



International Association for the Evaluation of Educational Achievement | www.iea.nl

NEWSLETTER

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EDITORIAL

IEA DATA IN RESEARCH

IEA Secretariat

This issue of the IEA Newsletter focuses on the **use of IEA data in research**. High quality, in-depth analyses of data from the IEA studies not only enhance knowledge of educational processes, but also contribute to best practices in educational monitoring and evaluation.

By investigating the relative merits of different educational policies and practices through the rich databases available from IEA, researchers disclose important relations and formulate new questions, facilitating the development of strategies that address specific issues of concern in educational planning and policy-making. These investigations also further discussions at the national and international level about student achievement and related aspects, which may lie outside the scope of the international reports or might be of special relevance for regional or national contexts. Such research might

result in new studies and other projects focusing on the level of policy or practice. In addition, research on data from IEA studies contributes to advancements in the statistical methods employed in large-scale assessments, as well as the design of new surveys and techniques for conducting data analysis and measuring changes in achievement over time.

2012 and beyond

This year researchers around the world analyzed outcomes from the IEA studies to explore a wide range of issues in their conference presentations and journal articles (see pp. 2–3). Looking forward, the 5th IEA International Research Conference for students and scholars working with data from IEA studies, the IEA annual awards, and the IERI training academies and monograph will offer rich opportunities for sharing innovation in research using IEA data. ●

DPC RANDA: BUILDING A CULTURE OF EVIDENCE

The DPC's Research and Analysis Unit (RandA), which was formed in 2007 to support and promote secondary analysis of large-scale assessment data, is home to a variety of research projects, often carried out in collaboration with scholars from institutions around the world. From publishing in peer-reviewed journals to presenting at international conferences, as well as conducting training in how to use the IEA international databases, the activities of RandA reflect IEA's commitment to strengthening the network of researchers working with data on educational achievement outcomes.

Recent conference papers by RandA staff

In 2012, staff members of RandA and collaborators presented papers at various conferences: 25th International Congress for School Effectiveness and Improvement (ICSEI) on 5–8 January in Malmö, Sweden; annual meeting of the American Educational Research Association (AERA) on 13–17 April in Vancouver, Canada; annual meeting of the Comparative and International Education Society (CIES) on 22–27 April in San Juan, Puerto Rico; Gulf Research Meeting (GRM) on 11–14 July in Cambridge, United Kingdom; and the European Conference on Educational Research (ECER) on 18–21 September in Cadiz, Spain. These papers reveal a diverse research

agenda concerned with international and regional comparisons and improving statistical methods.

- **The Relationship Between School Resources and Grade 8 Mathematics Achievement:** A comparison of Israeli Hebrew, Israeli Arab and Palestinian Authority schools in TIMSS 2007 by Yasin Afana, Petra Lietz, and Mollie Tobin, GRM
- **Measuring Family Socioeconomic Status in PIRLS** (Progress in International Reading Literacy Study) 2006 by Daniel H. Caro and Diego Cortés, AERA
- **A New Look at the Evaluation of Sociological Theories in International Large-Scale Educational Assessments** by Daniel H. Caro and Andrés Sandoval-Hernandez, AERA and CIES
- **Effective Schools in Eastern European Countries:** An analysis of teacher level variables using PIRLS 2006 data by Juliane Hencke and Oliver Neuschmidt, ICSEI

- **Expected Electoral Participation in Nine European Former Communist Countries:** A 1999–2009 trend by Plamen Mirazchiyski, CIES
- **Socioeconomic Gradients Across East Europe:** Data from Progress in International Reading Literacy Study (PIRLS) 2006 by Plamen Mirazchiyski and Daniel H. Caro, AERA
- **Youth Future Civic Participation in Europe:** Differences between the East and the rest by Plamen Mirazchiyski, Andrés Sandoval-Hernandez, and Daniel H. Caro, ECER
- **Civic Participation and Socioeconomic Status:** The mediating role of school civic learning opportunities by Andrés Sandoval-Hernandez, AERA and ECER
- **Factors and Conditions that Promote Academic Resilience:** A cross-country perspective by Andrés Sandoval-Hernandez and Diego Cortés, CIES and ICSEI. ●

To request copies of conference papers presented by RandA staff, please contact RandA@iea-dpc.de.



ACADEMIC PAPERS USING IEA DATA

RECENT THEMES

One of IEA's main objectives is to provide high-quality data to increase policy-makers' understanding of the key factors that influence teaching and learning and help them identify areas of concern and action within and across systems of education. To realize this aim, the data need to be analyzed and results made available to all stakeholders. IEA and other international agencies produce international and regional reports, and many national agencies do the same at the country level. These reports are normally widely known and distributed, but due to their broad scope, they tend to present results in a general and descriptive fashion. In contrast, academic papers typically have a narrower scope, use more sophisticated analytical techniques, and address very specific research questions. But how much are researchers using IEA data for their work? What are the main topics discussed in academic journals?

A recent exploration conducted by RandA staff revealed over 50 articles published in 2012 (or forthcoming for publication) that interpret and analyze findings from IEA studies. The majority of these articles have been published in peer-reviewed academic journals, but some can also be found in venues like educational magazines and newspapers, increasing exposure to different audiences. Some articles consider one or more IEA studies in the context of other international (e.g., PISA) or national assessments, in order to explore the wider implications of assessment outcomes for a particular education system or method of analysis. Many others focus on the specific background factors considered

to influence achievement. Over half of these articles reference findings or data from TIMSS, with about 7–12 each related to TEDS-M, ICCS 2009, and PIRLS. The most popular topics addressed in these publications include differences in achievement between different population subgroups (based on immigrant background, gender, socioeconomic status, schools in rural and urban settings, etc.); teachers' characteristics and teaching practices; students' beliefs, motivation, and attitudes; and the importance and relevance of international comparisons.

For the community of researchers in educational evaluation, this provides a broad perspective on the major topics driving the international educational debate. For policy-makers, education managers, teachers, teacher trainers, curriculum developers, and others with a shared aim for educational improvement, the outcomes of secondary analysis help bridge the gap between research, policy, and practice. ●

The full list of abstracts can be accessed at www.iea-dpc.de/research_analysis0.html?L=1. These abstracts were compiled using the EBSCOhost search engine with the names of IEA studies as keywords. This is not an exhaustive list, so please help it grow! You can send information about recently published research articles on IEA data to RandA@iea-dpc.de. To present your research in an upcoming issue of the IEA Newsletter, please contact department@iea.nl.

IEA thanks Andrés Sandoval-Hernandez for contributing text, information, and images for the newsletter.



MEETINGS & EVENTS

5 October 2012

IEA Technical Executive Group meeting, Phuket, Thailand

6–7 October 2012

IEA Standing Committee meeting, Phuket, Thailand

8–11 October 2012

53rd IEA General Assembly, Phuket, Thailand

21–23 November 2012

IERI training academy, Taipei, Chinese Taipei

8–9 February 2013

IEA Standing Committee meeting, Hamburg, Germany

10–15 February 2013

9th TIMSS & PIRLS 2011 and 1st TIMSS 2015 & PIRLS 2016 NRC meetings, Hamburg, Germany

24–25 June 2013

Workshops preceding the 5th IEA International Research Conference, Singapore

26–28 June 2013

5th IEA International Research Conference, Singapore



WELCOME TO
THE HEART OF EDUCATION

26–28 JUNE
2013
SINGAPORE

The IRC-2013 will be held at the National
Institute of Education, Singapore.

5TH IEA INTERNATIONAL RESEARCH CONFERENCE Call for proposals

IEA invites proposals reporting on secondary research results of the IEA studies for its **5th International Research Conference (IRC-2013)**. Held every two or three years, the conference presents a range of research undertaken using IEA data, in order to foster discussion of critical educational issues in a comparative and global context.

The IRC-2013, which is organized in cooperation with the National Institute of Education (NIE) in Singapore, will include strands related to TIMSS, TIMSS Advanced, ICCS, CIVED, PIRLS, prePIRLS, TEDS-M, SITES, and other IEA studies. Contributions relevant to the conference aims are welcome in all areas of educational evaluation, including but not limited to:

- within-country studies of background factors behind educational attitudes or achievement
- comparative studies of factors related to achievement across multiple countries
- methodological issues associated with conducting large-scale research investigations of within-country achievement results via examination of data from comparison countries.

Junior and senior researchers and graduate students are encouraged to apply. **Proposals are due on 15 November 2012.** For detailed submission guidelines, please visit www.iea.nl/irc-2013.html.

Keynotes

The conference also features presentations from eminent scholars in international comparative educational research, including Prof Dr Larry V. Hedges (Northwestern University), Prof Dr Berinderjeet Kaur (Singapore National Institute of Education), Prof Dr Eckhard Klieme (German Institute for International Educational Research), Prof Dr Michael O. Martin (Boston College), and Prof Dr Ina V.S. Mullis (Boston College).

Pre-conference workshops

Free training workshops on 24–25 June 2013 will offer a great way to deepen your knowledge of, and gain practice in, working with data from large-scale assessments! Organized by the IEA Data Processing and Research Center, each workshop >

will cover a variety of specialized topics and include hands-on practical training with statistical software.

- Introduction to IEA Databases and IDB Analyzer, Plamen Mirazchiyski and Andrés Sandoval-Hernandez**
 This workshop provides an overview of the IEA databases, test design, and sampling. Participants will learn how to use the IDB Analyzer to combine datasets and conduct statistical analyses. This workshop is suitable for individuals who have limited experience with IEA databases and analysis procedures.
- Using HLM with International Large-Scale Assessment Data, Leslie Rutkowski**
 This workshop provides an introduction to multilevel or hierarchical linear modeling (HLM). Participants will learn how to prepare datasets and import them to the HLM 7 software, as well as about model specification, hypothesis testing, interpretation, and two- and three-level HLM analysis. This workshop is aimed at individuals with a working knowledge of IEA databases and intermediate-level statistics.
- Assessment Designs, Item Response Theory, and Proficiency Estimates, Eugenio Gonzalez**
 This workshop will provide participants with an overview of the principles surrounding the design of large-scale assessments, the item response theory models used to calibrate items, and the methodology used to assign proficiency estimates, also known as plausible values.
- Sampling in Large-Scale Assessments in Education, Sabine Meinck**
 This workshop introduces the sampling methodology applied in large-scale educational surveys. Participants will learn about the concepts of sampling theory such as stratification and clustering, calculation of weights, variance estimation, and statistical significance.

Please note that attendance to the workshops is limited, and online registration is mandatory. **The registration period is 15 February–15 May 2013. ●**

For more information about the conference, please contact the IRC-2013 organizers at irc@iea.nl. We hope to see you in Singapore!



AUTUMN IERI ACADEMY

Item Response Theory in Large-Scale Assessments

21–23 November 2012, Taipei, Chinese Taipei

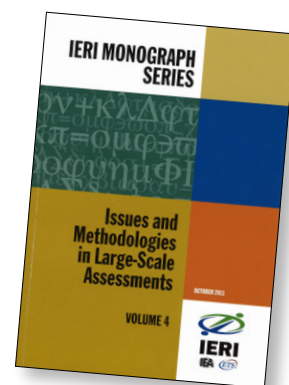
The 2012 IERI Autumn Academy will focus on the use of Item Response Theory (IRT) in large-scale assessments. Instructors Frank Rijmen and Eugenio Gonzalez will cover basic topics related to classical test theory and IRT, review the different IRT models currently in use, and train participants to work with IRT software to conduct analysis. The schedule will include both presentations and hands-on practical assignments.

The Academy is targeted to participants who have knowledge of statistical analysis techniques, but with little or no experience in the area of IRT. For more information or to register, please visit www.ierinstitute.org or contact ierinstitute@iea-dpc.de. ●

CALL FOR IERI PAPERS

The IEA-ETS Research Institute (IERI) seeks paper submissions for the *IERI Monograph Series: Issues and Methodologies in Large-Scale Assessments*. This series publishes papers that advance the science of large-scale assessments and make use of data collected by programs such as TIMSS, PIRLS, ICCS, CIVED, TEDS-M, SITES, U.S. NAEP, OECD PISA, OECD TALIS, OECD PIAAC, IALS, ALL, and others.

The IERI Monograph Series is a joint annual publication between IEA and the Educational Testing Service (ETS). Each issue includes 5–7 papers covering a range of scientific and methodological issues related to large-scale survey design and implementation.



TO CONTRIBUTE: Guidelines for preparing your submission, as well as information about the review process (all work published as part of the series undergoes blind peer review) are available at www.ierinstitute.org. Questions can be directed to the editorial team at ierinstitute@iea-dpc.de. ●



HIGHLIGHTS OF THE ICCS 2009 REGIONAL MODULES

Do students know basic facts about their region and its institutions? What does regional unification mean for them? How important is morality and spirituality for good citizenship? What are students' attitudes toward authoritarian forms of government or dictatorship?

This is just a sampling of questions that were explored within the Asian, European, and Latin American regional modules of the **IEA International Civic and Citizenship Education Study (ICCS) 2009**.

Educational researchers and policy-makers have increasingly recognized the regional context as an important aspect of future citizens' education. As a supplement to the international survey, the ICCS regional modules investigated specific topics in civic and citizenship education that were considered relevant by participating countries from the respective geographical region, but not included in the international assessment. The regional module instruments (student test and questionnaire in the European and Latin American modules, and a questionnaire

in the Asian module) were administered as a separate survey after the international ICCS instruments, providing unique evidence that may be used to improve policy and practice in education for citizenship.

Asian Module

Participants: Chinese Taipei, Hong Kong SAR, Indonesia, Republic of Korea, and Thailand.

The Asian regional module adopted a slightly different perspective on civics and citizenship than that of the ICCS

international instruments. It focused primarily on the personal characteristics (self-cultivation and personal morality) of the individual citizen that were emphasized in civic and citizenship education across the five Asian ICCS countries, and that were considered to underpin "Asian citizenship."

In spite of the considerable diversity in the region, students across the five countries generally agreed that morality is a critical aspect of good citizenship and political leadership. In addition, they expressed positive attitudes toward their own country, support for preserving their national "traditional" culture (especially in Indonesia and Thailand), and a strong sense of Asian identity.

Other outcomes for the Asian module highlighted a common pattern of differences in the attitudes of students from two clusters of countries, consisting of Indonesia and Thailand in one group and Chinese Taipei, Hong Kong SAR, and Korea in the second. For instance, students in Thailand and Indonesia dem- ➤

onstrated overall higher levels of trust in institutions, belief in obedience to authority, and acceptance of authoritarian government behavior than students in Korea, Chinese Taipei, and Hong Kong SAR. Similar differences between these two groups were also found with respect to students' attitudes towards corruption in public service and the use of personal connections to hold public office. Rejection of authoritarian government practices, corruption in public service, and the use of personal connections to hold office were all positively associated with civic knowledge.

European Module

Participants: Austria, Belgium (Flemish), Bulgaria, Cyprus, Czech Republic, Denmark, England, Estonia, Finland, Greece, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Slovak Republic, Slovenia, Spain, Sweden, and Switzerland.

The ICCS European regional module emphasized content and concepts related to the institutions, issues, and social conditions of Europe and the European Union (EU). Knowledge of basic facts about the EU was widespread among students from the European ICCS countries (including two countries that are not EU members), but there was more variation in students' in-depth knowledge about EU laws and policies. Most students expressed a strong sense of European identity and positive attitudes toward increased European harmonization of policies, the free movement of citizens within Europe, and equal rights for ethnic or racial groups and immigrants. However a substantial minority of students in many European countries presented more negative attitudes on these issues. In terms of "active citizenship," the vast majority of students said that they intended to vote in national elections as adults, but fewer expected to vote

in European elections or take a more active role in politics, such as joining a political party or running for office. Civic participation in the wider community was also relatively uncommon (students more frequently reported participating in school-related activities). Most teachers and school principals regarded the development of knowledge and cognitive skills as the most important aim of civic and citizenship education, in contrast to other aims such as the development of participatory skills.

Latin American Module

Participants: Chile, Colombia, Dominican Republic, Guatemala, Mexico, and Paraguay.

The Latin American regional module was connected to the Regional System for the Development and Evaluation of Citizenship Competencies (SREDECC), an initiative that aims to strengthen the policies, programs, and evaluation for citizenship development in the region. The module emphasized content and concepts relating to public institutions, government, and the rule of law in Latin American countries, as well as peaceful coexistence of diverse groups within society.

In general, Latin American students expressed positive attitudes toward their country and had a strong sense of Latin American identity. They showed, however, relatively lower levels of civic knowledge. For instance, many students were unfamiliar with the concept of representative democracy as a political system, and lacked more specific knowledge about civic institutions, systems, and other concepts. Countries with higher economic, social, and educational development had students with higher levels of civic knowledge. The majority of these students did not support authoritarian government and corrupt practices in public service, though many believed that dictatorships could be justified under certain circumstances. Many

students reported experiencing verbal or physical abuse at school, and considerable minorities supported vigilante justice when authorities failed to act. Civic knowledge was positively associated with rejection of authoritarianism and corrupt practices in government. These links suggest that improving civic learning is an important step in strengthening democracy and civil systems.

Looking towards the future

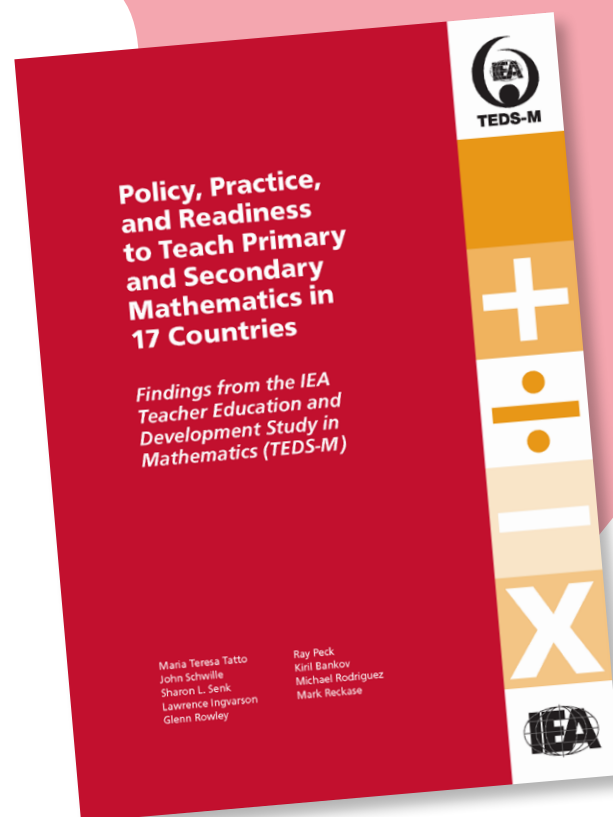
The results of the ICCS regional modules elicit questions about further differences between countries in the same region and correlates of those differences. Some issues of specific local importance, such as corruption in public service, authoritarian practices, and discrimination, may be relevant in other regions as well, raising themes for follow-up studies.

The next IEA ICCS study is planned for 2016, and might respond to these and other questions arising from changing contexts of democracy and civic participation. ICCS 2016 is expected to measure overtime changes since 2009, as well as some new aspects of civic and citizenship education. As in the previous assessment, regional modules are envisaged to address issues of special regional interest.

For information on participating in this project, please contact the IEA Secretariat (department@iea.nl). ●

The ICCS 2009 Asian, European, and Latin American reports are part of a series of international publications on the ICCS project and can be downloaded free of charge from www.iea.nl/iccs_2009.html. Other publications in the series include an initial findings report, extended international report, and technical report, as well as an encyclopedia which will be released at the beginning of 2013. Researchers interested in conducting secondary analysis of the ICCS data can download the complete data and documentation files from <http://rms.iea-dpc.org/>.

POLICY, PRACTICE, AND READINESS TO TEACH: INTERNATIONAL FINDINGS FROM TEDS-M



The IEA Teacher Education and Development Study in Mathematics (TEDS-M) was the first study of the preparation of school teachers that employed nationally representative probability samples for large-scale, cross-national comparison. TEDS-M set out to determine how—and how well—a new generation of teachers are being equipped to teach mathematics in primary and lower-secondary schools in 17 countries around the world.

Data were collected in 2008 from approximately 22,000 future teachers in about 750 programs across 500 teacher education institutions. Nearly 5,000 members of the teaching staff within these programs (including mathematics and general pedagogy educators) were also surveyed.

The major findings of the study presented in the TEDS-M international report, *Policy, Practice, and Readiness to Teach Primary and Secondary Mathematics in 17 Countries*, highlighted the complex landscape of mathematics teacher education, showing big differences between countries in terms of how future teachers are being prepared for their roles, what they know, and what they believe about mathematics teaching and learning.

Providing education for future teachers of mathematics

Differences in the organization and types of teacher education programs were evident within and across the TEDS-M countries. The TEDS-M researchers devised a strategy to group similar programs within countries, based on the grade spans for which teachers were prepared to teach and the degree of subject specialization. This ensured that programs with similar purposes and characteristics could be compared across countries.

TEDS-M also found considerable variation in national policies related to quality assurance, entry requirements, program length, and the opportunities to learn mathematics and mathematics pedagogy that programs provided to their future teachers. Future teachers being prepared for the lower and upper-secondary grades had, on average, opportunity to learn mathematics in more depth than their counterparts at the primary level. Not surprisingly, countries with higher scores on the TEDS-M knowledge tests, such as Chinese Taipei, Singapore, and the Russian Federation, provided their teachers with significantly more opportunities to learn university and school-level mathematics than other countries. They

have also ensured the high quality of entrants to teacher education, have strong systems for reviewing, assessing, and accrediting teacher education providers, and have developed strong mechanisms for ensuring that future teacher graduates meet high standards of performance before gaining certification and full entry to the profession.

In order to graduate, future teachers in most of the TEDS-M countries had to demonstrate their readiness for teaching by receiving passing grades in all subjects, written or oral examinations, and/or theses.

Future teachers' knowledge for teaching mathematics

TEDS-M assessed the knowledge that future teachers had acquired by the end of their preservice education, including both content knowledge and pedagogical knowledge. Items to assess content knowledge covered number and operations, algebra and functions, geometry and measurement, and data and chance in one of three cognitive sub-domains: knowing, applying, and reasoning. Items addressing mathematics pedagogical knowledge spanned three domains: curricular knowledge, planning for teaching and learning, and enacting teaching and learning.

There was a wide range of achievement between the highest and lowest-scoring countries, showing that the future teachers in some countries graduate with considerably more knowledge, on average, than others, even when grade span and degree of specialization are similar. Nevertheless, even the highest-achieving countries had some teachers with relatively low scores, and every low-achieving country had some teachers with higher scores.

Among the programs preparing generalist primary teachers, Chinese Taipei and Singapore had the highest averages for both mathematics knowledge and pedagogy. Chinese Taipei, Singapore, and the Russian Federation also had the highest scores for teachers who were being prepared to teach at both the lower and upper-secondary levels. Poland and Germany also performed well, due in part to the strong performance of their specialist teachers in the lower grades, while Norway's strongest performance was seen among those being prepared for both primary and lower-secondary teaching, especially in the pedagogical knowledge items.

“TEDS-M focuses on one of the key elements of successful learning: teachers. It provides information useful for policy makers in their reform efforts aimed at increasing teacher quality, and serves as a blueprint for further studies on teacher preparation and performance.”

DR HANS WAGEMAKER, IEA EXECUTIVE DIRECTOR

Where countries offered separate programs for generalist and specialist teachers at the primary level, the specialists tended to perform better on the TEDS-M knowledge assessment. At the secondary level, future teachers whose programs prepared them to teach at the lower and upper-secondary grades had higher achievement, on average, than those trained for the lower-secondary level only. The TEDS-M findings suggest that the design of teacher education curricula can have a substantial effect on future teachers' knowledge of mathematics and pedagogy.

Future teachers' beliefs about mathematics teaching and learning

Future teachers in all countries generally saw mathematics as a process of enquiry, which is best learned through active student involvement rather than just following the teacher's directions. There was a weak but consistent tendency for future teachers who endorsed the views that mathematics is a process of enquiry and that learning mathematics requires active involvement to have relatively greater knowledge of mathematics content and pedagogy than those who rejected these views. There was, however, considerable diversity across countries in the extent to which future teachers saw mathematics as a set of rules and procedures and as a fixed ability in students. These beliefs were more strongly supported by future teachers in Botswana, Georgia, Malaysia, Oman, Philippines, and Thailand; they were most strongly rejected in Germany, Norway, and Switzerland.

Notably, in every country the pattern of beliefs held by future teachers closely matched those of the teacher educators. This relationship is worthy of closer consideration if the agencies and authorities

teacher education studies, whether in mathematics or other curriculum areas. ●

The TEDS-M international report is the third publication of the TEDS-M project. It was preceded by a report on the assessment framework and a report on relative teacher salaries. These publications can be downloaded free of charge from www.iea.nl/teds-m.html. The TEDS-M international database is also available for secondary research (the data request form can be obtained from <http://rms.iea-dpc.org/>). Future publications in the series include a detailed report on the policy contexts for teacher education, an encyclopedia presenting country-by-country information, and a technical report.



About TEDS-M

Participants: Botswana, Canada, Chile, Chinese Taipei, Georgia, Germany, Malaysia, Norway, Oman, Philippines, Poland, Russian Federation, Singapore, Spain, Switzerland (German-speaking cantons), Thailand, and United States.

TEDS-M was conducted under the auspices of IEA by a consortium of two partner institutions: Michigan State University and the Australian Council for Educational Research. These institutions worked in close cooperation with the IEA Secretariat, the IEA Data Processing and Research Center, and the national research centers in participating countries. Funding for this project was provided by the U.S. National Science Foundation, participating countries, and IEA.

responsible for teacher education wish to effect significant change in the beliefs of their future teachers.

Looking towards the future

TEDS-M provides information useful for policy-makers in their reform efforts aimed at increasing teacher quality. It also serves as a blueprint for future research on teacher preparation and performance, having made available a common terminology, sampling methods tailored to teacher education, and instruments and analyses that can be adapted and improved for use in subsequent

IEA AWARDS

The **IEA Bruce Choppin and Richard Wolf awards** recognize outstanding scholarly work based on IEA data. Offered annually, these awards encourage and promote young and established academics carrying out secondary IEA research on a variety of topics and methodological issues associated with large-scale assessments, including within-country and comparative studies of factors related to student achievement and attitudes.

The Bruce Choppin award is designated for an outstanding master's or doctoral thesis, and the Dick Wolf award is given to the author(s) of a paper published in a refereed journal, monograph, or book, which includes analysis of data from one or more IEA studies. The awards are adjudicated by the IEA Awards Committee, consisting of Dr David Robitaille (committee chairperson), Dr Larry Hedges, and Dr Seamus Hegarty. Winners receive a prize of €500 and a certificate from IEA.

2012 IEA AWARD WINNERS

Bruce Choppin Award

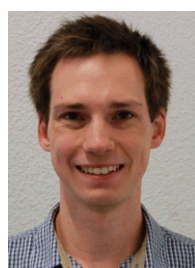


Dr Gabrielle Stanco, "Using TIMSS 2007 Data to Examine STEM School Effectiveness in an International Context," doctoral dissertation

completed in 2012 at Boston College, United States.

This dissertation research used TIMSS 2007 data to investigate how school effectiveness factors known to be strongly associated with higher STEM achievement operated in the United States compared to Chinese Taipei, the Czech Republic, Singapore, and Slovenia. In each of the five countries, multilevel modeling was used to examine STEM

achievement in relation to 11 school effectiveness factors associated with school resources, fidelity of curriculum implementation, and school climate, controlling for student home resources. Findings from this research showed that across the five countries, there were differences in how important school effectiveness factors operated. Teacher preparation, teaching the curriculum, and using instructional strategies involving reasoning and inquiry were all important school characteristics related to STEM achievement in some countries. A school environment conducive to learning also emerged as being strongly associated with high STEM achievement in three of the countries, including the United States. Both absence of discipline and attendance problems, as well as a school climate supportive of academic success, were important predictors of student STEM achievement.



Mr Jan-Christoph Bietenbeck, "Teaching Practices and Student Achievement: Evidence from TIMSS," master's thesis completed in 2011 at the Centro

de Estudios Monetarios y Financieros (CEMFI), Spain.

This thesis examined the impact of different teaching practices on student test scores in the United States against the background of a series of proposed teaching reforms, which called for an increase in the use of "modern" teaching practices at the cost of more "traditional" ones, thus implicitly assuming that the former are better at raising student achievement. Using student survey data from TIMSS 2007 and an estimation strategy to control for the subject-invariant part of unobserved student ability, evidence was found that points in the opposite direction. While the traditional-teaching measure used in this study had a substantial positive effect on student achievement, the estimated impact of the modern-teaching measure was much smaller and statistically insignificant. This

was shown for standardized tests such as TIMSS, though the role of modern teaching for improving students' non-cognitive skills (such as reliability and persistence) requires further research.



Dick Wolf Award

Dr Kerry J. Kennedy, Dr Magdalena Mo Ching Mok, and Mr Michael Ying Wah Wong, "Developing Political Trust in Adolescents: Is There a Role for Schools?" published in B.R. Curtis (Ed.),

Psychology of Trust (2011).

This article investigated the role of schools and the contribution they can make towards building political trust among young people. Multilevel modeling was used as an analytic technique in order to examine results at different levels of the education system. This investigation used a sample comprising 23,654 junior secondary students from schools in five Asian societies that participated in ICCS 2009: Chinese Taipei, Hong Kong SAR, Indonesia, Korea, and Thailand. Findings from this research showed that schools can play a role in the development of political trust. Schools that utilized generally democratic processes and structures for students were more likely to build political trust than those that did not. Nevertheless, there was a substantial difference between countries in the mechanisms through which schools exerted an influence on students' political trust. For example, while valuing students' opinions and providing opportunities for participation were influential in all societies, establishing an open classroom climate reached significance only in one country (Korea). ●

To apply: The next awards deadline is 31 March 2013! For information about entry procedures and requirements, please visit www.iea.nl/awards.html.

IEA STUDIES: ACTIVITY REPORT

ICILS 2013: International Computer and Information Literacy Study

Twenty countries are participating in ICILS 2013: Australia, Canada (Alberta), Chile, Croatia, Czech Republic, Denmark, Germany, Hong Kong SAR, Israel, Korea, Lithuania, Netherlands, Norway, Poland, Russia, Slovak Republic, Slovenia, Switzerland, Thailand, and Turkey.

In 2012, the main activities of the ICILS study team and national centers focused on the completion of the field trial and subsequent data analysis and preparations for the main survey. The field trial took place in February–May 2012. The 4th national research coordinator meeting was held on 10–14 September 2012 in Brig, Switzerland to review data analyses from the field trial and select instrument content for the main data collection. At the meeting, project par-



ticipants also reflected on their experiences in the field trial, in particular with the computer-based delivery system, in order to improve future operations. The main survey will be carried out in March–May 2013 (northern hemisphere countries) and October–December 2013 (southern hemisphere countries).

PIRLS 2011: Progress in International Reading Literacy Study & TIMSS 2011: Trends in International Mathematics and Science Study

Recent efforts have centered around data analysis and preparation of the PIRLS and TIMSS international reports. The IEA Data Processing and Research Center completed data processing for all participating countries, and sampling adjudication was also successfully completed. The exhibits (figures and tables) containing weighted background data and scaled achievement data for all countries received a final review at the

8th meeting of the PIRLS and TIMSS national research coordinators on 24–29 June 2012 in Singapore. The PIRLS and TIMSS encyclopedias underwent review and editing by the IEA Publications and Editorial Committee, and were published in September 2012 (see p. 12). The international reports will be released to the public through the Web on 11 December 2012. The national research coordinators of both studies will meet for the final time on 10–15 February 2013 in Hamburg, Germany to review the PIRLS-TIMSS relationships report and receive training on using the international databases. This meeting will also launch the new cycles of PIRLS/prePIRLS 2016 and TIMSS/TIMSS Advanced 2015. ●



WEB DEVELOPMENTS

IEA RSS newsfeed

IEA is pleased to announce a new online newsfeed. **RSS (Really Simple Syndication)** is a convenient way to stay informed about the latest IEA publications, study releases, meetings, and training opportunities. Our news updates are open to all members of the public, including researchers, policy-makers, technical experts, educators, and journalists.

The IEA newsfeed can be viewed in any RSS feed reader (such as Google Reader or the built-in reader of Internet Explorer, Outlook, and Firefox) or you can subscribe by email.

Signing up is easy! Please visit the IEA

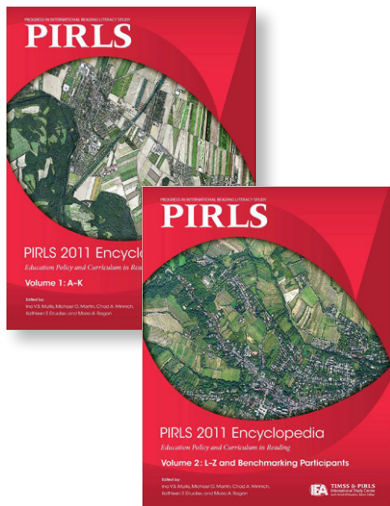
website at www.iea.nl and click on the RSS or email icon next to the “Events & news” column. Depending on which RSS feed reader is being used, you might be prompted to “Subscribe to this feed” or you can add the link manually: www.iea.nl/?type=100. To subscribe by email, please enter your email address and follow the instructions in your confirmation email to activate your subscription (you may unsubscribe at any time).

Need more assistance? Please contact the IEA Secretariat (department@iea.nl). Together with the IEA DPC’s Web development team we will be happy to help!

IEA discussion forum

Currently under development is an online discussion forum for General Assembly representatives and members of the Standing Committee and Technical Executive Group. The forum, which will open later this year, aims to enhance communication and knowledge sharing within these groups, whose members are consulted at all stages of study implementation. Between General Assembly meetings, the online forum will help bring together the representatives of 68 education systems around the world to discuss issues relevant to our operations and studies, and to exchange feedback on meeting and study-related materials. ●

NEW PUBLICATIONS



PIRLS 2011 Encyclopedia: Education policy and curriculum in reading

Edited by I.V.S. Mullis, M.O. Martin, C.A. Minnich, K.T. Drucker, and M.A. Ragan

This two-volume publication describes the contexts for teaching and learning reading in primary schools within the countries that participated in PIRLS 2011. Individual chapters authored by country representatives describe the organization of each education system and its reading curriculum, including goals, instructional materials and approaches, and information on the assessment of reading achievement. The country chapters also include information on how the PIRLS data are being used in the process of educational monitoring and improvement. Published in 2012 by the TIMSS & PIRLS International Study Center at Boston College, Chestnut Hill, MA.

TIMSS 2011 Encyclopedia: Education policy and curriculum in mathematics and science

Edited by I.V.S. Mullis, M.O. Martin, C.A. Minnich, G.M. Stanco, A. Arora, V.A.S. Centurino, and C.E. Castle

This encyclopedia in two volumes provides profiles of the national contexts for teaching and learning mathematics and science in the TIMSS 2011 participating countries. Individual chapters authored by country representatives summarize the structure of each education system, with a particular focus on curricula, goals, instructional materials and approaches, and assessments related to mathematics and science education in primary and lower-secondary schools. The country chapters also include information on how the TIMSS data are being used in the process of educational monitoring and improvement. Published in 2012 by the TIMSS & PIRLS International Study Center at Boston College, Chestnut Hill, MA.



Other publications

- Brese, F., & Tatto, M.T. (Eds.). (2012). **TEDS-M 2008 User Guide for the International Database**. Amsterdam: IEA.
- Fraillon, J., Schulz, W., & Ainley, J. (2012). **ICCS 2009 Asian Report: Civic knowledge and attitudes among lower secondary students in five Asian countries**. Amsterdam: IEA.
- Mullis, I.V.S., Martin, M.O., Ruddock, G.J., O'Sullivan, C.Y., & Preuschoff, C. (2012). **Quadro di riferimento di TIMSS 2011** [TIMSS 2011 Assessment Frameworks]. Frascati, Italy: INVALSI.
- Tatto, M.T., Schwillie, J., Senk, S.L., Ingvarson, L., Rowley, G., Peck, R., Bankov, K., Rodriguez, M., & Reckase, M. (2012). **Policy, Practice, and Readiness to Teach Primary and Secondary Mathematics in 17 Countries: Findings from the IEA Teacher Education and Development Study in Mathematics (TEDS-M)**. Amsterdam: IEA.

These publications can be downloaded free of charge from www.iea.nl. Please send announcements of any national publications to the IEA Secretariat for inclusion in forthcoming issues of the newsletter.

UPCOMING ISSUES

• **Highlights from the 53rd IEA General Assembly meeting**

• **TIMSS 2011 and PIRLS 2011 international release**

COLOPHON

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