CHAPTER 4
Students’ Backgrounds and Attitudes Towards Mathematics

What Educational Resources Do Students Have in Their Homes?
- Exhibit 4.1 Index of Home Educational Resources (HER)
- Exhibit 4.2 Frequency with Which Students Speak Language of the Test at Home
- Exhibit 4.3 Trends in Frequency with Which Students Speak Language of the Test at Home
- Exhibit 4.4 Students’ Expectations for Finishing School

How Much of Their Out-of-School Time Do Students Spend on Homework During the School Week?
- Exhibit 4.5 Index of Out-of-School Study Time (OST)
- Exhibit 4.6 Trends in Index of Out-of-School Study Time (OST)
- Exhibit 4.7 Total Amount of Out-of-School Time Students Spend Studying Mathematics or Doing Mathematics Homework on a Normal School Day

How Do Students Perceive Their Ability in Mathematics?
- Exhibit 4.8 Index of Students’ Self-Concept in Mathematics (SCM)
- Exhibit 4.9 Index of Students’ Self-Concept in Mathematics (SCM) by Gender

What Are Students’ Attitudes Towards Mathematics?
- Exhibit 4.10 Index of Students’ Positive Attitudes Towards Mathematics (PATM)
- Exhibit 4.11 Index of Positive Attitudes Towards Mathematics (PATM) by Gender
- Exhibit 4.12 Trends in Index of Positive Attitudes Towards Mathematics (PATM)
- Exhibit 4.13 Trends in Gender Differences in Percentages of Students at High Level of Index of Positive Attitudes Towards Mathematics (PATM)

CHAPTER 5
The Mathematics Curriculum

Does Decision Making About the Intended Curriculum Take Place at the National or Local Level?
- Exhibit 5.1 Mathematics Curriculum

How Do Countries Support and Monitor Curriculum Implementation?
- Exhibit 5.2 Methods Used to Support or Monitor Curriculum Implementation

What Countries Have Public Examinations in Mathematics?
- Exhibit 5.3 Public Examinations in Mathematics

What Countries Have System-Wide Assessment in Mathematics?
- Exhibit 5.4 System-Wide Assessments in Mathematics

How Much Instructional Time Is Recommended for Mathematics?
- Exhibit 5.5 Instructional Time for Mathematics

How Do Countries Deal with Individual Differences?
- Exhibit 5.6 Differentiation of Instruction for Students with Different Abilities or Interests

What Are the Major Characteristics of the Intended Curriculum?
- Exhibit 5.7 Emphasis on Approaches and Processes

What Mathematics Content Do Teachers Emphasize at the Eighth Grade?
- Exhibit 5.8 Subject Matter Emphasized Most in Mathematics Class

Are There National or Regional Policies on Using Calculators?
- Exhibit 5.9 Policy On Calculator Usage

What Mathematics Topics Are Included in the Intended Curriculum?
- Exhibit 5.10 Mathematics Topics Included in the TIMSS Questionnaires
- Exhibit 5.11 Mathematics Topics in the Intended Curriculum for At Least 90% of Students, Up to and Including Eighth Grade
Have Students Been Taught the Topics Tested by TIMSS?

Exhibit 5.12 Percentages of Students Taught Fractions and Number Sense Topics
Exhibit 5.13 Percentages of Students Taught Measurement Topics
Exhibit 5.14 Percentages of Students Taught Data Representation, Analysis, and Probability Topics

Can Meaningful Comparisons Be Made Between the Intended and Implemented Curriculum?

Exhibit 5.15 Percentages of Students Taught Geometry Topics
Exhibit 5.16 Percentages of Students Taught Algebra Topics

What Preparation Do Teachers Have for Teaching Mathematics?

Exhibit 6.1 Age and Gender of Teachers
Exhibit 6.2 Preparation to Teach Mathematics
Exhibit 6.3 Index of Teachers’ Confidence in Preparation to Teach Mathematics (CPTM)

How Much School Time Is Devoted to Mathematics Instruction?

Exhibit 6.4 Mathematics Instructional Time at Grade 8
Exhibit 6.5 Number of Hours Mathematics Is Taught Weekly
Exhibit 6.6 Trends in Number of Hours Mathematics Is Taught Weekly
Exhibit 6.7 Frequency of Outside Interruption During Mathematics Lessons

What Activities Do Students Do in Their Mathematics Lessons?

Exhibit 6.8 Mathematics Class Size
Exhibit 6.9 Trends in Mathematics Class Size
Exhibit 6.10 Time Spent on Various Activities in Mathematics Class
Exhibit 6.11 Students Doing Various Activities in Mathematics Class
Exhibit 6.12 Presentational Modes Used in Mathematics Class
Exhibit 6.13 Index of Teachers’ Emphasis on Mathematics Reasoning and Problem-Solving (EMRPS)
Exhibit 6.14 Trends in Index of Teachers’ Emphasis on Mathematics Reasoning and Problem-Solving (EMRPS)

How Are Calculators and Computers Used?

Exhibit 6.15 Calculator Use in Mathematics Class
Exhibit 6.16 Index of Emphasis on Calculators in Mathematics Class (ECMC)
Exhibit 6.17 Trends in Index of Emphasis on Calculators in Mathematics Class (ECMC)
Exhibit 6.18 Frequency of Computer Use in Mathematics Class
Exhibit 6.19 Trends in Frequency of Computer Use in Mathematics Class
Exhibit 6.20 Access to the Internet and Use of the Internet for Mathematics Projects

What Are the Roles of Homework and Assessment?

Exhibit 6.21 Index of Teachers’ Emphasis on Mathematics Homework (EMH)
Exhibit 6.22 Trends in Index of Teachers’ Emphasis on Mathematics Homework (EMH)
Exhibit 6.23 Types of Assessment Teachers Give Quite A Lot or A Great Deal of Weight
CHAPTER 7
School Contexts for Learning and Instruction

What School Resources Are Available to Support Mathematics Learning?

Index of Availability of School Resources for Mathematics Instruction (ASRMI)

Trends in Index of Availability of School Resources for Mathematics Instruction (ASRMI)

What Is the Role of the School Principal?

Time Principal Spends on Various School-Related Activities

What Are the Schools’ Expectations of Parents?

Schools’ Expectations for Parental Involvement

How Serious Are School Attendance Problems?

Index of Good School and Class Attendance (SCA)

Frequency and Seriousness of Student Attendance Problems

How Safe and Orderly Are Schools?

Frequency and Seriousness of Student Behavior Threatening an Orderly School Environment

Frequency and Seriousness of Student Behavior Threatening a Safe School Environment

REFERENCE 1
Students’ Backgrounds and Attitudes Towards Mathematics

Educational Aids in the Home: Dictionary, Study Desk/Table, and Computer

Trends in Educational Aids in the Home

Number of Books in the Home

Trends in Number of Books in the Home

Highest Level of Education of Either Parent

Country Modifications to the Definitions of Educational Levels for Parents’ Education or Students’ Expectations for Finishing School

Students’ Perception of the Importance of Various Activities

Students’ Perception of Their Mothers’ View of the Importance of Various Activities

Students’ Perception of Their Friends’ View of the Importance of Various Activities

Why Students Need to Do Well in Mathematics

Students’ Daily Out-of-School Study Time

Trends in Students’ Daily Out-of-School Study Time

Students’ Daily Leisure Time

Students’ Reports That Mathematics Is Not One of Their Strengths

Students’ Liking Mathematics