



**International Association
for the Evaluation of
Educational Achievement**

Headquarters
Herengracht 487
1017 BT Amsterdam
The Netherlands

Tel. +31 (0)20 625 36 25
Fax +31 (0)20 420 71 36
department@iea.nl
www.iea.nl

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CALL FOR PROPOSALS

Call no. IEA 04/01-2016

Thematic report using IEA TIMSS data: Globalization of science curricula

1. Introduction

The International Association for the Evaluation of Educational Achievement (IEA) invites proposals for creating a report based on secondary analysis of IEA data. The deliverable for this project will be an 80- to 150-page report that includes, in addition to the main text, an executive summary, tables, graphs, and cited references. The general theme for this report is the globalization of science curricula.

2. Data

2.1 IEA has conducted TIMSS, an international assessment of mathematics and science at Grades 4 and 8, every four years since 1995. In 2011, nationally representative samples of students in 63 countries and 14 benchmarking entities (regional jurisdictions of countries, such as states) participated in the study. In total, more than 600,000 students took part in TIMSS 2011. The various international reports on TIMSS 2011 give a very detailed overview of the study's results.¹

2.2 TIMSS measures different content areas and cognitive processes on scales that also enable trend comparisons across TIMSS cycles. The TIMSS encyclopedias provide further information on the contexts (e.g., curricula) of all participating education systems.²

3. Study background and objectives

The potential impacts of globalization on education are of international interest. Researchers argue that competition between countries for labor force, the mobility of people, and the influence of intergovernmental agencies, such as the OECD or European Union, are promoting increasing similarities among countries'

¹ Mullis, I. V. S., Martin, M. O., Foy, P., & Arora, A. (2012). *TIMSS 2011 international results in mathematics*. Chestnut Hill, MA, USA: IEA TIMSS & PIRLS International Study Center, Boston College (<http://timssandpirls.bc.edu/timss2011/international-results-mathematics.html>)

² Mullis, I. V. S., Martin, M. O., Minnich, C. A., Stanco, G. M., Arora, A., Centurino, V. A. S., & Castle, C. E. (Eds.). (2012). *TIMSS 2011 encyclopedia: Education policy and curriculum in mathematics and science*. Vols. 1 and 2. Chestnut Hill, MA, USA: IEA TIMSS & PIRLS International Study Center, Boston College (<http://timssandpirls.bc.edu/timss2011/encyclopedia-timss.html>)

education systems and curricula. Supranational organizations, such as the World Bank, may also exert their influence on educational systems – particularly in developing countries.

But is education around the world really becoming increasingly similar? Does evidence exist to support the notion that the curricula developed by ministries of education and educational practice in schools conform to a set of “international standards” and, if so, is it possible to identify these benchmarks?

IEA TIMSS first collected data in 1995 – before or at the beginning of the period when researchers claim that globalization began to exert its influence. William Schmidt and colleagues investigated data from a curriculum questionnaire that was administered as part of TIMSS 1995, and researched the set science textbooks used in schools in participating countries, and concluded that there were considerable differences in the countries’ curricula.³

As a basis for research, IEA TIMSS has special value: curriculum information has been collected every four years since 1995 from up to 60 countries, and, as this data is grade based, it provides information at significant stages in education, namely toward the end of primary education (grade 4) and toward the end of lower secondary education (grade 8). IEA TIMSS records information on intended curricula supplied at a national level, teacher and student experiences of implemented curricula, and achieved curricula at a student level.

3.1 Research questions

This thematic report should explore how science curricula have developed internationally over the last 20 years, using IEA data as a primary source. Interesting questions that could be explored in the report may include (but are not limited to):

- Were there changes in intended, implemented and achieved curricula over the last 20 years?
- If changes exist, do they support the hypothesis that science curricula (intended, implemented or achieved) are becoming increasingly similar across countries?
- Are there groups of countries where curricula are increasingly integrated; can the basis of an international core curriculum be identified?
- Is it possible to establish potential mechanisms or drivers supporting the development of curriculum changes on an international level?

4. General guidelines for proposal submission

4.1 Proposals must be submitted in English.

4.2 The research literature on the effect of globalization on educational policy is extensive. Please ensure the proposal demonstrates familiarity with this research by including a sound literature review. Ensure that the contribution that IEA data will make to this literature is explicit, especially in terms of its potential to expand on the current state of research and knowledge.

4.3 When preparing a proposal, please clearly specify the research relevance and the policy relevance of the research questions and methods selected. This specification needs to expand on and add to the ideas set out in this call for proposals.

³ Schmidt, W.H., Raizen, S.A., Britton, E.D., Bianchi, L.J., & Wolfe, R.G. (1997) *Many visions, many aims. Volume 2: a cross-national investigation of curricular intentions in school science*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

4.4 The proposal must furthermore describe the general analytical framework that will guide, not only analyses of the IEA data, but also interpretation of the results of those analyses. The description of the framework must be such that it clearly shows how the proposed analysis will address the policy-relevant research questions. The description should therefore identify:

- (i) which IEA data (study, questionnaire items, indices, or constructs from questionnaires) will be used,
- (ii) any non-IEA data sources that will be included, and
- (iii) any additional research requirements.

Please ensure that a brief description of the types of statistical analyses to be used is included.

4.5 In addition, the proposal must include a detailed timeline for all analyses and report-writing activities, and a well-considered budget proposal.

4.6 When developing timelines, assume a start date of 1 May 2016 and an end date of 30 April 2017; the final edited manuscript of the report must be supplied by IEA to the publishers for print production before 1 March 2017. Although there may be a certain degree of flexibility in the timeline, it must make provision for (i) submission of a complete draft report by 1 November 2016 for review by IEA, and (ii) subsequent revision and language editing of the report November 2016–February 2017. The corresponding author must be available for consultation with Springer Publishers during the print production period, which is scheduled for February–April 2017.

4.7 Budgets must include the expected number of work days needed to complete each activity related to the project and a total budget in euros or US dollars. The total budget should not exceed 25,000 euros.

4.8 The call is open to all researchers, excluding teams from IEA International Study Centers. For the latter, direct assignments are possible.

4.9 The proposal should be no more than 10 pages in length⁴. Please also provide a short (500-word maximum) biographical note on each person in the team tendering for the project. Please highlight the relevance of each person's experience to the proposed activities.

4.10 IEA will review all proposals according to their methodological quality, research and policy relevance, and budget. All tenderers will be informed of the outcome of these deliberations by 10 April 2016.

Proposals may be submitted by post or by courier. The deadline for proposals is 1:00 pm, 1 March 2016. Send the proposal by post to:

International Association for the Evaluation of Educational Achievement
 IEA Secretariat
 Herengracht 487
 1017 BT Amsterdam
 The Netherlands

or by email to secretariat@iea.nl.

⁴ 12 point type, double spaced.