



## *B*

### **3.1 Introduction**

The international versions of the TIMSS Advanced assessment items, background questionnaires, and procedural manuals were developed in English, the working language of the International Association for the Evaluation of Education Achievement (IEA). Using the international versions prepared by the TIMSS & PIRLS International Study Center, participants translated the materials into

Center, 2007), and were discussed at meetings of National Research



### 3.3 Number of Languages Used for Translation

In total, the TIMSS Advanced data collection instruments were translated into 11 languages. Two countries (Lebanon and Norway) prepared the test materials in two languages, and two countries collected data in English. Participants who tested in English were also expected to go through the verification of their national adaptations and the layout of the instruments. Exhibit 3.1 shows the languages used by each participant for the various instruments.

**Exhibit 3.1 Participants and Languages in TIMSS Advanced 2008**

Country	Language
Armenia	Armenian
Iran, Islamic Rep. of	Farsi
Italy	Italian
Lebanon	English French
Netherlands	Dutch
Norway	Bokmål Norsk
Philippines	English
Russian Federation	Russian
Slovenia	Slovenian
Sweden	Swedish

### 3.4 Translators and Reviewers

Participating countries were strongly advised to hire an experienced translator who was qualified to translate the TIMSS Advanced items and questionnaires, and a reviewer to review the translations. It was important for the translator to have had experience translating texts in mathematics and physics, preferably at the level of the target grade; and it was desirable for the translator to be familiar with test development.

Guidelines suggested that both the translator and the reviewer of the TIMSS Advanced instruments should have:

- an excellent knowledge of English;
- an excellent knowledge of the target language;
- experience in the national cultural context; and
- experience with students in the target grade.

The ideal translation reviewer would be a teacher teaching students in the final year of secondary school in the country with the qualities listed above, and an understanding of the subject matter.

Countries could employ more than one translator and/or reviewer (per subject). In some cases it was not possible to engage translators and reviewers with the required language skills and subject matter knowledge in both advanced (6<sup>th</sup> and 8<sup>th</sup> grade) and intermediate (4<sup>th</sup> and 6<sup>th</sup> grade) TIMSS instruments.

The translated text should have the same register (language level and degree of formality) as the source text.

The translated text should have correct grammar and usage (e.g., subject/verb agreement, prepositions, verb tenses, etc.).

The translated text should not clarify, remove, or add any information.

The translated text should have equivalent qualifiers and modifiers appropriate for the target language.

The translated text should have the equivalent mathematics and physics terminology appropriate for the target language.

Idiomatic expressions should be translated appropriately, not necessarily word for word.

Spelling, punctuation, and capitalization in the target text should be appropriate for the target language and the country's national context.

### 3.5.1 Adaptations to Test Items

In order to ensure international equivalence of the achievement items across countries, NRCs were instructed to minimize adaptations to them. Unfamiliar vocabulary and expressions could and should be adapted to ensure that the terminology was equally familiar to students in all countries, so long as this did not change the meaning or the difficulty level of the item. The major concern was to convey the same meaning and style as the text of the international version. Guidelines for specific terms, including units of measurement, were listed in the

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### 3.5.2 Adaptations to Questionnaires

Guidelines for adapting terminology in the questionnaires were similar to that for the achievement items; however, unlike the achievement items, there were places in the questionnaires where adaptations were required. These places were marked with carets (< >), indicating information that must be replaced with the country-appropriate term. For example, <country> would be replaced with the country name and <language of test> would be replaced with the language of the test in that country. The NRC received adaptation notes for the questionnaires.

### 3.6 Documenting National Adaptations

All deviations from the international versions of the advanced mathematics and physics assessment booklets or questionnaires were documented on National Adaptations Forms (NAFs). The National Adaptations Forms consisted of a set of 8 forms: the first 6 were for the





however, in the Philippines the results of the verification were not used to make national changes to the assessment materials;<sup>1</sup> and, in Lebanon the verification was done only for the French version, and without National Adaptations Forms.

### **3.7.1 Verification of Translations at National Centers after the Field Test**

International translation verification procedures for the field test were equally as rigorous as for the main data collection. The results of item analyses from the TIMSS Advanced field test, conducted during

### 3.7.3 Process of Translation Verification

National Research Coordinators were instructed to send PDF files of the following documents to the IEA Secretariat for translation verification:

7 blocks of advanced mathematics achievement items;

7 blocks of physics achievement items;

1 set of advanced mathematics booklet covers;

1 set of physics booklet covers;

the calculator use survey;

the advanced mathematics booklet introduction;

the physics booklet ~~introduction~~





following the field trial, and feedback was delivered to the verifier who was working on the instruments for the main data collection.

The Translation Verification Summary forms were forwarded to the TIMSS & PIRLS International Study Center, where they were reviewed for any misunderstandings or mistranslations. Furthermore, the forms could be reviewed following data collection and analysis, if any item characteristics suggested an error. NRCs were not obliged to implement suggestions from the verifier; however, they did take responsibility for any errors or mistranslations in the instruments. For the field trial, all participants returned completed Translation

**References**

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IEA Secretariat. (2007). *200*. Amsterdam: IEA

TIMSS & PIRLS International Study Center. (2007). *200*



