



# NEWSLETTER

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View from Toompea  
Castle of the historic  
old town of Tallinn

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## 50<sup>TH</sup> IEA GENERAL ASSEMBLY MEETING

5–8 October 2009 Tallinn Estonia

**A**fter a warm welcome in Tallinn's historic town hall, IEA representatives from around the world gathered on the drizzly morning of 5 October 2009 for the **50<sup>th</sup> IEA General Assembly** meeting in Estonia. During this annual meeting, attendees reviewed and discussed old and new IEA business, and received reports on the organization and its committees and studies. IEA Chair Seamus Hegarty and Executive Director Hans Wagemaker called 2009 a "remarkable year" in the development of IEA's studies and membership. General Assembly representatives admitted the Colombian Institute for the Promotion of Higher Education/Instituto Colombiano para la Evaluación de la Educación (ICFES) to IEA, bringing IEA's institutional membership to 68 education systems. Kimmo Leimu was awarded Honorary Membership in recognition of his work for IEA over the last 40 years. Dr Hegarty paid tribute to the memory of two honorary members, Torsten Husen and

Neville Postlethwaite, who passed away in 2009.

### Reports and presentations

The initiation of ICILS 2013 (see page 4 for details), the first IEA study of student computer and information literacy, was announced to the General Assembly. Participants also received the progress report for TEDS-M, the first IEA study of tertiary education. This report focused on the teacher education program groupings that were devised to reflect a diversity of program types. Key aspects of the analysis and reporting for ICCS 2009 were also discussed (see article, page 7). Participants received a preview of the TIMSS Advanced 2008 international report, which was subsequently released in December 2009 (see page 5). Study directors noted the great coordination efforts required for the first joint administration of PIRLS and TIMSS in 2011. With over 50 and 60 education systems planning to participate in





Participants of the 50<sup>th</sup> IEA General Assembly at Albu manor in Järva County, Estonia

PIRLS 2011 and TIMSS 2011, respectively, they are IEA's largest studies. Also for the first time, prePIRLS is being offered for countries whose students are at an earlier phase of reading development. The international release of TIMSS 2007 occurred in December 2008; all international reports and data are available for download from <http://timss.bc.edu/TIMSS2007>.

There were also panel presentations and detailed discussions on topics of relevance to IEA studies, such as measuring and disseminating trend results from PIRLS and TIMSS (with the examples of Hungary, New Zealand, and Japan), and estimating students' performance at the subnational level in Australia and the United States.

An overview of IEA's financial position and the budget for 2010 were given, and participants were informed about the IEA DPC's international and national projects, including study-related work, software development, data management and scanning activities, and trainings.

All progress reports and presentations from the 50th IEA General Assembly are available for download at [www.iea.nl/50th\\_ga.html](http://www.iea.nl/50th_ga.html).

### Excursion

In typical IEA fashion, after the meeting was complete, participants gathered on Thursday, 8 October 2009 for a unique cultural excursion. This excursion took participants to several rural schools in restored manor houses outside of Tallinn. Albu manor in Järva County (pictured) has housed the Albu Basic School since 1921 and is one of the oldest manor houses in Estonia, with records dating back to 1282. As participants toured the historic manor buildings and tranquil grounds, they were greeted during the lesson breaks by curious and friendly young students.

IEA would like to extend its sincere thanks to Estonian Representative Prof Anu Toots and colleagues for their gracious hospitality and assistance in the organization and administration of the meeting. ●

### Upcoming 51<sup>st</sup> IEA General Assembly meeting

**4–7 October 2010  
Gaborone Botswana**

For information on the meeting and to register/request a registration form, please contact the IEA Secretariat ([department@iea.nl](mailto:department@iea.nl)).

*Relevant documents are available for download from [www.iea.nl/51st\\_ga.html](http://www.iea.nl/51st_ga.html).*

## IEA NEWSLETTER

**The IEA newsletter has seen several transformations since its first issue in 1971 (featuring a letter from IEA's first chair, Torsten Husén), and clearly a lot has changed during this time.**

In 1971, IEA's 'International Center'—as it was called then—was located in Stockholm, Sweden, and that year's meeting of the IEA Council (now known as the General Assembly) was held in Amsterdam. The "geographical distribution of IEA's work" was notable even at that time, according to the January 1971 issue, and could "be seen in the production and distribution of the answer cards used by students in responding to IEA instruments in the 1970 testing program." These cards were created from plates made in Copenhagen, printed in Stockholm, sent to London for identification punching, distributed to national centers and then to schools for testing, and finally returned to Iowa for scanning and recording onto tapes, which were sent to the IEA Data Processing Unit in New York City!

Nowadays, methods of data collection, storage, and transfer have made the mailing of survey records nearly obsolete. As an organization, IEA has also undergone changes, seeing its membership grow to 68 institutions around the world, with nearly 30 completed studies and 5 in progress.

After a ten-year break, the IEA Secretariat is glad to resume publishing the IEA Newsletter to share news and information about IEA's studies and activities. Contributions and feedback are always welcome ([department@iea.nl](mailto:department@iea.nl)).

*To learn more about the history of IEA, visit [www.iea.nl/brief\\_history\\_of\\_iea.html](http://www.iea.nl/brief_history_of_iea.html).*



IRC 2010 at the Department of Education, University of Gothenburg, located in the heart of the city



# 4<sup>TH</sup> IEA INTERNATIONAL RESEARCH CONFERENCE

1–3 JULY 2010, GOTHENBURG, SWEDEN

**T**he reach of IEA's 4<sup>th</sup> International Research Conference (IRC) was wide, with participants hailing from over 30 countries and papers covering a number of IEA studies. The result: a unique, three-day forum for IEA's international community of scholars and researchers to discuss in-depth the critical educational issues facing us today. Hosted by the Department of Education at the University of Gothenburg, the IRC invited seminal papers on secondary research using data from IEA studies (including TIMSS, PIRLS, ICCS, CIVED, TEDS-M, and SITES). Nearly 80 talks were held for over 160 attendees in sessions arranged around key themes including school effectiveness, trend measurement, textbooks and curricula, student motivation, socioeconomic factors in achievement, and between/within-country differences. Each morning of the conference featured a keynote presentation. Rainer Lehmann, professor at Humboldt

University, Berlin, highlighted the great scientific contributions of Torsten Husén and Neville Postlethwaite, two 'giants' of IEA's past. Ina Mullis and Michael Martin, executive directors of TIMSS and PIRLS (Boston College), gave a presentation on challenges and strategies for measuring trends in TIMSS and PIRLS. Jan-Eric Gustafsson, professor at the University of Gothenburg, discussed aspects of causal inference in comparative research. As in previous years, the conference was preceded by a two-day training seminar on secondary data analysis. Three parallel workshops were offered: "Introduction to IEA Databases and IDB Analyzer," "Using HLM with Large-Scale Assessment Data," and "Assessment Designs, Item Response Theory, and Proficiency Estimates." All papers and presentations from the 4<sup>th</sup> IRC will be made available for download from [www.iea-irc.org](http://www.iea-irc.org).

## About the IEA IRC

Every two or three years, the IRC invites submissions of papers that report on the secondary research results of IEA studies. These papers foster the exchange of information on a wide range of topics in education and a deeper understanding of educational processes and the role that education plays in shaping individuals and nations. Because of its international scope, the conference encourages participants to examine issues across a broad global context to enhance pedagogical knowledge and facilitate the implementation of positive changes in education systems worldwide. ●

*The next IEA International Research Conference will be held in July 2013 in Singapore. It will be organized by IEA in cooperation with the National Institute of Education in Singapore.*

ICILS 2013

# LAUNCH OF A NEW STUDY



New ICILS logo, designed to reflect the transformative use of information and communication technology. Red, green, and blue represent the three primary colors used in electronic displays.

Summer in June is a beautiful, busy season in Amsterdam, and the 1<sup>st</sup> NRC meeting (21–24 June 2010) of IEA's new **International Computer and Information Literacy Study (ICILS)** did not disappoint. It brought together a number of IEA's national research coordinators, representatives, and consultants for a productive week of presentations and discussion. They were joined by staff from the ICILS International Study Center (ISC) at the Australian Council for Educational Research (ACER), IEA Secretariat, IEA Data Processing and Research Center (DPC), and SoNET Systems. Presentations included an overview of the aims, progress, and technical aspects of the study, such as plans for the IT systems and assessment software. Participants also had ample opportunity to formulate questions and concerns—and ultimately, to help shape the conceptual framework, instrumentation, and operations of the study. One-on-one meetings were arranged between all of the national representatives attending the meeting and DPC/ISC staff to discuss national sampling plans and individual concerns.

## About ICILS 2013

ICILS is a new IEA study of student computer and information literacy at Grade 8, with an option for Grade 4. ICILS

comes at a time of increasing international interest in digital literacy and the assessment of “21<sup>st</sup> century skills,” and builds on ACER's expertise in conducting a national study of information and communication technology.

The computer and information literacy (CIL) construct for ICILS is defined as “the ability to use computers to investigate, create, and communicate in order to participate effectively at home, at school, in the workplace, and in the community.” In addition to investigating differences between and within countries in CIL achievement, the study will also examine factors in schools, education systems, and students' personal and technical backgrounds that are related to CIL.

The instruments for the study will include an authentic computer-based student test with live and simulated software tasks, as well as student, teacher, school, and national context questionnaires. The teacher questionnaire will include explicit links to SITES 2006. For the student assessment, USB memory sticks are the primary, recommended delivery option and 20 randomly selected students will be tested per school across the target grade.

In November 2009, formal invitations to join the study were sent to all of IEA's General Assembly representatives.

## Timeline

**March 2010–December 2010**

Development of framework

**21–24 June 2010**

1<sup>st</sup> National Research Coordinators' meeting, Amsterdam

**January 2011–December 2011**

Development and pilot of instruments

**31 January–3 February 2011**

2<sup>nd</sup> National Research Coordinators' meeting, Hamburg

This meeting will focus on instrument development and field operations.

**March 2012–May 2012**

Field test

**March 2013–May 2013**

Main data collection  
(Northern Hemisphere)

**October 2013–December 2013**

Main data collection  
(Southern Hemisphere)

**November 2014**

Release of international report

**March 2015**

Release of database and technical report

## Study coordination

ACER staff, including Project Coordinator Dr John Ainley and Research Director Mr Julian Fraillon, are responsible for the day-to-day management of ICILS.

A project website (<http://icils.acer.edu.au>) has been established which will serve as a major communications resource for all participating countries throughout the study. ●

*For further information, please contact the IEA Secretariat  
[www.iea.nl/secretariat.html](http://www.iea.nl/secretariat.html).*

# TIMSS ADVANCED 2008

## LESSONS LEARNED



**‘One of the key requirements for the development of technologically advanced countries that wish to compete economically in the 21<sup>st</sup> century is to prepare people to be their future specialists in mathematics, science, technology, and engineering.’**

HANS WAGEMAKER, IEA EXECUTIVE DIRECTOR

**T**he second cycle of IEA’s study of advanced mathematics and physics achievement, **Trends in International Mathematics and Science Study – Advanced 2008**, provided important lessons for many countries but also pointed to some causes for concern.

### About TIMSS Advanced

Ten countries participated in this study of school-leaving students with special preparation in advanced mathematics and physics: Armenia, Iran, Italy, Lebanon, The Netherlands, Norway, Philippines, Russian Federation, Slovenia, and Sweden. Trend data is available for five countries (Italy, Norway, Russian Federation, Slovenia, and Sweden) that participated in the 1995 cycle. Each assessment was organized around two domains: cognitive (knowing, applying, and reasoning) and content (algebra, calculus, and geometry in the case of advanced mathematics; in physics: mechanics, electricity and magnetism, heat and temperature, and atomic and nuclear physics). Data were collected in 2007–2008.

### Results for advanced mathematics

On average, student achievement in advanced mathematics was highest in the Russian Federation, The Netherlands, and Lebanon. Compared to 1995, the Russian Federation had little change in average achievement, while Slovenia, Italy, and Sweden showed a decline. The percentages of students studying advanced mathematics varied considerably across participating countries, ranging from 40.5 percent in Slovenia and 20 percent in Italy, to 1.4 percent in the Russian Federation and just about 1 percent in the Philippines. Countries’ mathematics programs also varied in duration and intensity.

In most countries, the majority of students taking advanced courses in mathematics were male, reaching as high as 77 percent in The Netherlands and 60 percent or higher in Lebanon, Italy, Norway, and Sweden. In contrast, there was about a 60/40 split favoring females in Slovenia and the Philippines. There was essentially no difference in advanced mathematics achievement between male and female students in The Netherlands, Italy, Norway, and Armenia. Females had higher achievement in Lebanon; males had higher achievement in the remaining countries.

### Results for physics

With the exception of The Netherlands, which was the top-performing country in physics by nearly 50 score points (the standard deviation was 100 points), most countries had a wide score range between their highest and lowest achieving students, particularly the Russian Federation. Compared to 1995, results for Slovenia and the Russian Federation did not indicate a significant change in average achievement, while Norway and Sweden showed a decline. There was less variation across countries

in the percentages of students studying physics, ranging from 11 percent in Sweden to 2.6 percent in the Russian Federation. In general, students also had fewer instructional hours in physics than in advanced mathematics.

Male physics students outnumbered females in all countries except Armenia. At the extreme, 81 percent of physics students were male in The Netherlands, and more than 70 percent were male in Slovenia, Lebanon, and Norway. There was little or no gender difference in achievement in Slovenia, Armenia, Sweden, and Lebanon. In the other five countries (The Netherlands, Norway, Italy, Iran, and Russian Federation) males had higher average scores than females.

### Policy issues

A striking result is that many of the TIMSS Advanced teachers are reaching retirement age, with over 60 percent of students being taught by teachers at least 50 years old in a number of countries. Most of these teachers were very experienced and well educated, with postgraduate degrees. Calculators were used much more frequently than computers in advanced mathematics and physics classes, though this varied across countries. Although nearly all of the students surveyed planned to continue their education after secondary school, most indicated engineering, business, health science, or social science as a future field of study, rather than mathematics or science. >



## TIMSS ADVANCED 2008: LESSONS LEARNED

Teachers of advanced mathematics tended to be either mostly male (Lebanon, The Netherlands, Norway, Sweden, Iran) or mostly female (Philippines, Slovenia, Armenia, Russian Federation). Physics teachers were mostly male, with about 89–95 percent of students being taught by a male teacher in The Netherlands, Sweden, Norway, and Lebanon. Italy came the closest to gender parity for both subjects.

### Resources

TIMSS Advanced was carried out as part of the Trends in International Mathematics and Science Study series led by the International Study Center at Boston College, United States. The study directors were Dr Michael Martin and Dr Ina Mullis. The TIMSS Advanced 2008 international report, database, and other publications are available for download from <http://timss.bc.edu/index.html>.

The next administration of TIMSS Advanced is planned for 2015 in conjunction with the regular cycle of TIMSS. ●

*For more information, please contact the IEA Secretariat*  
[www.iea.nl/secretariat.html](http://www.iea.nl/secretariat.html).

## RECENT PUBLICATIONS RELATED TO IEA STUDIES

Carnoy, M., Beteille, T., Brodziak, I., Loyalka, P., & Luschei, T. (2009).

**Teacher Education and Development Study in Mathematics (TEDS-M): Do Countries Paying Teachers Higher Relative Salaries Have Higher Student Mathematics Achievement?**  
Amsterdam: IEA.

Mullis, I. V. S., Martin, M. O., Kennedy, A. M., Trong, K. L., & Sainsbury, M. (2009). **PIRLS 2011 Assessment Framework**. Chestnut Hill, MA: Boston College.

Mullis, I. V. S., Martin, M. O., Ruddock, G. J., O'Sullivan, C. Y., & Preuschoff, C. (2009). **TIMSS 2011 Assessment Frameworks**. Chestnut Hill, MA: Boston College.

Plomp, T., Anderson, R. E., Law, N., & Quale, A. (Eds.). (2009). **Cross-National Information and Communication Technology: Policies and Practices in Education** (Rev. 2nd ed.). Charlotte, NC: Information Age Publishing, Inc.

Schulz, W., Ainley, J., Fraillon, J., Kerr, D., & Losito, B. (2010). **Initial Findings from the IEA International Civic and Citizenship Education Study**. Amsterdam: IEA.

von Davier M., & Hastedt, D. (Eds.). (2009). **IERI Monograph Series: Issues and Methodologies in Large-Scale Assessments** (Vol. 2). Hamburg/Princeton, NJ: IEA-ETS Research Institute.

*Please send announcements of recent publications related to IEA studies to the IEA Secretariat ([department@iea.nl](mailto:department@iea.nl)) for inclusion in forthcoming issues of the newsletter. Most publications are available for free download from [www.iea.nl/iea\\_publications.html](http://www.iea.nl/iea_publications.html).*

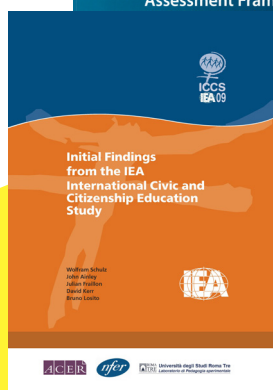


PHOTO COURTESY OF EUROPEAN TRAINING FOUNDATION (ETF)



### IN MEMORIAM

## MUNTHERR MASRI 1935–2010

Dr Munther Masri, president of the National Centre for Human Resources Development and former education minister of Jordan, passed away on 6 September 2010. Dr Masri has served as IEA's General Assembly representative for Jordan since 2002, and was an active member of the research community with numerous publications and conference papers in the fields of education, human development, and electrical technology. He received a Ph.D. in technical education from the University of London in 1985. Dr Masri will be remembered for his distinguished record of achievement. IEA would like to extend its deepest sympathies to Dr Masri's family and friends.

# ICCS 2009 INITIAL FINDINGS

**‘Every country is trying to answer some critical questions: what do its students need to learn to prepare them to be good citizens? What role does the school system play in teaching them their rights and responsibilities as productive and active citizens?’**

HANS WAGEMAKER, IEA EXECUTIVE DIRECTOR

**O**n 29 June 2010, the much anticipated results of the IEA **International Civic and Citizenship Education Study (ICCS)** were released at the University of Gothenburg. The report on the initial findings from ICCS provides information about comparative student achievement in civic knowledge, as well as student perceptions and behaviors related to civics and citizenship. Differences among the 38 participating countries in these outcomes are examined in relation to student characteristics, classroom climate, and community and national contexts. The report also allows 15 countries to assess increases or declines in civic knowledge over the last decade, since the IEA Civic Education Study of 1999. The report reveals striking differences between students in their assessed levels of civic knowledge and understanding. Interestingly, the study shows not only a wide range in average country scores—differences between countries—but an even greater variation in student scores within countries. The data also provides evidence of a remarkable diversity of approaches and aims for civic and citizenship education.



## About ICCS

**ICCS is the largest international study on civic and citizenship education ever conducted; it aims to investigate the ways in which young people are prepared to undertake their roles as citizens, amidst changed contexts of democracy and civic engagement in the 21<sup>st</sup> century. Over 140,000 Grade 8 students were surveyed in 2008–2009; in-depth contextual data were also collected from national research coordinators, school principals, and over 62,000 teachers.**

## Knowledge for citizenship

The variation in civic knowledge across countries can be evidenced in the 60-point difference between the top and bottom quartiles of the country distribution (the standard deviation was 100 points). More than 50 percent of students in the top four countries (Finland, Denmark, Korea, and Chinese Taipei) reached the highest of three proficiency levels in civic knowledge. This can be compared to the lowest four performing countries, where over 70 percent of students were at or below

the lowest proficiency level. With respect to within-country differences, there was often a significant gap between scores located at the lowest (bottom 5 percent) and highest (top 95 percent) extremes. Results suggest a decline in civic content knowledge over the last 10 years for 7 of the 15 countries for which trend comparisons are possible, and an increase in 1 country (Slovenia).

## Student characteristics, attitudes, and behaviors

In the overwhelming majority of countries, female students attained higher civic knowledge scores, on average, than male students. Students whose parents had higher status occupations also generally received higher scores, though this effect varied across countries. Students mostly expressed higher levels of trust in national government, the media, people in general, and especially schools, but political parties were the least trusted civic institution. Gender equality was strongly endorsed, though girls were significantly more supportive of it than boys. Students were more interested in domestic than international political and social issues, and expressed greater interest in such issues when their parents were reported to be interested as well. Contrary to earlier findings, gender differences in students' civic-related interests were quite small.

Civic participation was reported to occur more frequently in school (e.g., voting in class elections) than in the community. Most students intended to vote as adults, and this was associated with higher levels of civic knowledge and interest. Approximately 50 percent of students indicated a preference for one political party, showing that some students form political preferences at a relatively young age.

## ICCS 2009: INITIAL FINDINGS

### National approaches to education

Most teachers regarded the development of knowledge and skills as the most important aim of civic and citizenship education, in comparison to other goals such as active participation. In the majority of countries, principles reported a specific provision for civic and citizenship education in the curriculum.

### ICCS participants

Austria, Belgium (Flemish), Bulgaria, Chile, Chinese Taipei, Colombia, Cyprus, Czech Republic, Denmark, Dominican Republic, England, Estonia, Finland, Greece, Guatemala, Hong Kong SAR, Indonesia, Ireland, Italy, Republic of Korea, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Mexico, The

Netherlands, New Zealand, Norway, Paraguay, Poland, Russian Federation, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand

### International coordinators

ICCS is directed by a consortium consisting of three partner organizations: The Australian Council for Educational Research (ACER), The National Foundation for Educational Research (NFER) in England, and the Laboratorio di Pedagogia Sperimentale (LPS) at the Roma Tre University in Italy. The International Study Center is located at ACER with Dr John Ainley as project coordinator and Dr Wolfram Schulz as research director. Dr David Kerr (NFER) and Dr Bruno Losito (LPS) are the associate research directors of ICCS. ●

### Reporting timeline

The report on initial findings is the first in the series to present ICCS study outcomes:

- Initial findings report (June 2010)
- Extended international report (November 2010)
- Regional reports
  - Europe (November 2010)
  - Latin America (December 2010)
  - Asia (December 2010)
- Technical report and international database (November 2010)
- Encyclopedia (January 2011)

*All reports in the series will be made available after their release at <http://liccs.acer.edu.au>.*

### Meeting calendar

1 Oct 2010	IEA Technical Executive Group, Gaborone, Botswana
2–3 Oct 2010	IEA Standing Committee, Gaborone, Botswana
4–7 Oct 2010	51 <sup>st</sup> IEA General Assembly, Gaborone, Botswana
31 Jan–3 Feb 2011	2 <sup>nd</sup> ICILS NRC meeting, Hamburg, Germany
11–12 Feb 2011	IEA Standing Committee, Rome, Italy
13–18 Feb 2011	6 <sup>th</sup> PIRLS NRC meeting, Rome, Italy
6–11 Mar 2011	6 <sup>th</sup> TIMSS NRC meeting, Bangkok, Thailand

### Forthcoming issues

- ➔ Study highlights from the regional modules of ICCS and TEDS-M
  - ➔ 51<sup>st</sup> IEA General Assembly meeting
  - ➔ Launch of the redesigned IEA website

### Colophon

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