutions. The analysis plan needs to be guided by the assessment framework and the interests of countries participating in the study.

It is proposed to use a wide range of statistical analyses including descriptive statistics (means, percentages, percentiles), tests of differences (between countries or subgroups

⁴ In CIVED, the cognitive test scores had an international mean of 100 and a standard deviation of 20 (see Schulz and Sibberns, 2004). It is currently proposed to change this metric to a different metric (with an international mean of 500 and a standard deviation of 100) in order to be consistent with the practice in major IEA studies like TIMSS and PIRLS.

within countries), bi-variate analyses (effect coefficients), multivariate analyses (multiple regression) and multi-level analyses.

The data analysis undertaken for reporting should:

- address the research questions elaborated in the assessment framework;
- be obtained by appropriate statistical methods;
- be communicated and displayed in ways understood by potential readers; and
- be reported accompanied by the methodological information about how the results were derived.

In accordance with the IEA standards for international large-scale assessments, all population estimates will be reported with their respective standard errors. In view of the complex sampling design, replication methods would be used for estimating standard errors through the use of appropriate macros (SPSS or SAS) and/or specially designed statistical software (like WESVAR).

It is viewed as very important for the success of this study to include a wide range of expertise in the review of the analysis outcomes. Drafts of all reports will be circulated among both experts and national centres, as appropriate. This includes the international report, contexts survey report and regional report (where appropriate). National centres will be invited to comment on the drafts and make suggestions for modifications or amendments, in particular with respect to the interpretations of national results and their relationship with specific country and/or regional contexts.

It is envisaged that the following reports be published:

- The *International Report* on the ICCS results will be published in 2010. This volume would include results derived using the international core instruments and be the equivalent to the first international report on CIVED (Torney-Purta, Lehmann, Oswald and Schulz, 2001).
- The *Technical Report* for ICCS will be published in 2010. This report would contain a description of details on instrument development, data collection procedures and analysis (see as an example the CIVED technical report in: Schulz and Sibberns, 2004).
- Consideration will be given to publishing separate *Regional Reports* on regional components of ICCS. For example, there is a strong case for publishing a separate *European Regional Report* and *Latin American Regional Report* on the results derived using the regional instruments from the European regional module.

National centres will elaborate national reports on the results of international studies and are often in need of assistance with analyses and reporting. Therefore, it is envisaged to provide workshops on data analysis and reporting after the data collection at the NRC meeting in November 2009. National centre staff will receive some basic information about the use of SPSS macros to appropriately analyse the ICCS data using a preliminary dataset (without any country results) as examples. Countries will also receive guidelines regarding the adequate reporting of results in national reports. Using the expertise gained in CIVED and other international studies, the NRC meeting may also include discussions about how to ensure the results are disseminated effectively to a range of audiences, notably policy-makers, at national

level. It is important that the efforts in coordinating and reporting the study at international level are matched by those at national and regional levels.

After the release of the international database and the technical report, an International Database Seminar will be conducted in November 2010. At this seminar training for the analysis of the final ICCS data will be provided, including information on the basic statistical concepts, the correct use of statistical software and the interpretation of results.

It is envisaged that reports and databases be made available through the Internet. In order to enable fellow researchers to use the ICCS data, the data files with the international database (from students, teachers and schools) and, where appropriate, regional database(s) would be made available for downloading at the ICCS website together with the necessary technical information (technical report, codebooks, instruments except the non-release test items, database description). National centres will also be encouraged to make their national reports available through the ICCS website. The web information will be elaborated in close cooperation between International Study Centre and its partner institutions, the IEA Data Processing Centre and the IEA Secretariat.

Benefits for Participating Countries

Benefits for countries that participate in the international part of ICCS will be the following:

- National indicators of current knowledge and understandings in civics and citizenship among lower secondary students that may inform practices and policies in this area.
- National indicators reflecting the beliefs, attitudes and behaviour of their 14-year-olds that will provide an informative picture of the civic and citizenship engagement of young people.
- Comparative data that enable them to compare their national results with those from other countries.
- In case of participation in CIVED 1999, the opportunity to assess changes in indicators of student knowledge and engagement over the past decade.
- An assessment of the national status of civic and citizenship education from different perspectives including student learning outcomes, teacher perceptions and school-level practices.
- Active participation in the development of the instrumentation of this study.
- Opportunities for training in test development, operational procedures and data analysis.
- The possibility of assessing country-specific issues administering additional national items at the end of international (and regional) instruments.

Furthermore, the option of participating in regional modules offers the following additional benefits:

- Active involvement in the development of region-specific assessment of student knowledge, attitudes and engagement.

- Region-specific indicators of student learning outcomes that may inform about areas not covered in the international instruments.
- Opportunities to compare specific indicators with other countries from the same region.

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