LaNA Costs Overview: Framework for Estimating National Costs

The framework for estimating national costs has been developed to describe the types of tasks, infrastructure and staff needed within countries in order to implement LaNA. The total national costs for running LaNA will depend on individual country circumstances and cost structures.

The study's default participation mode relates to the administration of the full set of the LaNA instruments. This refers to the administration of the LaNA test booklets and the TIMSS/PIRLS linkage booklets to a representative school sample. In addition to that, the principals of the sampled schools will have to complete a school questionnaire and the students that are part of the within-school classroom sample need to complete a student questionnaire. The study considers one day of testing per school within the timeframe as outlined in the study's schedule listed further below in this document.

All test administration activities will be trialed in a practice administration by collecting data from a convenience sample of 5-10 schools. The focus of this activity lies within acquiring a deep understanding of LaNA's survey operation procedures to be well prepared for the main data collection. The costs in this framework have been described with reference to one grade level participating in each country. For LaNA the target grade will vary between the 4th and the 6th year of schooling (i.e., its national equivalent).

The following major items also need to be taken into account when estimating national costs:

1) STAFF

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 National Research Coordinator (NRC) plus some part-time staff to assist at particular times during the project's lifecycle of 18-24 months. More specifically, the following task will need to be fulfilled within each participating country outlining the scope of work:

- Translation and/or national adaptation of the student and teacher questionnaires, test booklets and administration materials
- Contacting schools
- Test administration in schools
- Within-school sampling
- Encouraging school/student participation (to ensure participation rate requirements for reporting are met)
- Hire and train test administrators
- Scoring the constructed response items
- Data entry and verification

Though not a fixed prerequisite it is strongly recommended that LaNA staff who work directly with the International Study Center at the IEA Hamburg have good written and spoken English language skills.

2) EQUIPMENT AND INFRASTRUCTURE

The NSC needs to be equipped with IBM compatible computers (not more than five years old) for administration and communication and Windows operating systems (not older than Windows 8). LaNA communication with NSCs will include email, Microsoft Office files and PDFs. We will assume that NSCs have a high-speed internet connection to participate in virtual meetings (see next section), and to send and receive files. Other costs comprise standard office costs, such as supplies, mail and delivery (courier) services.

3) SPECIFIC REQUIREMENTS OF LANA

The NRC plays a major role in LaNA and is the country's main contact person for all aspects of the study. The NRC's main responsibility is the implementation of the study in the country, including the coordination of all tasks. More specifically, the NRC is responsible for:

- Organizing the National Study Center (NSC) to perform the LaNA tasks;
- Employing and/or supervising staff, including assigning/distributing the roles as outlined below;
- Ensuring availability of required hardware and software and other necessary equipment and materials as mentioned in the previous section;
- Communicating with the coordination center at IEA and potential donor organizations;
- Participating in conference calls, virtual meetings and a face-to-face training.

For more detailed information please look at the "LaNA Required Capacity: National Study Center" document.

4) TRAVELLING

Most of the international meetings will be held virtually. However, it is planned to have a four-day onsite field operations training that provides instructions on within-school sampling, test administration, data entry and scoring. Ideally, there will be one meeting with all LaNA participants present. That meeting would occur either in Hamburg, Germany or in one of the participating countries willing to host the meeting. IEA is also prepared to conduct different editions of this meeting facilitating the presence of participating countries within a certain geographical region. If you are interested in hosting such a meeting, please get in touch with IEA. It may be necessary to bring certain personnel with specific responsibilities within the national center to the meetings (e.g., when conducting training sessions on data management topics). This is merely a rough guideline. Formats and venues of all meetings will be discussed during the initialization process of the study. It also may be necessary to budget for some traveling within your country associated with project operations (such as visits to schools or school administration bodies).

5) INSTRUMENT PREPARATION

All LaNA instruments will be delivered on paper. The instruments will need to be adapted and translated to the national language(s); this includes translation and within country review (often at the national center) of the translations. The international versions of the LaNA instruments will be made available in English language (US spelling). Even if the study will be administered in the country in English language exclusively, it is necessary to allocate an appropriate amount of time for necessary adaptations, potential national extensions to the international versions of the questionnaires, and the implementation of quality control measures with regards to translations and national adaptations.

6) SHIPPING/MAILING COSTS

Following the translation and verification of assessment instruments, NSCs will need to arrange and pay for the printing and shipping of all paper survey instruments. This includes distribution, tracking and return of completed questionnaires and test booklets.

For the practice administration, approximately 5-10 schools will be participating. Thus, data will be collected from about 150 to 300 students.

There will be approximately 150 schools participating in the study's main data collection. Thus, data will be collected from about 4,500 students.

There will also be manuals that countries may want to translate, print or reproduce, for example, a test administrator or school coordinator manual. The manuals commonly used in the IEA studies are: Sampling manual, Survey Operations Procedures manuals, and instructions for Test Administrators and School Coordinators manual. For scoring related tasks, scoring guides will be made available as well.

7) DATA ENTRY

All completed survey instruments need to be digitized, i.e., entered 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.

8) SCORING

The actual LaNA test material consists of multiple-choice items. However, to properly link LaNA to IEA's TIMSS and PIRLS, the study's test material also consists of four so-called "TIMSS/PIRLS linking booklets" which contain mathematics achievement items originally administered in TIMSS and reading achievement items originally administered in PIRLS. Now, the major difference between the LaNA booklets and the TIMSS/PIRLS linking booklets is that the linking booklets contain open ended tasks, also known as constructed response (CR) items, that require human scoring after data collection.

Half of the sampled students will receive one of the four TIMSS/PIRLS linking booklet. Each booklet contains about 15 mathematics and 10 reading constructed response items that require human scoring. NSCs will need to have personnel dedicated to the scoring of all constructed response items in the TIMSS/PIRLS linking 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, please also consider that you will need to score about 2,000 student responses to constructive response items twice. This routine is referred to as reliability scoring and aims to provide a measure of the overall scoring quality.

9) REPORTING AND DISSEMINATION OF THE RESULTS

Additional costs may be expected for national reporting and dissemination of results. Note that it is not a participation requirement to publish a national report based on the analysis of the LaNA data. If needed, IEA may provide assistance. Additionally, IEA will provide the IDB Analyzer software and a guide for working with the data at the national level. Thus, we encourage all countries to use the data and plan for within-country analysis and reporting activities, and even within-country release events.

If participants 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. In that case, we recommend having at least one researcher or consultant with basic knowledge in inferential statistics working on the report and conducting the analysis the report requires.

10) PRACTICE ADMINISTRATION

All participating countries are required to trial all LaNA procedures by administering the LaNA instruments to a small convenience sample (5-10 schools).

11) ESTIMATED WORKING DAYS

The following table comprises of all country activities with an approximation of person working days attached to the activity (one working day ~8 hours):

Activity #	Description
A1	**Preparation of the instruments (15–20 days)** • Review school and student questionnaires and test booklets and check for appropriateness of language used, considering the cultural context • Translate all survey instruments (two questionnaires and 8 test booklets), unless the language of administration is English • Document all changes in the National Adaptation Form (NAF), a record of all deviations from the international source instruments other than direct translations • Process feedback resulting from an optical check of the instruments • Update instruments after practice administration (if necessary) • Conduct final review of all instruments
A2	**Practice Administration (30–40 days)** • Select a convenience school sample (5-10 schools) for a practice administration • Establish contact to sampled schools and secure their participation • Print, prepare and ship materials (instruments and tracking forms) to selected schools (5-10 school questionnaires, 150-300 student questionnaires, 25-35 copies of each of the 8 booklets, around 30 constructed response scoring sheets and a sufficient number of copies of the student tracking forms and labels) • Train test administrators • Collect data • Data entry and scoring
A3	**Sampling (25–35 days)** • Provide a comprehensive list of schools which comprises of all schools where target students can be found to IEA • Contact sampled schools in order to acquire their participation in the main data collection • Within-school sampling of intact classes for main data collection
A4	**Meetings and training (10–15 days)** • Participate in online NRC meetings • Participate in onsite field operations training (consider bringing personnel responsible for a specific task area to the training)

Activity #	Description
A5	**Printing (10–12 days)** • ~200 copies of the school questionnaire (~12 pages) • ~4,500 to 5,000 copies of the student questionnaire (~12 pages) • ~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 8 booklets. This number refers to booklets in total. However, you need a sufficient number of copies of each of the eight booklets (simply estimate the total number of sampled students and then divide by eight to get the number of copies for each booklet + spare booklets) • ~350 to 450 copies of the reliability scoring sheets used to record the 2nd (reliability) score of the constructed response items in the TIMSS/PIRLS Linking booklets (~2 pages) • Print sufficient copies of test administrator manuals, school coordinator manuals, data entry manuals, scoring guides • Print student tracking forms and instrument labels.
A6	**Preparing for the test administration (15–20 days)** • Affix labels to the printed instruments • Print tracking forms • Ship materials to the participating schools • Provide clear instructions to school contact on how to administer the questionnaires and booklets •
A7	**Data entry and monitoring** • **Perform data entry according to the stipulated guidelines (approx. 72 days)** The duration of this work heavily depends on the amount of data entry personnel you can count on. Assuming 6 persons entering data for 6 net hours a day you will need approximately 12 working days. If you double the number of persons you may be done in 6 days. • Perform double punching (i.e., enter approximately 5% of allquestionnaire types twice by different data entry personnel) • Supervise the data entry process
A8	**Scoring** • **Perform scoring according to the stipulated rules and guidelines (approx. 48 days)** The duration of this work heavily depends on the number of scorers you can count on. Assuming 2 mathematics and 2 reading scorers you will need approximately 16 working days (assuming 6 net hours a day). If you double both numbers, you may be done in 8 days • Perform reliability scoring (200 responses per constructed response item need to be scored twice) • Supervise the scoring process
A9	**Data quality control and cleaning inquiries (10–15 days)** • Review all collected data for consistency • Submit final database to IEA according to stipulated privacy and formatting instructions • Respond to data cleaning inquiries from IEA on student or school data
A10	**Administration of project (70–100 days)** • Maintain communication with IEA and follow instructions and guidelines in order to keep deadlines and implement quality control measures with regards to collecting and processing data from students or teachers