Foreword

In both technologically advanced and developing economies, understanding educational outcomes is central to effective educational planning and reform. Further, in today's global innovation economy, competence in mathematics and science remains an educational imperative.

For more than 50 years, the International Association for the Evaluation of Educational Achievement (IEA) has been conducting comparative studies of educational achievement in a number of curriculum areas, including mathematics and science. TIMSS 2011 represents the fifth cycle of the Trends in International Mathematics and Science Study (TIMSS), developed by IEA. During the past two decades, TIMSS has reported on mathematics and science achievement trends at the fourth and eighth grades, providing educational policymakers, administrators, teachers, and researchers with powerful insights into how educational systems are functioning as well as critical intelligence about the possibilities for educational reform and improvement.

The *TIMSS 2011 International Results in Mathematics* presents extensive information on student performance in mathematics, including trends over the five assessments since 1995. Also included are data on performance in the mathematics content domains (algebra, geometry, etc.) and

on competence in managing the problem solving challenges in these mathematical contexts. In addition, the TIMSS 2011 report contains vital information on key curricular, instructional, and resource-related factors that can impact the teaching and learning process. These data on student achievement trends and the contexts for teaching and learning mathematics will ensure that TIMSS continues to set the standard for studies of this type and be regarded as a fundamental source of information for educational policymakers, planners, and researchers alike.

TIMSS requires and represents a significant commitment of resources and dedication to achieve a common vision. Clearly, projects of this magnitude rely on the cooperation and support of a large number of individuals, institutions, and organizations around the world. IEA is particularly indebted to the staff members of the TIMSS & PIRLS International Study Center at Boston College, who have been charged with the overall leadership of this project. Their contributions have been augmented by the staff of the IEA Data Processing and Research Center, the IEA Secretariat, Statistics Canada, and Educational Testing Service, for whose support I am also extremely grateful. While the work of the staff of this consortium makes projects like TIMSS possible, the continued leadership and direction of the TIMSS Executive Directors Ina Mullis and Michael Martin remain central to the success of this project.

In addition, projects of this size are possible only with considerable financial support. I am particularly grateful for support from IEA's major funding partners, including the US National Center for Education Statistics, the World Bank, and the many self-funding countries without which this project would not have been possible. I also wish to thank Boston College for its continued support of the TIMSS & PIRLS International Study Center.

Finally, as always, TIMSS would not have been possible without the National Research Coordinators and their colleagues, whose responsibility it was to manage the study at the local level, and the participation of the many teachers, students, and policymakers around the world who gave freely of their time in the interest of advancing our common understanding of reading achievement. On behalf of all who benefit from the use of the information provided by TIMSS, we are thankful for this commitment.

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