

## Framework for Estimating National Costs for LaNA

This framework has been developed to help countries estimate the national costs associated with implementing IEA's Literacy and Numeracy Assessment (LaNA). It describes the types of tasks, infrastructure, and staff needed within participating countries. The national costs for implementing LaNA will depend on individual country circumstances and cost structures.

The costs in this framework are based on administering LaNA at one grade level in a country. Activities and resource needs are based on administering the four standard LaNA paper assessment booklets, a school questionnaire in each sampled school, and a student questionnaire to each assessed student, in both the Practice Administration and Main Data Collection. Administration of LaNA can be completed within a single day in each school.

Other factors that can affect a country's national costs:

- (1) Adaptation/extension of the LaNA context questionnaires with national items. If a country chooses to add items or modules to the LaNA questionnaires, this will have implications for activities related to instrument preparation, the scope of the Practice Administration, printing, and data entry.
- (2) Whether a country opts to administer the supplemental LaNA booklets. Countries in which students may be successful on content that is more challenging than what is included in the standard LaNA booklets are encouraged to also administer the four supplemental LaNA booklets which contain TIMSS and PIRLS items and will provide more information about what their students know and can do. While each student is still only administered a single booklet, the administration of the LaNA supplemental booklets will require additional instrument verification, considerations when printing, and human scoring of responses to constructed-response items.
- (3) Whether a country chooses to administer the optional teacher questionnaire (in development).

The major budget requirements needed to implement the LaNA assessment in each country are described below. For additional information on the required roles and expertise of the National Research Coordinator (NRC), and the necessary tasks to take place in each participating country, please refer to the separate document titled *National Roles and Tasks*.

## National Study Center

A LaNA National Study Center (NSC) is established in each participating country. Usually, for a study of this scope, the NSCs include one full-time NRC plus part-time staff to assist at particular times during the project's lifecycle of 15–18 months.

The following tasks will need to be fulfilled within each participating country:

- Reviewing and adapting centrally translated questionnaires and test booklets;
- Reviewing, adapting, and translating administration materials such as survey operation procedures manuals and software tutorials (as needed);
- Coordinating sampling, including providing a sampling frame, contacting schools; and conducting within-school sampling;
- Encouraging school/student participation to ensure participation rate requirements for reporting are met;
- Hiring and training test administrators;
- Conducting test administration in schools and providing quality assurance oversight;
- Scoring constructed-response items (only applicable to countries administering the supplemental LaNA booklets);
- Data entry and verification;
- Submitting data files and responding to data cleaning inquiries.

A working knowledge of English (IEA's working language) is required of the NRCs and other staff who work directly with IEA and others in the LaNA International Team.

Please refer to the document *National Roles and Tasks* for the specific roles and responsibilities of the NRC and other staff.

## Equipment and Infrastructure

The NSC must be equipped with personal computers running Microsoft Windows operating systems (version 10 or later) and that are suitable for administrative tasks and communication. LaNA communication with NSCs will include email, Microsoft Office files (Word, Excel, PPT), and PDFs. NSCs will need to have a high-speed internet connection to participate in virtual meetings, and to send and receive files. Other costs comprise standard office costs, such as supplies, mail, and delivery (courier) services.

## Travel

Most meetings between the NSC and the LaNA International Team will be held virtually. Some of the meetings or training sessions may be held onsite in the participating country. Formats and venues of all meetings will be discussed during the initialization stage of the study.

It also may be necessary to budget for some within-country travel to support LaNA on-site meetings with IEA (if needed) and project operations (such as visits to schools or

school administration bodies) and to conduct training sessions (such as school coordinator or data entry training).

## Instrument Preparation

All LaNA instruments are delivered on paper. IEA works with established translation companies and will provide each country with fully translated instruments in the language(s) of instruction. However, NSCs must allocate an appropriate amount of time to verify the correctness and appropriateness of the language used for students at the end of primary school and to ensure that appropriate cultural adaptations are made (for example, adjusting names of characters in a passage to more familiar names).

Additionally, a country's budget will need to take into consideration any potential national extensions to or adaptations of the international versions of the questionnaires, and the implementation of quality control measures regarding instrument verification (i.e. adaptation and layout verification) and production.

The test administration script will need to be translated into the test language(s). LaNA manuals may also need to be translated depending on the intended user(s).

## Printing and Labeling

Following the translation and verification of assessment instruments, NSCs will need to arrange and pay for the printing of all survey instruments and tracking forms and prepare and print labels for all booklets and questionnaires. Printing estimates are provided in the table below.

LaNA manuals may also need to be printed and reproduced, depending on the intended user(s) of the manual. LaNA manuals include:

- Sampling Manual (for NSC staff)
- Survey Operations Procedures Manuals (for NSC staff)
- School Coordinator Manual
- Test Administrator Manual (with Administration Script)

## Shipping/Mailing

For shipping assessment materials to schools, a safe and efficient shipping method should be selected so the materials remain secure at all times. Additional mailing might be necessary between the NSC and schools, e.g., providing any missing or damaged testing materials.

**NOTE:** There are two rounds of shipping materials to and from the participating schools—first for the Practice Administration and then for the Main Data Collection.

## Data Entry

All completed survey instruments need to be digitized by entering responses into a database via a computer program provided by IEA. Countries will need to budget for data entry staff. This includes training sessions where staff learn the data entry rules stipulated in the survey operations procedures and data quality checks, such as the double data entry of a certain proportion of the completed survey instruments.

## Scoring

The standard LaNA test booklets comprise of multiple-choice items only. However, if the four supplemental LaNA booklets are administered, human scoring of the constructed-response items will be necessary.

NSCs will need to have personnel dedicated to the scoring of all constructed response items in the supplemental LaNA booklets according to the rules and guidelines stipulated by IEA. The reliability and validity of scoring are critical to the quality of the assessment results. To achieve the goal of reliable and valid scoring, IEA provides international scoring training and scoring guides along with scoring training materials. In addition, a subset of the responses to the constructed-response items in the supplemental booklets will need to be scored twice to provide a measure of inter-rater agreement.

## Reporting and Dissemination of Results

IEA encourages participating countries to plan for both within-country LaNA data analysis and reporting activities, and within-country release and dissemination events. However, publishing a LaNA national report or releasing the data in the public database are not participation requirements. IEA will provide countries with a User Guide for working with the LaNA data and configure the IEA IDB Analyzer (statistical tool) to work with the LaNA database. Optional additional capacity-building modules are available to provide more in-depth training in secondary data analysis and the development of a country policy brief.

If countries plan to publish a national report, the duration of the study from a national perspective increases by approximately three-to-six months, depending on the scope of the report and the available resources. At least one researcher conducting analyses is recommended to support the development of a national report.

## Estimated Working Days and Printing Needs

The following table outlines country activities with an approximate number of person working days attached to the activity (one working day = approximately 8 hours) and includes printing estimates.

| Activity # | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>   | <b>Preparation of the instruments (15–20 days)</b> <ul style="list-style-type: none"> <li>• Review centrally translated school and student questionnaires and test booklets (4 or 8 booklets depending on whether the supplemental LaNA booklets are used) and check for appropriateness of language used, considering the cultural context;</li> <li>• Document all instrument adaptations in the National Adaptation Form;</li> <li>• Process feedback resulting from an optical check of the instruments;</li> <li>• Update instruments after practice administration (if necessary);</li> <li>• Conduct final review of all instruments.</li> </ul>                                                                                                                                               |
| <b>2</b>   | <b>Sampling (25–35 days)</b> <ul style="list-style-type: none"> <li>• Provide IEA with a comprehensive list of all schools in which target students can be found;</li> <li>• Consider research interests, e.g., group comparisons, in consultation with IEA;</li> <li>• Confirm Main Data Collection sample provided by IEA;</li> <li>• Establish contact with sampled schools and secure their participation in the Main Data Collection;</li> <li>• Within-school sampling of intact classes for main data collection.</li> </ul>                                                                                                                                                                                                                                                                   |
| <b>3</b>   | <b>Practice Administration (30–40 days)</b> <ul style="list-style-type: none"> <li>• Select a convenient sample of schools (5–10) for Practice Administration;</li> <li>• Establish contact with Practice Administration schools and secure their participation;</li> <li>• Print, prepare, and ship materials to selected schools, including: up to 10 school questionnaires, 300 student questionnaires, 300 copies of test booklets (4 or 8 different booklets depending on whether the supplemental LaNA booklets are used), and enough copies of the student tracking forms and labels;</li> <li>• Appoint and train school coordinators and test administrators;</li> <li>• Collect data;</li> <li>• Data entry;</li> <li>• Scoring if administering the supplemental LaNA booklets.</li> </ul> |
| <b>4</b>   | <b>Meetings and training (10–15 days)</b> <ul style="list-style-type: none"> <li>• Participate in online meetings with LaNA International Team;</li> <li>• Participate in onsite training with IEA.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Activity # | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5          | <b>Printing for Main Data Collection (10–12 days)</b> <ul style="list-style-type: none"> <li>• ~200 copies of the school questionnaire (~12 pages);</li> <li>• ~4,500 to 5,000 copies of the student questionnaire (~12 pages);</li> <li>• ~4,500 to 5,000 copies of the LaNA booklets (~44 pages). Note that this doesn't mean you need this number of copies for each of the 4 booklets (or 8 booklets if using the supplemental LaNA booklets). This number refers to booklets in total. However, you need enough copies of each of the 4 or 8 booklets (simply estimate the total number of sampled students and then divide by 4 or 8 to get the number of copies for each booklet + spare booklets);</li> <li>• Copies of test administrator manuals, school coordinator manuals, data entry manuals, scoring guides, student tracking forms and instrument labels.</li> </ul> |
| 6          | <b>Preparing for and conducting the test administration (15–20 days)</b> <ul style="list-style-type: none"> <li>• Affix labels to the printed instruments;</li> <li>• Ship materials to the participating schools;</li> <li>• Appoint and train school coordinators and test administrators;</li> <li>• Provide quality assurance oversight of data collection.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7          | <b>Data entry and monitoring (approximately 72 days)</b> <ul style="list-style-type: none"> <li>• The duration of this work depends on the amount of data entry personnel staffed. Assuming 6 people entering data for 6 net hours a day you will need approximately 12 working days. If you double the number of people, you may be done in 6 days;</li> <li>• Perform double punching. This involves the entering of approximately 5% of all questionnaire types twice, by different data entry personnel;</li> <li>• Supervise the data entry process.</li> </ul>                                                                                                                                                                                                                                                                                                                 |
| 8          | <b>Scoring for countries using the supplemental LaNA booklets (approximately 46 days for mathematics and 26 days for reading)</b> <ul style="list-style-type: none"> <li>• The duration of this work depends on the number of scorers. If you have 2 mathematics and 2 reading scorers you will need approximately 36 working days (assuming 6 net hours a day) and if you double your scorers, you will need approximately 18 working days;</li> <li>• Supervise the scoring process;</li> <li>• Print ~350 to 450 copies of the reliability scoring sheets used to record the second (reliability) score of the constructed response items, if using the supplemental LaNA booklets (~2 pages).</li> </ul>                                                                                                                                                                         |
| 9          | <b>Data quality control and cleaning inquiries (10–15 days)</b> <ul style="list-style-type: none"> <li>• Review all collected data for consistency;</li> <li>• Submit final database to IEA according to stipulated privacy and formatting instructions;</li> <li>• Respond to data cleaning inquiries from IEA.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 10         | <b>Administration of project (70–100 days)</b> <ul style="list-style-type: none"> <li>• Maintain communication with IEA and follow instructions and guidelines in order to meet deadlines and implement quality control measures for collecting and processing data.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |