

**IEA Research for Education**

A Series of In-depth Analyses Based on Data of the International  
Association for the Evaluation of Educational Achievement (IEA)



Trude Nilsen

Jan-Eric Gustafsson *Editors*

# Teacher Quality, Instructional Quality and Student Outcomes

Relationships Across Countries, Cohorts  
and Time



Springer Open

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## **Volume 2**

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The International Association for the Evaluation of Educational Achievement (IEA) is an independent nongovernmental nonprofit cooperative of national research institutions and governmental research agencies that originated in Hamburg, Germany, in 1958. For nearly 60 years, IEA has developed and conducted high-quality, large-scale comparative studies in education to support countries' efforts to engage in national strategies for educational monitoring and improvement.

IEA continues to promote capacity building and knowledge sharing to foster innovation and quality in education, proudly uniting more than 60 member institutions, with studies conducted in more than 100 countries worldwide.

IEA's comprehensive data provide an unparalleled longitudinal resource for researchers, and this series of in-depth thematic reports can be used to shed light on critical questions concerning educational policies and educational research. The goal is to encourage international dialogue focusing on policy matters and technical evaluation procedures. The resulting debate integrates powerful conceptual frameworks, comprehensive datasets and rigorous analysis, thus enhancing understanding of diverse education systems worldwide.

More information about this series at <http://www.springer.com/series/14293>

Trude Nilsen · Jan-Eric Gustafsson  
Editors

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*Editors*

Trude Nilssen  
University of Oslo  
Blindern, Oslo  
Norway

Jan-Eric Gustafsson  
Department of Education and Special  
Education  
University of Gothenburg  
Gothenburg  
Sweden

and

Faculty of Educational Sciences  
Centre for Educational Measurement  
at the University of Oslo (CEMO)  
Oslo  
Norway

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# Foreword

IEA's mission is to enhance knowledge about education systems worldwide and to provide high-quality data that will support education reform and lead to better teaching and learning in schools. In pursuit of this aim, it conducts, and reports on, major studies of student achievement in literacy, mathematics, science, citizenship, and digital literacy. These studies, most notably the Trends in Mathematics and Science Study (TIMSS), Progress in International Reading Literacy Study (PIRLS), and the International Civic and Citizenship Study (ICCS), are well established and have set the benchmark for international comparative studies in education.

The studies have generated vast data sets encompassing student achievement, disaggregated in a variety of ways, along with a wealth of contextual information which contains considerable explanatory power. The numerous reports that have emerged from them are a valuable contribution to the corpus of educational research.

Valuable though these detailed reports are, IEA's goal of supporting education reform needs something more: deep understanding of education systems and the many factors that bear on student learning requires in-depth analysis of the global data sets. IEA has long championed such analysis and facilitates scholars and policy makers in conducting secondary analysis of our data sets. So we provide software such as the International Database Analyzer to encourage the analysis of our data sets, support numerous publications including a peer-reviewed journal—*Large-scale Assessment in Education*—dedicated to the science of large-scale assessments and publishing articles that draw on large-scale assessment databases, and organize a biennial international research conference to nurture exchanges between researchers working with IEA data.

This new series of thematic reports represents a further effort by IEA to capitalize on our unique data sets, so as to provide powerful information for policy makers and researchers. Each report will focus on a specific topic and will be produced by a dedicated team of leading scholars on the theme in question. Teams are selected on the basis of an open call for tenders. The intention is to have two

such calls a year. Tenders are subject to a thorough review process, as are the reports produced. (Full details are available on the IEA Web site.)

This second report is based on secondary analysis of TIMSS 2011. It aims to deepen understanding of the relationships between teacher quality, instructional quality, and learning outcomes. Conducted by researchers at the University of Oslo, University of Gothenburg and the Humboldt-Universität zu Berlin, *Teacher Quality, Instructional Quality and Student Outcomes* is a valuable addition to the growing body of research on measuring teacher and instructional quality and their impact on learner outcomes. By analyzing TIMSS data across countries and grades (four and eight) and taking account of a multiplicity of background variables, the report both demonstrates the unique value of international large-scale assessments and highlights implications for policy and practice.

A forthcoming thematic report will focus on perceptions of school safety and the school environment for learning and their impact on student learning.

Seamus Hegarty  
Chair IEA Publications and Editorial Committee