

Framework for estimating national costs for IEA ICCS 2022

This framework on national costs has been developed to describe the types of tasks, infrastructure and staff needed within countries in order to run the IEA ICCS 2022 study. The total national costs for running ICCS will of course depend on individual country circumstances and cost structures. It should be used in conjunction with the accompanying NRC and NSC task description. Further, cost estimations for previous cycles of ICCS in the country, or those for surveys and assessments of similar nature, complexity and structure, will be invaluable resources for estimating national costs.

The costs in this framework have been described with reference to one grade level participating in each country. For ICCS 2022, the target grade in most countries will be the eighth grade, or its national equivalent.

The major items to be taken into account when estimating costs are:

(1) STAFF

Usually, for a study of this scope, the National Study Center (NSC) include one or two full-time researchers plus some part-time staff to assist them at particular times during the project life-cycle. The tasks that typically require additional staff at particular times include the following:

- translation of the instruments and administration materials;
- survey administration in schools (school coordinator, test administrator);
- If the computer-based assessment option is taken up¹:
 - IT support for the provisioning and quality control of the computer-based assessment materials;
 - provision of technical assistance to schools for computer-based delivery of the assessment (including a telephone-based helpdesk at the time of administration);
- national quality observation of data collection;
- scoring student responses at the NSC;
- contacting schools and encouraging cooperation/participation;
- within-school listing and sampling;
- data capture, scoring, coding and management; and
- clerical assistance.

ICCS staff who work directly with the International Study Center, the Associate Research Center, the IEA Amsterdam and the IEA Hamburg, require good written and spoken English language skills.

(2) EQUIPMENT AND INFRASTRUCTURE

The national study center needs to be equipped with sufficiently equipped and up-to-date PCs (i.e. IBM compatible computers) that are not more than about three years old for administration and

¹ Please note that the approach to computer-based assessment for ICCS is not yet fully determined. While current assessment within and beyond the IEA use school computers in conjunction with USB drives, native tablet apps or local server approaches, initial explorations for an online delivery of materials are currently explored. ICCS will use a delivery platform with proven functionality for the student test and questionnaire (including any regional material) as well as for the online delivery of teacher and principal questionnaires. The operational and financial feasibility of these options will be determined within the first year of the study to allow for sufficient time for development.

communication. Any systems provided to the National Study Center for within-school sampling, online translation, data monitoring and management, online scoring and similar are exclusively designed to work on Windows® operating platforms.² A minimum of Microsoft® Office® 2010 or above, Adobe Acrobat Reader, and stable Internet connection are required. Communication with the international centers will be via email and materials will be exchanged by uploading/downloading to/from the IEA's and the International Study Center's secure servers and exchange platforms.

While scoring student work in ICCS will be done on paper for countries administering paper-based test booklets, national centers in countries participating in the computer-based delivery will also need to make provisions for computer-based scoring of student work for both the field trial and main survey. This will require approximately 10 computers to be available for use by scorers (for approximately five working days for the field trial and 15 working days for the main survey).

Other costs would comprise standard office costs such as supplies, mail and delivery (courier) services.

(3) TRAVEL

There are six meetings of the National Research Coordinators (NRC), which are held in different countries. The first meeting (in March 2018) will launch ICCS 2022 and provide participants the opportunity to contribute to broad directions, revisions to the assessment framework and the content of the instruments from their perspective. The next two meetings will precede the field trial, and one the main survey data collection periods and each deal with frameworks and instrument development, project management and planning, instrumentation implementation, and reporting. The fifth and sixth meeting allow participants to review the International Report. The final meeting also includes a training to support researchers to work with the international database, which will be under embargo at that stage. This training should be attended by the NRC and, if possible and applicable, also by other researchers associated with the NSC.

There are also two training meetings at the IEA in Hamburg, Germany for field operations, data management, scorer training and any technical training for IT coordinators, one prior to the field trial, the other prior to the main survey. Depending on the eventual scheduling, the third and fourth NRC meetings may also be connected with one or both of these trainings. Some countries may choose to send more than one person to the training meetings (such as the NRC as well as other staff members with specific responsibility for scorer, data management or IT operations in the country).

It is necessary to budget for some travelling within your country associated with project operations (such as test administrators' visits to schools, possible training for IT support staff, or national quality observations during the test administration). These costs naturally will vary by the country size and geography as well as on optional components.

International Quality Observers are employed by the IEA Amsterdam directly. Costs for attending the respective training and any honoraria are covered by IEA.

² The IEA observes Microsoft's® life cycle commitments. In this respect, the extended support for Windows® 7 will end in January 2020, Windows® 8 in January 2023 and Windows® 10 in October 2025.

(4) SAMPLING ACTIVITIES

In order to let the international sampling experts select a sample of schools, a school sampling frame has to be compiled, constituting a comprehensive list of all schools in the country offering the target grade(s). Once the school sample was selected, the NSC is responsible to select the within-school samples of classes and students using software that is provided by the IEA. This involves the collection of comprehensive class and students' lists from the participating schools, entering or importing these lists into the software, their validation, performing the sampling, and further a thorough tracking of the participation status of all selected units.

(5) INSTRUMENT PREPARATION

The student instruments will be paper delivered or, if this option is taken up, computer-delivered using a cost-efficient and effective method (see earlier footnote). The teacher, school and national context survey instruments can all be delivered over the internet although a paper fallback exists. In some countries there will consequently be no need for instruments to be printed, with the exception of a small number available as backup in exceptional circumstances. However, the proportion of instruments for staff in school that can be delivered on computer will likely vary across countries. Some countries will need to budget for some or all of these instruments to be printed. In previous cycles of ICCS, about 25-30 schools with about 500-1000 students participated in a field trial and 3000-4000 students in a main survey (the minimum school sample size for the main size was 150 schools, with one entire/intact class sampled within). The length of the student instruments (test and questionnaires) will be around 50 pages, teacher and school questionnaires up to 20 pages each. The number of teachers per school can be assumed to be equivalent to previous cycles, i.e. 15. Participation in regional questionnaire options and administration of international options may imply slightly longer instruments.

The instruments will need to be translated to the national language(s), this includes both translation and within-country review of the translations (often at the NSC). This will be conducted on the computer using a web-based system. Each country will bear the cost of translation and within country review. Countries administering the study in more than two languages will need to budget for additional international translation verification.

As discussed earlier, the eventual delivery approach to computer-based assessments (student test and questionnaire) has not yet been determined and will be agreed with countries interested or participating in this option, starting during the first NRC meeting in March 2018. It is assumed that the study will use existing school computers to the maximum extent possible. Direct cost will hence either relate to purchasing, provisioning and shipping quality USB drives (one per participating student; technical specifications to be determined) or hardware for a local server approach. NSC may also opt to provide sets of portable computers for each testing session, incurring respective costs for rent, shipping and provisioning.

Any pilot studies in 2018/19 during the initial phase of instruments development might incur a small cost for instrument translation and printing.

Several manuals will be provided for both the field trial and the main survey. Some of these will need to be translated and printed, in particular the School Coordinator Manual, Test Administrator Manual, and Scoring Guide(s).



(5) SCORING, CODING AND DATA CAPTURE

Scoring will take approximately 20 person days for the field trial and about 100 person days for the main survey. Coding of parental occupation is assumed to require about 10 person days for the field trial and 30 person days for the main survey.

In some countries there will be no data entry as all instruments will be completed on computers. In countries where students and/or school staff will complete paper-based questionnaires there will need to be some data entry.

(6) REPORTING AND DISSEMINATION OF THE RESULTS:

This includes the costs of preparation and publishing a national report, press conference for its release and/or any other form of the result dissemination (e.g. publications, conferences, workshops).