Supplement 3: Variables Derived from the Student, Teacher and School Questionnaires

Overview of the Supplement

This supplement contains documentation on all the derived variables contained in the TIMSS 2003 data files that are based on background questionnaire variables. These variables were used to report background data in the TIMSS 2003 international reports, and are made available as part of this database to be used in secondary analyses. There are seven sections of this supplement corresponding to each background questionnaire type from which the reporting variables are derived. The eighth section describes variables that are derived using source variables from more than one questionnaire.

- Section 1: Eighth Grade - Student Questionnaire
- Section 2: Eighth Grade - Mathematics Teacher Questionnaire
- Section 3: Eighth Grade - Science Teacher Questionnaire
- Section 4: Eighth Grade - School Questionnaire
- Section 5: Fourth Grade - Student Questionnaire
- Section 6: Fourth Grade - Teacher Questionnaire
- Section 7: Fourth Grade - School Questionnaire
- Section 8: Variables Derived from more than one Questionnaire

Each sections include specific documentation for each derived variable. Each of these sections is organized in order they appear in the international report and contains the following information about each of the derived background variables:
• Derived Variable Name

• Derived Variable Label

• Grade

• Title of the exhibit: contains the derived variable.

• Report Location: This is the location of the exhibit in the TIMSS 2003 International Report

• Location in Questionnaire: This is the location of the item(s) in the Background Questionnaire

• Source Variable(s): Background Questionnaire variable names to compute the derived variable

• Procedure: Description of how the derived variable was computed based on associated source variables

• Missing Rules: Description of the source variable data cleaning and missing rules applied to assign cases to missing for the derived variable

Derived Variables Based on the Eighth Grade Student Background Data

Derived variables related to students’ attitudes and classroom activities are computed either for science as an integrated subject or for specific science subject areas (biology, chemistry, earth science, physics), depending on whether the general science (SQ2) or separate science (SQ2S) version of the student questionnaire was administered. In the documentation, the source variables and analysis notes refer to the student background questionnaire items by the following definitions:

SQ2_*** = Location of background questions in the general science version of the eighth grade student background questionnaire.

SQ2S_*** = Location of background questions pertaining to separate science version of the eighth grade student background questionnaire.

There are three types of derived variables based on student background data, depending on the questionnaire source(s):
1. Variables related to general/integrated science (BSDS***); these variables contain data only for students in countries that administered the general science form of the questionnaire.

2. Variables related to separate science subject areas (biology or biological science = BSDB***, chemistry = BSDC***, earth science = BSDE***, and physics or physical science = BSDP***); these variables contain data only for students in countries that administered the separate science version of the questionnaire.

3. Variables related to mathematics or general background information (BSDM*** or BSDG***); these variables contain data for all countries administering either version of the questionnaire.

A few countries modified the questionnaire to include questions for only some of the sciences subject areas or for combined subject-area classes. These special cases are described in Supplement 2, which documents the national adaptations of the background questionnaire items.

**Derived Variables Based on Eighth Grade Teacher Background Data**

Since there were two types of Teacher questionnaires, the source variables and analysis notes reference specific background questionnaires according to the following definitions:

\[ TQM2_{**} = \text{Eighth Grade Mathematics Teacher Questionnaire Item} \]

\[ TQS2_{**} = \text{Eighth Grade Science Teacher Questionnaire Item} \]

There are three types of derived variables based on teacher background data, depending on the questionnaire source:

1. Variables asked only of mathematics teachers and related to mathematics classes/teaching (BTDM***).

2. Variables asked only of science teachers and related to science classes/teaching (BTDS***).

3. Variables asked of both mathematics and science teachers and not directly related to mathematics or science instruction (BTDG***).

Note that all science variables were computed for all science teachers. Separation into General/Integrated and Separate Science panels in the
international report was based on filtering by the variable ITCOURSE described in Chapter 2 of the User Guide. In countries identified as Separate Science, the teachers were selected using the appropriate ITCOURSE codes:

- General Science = 6
- Biology or Biology/ Earth Science = 3 (or 9)
- Chemistry = 4
- Physics or Physical Science = 2 (or 8)
- Earth Science = 5.

**Derived Variables Based on Eighth Grade School Background Data**

One questionnaire was administered to schools. The source variables and analysis notes reference specific background questionnaire items according to the following definitions:

SCQ2_*** = Eighth Grade School Questionnaire Item

There are three types of derived variables based on school background data, depending on the questionnaire source:

1. School level variables related to mathematics instruction (BCDM****).
2. School level variables related to science instruction (BCDS****).
3. School level variables not directly related to mathematics or science (BCDG****).

**Derived Variables Based on Fourth Grade Student Background Data**

Only one questionnaire was administered to fourth grade students. The source variables and analysis notes reference specific background questionnaire items according to the following definitions:

SQ1_*** = Fourth Grade Student Questionnaire Item

There are three types of derived variables based on student background data:

1. Variables related to science (ASDS****).
2. Variables related to mathematics (ASDM****).

3. Variables related to general background information (ASDG****).

**Derived Variables Based on Fourth Grade Teacher Background Data**

Only one questionnaire was administered to fourth grade teachers. The source variables and analysis notes reference specific background questionnaire items according to the following definitions:

\[ \text{TQ1}*** = \text{Fourth Grade Teacher Questionnaire Item} \]

There are three types of derived variables based on teacher background data, depending on the questionnaire source:

1. Variables related to mathematics classes/teaching (ATDM****).

2. Variables related to science classes/teaching (ATDS****).

3. Variables not directly related to specific mathematics or science instruction (ATDG****).

**Derived Variables Based on Fourth Grade School Background Data**

One questionnaire was administered to schools. The source variables and analysis notes reference specific background questionnaire items according to the following definitions:

\[ \text{SCQ1}*** = \text{Fourth Grade School Questionnaire Item} \]

There are three types of derived variables based on school background data, depending on the questionnaire source:

1. School level variables related to mathematics instruction (ACDM****).

2. School level variables related to science instruction (ACDS****).

3. School level variables not directly related to mathematics or science (ACDG****).
**Derived Variable Name:** bsdgedup  
**Label:** Parents’ Highest Education Level  
**Grade:** Eighth

**Title of Exhibit:** Highest Level of Education of Either Parent

**Report Location:** 4.1 Math and Science

**Location in Questionnaire:** SQ2_6A,B; SQ2S_6A,B

**Source Variables:** BSBGMFED, BSBGFMED

**Procedure:**

Derived variable is computed from students’ response to the following two separate questions:

1. What is the highest level of education completed by your mother (or stepmother or female guardian)? (SQ2_6A or SQ2S_6A)
2. What is the highest level of education completed by your father (or stepfather or male guardian)? (SQ2_6B or SQ2S_6B)

Compute the highest education level of either parent after recoding “I don’t know” (code 9) to missing. If missing one variable, use the value of the other.

The international version of response categories for SQ2_6A, B are:

1. Did not finish ISCED 1 or did not do school
2. ISCED 1
3. ISCED 2
4. ISCED 3
5. ISCED 4B
6. ISCED 5B
7. ISCED 5A, first degree
8. Beyond ISCED 5A, first degree
9. I don’t know

For the derived variable BSGEDUP, the education categories were combined into five reporting categories which are computed as follows:

1. Finish University or Equivalent or Higher (Codes 7,8)
2. Finish Post-secondary Vocational/Technical Education But Not University (Codes 5,6)
3. Finish Upper Secondary Schooling (Code 4)
4. Finish Lower secondary Schooling (Code 3)
5. No More than Primary Schooling (Codes 1,2)

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:**
The derived variable is coded as missing if both source variables are missing.
**Derived Variable Name:** bsdgasp  
**Label:** Stds Educ Asprts Rltv to Prnts Educ Lvl  
**Grade:** Eighth

**Title of Exhibit:**  Students’ Educational Aspirations Relative to Parents’ Educational Level

<table>
<thead>
<tr>
<th>Report Location:</th>
<th>4.2 Math and Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location in Questionnaire:</td>
<td>SQ2_7, SQ2_6A,B; SQ25_7, SQ25_6A,B</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BSBGHFSG, BSBGMFED, BSBGFMED</td>
</tr>
</tbody>
</table>

**Procedure:**

Derived variable is computed from students’ response to the following three questions:

1. What is the highest level of education completed by your mother (or stepmother or female guardian)? (SQ2_6A or SQ25_6A)
2. What is the highest level of education completed by your father (or stepfather or male guardian) ? (SQ2_6B or SQ25_6B)
3. How far in school do you expect to go? (SQ2_7 or SQ25_7)

First, compute the derived variable of highest education level of either parent (BSDGEDUP) using SQ2_6A and B. Then compute the derived variable BSDGASP using derived variable BSDGEDUP and student’s response to question SQ2_7

The international version of response categories for SQ2_7 are:

1) Finish ISCED 3, 2) Finish ISCED 4B, 3) Finish ISCED 5B, 4) Finish ISCED 5A, first degree, 5) Beyond ISCED 5A, first degree 6) I don't know

The derived variable BSDGASP is reported with four categories as follows:

1: Student Finish University (SQ2_7: Codes 4,5) and Either Parent Went to University or Equivalent (BSDGEDUP: Code 1)
2: Student Finish University (SQ2_7: Codes 4,5) and Neither Parent Went to University or Equivalent (BSDGEDUP: Code 2-5).
3: Student Not Finish University (SQ2_7: Codes 1-3) Regardless of Parents' Education (BSDGEDUP: Code 1-5).
4: Students Do Not Know (SQ2_7: Code 6) Regardless of Parents' Education (BSDGEDUP: Code 1-5).

Analysis weighted by TOTWGT.

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**Comments**

**Missing Rules:**

The derived variable is coded as missing if highest education level of either parent or response SQ2_7 is missing.
Derived Variable Name: bsdgcvl  
Label: Availability of Computer  
Grade: Eighth

Title of Exhibit: Use of Computer

Report Location: 4.6  
Math and Science

Location in Questionnaire: SQ2_14A, B; SQ2s_27A, B

Source Variables: BSBGCOM, BSBGCSC, BSBGCLIB, BSBGCFRH, BSBGCCAF, BSBGCELS, BSBGUSEC

Procedure:

Derived variable is computed from students' responses to the following questions with a Yes/No response.

1. Do you ever use a computer? (do not include PlayStation, GameCube, Xbox, or other TV/video game computers)(SQ2_14A or SQ2s_27A)
2. Where do you use a computer?(SQ2_14B or SQ2s_27B)
   The question (SQ2_14B or SQ2s_27B) has following six options
   a) At home, b) At school, c) At a library, d) At a friend's home, e) At an Internet Cafe, f) Elsewhere
   The dervierd variable BSDGCVAL is reported with five categories based on following definitions:
   1.Use Computer Both at Home and at School (14A, 14Ba and 14Bb = Code 1).
   2.Use Computer at Home but Not at School (14A, 14Ba = Code 1and 14Bb = Code 2 or missing).
   3.Use Computer at School but Not at Home (14A, 14Bb = Code 1and 14Ba = Code 2 or missing).
   4.Use Computer Only at Places Other than Home and School (14A = code 1 and 14Ba and 14Bb = code 2 or missing and code 1 for at least one of the items from 14Bc-e.
   5. Do Not Use Computer at All (14A = Code 2). In the denominator, include all valid cases.
   Analysis weighted by TOTWGT.

Comments

Missing Rules: The dervierd variable is coded as missing, if response to SQ2_14A = code 1 or missing, AND reponse to all options SQ2_14B a-f = code 2 or missing.
The index is computed from students' responses to the following two questions regarding mathematics homework.

How often your teacher gives you homework in mathematics? (SQ2_19A or SQ2S_32Aa)
When your teacher gives you mathematics homework, how many minutes are you usually given? (SQ2_19B or SQ2s_328a)

The international version of the SQ2_19A has following options
1) Every day
2) 3 or 4 times a week
3) 1 or 2 times a week
4) Less than once a week
5) Never

The international version of the SQ2_19B has following options
1) Fewer than 15 minutes
2) 15 - 30 minutes
3) 31-60 minutes
4) 61-90 minutes
5) More than 90 minutes

The index BSDMHW has three levels defined as follows:
1 = High: Students who responded that they are given mathematics homework at least 3 or 4 times a week (SQ2_19A = code 1 or 2) AND they are given at least 31 minutes of mathematics homework (SQ2_19B = code greater than or equal to 3)
3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ2_19A code < than or equal to 3) AND they are given at most 30 minutes of mathematics homework (SQ2_19B code 1 or 2)
2 = Medium: All other combinations.
Analysis weighted by TOTWGT.
### Derived Variable Name: bsdshw  
### Label: Index of Time on Science Homework (TSH)  
### Grade: Eighth

**Title of Exhibit:** Index of Time Students Spend Doing Science Homework (TSH) in a Normal School Week

**Report Location:** 4.7  
**Location in Questionnaire:** SQ2_20A, B

**Source Variables:** BSBStHWMA, BSBStWWMG

**Procedure:**

The index is computed from students’ responses to the following two questions regarding science homework:

1. How often your teacher gives you homework in science? (SQ2_20A)
2. When your teacher gives you science homework, how many minutes are you usually given? (SQ2_20B)

The international version of the SQ2_20A has following options:

1) Every day  
2) 3 or 4 times a week  
3) 1 or 2 times a week  
4) Less than once a week  
5) Never

The international version of the SQ2_20B has following options:

1) Fewer than 15 minutes  
2) 15 - 30 minutes  
3) 31-60 minutes  
4) 61-90 minutes  
5) More than 90 minutes

The index BSDSHW has three levels defined as follows:

1 = High: Students who responded that they are given science homework at least 3 or 4 times a week (SQ2_20A = code 1 or 2) and they are given at least 31 minutes of science homework (SQ2_20B code = greater than or equal to 3)  
3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ2_20A code = greater than or equal to 3) AND they are given at most 30 minutes of science homework (SQ2_20B = code 1 or 2)  
2 = Medium: All other combinations.

Analysis weighted by TOTWGT.

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**Comments**

**Missing Rules:**
The derived variable is coded as missing if [response to SQ2_20A is missing] or [response to SQ2_20B is missing AND response to SQ2_20A is valid but different than code 5].
**Derived Variable Name:** bsdbhw

**Label:** Index of Time on Biology Homework (TSH)

**Grade:** Eighth

**Title of Exhibit:** Index of Time Students Spend Doing Science Homework (TSH) in a Normal School Week

**Report Location:** 4.7 Science

**Location in Questionnaire:** SQ25_32Ab, Bb

**Source Variables:** BSBBTGHW BSBBHWM

**Procedure:**

The index is computed from students' responses to the following two questions regarding biology homework.

How often your teacher gives you homework in biology? (SQ25_32Ab)

When your teacher gives you biology homework, how many minutes are you usually given? (SQ25_32Bb)

The international version of the SQ25_32Ab has following options

1) Every day
2) 3 or 4 times a week
3) 1 or 2 times a week
4) Less than once a week
5) Never

The international version of the SQ25_32Bb has following options

1) Fewer than 15 minutes
2) 15 - 30 minutes
3) 31-60 minutes
4) 61-90 minutes
5) More than 90 minutes

The index BSDBHW has three levels defined as follows:

1 = High: Students who responded that they are given biology homework at least 3 or 4 times a week (SQ25_32Ab = code 1 or 2) and they are given at least 31 minutes of biology homework (SQ25_32Bb = code greater than or equal to 3)

3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ25_32Ab code = greater than or equal to 3) AND they are given at most 30 minutes of biology homework (SQ25_32Bb = code 1, 2)

2 = Medium: All other combinations.

Analysis weighted by TOTWG.

**Comments**

Only countries reporting teaching science as separate subjects are included in this variable

**Missing Rules:**

The derived variable is coded as missing if [response to SQ2s_32Ab is missing] or [SQ2s_32Bb is missing AND response to SQ2s_32Ab is valid but different than code 5].

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Section 1.6
The index is computed from students' responses to the following two questions regarding earth science homework.

1. How often your teacher gives you homework in earth science? (SQ25_32Ac)
2. When your teacher gives you earth science homework, how many minutes are you usually given? (SQ25_32Bc)

The international version of the SQ25_32Ac has following options:
- 1) Every day
- 2) 3 or 4 times a week
- 3) 1 or 2 times a week
- 4) Less than once a week
- 5) Never

The international version of the SQ25_32Bc has following options:
- 1) Fewer than 15 minutes
- 2) 15 - 30 minutes
- 3) 31-60 minutes
- 4) 61-90 minutes
- 5) More than 90 minutes

The index BSDEHW has three levels defined as follows:
- 1 = High: Students who responded that they are earth science homework at least 3 or 4 times a week (SQ25_32Ac code =1 or 2) and they are given at least 31 minutes of earth science homework (SQ25_32Bc code greater than or equal to 3)
- 3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ2_19A code = greater than or equal to 3) AND they are given at most 30 minutes of earth science homework (SQ25_32Bc= code 1, 2 )
- 2 = Medium: All other combinations.

Analysis weighted by TOTWGT.

Comments

Only countries reporting teaching science as separate subjects are included in this variable.

Missing Rules:

The derived variable is coded as missing if [response to SQ2s_32Ac is missing] or [response to SQ2s_32Bc is missing AND response to SQ2s_32Ac is valid but different than code 5].
### Derived Variable Name: bsdchw

**Label:** Index of Time on Chemist Homework (TSH)  
**Grade:** Eighth

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<tr>
<th>Title of Exhibit:</th>
<th>Index of Time Students Spend Doing Science Homework (TSH) in a Normal School Week</th>
</tr>
</thead>
</table>
| Report Location:  | 4.7  
| Location in Questionnaire: | SQ25_32Ad,Bd |
| Source Variables: | BSBCTGHW BSBCHWMI |

**Procedure:**

The index is computed from students' responses to the following two questions regarding chemistry homework.

How often your teacher gives you homework in earth science? (SQ25_32Ad)

When your teacher gives you earth science homework, how many minutes are you usually given? (SQ25_32Bd)

The international version of the SQ25_32Ad has following options:

1. Every day  
2. 3 or 4 times a week  
3. 1 or 2 times a week  
4. Less than once a week  
5. Never

The international version of the SQ25_32Bd has following options:

1. Fewer than 15 minutes  
2. 15 - 30 minutes  
3. 31-60 minutes  
4. 61-90 minutes  
5. More than 90 minutes

The index BSDCHW has three levels defined as follows:

1 = High: Students who responded that they are given chemistry homework at least 3 or 4 times a week (SQ25_32Ad = code 1, 2) and they are given at least 31 minutes of chemistry homework (SQ25_32Bd = code greater than or equal to 3)

3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ25_32Ad code = greater than or equal to 3) AND they are given at most 30 minutes of chemistry homework (SQ25_32Bd = code 1, 2)

2 = Medium: All other combinations.

Analysis weighted by TOTWGT.

**Comments**

Only countries reporting teaching science as separate subjects are included in this variable

**Missing Rules:**

The derived variable is coded as missing if [response to SQ2s_32Ad is missing] or [response to SQ2s_32Bd is missing AND response to SQ2s_32Ad is valid but different than code 5].
The index is computed from students' responses to the following two questions regarding physics homework.

How often your teacher gives you homework in physics? (SQ2s_32Ae)
When your teacher gives you physics homework, how many minutes are you usually given? (SQ2s_32Be)

The international version of the SQ2s_32Ad has following options
1) Every day
2) 3 or 4 times a week
3) 1 or 2 times a week
4) Less than once a week
5) Never

The international version of the SQ2s_32Bd has following options
1) Fewer than 15 minutes
2) 15 - 30 minutes
3) 31-60 minutes
4) 61-90 minutes
5) More than 90 minutes

The index BSDPHW has three levels defined as follows:
1 = High: Students who responded that they are given physics homework at least 3 or 4 times a week (SQ2s_32Ae = code 1, 2) and they are given at least 31 minutes of physics homework (SQ2s_32Be = code greater than or equal to 3)
3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ2s_32Ae code = greater than or equal to 3) AND they are given at most 30 minutes of physics homework (SQ2s_32Be = code 1, 2)
2 = Medium: All other combinations.

Compute percent of students and average achievement for students at each level.
Analysis weighted by TOTWGT.

Only countries reporting teaching science as separate subjects are included in this variable

The derived variable is coded as missing if [response to SQ2s_32Ae is missing] or [response to SQ2s_32Be is missing AND response to SQ2s_32Ae is valid but different than code 5].
**Derived Variable Name:** bsdmscl  **Label:** Index of Self-Confid Learning Math (SCM)  **Grade:** Eighth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Index of Students’ Self-Confidence in Learning Mathematics (SCM)</th>
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<tbody>
<tr>
<td>Report Location:</td>
<td>4.9 Math</td>
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<tr>
<td>Location in Questionnaire:</td>
<td>SQ2_8a,c,f,g; SQ2S_8a,c,f,g</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BSBMTWEL, BSBMTCLM, BSBMTSTR, BSBMTQKY</td>
</tr>
</tbody>
</table>

**Procedure:**

The index is computed from students’ responses to the following questions regarding mathematics on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:

1) I usually do well in mathematics (SQ2_8a or SQ2S_8a).
2) Mathematics is more difficult for me than for many of my classmates (Reversed)(SQ2_8c or SQ2S_8c).
3) Mathematics is not one of my strengths (SQ2_8f or SQ2S_8f).
4) I learn things quickly in mathematics (SQ2_8g or SQ2S_8g).

Index BSDMSCL is based on the average of responses to the above statements. The index has three categories:

1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:** Index coded as missing if 2 or more source questions are with invalid data.
The index is computed from students' responses to the following questions regarding science on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:
1) I usually do well in science (SQ2_11a).
2) Science is more difficult for me than for many of my classmates (Reversed)(SQ2_11c).
3) Science is not one of my strengths(SQ2_11f).
4) I learn things quickly in science (SQ2_11g). Index BSDSSCL is based on the average of responses to the above statements. The index has three categories:
1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.
Analysis weighted by TOTWGT.
<table>
<thead>
<tr>
<th><strong>Derived Variable Name:</strong></th>
<th>bsdbscsl</th>
<th><strong>Label:</strong></th>
<th>Index Self-Conf Learning Biology (SCB)</th>
<th><strong>Grade:</strong> Eighth</th>
</tr>
</thead>
</table>

**Title of Exhibit:**  
Index of Students’ Self-Confidence in Learning Science (SCS)

**Report Location:**  
4.9 Science

**Location in Questionnaire:**  
SQ2S_12:a,c,f,g

**Source Variables:**  
BSBBTWEI, BSBBTCLM, BSBBTSTR, BSBBTQKY

**Procedure:**  
The index is computed from students' responses to the following questions regarding biology on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:  
1) I usually do well in biology (SQ2S_12a).  
2) Biology is more difficult for me than for many of my classmates (Reversed) (SQ2S_12c).  
3) Biology is not one of my strengths (SQ2S_12f).  
4) I learn things quickly in biology (SQ2S_12g).  

Index BSDSCL is based on the average of responses to the above statements. The index has three categories:  
1 = High: Average is less than or equal to 2.  
2 = Medium: Average is greater than 2 and less than 3.  
3 = Low: Average is greater than or equal to 3.  
Analysis weighted by TOTWGT.

**Comments**  
Only countries reporting teaching science as separate subjects are included in this variable

**Missing Rules:**  
Index coded as missing if 2 or more source questions are with invalid data.
**Derived Variable Name:** bsdescl  
**Label:** Index Self-Conf Learning Earth $S$ (SCE)  
**Grade:** Eighth

<table>
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<th>Title of Exhibit:</th>
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<tr>
<td>Report Location:</td>
<td>4.9 Science</td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>SQ2S_16:a,c,f,g</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BSBETWEL, BSBETCLM, BSBETSTR, BSBETQKY</td>
</tr>
</tbody>
</table>
| Procedure:        | The index is computed from students' responses to the following questions regarding earth science on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:  
1) I usually do well in earth science (SQ2S_16a).  
2) Earth science is more difficult for me than for many of my classmates (Reversed)(SQ2S_16c).  
3) Earth science is not one of my strengths (SQ2S_16f).  
4) I learn things quickly in earth science (SQ2S_16g).  
Index BSDESL is based on the average of responses to the above statements and has three categories:  
1 = High: Average is less than or equal to 2.  
2 = Medium: Average is greater than 2 and less than 3.  
3 = Low: Average is greater than or equal to 3.  
Analysis weighted by TOTWGT. |

**Comments**  
Only countries reporting teaching science as separate subjects are included in this variable

**Missing Rules:**  
Index coded as missing if 2 or more source questions are with invalid data.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>bsdcscl</th>
<th>Label:</th>
<th>Index Self-Conf Learning Chemist (SCC)</th>
<th>Grade: Eighth</th>
</tr>
</thead>
</table>

**Title of Exhibit:**
Index of Students' Self-Confidence in Learning Science (SCS)

**Report Location:**
4.9 Science

**Location in Questionnaire:**
SQ2S_20:a,c,f,g

**Source Variables:**
BSBCTWEL, BSBCTCLM, BSBCTSTR, BSBCTQKY

**Procedure:**
The index is computed from students' responses to the following questions regarding chemistry on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:

1) I usually do well in chemistry (SQ2S_20a).
2) Chemistry is more difficult for me than for many of my classmates (Reversed) (SQ2S_20c).
3) Chemistry is not one of my strengths (SQ2S_20f).
4) I learn things quickly in chemistry (SQ2S_20g).

Index BSDCSCSL is based on the average of responses to the above statements and has three categories:

1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

**Comments**
Only countries reporting teaching science as separate subjects are included in this variable

**Missing Rules:**
Index coded as missing if 2 or more source questions are with invalid data.
The index is computed from students' responses to the following questions regarding physics on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:
1) I usually do well in physics (SQ25_24a).
2) Physics is more difficult for me than for many of my classmates (Reversed) (SQ25_24c).
3) Physics is not one of my strengths (SQ25_24f).
4) I learn things quickly in physics (SQ25_24g).

Index BSDPSCL is based on the average of responses to the above statements and has three categories:
1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

Comments
Only countries reporting teaching science as separate subjects are included in this variable

Missing Rules:
Index coded as missing if 2 or more source questions are with invalid data.
**Derived Variable Name:** bsdmsv  
**Label:** Index of Students' Valuing Math (SVM)  
**Grade:** Eighth

<table>
<thead>
<tr>
<th>Report Location:</th>
<th>4.10</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location in Questionnaire:</td>
<td>SQ2_8b,d and SQ2_9a-e</td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BSBMAHDL, BSBMAOSS, BSBMAUNI, BSBMAJOB, BSBMAGET, BSBMTMOR, BSBMTENJ</td>
<td></td>
</tr>
</tbody>
</table>

**Procedure:**

The index is computed from students' responses to the following seven questions regarding mathematics on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:

1. I would like to take more mathematics in school (SQ2_8b).
2. I enjoy learning mathematics (SQ2_8d).
3. I think learning mathematics will help me in my daily life (SQ2_9a).
4. I need mathematics to learn other school subjects (SQ2_9b).
5. I need to do well in mathematics to get into the university of my choice (SQ2_9c).
6. I would like a job that involved using mathematics (SQ2_9d).
7. I need to do well in mathematics to get the job I want (SQ2_9e).

Index BSDMSV is based on the average of responses to the above statements and has three categories:

1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:** Index coded as missing if 3 or more source questions are with invalid data.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>bsdssv</th>
<th>Label:</th>
<th>Index of Students Valuing Science (SVS)</th>
<th>Grade: Eighth</th>
</tr>
</thead>
</table>

**Title of Exhibit:**

"Index of Students' Valuing Science (SVS)"

**Report Location:**

4.10 Science

**Location in Questionnaire:**

SQ2_11b,d and SQ2_12a-e.

**Source Variables:**

BSBSAHDL, BSBSAOSS, BSBSAUNI, BSBSAJOB, BSBSAGET, BSBSMOR, BSBSTENJ

**Procedure:**

The index is computed from students' responses to the following seven questions regarding science on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:

1. I would like to take more science in school (SQ2_11b);
2. I enjoy learning science (SQ2_11d);
3. I think learning science will help me in my daily life (SQ2_12a);
4. I need science to learn other school subjects (SQ2_12b);
5. I need to do well in science to get into the university of my choice (SQ2_12c);
6. I would like a job that involved using science (SQ2_12d);
7. I need to do well in science to get the job I want (SQ2_12e).

Index BSDSSV is based on the average of responses to the above statements and has three categories:

1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:**

Index coded as missing if 3 or more source questions are with invalid data.
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<th>Label:</th>
<th>Index of Students Valuing Biology (SVB)</th>
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<th>Eighth</th>
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<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td></td>
<td>Index of Students' Valuing Science (SVS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td></td>
<td></td>
<td>4.10 Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td></td>
<td></td>
<td>SQ2S_12:b,d and SQ2S_13:a-e f</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td></td>
<td></td>
<td>BSBBADHL, BSBBAOSS, BSBBAUNI, BSBBAJOB, BSBBAGET, BSBBTMOR, BSBBBBINV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Procedure:             |        |        | The index is computed from students' responses to the following seven questions regarding biology on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:  
1) I would like to take more biology in school (SQ2S_12b).  
2) I enjoy learning biology (SQ2S_12d).  
3) I think learning biology will help me in my daily life (SQ2S_13a).  
4) I need biology to learn other school subjects (SQ2S_13b).  
5) I need to do well in biology to get into the university of my choice (SQ2S_13c).  
6) I would like a job that involved using biology (SQ2S_13d).  
7) I need to do well in biology to get the job I want (SQ2S_13e).  
Index BSDBSV is based on the average of responses to the above statements and has three categories:  
1 = High: Average is less than or equal to 2.  
2 = Medium: Average is greater than 2 and less than 3.  
3 = Low: Average is greater than or equal to 3.  
Analysis weighted by TOTWGT. |        |        |

| Comments | Only countries reporting teaching science as separate subjects are included in this variable |
| Missing Rules: | Index coded as missing if 3 or more source questions are with invalid data. |
The index is computed from students’ responses to the following seven questions regarding earth science on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:

1) I would like to take more earth science in school (SQ25_16b).
2) I enjoy learning earth science (SQ25_16d).
3) I think learning earth science will help me in my daily life (SQ25_17a).
4) I need earth science to learn other school subjects (SQ25_17b).
5) I need to do well in earth science to get into the university of my choice (SQ25_17c).
6) I would like a job that involved using earth science (SQ25_17d).
7) I need to do well in earth science to get the job I want (SQ25_17e).

Index BSDES5 is based on the average of responses to the above statements and has three categories:

1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.
**Derived Variable Name:** bsdcsv  
**Label:** Index of Students Valuing Chemist (SV)  
**Grade:** Eighth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Index of Students' Valuing Science (SVS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Location:</td>
<td>4.10</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BSBCAHDL, BSBCAOSS, BSBCAUNI, BSBCAJOB, BSBCAGET, BSBCTMOR, BSBTCENJ</td>
</tr>
</tbody>
</table>
| Procedure: | The index is computed from students’ responses to the following seven questions regarding chemistry on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:  
1) I would like to take more chemistry in school (SQ25_20b);  
2) I enjoy learning chemistry (SQ25_20d);  
3) I think learning chemistry will help me in my daily life (SQ25_21a);  
4) I need learning chemistry will help me in my daily life (SQ25_21b);  
5) I need to do well in chemistry to get into the university of my choice (SQ25_21c);  
6) I would like a job that involved using chemistry (SQ25_21d);  
7) I need to do well in chemistry to get the job I want (SQ25_21e).  
Index BSDCSV is based on the average of responses to the above statements and has three categories:  
1 = High: Average is less than or equal to 2.  
2 = Medium: Average is greater than 2 and less than 3.  
3 = Low: Average is greater than or equal to 3.  
Analysis weighted by TOTWGT. |

| Comments | Only countries reporting teaching science as separate subjects are included in this variable |

| Missing Rules: | Index coded as missing if 3 or more source questions are with invalid data. |
### Derived Variable Name: bsdpsv  
### Label: Index of Students Valuing Physics (SVP)  
### Grade: Eighth

<table>
<thead>
<tr>
<th><strong>Title of Exhibit:</strong></th>
<th><strong>Index of Students' Valuing Science (SVS)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Report Location:</strong></td>
<td>4.10 Science</td>
</tr>
<tr>
<td><strong>Location in Questionnaire:</strong></td>
<td>SQ2S_24:b,d and SQ2S_25</td>
</tr>
<tr>
<td><strong>Source Variables:</strong></td>
<td>BSBPAHDL, BSBPAOSS, BSBPAUNI, BSBPAJOB, BSBPAGET, BSBPTMOR, BSBPTENJ</td>
</tr>
</tbody>
</table>
| **Procedure:** | The index is computed from students' responses to the following seven questions regarding physics on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:
1) I would like to take more physics in school (SQ2S_24b).
2) I enjoy learning physics (SQ2S_24d).
3) I think learning physics will help me in my daily life (SQ2S_25a).
4) I need learning physics to learn other school subjects (SQ2S_25b).
5) I need to do well in physics to get into the university of my choice (SQ2S_25c).
6) I would like a job that involved using physics (SQ2S_25d).
7) I need to do well in physics to get the job I want (SQ2S_25e).

Index BSDPSV is based on the average of responses to the above statements and has three categories:
1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

<table>
<thead>
<tr>
<th><strong>Comments</strong></th>
<th>Only countries reporting teaching science as separate subjects are included in this variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Missing Rules:</strong></td>
<td>Index coded as missing if 3 or more source questions are with invalid data.</td>
</tr>
</tbody>
</table>
The index is computed from students’ responses to the following question:

In school, did any of this things happen during the last month? (SQ2_16 or SQ2s_29)

Yes/No option (1 = yes, 2 = no)

a = Something of mine was stolen
b = I was hit or hurt by other student(s) (e.g., shoving, hitting, kicking)
c = I was made to do things that I didn’t want to do by other students
d = I was made fun of or called names
e = I was left out of activities by other students

Index BSDGPSS is assigned to three levels as follows:
1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.
Eighth Grade – Mathematics
Teacher Questionnaire
**Derived Variable Name:** btdmtoov  
**Label:** Summ Students Taught Overall Math Topics  
**Grade:** Eighth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Summary of Students Taught the TIMSS Mathematics Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Location:</td>
<td>5.7 Math</td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQM2_24Aa-j, Ba-f, Ca-h, Da-m, Ea-h</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BTBMT001 TO BTBMT045</td>
</tr>
</tbody>
</table>

**Procedure:**
Computed from teachers’ response to the following question:
The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQM2_24)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable. Analysis weighted by MATWGT.

**Comments**

**Missing Rules:**
Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
**Title of Exhibit:** Mathematics Teachers' Gender, Age, Certification, and Number of Years of Teaching

**Report Location:** 6.3  Math

**Location in Questionnaire:** TQM2_8A and 8B

**Source Variables:** BTBGTELC, BTBGTLC

**Procedure:**

Derived variable is computed from the teachers' responses for the following two question(s):

- Do you have a teacher license or certificate? (Yes/No) (Code 1/ Code 2) (TQM2_8A)
- What type of license or certificate do you hold? (TQM2_8B)

The international version of question TQM2_8B has following options:

1) Full certificate
2) Provisional Certificate
3) Emergency Certificate
4) Others.

The derived variable BTGDTELIC is reported as "Have Full Certificate"

The percent of students whose teachers checked option 1 for TQM2_8B after filtering for the teachers who has checked option 2 for TQM2_8A.

The derived variable BTGDTELIC has two categories:

1. Yes
2. No.

Analysis weighted by MATWGT.

**Comments**

**Missing Rules:** Derived variable is coded as missing if the source variable is missing.
**Title of Exhibit:** Summary of Students Taught the TIMSS Mathematics Topics

**Report Location:** 5.7 Math

**Location in Questionnaire:** TQM2_24Aa-j

**Source Variables:** BT8MTB01 TO BT8MTB10

**Procedure:**
Computed from teachers' response to the following question:
The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.”
(TQM2_24)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.
Then take the average of all these percentages included in the variable.
Analysis weighted by MATWGT.

**Comments**

**Missing Rules:** Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
**Derived Variable Name:** btmdstud  
**Label:** Class Size for Mathematics Instruction  
**Grade:** Eighth

**Title of Exhibit:**  
Class Size for Mathematics Instruction

**Report Location:**  
7.1 Math

**Location in Questionnaire:**  
TQM2_17

**Source Variables:**  
BTBMSTUD

**Procedure:**  
Based on the teachers’ responses for the following question regarding number student in TIMSS class: How many students are in the TIMSS class?(TQM2_17)  
The derived variable BTMSTUD has four categories  
1. 1-24 Students;  
2. 25-32 Students;  
3. 33-40 Students.  
4. 41 or More Students.  
Analysis weighted by MATWGT.

**Comments**

**Missing Rules:**  
Derived variable is coded as missing if the source variable is missing.
Computed from teachers' response to the following question:
The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year." (TQ2.24) The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.
Analysis weighted by MATWGT.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdmlt</th>
<th>Label:</th>
<th>Idx Tch Rpt Mth Clss WO Lim Fctrs (MCFL)</th>
<th>Grade:</th>
<th>Eighth</th>
</tr>
</thead>
</table>

Title of Exhibit: Index of Teachers' Reports on Teaching Mathematics Classes with Few or No Limitations on Instruction due to Student Factors (MCFL)

Report Location: 7.2 Math

Location in Questionnaire: TQM2_22a-f

Source Variables: BTBGLT01 TO BTBGLT06

Procedure:

Based on mathematics teachers' responses to the following six statements on a 5-point Likert scale of 1) Not applicable, 2) Not at all, 3) A little, 4) Some, 5) A lot:

1) Students with different academic abilities (TQM2_22a)
2) Students who come from a wide range of backgrounds (TQM2_22b)
3) Students with special needs (TQM2_22c)
4) Uninterested students (TQM2_22d)
5) Low morale among students (TQM2_22e)
6) Distruptive students (TQM2_22f).


Index BTDMLT is based on the average of responses to the six statements and has three categories:

1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by MATWGT.

Comments

Missing Rules: Index coded as missing if 3 or more source questions are with invalid data.
<table>
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<tr>
<th>Derived Variable Name:</th>
<th>btddtome</th>
<th>Label:</th>
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<th>Grade: Eighth</th>
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<tbody>
<tr>
<td>Title of Exhibit:</td>
<td>Summary of Students Taught the TIMSS Mathematics Topics</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>5.7</td>
<td>Math</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQM2_24Ca-h</td>
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<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BT8MTB17 TO BT8MTB24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure:</td>
<td>Computed from teachers' response to the following question:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose &quot;Mostly taught this year.&quot;(TQ2_24)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The international version of the questionnaire has following options for each topic:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Mostly taught before this year.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Mostly taught this year.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Not yet taught or just introduced</td>
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<tr>
<td></td>
<td>Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Then take the average of all these percentages included in the variable.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analysis weighted by MATWGT.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comments</th>
<th></th>
</tr>
</thead>
</table>

| Missing Rules: | Derived variable is coded as missing if more than one-third of the source topics (variables) are missing. |
### Derived Variable Name: bttdmh | **Label:** Index of Teachers’ Emphasis on Mathematics Homework (EMH) | **Grade:** Eighth

#### Title of Exhibit:
Index of Teachers’ Emphasis on Mathematics Homework (EMH)

#### Report Location:
7.13 Math

#### Location in Questionnaire:
TQM2_32, 33, 34

#### Source Variables:
BT8MHMWO, BTBMHWMC, BTBMHWKM

#### Procedure:
The index is computed from teachers’ responses to the following three question(s) regarding mathematics homework:
- Do you assign mathematics homework to the TIMSS class? (YES/NO) (TQM2_32)
- How often do you usually assign mathematics homework to the TIMSS class? (TQM2_33)
- When you assign mathematics homework to the TIMSS class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.) (TQM2_34)

The international version of the question TQM2_33 has following options:
1) Every or almost every lesson
2) About half the lessons
3) Some lesson

The international version of the question TQM2_34 has following options:
1) Fewer than 15 minutes
2) 15-30 minutes
3) 31-60 minutes
4) 61-90 minutes
5) More than 90 minutes

Index BTDMH is assigned to three categories according to the following definitions:
1 = High: TQM2_32 = code 1 AND TQM2_33 = code 1 or 2 AND TQM2_34 = code greater than or equal to 3
3 = Low: TQM2_32 = code 2 OR TQM2_32 = code 1 AND TQM2_33 = code 2 or 3 AND TQM2_34 = code 1 or 2.
2 = Medium: all other combinations.

Analysis weighted by MATWGT.

#### Comments

#### Missing Rules:
Derived variable is coded as missing if response to TQM2_33 or TQM2_34 is missing.
**Derived Variable Name:** btstog

**Label:** Summ Students Taught Geomtr Math Topics

**Grade:** Eighth

**Title of Exhibit:** Summary of Students Taught the TIMSS Mathematics Topics

**Report Location:** 5.7 Math

**Location in Questionnaire:** TQM2_24Da-m

**Source Variables:** BTBMTB25 TO BTBMTB37

**Procedure:**
Computed from teachers’ response to the following question:
The following list includes the main topics addressed by the TIMSS mathematics test. Choose the
response that best describes when students in the TIMSS class have been taught each topic. If a topic
was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ2_24)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.
Then take the average of all these percentages included in the variable.
Analysis weighted by MATWGT.

**Comments**

**Missing Rules:** Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdmch</th>
<th>Label:</th>
<th>Idx Math Tchr Prcptn Schl Climat (MTPSC)</th>
<th>Grade: Eighth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td>Index of Mathematics Teachers' Perception of School Climate (TPSC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>8.5 Math</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQM2_16a-h</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Source Variables:</td>
<td>BTBGCHTS, BTBGCHTU, BTBGCHTC, BTBGCHES, BTBGCHPS, BTBGCHPI, BTBGCHSR, BTBGCHSD</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Procedure:**

The index is computed from teachers’ responses to the following question regarding their school climate using five point likert scale (1 = very high, 2 = high, 3 = medium, 4 = low, 5 = very low):

How would you characterize each of the following within your school? (TQM2_16)

The international version of the question has following eight categories:

- a = Teachers’ job satisfaction
- b = Teachers’ understanding of the school's curricular goals
- c = Teachers’ degree of success in implementing the school's curriculum
- d = Teachers’ expectations for student achievement
- e = Parental support for student achievement
- f = Parental involvement in school activities
- g = Students’ regard for school property
- h = Students’ desire to do well in school

Index was calculated by averaging the response given by teachers for these categories.

Index BTDMCH is assigned to three levels as follow:

1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by MATWGT.

**Comments**

**Missing Rules:**

Derived variable is coded as missing if three or more variables are missing.
**Derived Variable Name:** btdmtoda  
**Label:** Summ Students Taught Data Math Topics  
**Grade:** Eighth

**Title of Exhibit:** Summary of Students Taught the TIMSS Mathematics Topics

<table>
<thead>
<tr>
<th>Report Location:</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location in Questionnaire:</td>
<td>TQM2_24Ea-h</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BT8MTB38 TO BT8MTB45</td>
</tr>
</tbody>
</table>

**Procedure:**

Computed from teachers’ response to the following question:

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year." (TQ2_24)

The international version of the questionnaire has following options for each topic:

1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic included in the derived variable.

Then take the average of all these percentages included in the derived variable.

Analysis weighted by MATWGT.

**Comments**

**Missing Rules:**

Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdmcu</th>
<th>Label:</th>
<th>Idx Math Tchr Prcptn Schl Safety (MTPSS)</th>
<th>Grade: Eighth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td></td>
<td>Index of Mathematics Teachers' Perception of Safety in the Schools (TPSS)</td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>8.7</td>
<td>Math</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQM2_15b-d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BTBGCUSN, BTBGCUSA, BTBGCUSAS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure:</td>
<td></td>
<td></td>
<td>Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements (TQM2_15): b = This school is located in a safe neighborhood c = I feel safe at this school d = This school's security policies and practices are sufficient Index BTDCUS is assigned to three levels as follow: 1 = High: Code 1 or 2 to all three statements 3 = Low: Code 3 or 4 to all three statements 2 = Medium: All other combinations Analysis weighted by MATWGT.</td>
<td></td>
</tr>
</tbody>
</table>

Comments

Missing Rules: Derived variable is coded as missing if one or more source variables are missing.
Eighth Grade – Science Teacher Questionnaire
**Derived Variable Name:** btdstoov  
**Label:** Summ Students Taught Overall Sci Topics  
**Grade:** Eighth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Summary of Students Taught the TIMSS Science Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Location:</td>
<td>5.8 Science</td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQS2_24Aa-l,Ba-h,Ca-j,Da-k,Ea-c</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BTBST001 TO BTBST044</td>
</tr>
</tbody>
</table>
| Procedure:       | Computed from teachers' response to the following question: The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year." (TQS2_24) The international version of the questionnaire has following options for each topic:  
1) Mostly taught before this year.  
2) Mostly taught this year.  
3) Not yet taught or just introduced  
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.  
Then take the average of all these percentages included in the variable.  
Analysis weighted by SCIWGT. |

<table>
<thead>
<tr>
<th>Comments</th>
</tr>
</thead>
</table>

| Missing Rules: | Derived variable is coded as missing if more than one-third of the source topics (variables) are missing. |
Computed from teachers’ response to the following question:
The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year." (TQS2_24)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.
Then take the average of all these percentages included in the variable.
Analysis weighted by SCIWT.
Computed from teachers' response to the following question:
The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQS2_24)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.
Then take the average of all these percentages included in the variable.
Analysis weighted by SCIWGT.
**Derived Variable Name:** btdstoph  
**Label:** Summ Students Taught Physics Sci Topics  
**Grade:** Eighth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Summary of Students Taught the TIMSS Science Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Report Location:</strong></td>
<td>5.8  Science</td>
</tr>
<tr>
<td><strong>Location in Questionnaire:</strong></td>
<td>TQS2_24Ca-j</td>
</tr>
<tr>
<td><strong>Source Variables:</strong></td>
<td>BTBSTO21 TO BTBSTO30</td>
</tr>
</tbody>
</table>
| **Procedure:**                               | Computed from teachers' response to the following question: 
The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQS2_24) The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable. Analysis weighted by SCIWGT. |

| **Comments** | |
| **Missing Rules:**                           | Derived variable is coded as missing if more than one-third of the source topics (variables) are missing. |
**Title of Exhibit:** Summary of Students Taught the TIMSS Science Topics

**Report Location:** 5.8 Science

**Location in Questionnaire:** TQS2_24Da-k

**Source Variables:** BTBSTO31 TO BTBSTO41

**Procedure:**
Computation from teachers’ response to the following question:
The following list includes the main topics addressed by the TIMSS science test. Choose the response
that best describes when students in the TIMSS class have been taught each topic. If a topic was
taught half this year and half before this year, please choose “Mostly taught this year.” (TQS2_24)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.
Then take the average of all these percentages included in the variable.
Analysis weighted by SCIWGT.

**Missing Rules:**
Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
### Derived Variable Name: btdstoen  |  **Label:** Summ Students Taught Environ Sci Topics  |  **Grade:** Eighth

**Title of Exhibit:** Summary of Students Taught the TIMSS Science Topics

**Report Location:**
- 5.8 Science

**Location in Questionnaire:** TQS2_24Ea-c

**Source Variables:**
- BTBSTO42 TO BTBSTO44

**Procedure:**
Computed from teachers' response to the following question:
The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQS2_24)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.
Analysis weighted by SCIWT.

---

**Comments**

**Missing Rules:** Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
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<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdgtelec</th>
<th>Label:</th>
<th>Sci Teacher Has Full License or Certificate</th>
<th>Grade:</th>
<th>Eighth</th>
</tr>
</thead>
</table>

**Title of Exhibit:** Science Teachers' Gender, Age, Certification, and Number of Years of Teaching

**Report Location:** 6.3 Science

**Location in Questionnaire:** TQS2_8A and 8B

**Source Variables:** BTRTELC, BTRGTELC

**Procedure:**
Based on the teachers' responses for the following two question(s):
- Do you have a teacher license or certificate? (Yes/No) (TQS2_8A)
- What type of license or certificate do you hold? (TQS2_8B)

The international version of question TQS2_8B has following options
1) Full certificate
2) Provisional Certificate
3) Emergency Certificate
4) Others.

The derived variable BTDGTELC is reported as "Have Full Certificate"

The percent of students whose teachers checked option 1 (Yes) for TQS2_8B after filtering for the teachers who has checked option 2 (No) for TQS2_8A.

The derived variable BTDGTELC has two categories:
1. Yes
2. No.

Analysis weighted by SCIWTG.

---

**Comments**

**Missing Rules:** Derived variable is coded as missing if the source variable is missing.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdspssc</th>
<th>Label:</th>
<th>Major in BIO, PHY, CHE or ES</th>
<th>Grade: Eighth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td></td>
<td>Preparation to Teach Science</td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>6.5</td>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQS2_6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BTBSPSB1, BTBSPSPH, BTBSPSCH, BTBSPSES</td>
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</tr>
<tr>
<td>Procedure:</td>
<td>Based on the teachers' responses for the first four options of the following question: During your &lt;post-secondary&gt; education, what was your major or main area(s) of study? (TQS2_6) The international version of the question has following nine options in Yes/No format (Code1/ Code2): a) Biology, b) Physics, c) Chemistry, d) Earth Science, e) Education - Science, f) Mathematics, g) Education - Mathematics, h) Education - General, i) Other The derived variable BTDSPSSC (Biology, Physics, Chemistry, or Earth Science) is reported in the fourth column of the exhibit 6.5 with following categories: Code 1: If TQS2_6a= code 1 or TQS2_6b= code 1 or TQS2_6c= code 1 or TQS2_6d= code 1. Code 2: If TQS2_6a= code 2 and TQS2_6b= code 2 and TQS2_6c= code 2 and TQS2_6d= code 2.</td>
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<td></td>
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</tr>
</tbody>
</table>

**Comments**

**Missing Rules:** Derived variable is coded as missing if all source variables (TQS2_6) are missing
**Derived Variable Name:** btdsstud  
**Label:** Class Size for Science Instruction  
**Grade:** Eighth

<table>
<thead>
<tr>
<th><strong>Title of Exhibit:</strong></th>
<th>Class Size for Science Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Report Location:</strong></td>
<td>7.1 Science</td>
</tr>
<tr>
<td><strong>Location in Questionnaire:</strong></td>
<td>TQS2_17</td>
</tr>
<tr>
<td><strong>Source Variables:</strong></td>
<td>BTBSSTUD</td>
</tr>
</tbody>
</table>
| **Procedure:** | Based on the teachers’ responses for the following question regarding number student in TIMSS class: How many students are in the TIMSS class?(TQS2_17)  
The derived variable BTDSSTUD has four categories  
1. 1-24 Students;  
2. 25-32 Students;  
3. 33-40 Students.  
4. 41 or More Students.  
For Analysis weighted by SCIWGT. |

<table>
<thead>
<tr>
<th><strong>Comments</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Missing Rules:</strong></th>
<th>Derived variable is coded as missing if the source variable is missing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derived Variable Name:</td>
<td>btdslt</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Title of Exhibit:</td>
<td>Index of Teachers’ Reports on Teaching Science Classes with Few or No Limitations on Instruction due to Student Factors (SCFL)</td>
</tr>
<tr>
<td>Report Location:</td>
<td>7.2 Science</td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQS2_22a-f</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BTBGLT01 TO BTBGLT06</td>
</tr>
</tbody>
</table>
| Procedure:             | Based on science teachers’ responses to the following six statements on a 5-point Likert scale of 1) Not applicable, 2) Not at all, 3) A little, 4) Some, 5) A lot:
1) Students with different academic abilities (TQS2_22a)
2) Students who come from a wide range of backgrounds (TQS2_22b)
3) Students with special needs (TQS2_22c)
4) Uninterested students (TQS2_22d)
5) Low morale among students (TQS2_22e)
6) Distruptive students (TQS2_22f).
Index BTDSLT is based on the average of responses to the six statements and has three categories:
1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.
Analysis weighted by SCIWGT.

Comments

Missing Rules: Index coded as missing if 3 or more source questions are with invalid data.
The index is computed from the teachers’ responses to the following three question(s) regarding science homework:

- Do you assign science homework to the TIMSS class? (YES/NO) (TQS2_27)
- How often do you usually assign science homework to the TIMSS class? (TQS2_28)
- When you assign science homework to the TIMSS class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.) (TQS2_29)

The international version of the question TQS2_28 has following options:
1) Every or almost every lesson
2) About half the lessons
3) Some lesson

The international version of the question TQS2_29 has following options:
1) Fewer than 15 minutes
2) 15-30 minutes
3) 31-60 minutes
4) 61-90 minutes
5) More than 90 minutes

Index BTDSH is assigned to three categories according to the following definitions:

1 = High: TQS2_27 = code 1 AND TQS2_28 = code 1 or 2 AND TQS2_29 = code greater than or equal to 3
2 = Medium: All other combinations.
3 = Low: TQS2_27 = code 2 OR TQS2_27 = code 1 AND TQS2_28 = code 2 or 3 AND TQS2_29 = code 1 or 2.

Analysis weighted by SCIWTG.
### Derived Variable Name: bttdsch
### Label:  Idx Sci Tchr Prcptn Schl Climate (TPSC)
### Grade: Eighth

**Title of Exhibit:** Index of Science Teachers' Perception of School Climate (TPSC)

**Report Location:** 8.5 Science

**Location in Questionnaire:** TQS2_16a-h

**Source Variables:** BTBGCHTS, BTBGCHTU, BTBGCHTC, BTBGCHES, BTBGCHPS, BTBGCHPI, BTBGCHSR, BTBGCHSD

**Procedure:**

The index is computed from teachers' responses to the following question regarding their school climate using five point likert scale (1 = very high, 2 = high, 3 = medium, 4 = low, 5 = very low):

How would you characterize each of the following within your school? (TQS2_16)

The international version of the question has following eight categories:

a = Teachers' job satisfaction  
b = Teachers' understanding of the school's curricular goals  
c = Teachers' degree of success in implementing the school's curriculum  
d = Teachers' expectations for student achievement  
e = Parental support for student achievement  
f = Parental involvement in school activities  
g = Students' regard for school property  
h = Students' desire to do well in school

Index was calculated by averaging the response given by teachers for these categories.

Index BTDSCH is assigned to three levels as follow:

1 = High: Average is less than or equal to 2.  
2 = Medium: Average is greater than 2 and less than 3.  
3 = Low: Average is greater than or equal to 3.

Analysis weighted by SCIWGT.

### Comments

### Missing Rules:

Derived variable is coded as missing if three or more variables are missing.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdscu</th>
<th>Label:</th>
<th>Idx Sci Tchr Prcptn School Safet (TPSS)</th>
<th>Grade: Eighth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td>Index of Science Teachers’ Perception of Safety in the Schools (TPSS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>8.7</td>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQS2.15b-d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BTBGCUSN, BTBGCUSA, BTBGCUAS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Procedure:             | The index is computed from teachers’ responses to the following question concerning security in their schools using four point likert scale (1 = agree a lot, 2 = agree, 3 = disagree, 4 = disagree a lot): Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements(TQS2.15):  
| | b = This school is located in a safe neighborhood  
| | c = I feel safe at this school  
| | d = This school’s security policies and practices are sufficient  
| | Index BTDSCU is assigned to three levels as follow:  
| | 1 = High: Code 1 or 2 to all three statements  
| | 3 = Low: Code 3 or 4 to all three statements  
| | 2 = Medium: All other combinations  
| | Analysis weighted by SCIWG'T. |
| Comments               | |
| Missing Rules:         | Derived variable is coded as missing if one or more source variables are missing. |
Section 4

Eighth Grade – School Questionnaire
### Derived Variable Name: bcdmst
### Label:  Idx Avlbl Schl Rsrs Math Instrn (ASRMI)
### Grade: Eighth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Trends in Index of Availability of School Resources for Mathematics Instruction (ASRMI)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Report Location:</th>
<th>8.3  Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location in Questionnaire:</td>
<td>For 2003, SCQ2_23a-e,g-k; For 1999, SCQ2_12a-e,g-k and For 1995 SCQ2_16a-e,g-k</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source Variables:</th>
<th>BCBGST01 TO BCBGST05, BCBMST07 TO BCBMST11</th>
</tr>
</thead>
</table>

| Procedure: | The index is computed from principals’ responses to questions regarding shortages or inadequacies that can affect instruction in their school on a four point likert scale (1 = none, 2 = a little, 3 = some, 4 = a lot) :

- Is your school capacity to provide instruction affected by a shortage or inadequacy of any of the following?(SCQ2_23)
  - a = Instructional materials (e.g., textbook);
  - b = Budget for supplies (e.g., paper, pencils);
  - c = School buildings and grounds;
  - d = Heating/cooling and lightening systems;
  - e = Instructional space (e.g., classrooms);
  - g = Computers for mathematics instruction;
  - h = Computer software for mathematics instruction;
  - i = Calculators for mathematics instruction;
  - j = Library materials relevant to mathematics instruction;
  - k = Audio-visual resources for mathematics instruction.

- Index BCDMST is assigned to three levels as follows:
  - 1 = High: Average value of a-e is less than 2 AND the average value of g-k is less than 2;
  - 3 = Low: Average value of a-e is greater than or equal to 3 AND the average value of g-k is greater than or equal to 3;
  - 2 = Medium: All other combinations.

- Analysis weighted by TOTWGT. |

| Comments | |
|----------||

| Missing Rules: | Derived variable is coded as missing if two or more of SCQ2_23a-e are missing OR two or more SCQ2_23g-k are missing. |
### Derived Variable Name: bcdsst

**Label:** Index of Availability of School Resources for Science Instruction (ASRSI)

**Grade:** Eighth

**Title of Exhibit:** Trends in Index of Availability of School Resources for Science Instruction (ASRSI)

**Report Location:** 8.3 Science

**Location in Questionnaire:** For 2003 SCQ2.23a-e,l-q; For 1999, grade 8: SCQ2.12a-e,l-q and For 1995 grade 8: SCQ2.16a-e,l-q

**Source Variables:** BCBGST01 TO BCBGST05, BCBSSST12 TO BCBSSST17

**Procedure:**

The index is computed from principals’ responses to questions regarding shortages or inadequacies that can affect instruction in their school on a four point likert scale (1 = none, 2 = a little, 3 = some, 4 = a lot):

- Is your school capacity to provide instruction affected by a shortage or inadequacy of any of the following? (SCQ2.23)
  - a = Instructional materials (e.g., textbook);
  - b = Budget for supplies (e.g., paper, pencils);
  - c = School buildings and grounds;
  - d = Heating/cooling and lightening systems;
  - e = Instructional space (e.g., classrooms);
  - l = science laboratory equipment and materials;
  - m = Computers for science instruction;
  - n = Computer software for science instruction;
  - o = Calculators for science instruction;
  - p = Library materials relevant to science instruction;
  - q = Audio-visual resources for science instruction.

Index BCDSSST is assigned to three levels as follow:

1. High: Average value of a-e is less than 2 AND the average value of g-k is less than 2;
2. Low: Average value of a-e is greater than or equal to 3 AND the average value of g-k is greater than or equal to 3;
3. Medium: All other combinations.

Analysis weighted by TOTWGT.

---

**Comments**

**Missing Rules:** Derived variable is coded as missing if two or more of SCQ2.23a-e are missing OR three or more SCQ2.23l-q are missing.
The index is computed from principals’ responses to eight questions regarding school climate using a four point Likert scale (1 = very high, 2 = high, 3 = medium, 4 = low, 5 = very low).

How would you characterize each of the following within your school?(SCQ2_7)

The international version of the question has following eight categories:

- a = Teachers’ job satisfaction
- b = Teachers’ understanding of the school’s curricular goals
- c = Teachers’ degree of success in implementing the school’s curriculum
- d = Teachers’ expectations for student achievement
- e = Parental support for student achievement
- f = Parental involvement in school activities
- g = Students’ regard for school property
- h = Students’ desire to do well in school

Index is calculated by averaging the responses for the above eight categories.

Index BCDGCH is assigned to three levels as follow:

1 = High: Average value is less than or equal to 2
2 = Medium: Average value is greater than 2 AND less than or equal to 3
3 = Low: Average value is greater than 3

Analysis weighted by TOTWGT.
The index is computed from principals’ responses to two questions concerning the problem behaviors of students in their schools:

How often each of the following behavior occur among eighth grade students in your school? (SCQ2_22A)

using a 5 point likert scale: 1) Never, 2) Rarely, 3) Monthly, 4) Weekly 5) Daily

If the behavior occurs, how severe a problem does it present? (SCQ2_22B)

using a 3-point likert scale: 1) Not a problem, 2) Minor problem, 3) Serious problem

The international version of both the question have following three problem behavior categories

a = Arriving late at school

b = Absenteeism (i.e., unjustified absences)

C = Skipping class <hours/periods>

Index BCDGSP is assigned to three levels as follow:

1 = High: SCQ2_22A_a-c = code 1 OR SCQ2_22B_a-c code 1 or missing

3 = Low: SCQ2_22B_a-c code 3 for at least 2 categories OR code 3 for 1 category and code 3 for other two categories OR if there is one missing source variable and code 3 for other two.

2 = Medium: All other combinations

Analysis weighted by TOTWGT.

Comments

Missing Rules:

Derived variable is coded as missing if two or three source variables are missing.
**Derived Variable Name:** asdgcavl  
**Label:** Availability of Computer  
**Grade:** Fourth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Use of Computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Location:</td>
<td>4.6 Math and Science</td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>SQ1_10A, B</td>
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<tr>
<td>Source Variables:</td>
<td>ASBGCHOM, ASBGCCH, ASBGCFRH, ASBGCCAF, ASBGCELS, ASBGUSEC</td>
</tr>
</tbody>
</table>
| Procedure: | Derived variable is computed from students' responses to the following questions with a Yes/No (code 1/code 2) response.  
1. Do you ever use a computer? (do not include PlayStation, GameCube, Xbox, or other TV/video game computers) (SQ1_10A)  
2. Where do you use a computer? (SQ1_10B).  
The question (SQ1_10B) has following six options  
a) At home, b) At school, c) At a library, d) At a friend's home, e) At an Internet Cafe, f) Elsewhere  
The derived variable ASDGCVAL is reported with five categories based on following definitions:  
1.Use Computer Both at Home and at School (10A, 10Ba and 10b = Code 1).  
2.Use Computer at Home but Not at School (10A, 10Ba = Code 1 and 10Bb = Code 2 or missing).  
3.Use Computer at School but Not at Home (10A, 10Bb = Code 1 and 10Ba = Code 2 or missing).  
4.Use Computer Only at Places Other than Home and School (10A = code 1 and 10Ba and 10Bb = code 2 or missing and code 1 for at least one of the options from 10Bc-e).  
5. Do Not Use Computer at All (10A = Code 2). In the denominator, include all valid cases. Analysis weighted by TOTWGT. |

**Comments**

**Missing Rules:** The derived variable is coded as missing, if response to SQ1_10A = code 1 or missing, AND response to all options SQ1_10B a-f = code 2 or missing.
**Derived Variable Name:** asdmhw  
**Label:** Index of Time on Math Homework (TMH)  
**Grade:** Fourth

**Title of Exhibit:** Index of Time Students Spend Doing Mathematics Homework (TMH) in a Normal School Week

**Report Location:** 4.7 Math

**Location in Questionnaire:** SQ1_15A, B

**Source Variables:** ASBMHWMA, ASBMHWMG

**Procedure:**

The index is computed from students' responses to the following two questions regarding mathematics homework.

- **How often your teacher gives you homework in mathematics? (SQ1_15A)**
- **When your teacher gives you mathematics homework, how many minutes are you usually given? (SQ1_15B)**

The international version of the SQ1_15A has following options

1) Every day  
2) 3 or 4 times a week  
3) 1 or 2 times a week  
4) Less than once a week  
5) Never

The international version of the SQ1_15B has following options

1) Fewer than 15 minutes  
2) 15 - 30 minutes  
3) 31-60 minutes  
4) 61-90 minutes  
5) More than 90 minutes

The index ASDMHW has three levels defined as follows:

1 = High: Students who responded that they are given mathematics homework at least 3 or 4 times a week (SQ1_15A = code 4 or 5) and they are given at least 31 minutes of mathematics homework (SQ1_15B = code greater than or equal to 3)  
3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ1_15A code = greater than or equal to 3) AND they are given at most 30 minutes of mathematics homework (SQ1_15B = code 1 or 2)  
2 = Medium: all other combinations.

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:** The derived variable is coded as missing if response to SQ1_15A is missing or [SQ1_15B is missing AND response to SQ1_15A is valid but different than code 5].
### Derived Variable Name: asdshw

**Label:** Index of Time on Science Homework (TMH)  
**Grade:** Fourth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Index of Time Students Spend Doing Science Homework (TSH) in a Normal School Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Location:</td>
<td>4.7</td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>SQ1_16A,B</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>AS8SHWMA, AS8SHWMG</td>
</tr>
</tbody>
</table>
| Procedure: | The index is computed from students’ responses to the following two questions regarding science homework.  
  How often your teacher gives you homework in science? (SQ1_16A)  
  When your teacher gives you science homework, how many minutes are you usually given? (SQ1_16B)  
  The international version of the SQ1_16A has following options:  
  1) Every day  
  2) 3 or 4 times a week  
  3) 1 or 2 times a week  
  4) Less than once a week  
  5) Never  
  The international version of the SQ1_16B has following options:  
  1) Fewer than 15 minutes  
  2) 15 - 30 minutes  
  3) 31-60 minutes  
  4) 61-90 minutes  
  5) More than 90 minutes  
  The index ASDSHW has three levels defined as follows:  
  1 = High: Students who responded that they are given science homework at least 3 or 4 times a week (SQ1_16A = code 1, 2) and they are given at least 31 minutes of science homework (SQ1_16B = code greater than or equal to 3)  
  3 = Low: Students who responded that they are given homework at most 1 or 2 times a week (SQ1_16A code = greater than or equal to 3) AND they are given at most 30 minutes of science homework (SQ1_16B = code 1, 2)  
  2 = Medium: all other combinations.  
  Analysis weighted by TOTWGT. |

**Comments**

**Missing Rules:** The derived variable is coded as missing if [response to SQ1_16A is missing] or [response to SQ1_16B is missing AND response to SQ1_16A is valid but different than code 5].
### Derived Variable Name: asdmscl  
**Label:** Index of Self-Confid Learning Math (SCM)  
**Grade:** Fourth

#### Title of Exhibit:
Index of Students’ Self-Confidence in Learning Mathematics (SCM)

#### Report Location:
4.9  
Math

#### Location in Questionnaire:
SQ1_6a,c,e,f

#### Source Variables:
ASBMTWEL, ASBMTCLM, ASBMTNOT, ASBMTQKY

#### Procedure:
The index is computed from students’ responses to the following questions regarding mathematics on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:
1) I usually do well in mathematics (SQ1_6a).
2) Mathematics is more difficult for me than for many of my classmates (Reversed) (SQ1_6c).
3) I’m just not good at mathematics (Reversed) (SQ1_6e).
4) I learn things quickly in mathematics (SQ1_6f).

Index ASDMSCL is based on the average of responses to the above statements. The index has three categories:
1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

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#### Comments

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#### Missing Rules:
Index coded as missing if 2 or more source questions are with invalid data.
<table>
<thead>
<tr>
<th>Derived Variable Name: asdsscl</th>
<th>Label: Index Self-Confidence in Learning Science (SCS)</th>
<th>Grade: Fourth</th>
</tr>
</thead>
</table>

**Title of Exhibit:** Index of Students’ Self-Confidence in Learning Science (SCS)

**Report Location:** 4.9 Science

**Location in Questionnaire:** SQ1.8:a,c, e, f

**Source Variables:** ASBSTWEL, ASBSTCLM, ASBSTNOT, ASBSTQKY

**Procedure:**
The index is computed from students’ responses to the following questions regarding science on a 4-point Likert scale of 1) Agree a lot, 2) Agree a little, 3) Disagree a little, 4) Disagree a lot:
1) I usually do well in science (SQ1.8a).
2) Science is more difficult for me than for many of my classmates (Reversed) (SQ1.8c).
3) I’m just not good at science (Reversed) (SQ1.8e).
4) I learn things quickly in science (SQ1.8f).

Index ASDSSCL is based on the average of responses to the above statements and has three categories:
1 = High: Average is less than or equal to 2.
2 = Medium: Average is greater than 2 and less than 3.
3 = Low: Average is greater than or equal to 3.

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:** Index coded as missing if 2 or more source questions are with invalid data.
The index is computed from students' responses to the following question:

In school, did any of this things happen during the last month? (SQ1_12)

The international version of the questionnaire has following five statements with a Yes/No option (1 =yes, 2 = no)

- a = Something of mine was stolen
- b = I was hit or hurt by other student(s) (e.g., shoving, hitting, kicking)
- c = I was made to do things that I didn’t want to do by other students
- d = I was made fun of or called names
- e = I was left out of activities by other students

Index ASDGPSS is assigned to three levels as follows:

1 = High: SQ1_12 a-e = code 2
2 = Low: SQ1_12 a-e = code 1 in at least three statements
3 = Medium: All other combinations

Analysis weighted by TOTWG.

Comments

Missing Rules:

Derived variable is coded as missing if two or more source variables are missing.
Fourth Grade – Teacher Questionnaire

Section 6
**Procedure:**

Computed from teachers’ response to the following question:

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_26)

- 1) Mostly taught before this year.
- 2) Mostly taught this year.
- 3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.

Analysis weighted by MATWGT.
**Derived Variable Name:** atdmtanu  |  **Label:** Summ Students Taught Number Math Topics  |  **Grade:** Fourth

**Title of Exhibit:** Summary of Students Taught the TIMSS Mathematics Topics

**Report Location:** 5.7 Math
**Location in Questionnaire:** TQ1_26Aa-l
**Source Variables:** ATBMTA01 TO ATBMTA12

Computed from teachers’ response to the following question:

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_26)

The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.

Analysis weighted by MATWGT.

**Comments**

**Missing Rules:** Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
Computed from teachers’ response to the following question:
The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_26)
The international version of the questionnarie has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.
Analysis weighted by MATWGT.
**Derived Variable Name:** atdmtame  **Label:** Summ Students Taught Measure Math Topics  **Grade:** Fourth

**Title of Exhibit:** Summary of Students Taught the TIMSS Mathematics Topics

<table>
<thead>
<tr>
<th>Report Location:</th>
<th>Location in Questionnaire:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.7 Math</td>
<td>TQ1_26ACa-f</td>
</tr>
<tr>
<td></td>
<td>ATBMTA19 TO ATBMTA24</td>
</tr>
</tbody>
</table>

Computed from teachers’ response to the following question:

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_26)

The international version of the questionnaire has following options for each topic:

1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.

Analysis weighted by MATWGT.

**Comments**

**Missing Rules:**

Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
**Derived Variable Name:** atdmtage  
**Label:** Summ Students Taught Geomtr Math Topics  
**Grade:** Fourth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Summary of Students Taught the TIMSS Mathematics Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Location:</td>
<td>5.7 Math</td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>TQ1_26Da-k</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>ATBMTA25 TO ATBMTA35</td>
</tr>
<tr>
<td>Procedure:</td>
<td>Computed from teachers’ response to the following question:</td>
</tr>
<tr>
<td></td>
<td>The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_26)</td>
</tr>
<tr>
<td></td>
<td>The international version of the questionnarie has following options for each topic:</td>
</tr>
<tr>
<td></td>
<td>1) Mostly taught before this year.</td>
</tr>
<tr>
<td></td>
<td>2) Mostly taught this year.</td>
</tr>
<tr>
<td></td>
<td>3) Not yet taught or just introduced</td>
</tr>
<tr>
<td></td>
<td>Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.</td>
</tr>
<tr>
<td></td>
<td>Analysis weighted by MATWGT.</td>
</tr>
</tbody>
</table>

**Comments**

**Missing Rules:** Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
### Derived Variable Name:
- atdmtada

### Label:
- Summ Students Taught Data Math Topics

### Grade:
- Fourth

#### Title of Exhibit:
Summary of Students Taught the TIMSS Mathematics Topics

#### Report Location:
5.7 Math

#### Location in Questionnaire:
TQ1_26ea-g

#### Source Variables:
ATBMTA36 TO ATBMTA42

#### Procedure:
Computes from teachers’ response to the following question:
The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year” (TQ1_26)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.
Analysis weighted by MATWGT.

#### Comments

#### Missing Rules:
- Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_39) The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.

Analysis weighted by SCIWGT.
**Derived Variable Name:** atdstali  
**Label:** Summ Students Taught Life Sci Topics  
**Grade:** Fourth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Summary of Students Taught the TIMSS Science Topics</th>
</tr>
</thead>
</table>

| Report Location: | 5.8  
| Location in Questionnaire: | Science  
| Source Variables: | TQ1_39Aa-j  
| Procedure: | ATBSTA01 TO ATBSTA10  

Computed from teachers’ response to the following question:

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_39)

The international version of the questionnaire has following options for each topic:

1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.

Analysis weighted by SCIWGT.

---

**Comments**

**Missing Rules:** Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
Computed from teachers’ response to the following question:

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1.39)

The international version of the questionnairie has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced

Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic.

Then take the average of all these percentages included in the variable.

Analysis weighted by SCIWGT.
Computed from teachers' response to the following question:
The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose “Mostly taught this year.” (TQ1_39)
The international version of the questionnaire has following options for each topic:
1) Mostly taught before this year.
2) Mostly taught this year.
3) Not yet taught or just introduced
Compute the percent of students whose teachers CHECKED option 1 or 2 for each individual topic. Then take the average of all these percentages included in the variable.
Analysis weighted by SCIWGRT.

Comments

Missing Rules: Derived variable is coded as missing if more than one-third of the source topics (variables) are missing.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>atdgtelc</th>
<th>Label:</th>
<th>Have Full Teaching License or Certificate</th>
<th>Grade: Fourth</th>
</tr>
</thead>
</table>

**Title of Exhibit:** Mathematics/Science Teachers’ Gender, Age, Certification, and Number of Years of Teaching

**Report Location:** 6.3 Math and Science

**Location in Questionnaire:** TQ1_8A and 8B

**Source Variables:** ATBGTELC, ATBGTLCE

**Procedure:**

Based on the teachers’ responses for the following two question(s):

1. Do you have a teacher license or certificate? (Yes/No) (TQ1_8A)
2. What type of license or certificate do you hold? (TQ1_8B)

The international version of question TQ1_8B has following options:

1) Full certificate
2) Provisional Certificate
3) Emergency Certificate
4) Others.

The derived variable ATDGTELC is reported as "Have Full Certificate"

The percent of students whose teachers checked option 1(Yes) for TQ1_8B after filtering for the teachers who has checked option 2 (No) for TQ1_8A.

The derived variable BTDGTEL has two categories:

1. Yes
2. No.

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:** Derived variable is coded as missing if the source variable is missing.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>atdmprep</th>
<th>Label:</th>
<th>Preparation to Teach Math</th>
<th>Grade: Fourth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td></td>
<td>Preparation to Teach Mathematics</td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td></td>
<td></td>
<td>ATBGSEP ATBGPSES ATBMPSC ATBSPSC ATBGPSOT ATBMDMA ATBSEDC</td>
<td></td>
</tr>
<tr>
<td>Procedure:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on teachers' response to the following two questions regarding their major area of study:

During your <post-secondary> education, what was your major or main area(s) of study? (TQ1_6A)

If your major or main area of study was education, did you have a specialization in any of the following? (TQ1_6B)

The international version of the question TQ1_6A has following five categories in Yes/No format (Code1/Code2):

a) Education - Primary/Elementary
b) Education - Secondary
c) Mathematics
d) Science
e) Other

The international version of the question TQ1_6B has following four categories in Yes/No format:

a) Mathematics
b) Science
c) Language/reading
d) Other subject

The derived variable ATDMPREP is reported with five sub-categories according to the following definitions:

1: Primary/Elementary Education with a Major or Specialization in Mathematics if TQ1_6_Aa = code 1 and [ (TQ1_6_Ac=code 1) or (TQ1_6_Ba=code 1)].
2: Primary/Elementary Education with a Major or Specialization in Science but not in Mathematics if Not in sub-category 1 and TQ1_6_Aa=code 1 and [ (TQ1_6_Ad=code 1) or (TQ1_6_Bb=code 1)].
3: Mathematics or Science Major without a Major or Specialization in Primary/Elementary Education if Not in sub-category 1 and 2 and TQ1_6_Ac=code 1 or TQ1_6_Ad=code 1 or TQ1_6_Ba=code 1 or TQ1_6_Bb=code 1.
4: Primary/Elementary Education without a Major or Specialization in Mathematics or Science if Not in sub-category 1, 2, and 3 and TQ1_6_Aa=code 1.
5: All other valid cases not in sub-category 1, 2, 3 and 4.

Comments

Missing Rules: Derived variable is coded as missing if all source variables (TQ1_6_Aa-e=YES) are missing.
**Derived Variable Name:** atdsprep  
**Label:** Preparation to Teach Science  
**Grade:** Fourth

<table>
<thead>
<tr>
<th>Title of Exhibit</th>
<th>Preparation to Teach Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Location:</td>
<td>TQ1_6A,B</td>
</tr>
<tr>
<td>Location in Questionnaire</td>
<td>ATBGSEP, ATBGPSES, ATBMPSMA, ATBGPSSC, ATBGPSTOT, ATBMEDMA, ATBSEDSC</td>
</tr>
<tr>
<td>Source Variables:</td>
<td>Based on teachers’ response to the following two questions regarding their major area of study: During your &lt;post-secondary&gt; education, what was your major or main area(s) of study?(TQ1_6A) If your major or main area of study was education, did you have a specialization in any of the following?(TQ1_6B) The international version of the question TQ1_6A has following five categories in Yes/No format (Code 1/Code2): a) Education - Primary/Elementary b) Education - Secondary c) Mathematics d) Science e) Other The international version of the question TQ1_6B has following four categories in Yes/No format: a) Mathematics b) Science c) Language/reading d) Other subject The derived variable ATDSREP is reported with five sub-categories according to the following definitions: 1: Primary/Elementary Education with a Major or Specialization in Science but not in Mathematics if TQ1_6_Aa=code 1 and [(TQ1_6_Ad=code 1) or (TQ1_6_Bb=code 1)]. 2: Primary/Elementary Education with a Major or Specialization in Mathematics if Not in sub-category 1 and TQ1_6_Aa = code 1 and [(TQ1_6_Ad=code 1) or (TQ1_6_Ba=code 1)]. 3: Mathematics or Science Major without a Major or Specialization in Primary/Elementary Education if Not in sub-category 1 and 2 and TQ1_6_Ac=code 1 or TQ1_6_Ad=code 1 or TQ1_6_Ba=code 1 or TQ1_6_Bb=code 1. 4: Primary/Elementary Education without a Major or Specialization in Mathematics or Science if Not in sub-category 1,2 and 3 and TQ1_6_Aa=code 1. 5: All other valid cases not in sub-category 1, 2, 3 and 4.</td>
</tr>
</tbody>
</table>

| Comments | |

<p>| Missing Rules: | Derived variable is coded as missing if all source variables TQ1_6_Aa-e are missing |</p>
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>atdmstud</th>
<th>Label:</th>
<th>Class Size for Mathematics Instruction</th>
<th>Grade: Fourth</th>
</tr>
</thead>
</table>

**Title of Exhibit:**
Class Size for Mathematics Instruction

**Report Location:**
7.1 Math

**Location in Questionnaire:**
TQ1_14A

**Source Variables:**
ATBMSTUD

**Procedure:**
Based on the teachers’ responses for the following question regarding number student in TIMSS class:

How many students are in the TIMSS class for mathematics?(TQM1_14A)

The derived variable ATDMSTUD has four categories:

1. 1-19 Students;
2. 20-26 Students;
3. 27-32 Students.
4. 33 or More Students.

Analysis weighted by MATWGT.

**Comments**

**Missing Rules:**
Derived variable is coded as missing if the source variable is missing.
Based on the teachers’ responses for the following question regarding number student in TIMSS class:

How many students are in the TIMSS class for science?(TQM1_14B)

The derived variable ATDSSTUD has four categories

1. 1-19 Students;
2. 20-26 Students;
3. 27-32 Students.
4. 33 or More Students.

Analysis weighted by SCIWGT.
### Derived Variable Name: atdmh  
### Label: Idx Tchr Emphasis on Math Homework (EMH)  
### Grade: Fourth

**Title of Exhibit:**  
Index of Teachers' Emphasis on Mathematics Homework (EMH)

**Report Location:**  
7.13 Math  
TQ1_27, 28, 29

**Location in Questionnaire:**  
ATBMHMWO, ATBMHWMC, ATBMHWKM

**Source Variables:**

**Procedure:**

The index is computed from the teachers' responses to the following three question(s) regarding mathematics homework:

1. Do you assign mathematics homework to the TIMSS class? (YES/NO) (Code1/ Code2) (TQ1_27)  
2. How often do you usually assign mathematics homework to the TIMSS class? (TQ1_28)  
3. When you assign mathematics homework to the TIMSS class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.) (TQ1_29)

The international version of the question TQ1_28 has following options:

1. Every or almost every lesson  
2. About half the lessons  
3. Some lesson

The international version of the question TQ1_29 has following options:

1. Fewer than 15 minutes  
2. 15-30 minutes  
3. 31-60 minutes  
4. 61-90 minutes  
5. More than 90 minutes

Index ATDMH is assigned to three categories according to the following definitions:

1. High: TQ1_27 = code 1 AND TQ1_28 = code 1 or 2 AND TQ1_29 = code greater than or equal to 3  
2. Low: TQ1_27 = code 2 OR cases with TQ1_27 = code 1 AND TQ1_28 = code 2 or 3 AND TQ1_29 = code 1 or 2.

2. Medium: All other combinations.

Analysis weighted by MATWGT.

### Comments

### Missing Rules:

Derived variable is coded as missing if response to TQ1_28 or TQ1_29 is missing.
The index is computed from the teachers’ responses to the following three question(s) regarding mathematics homework:

Do you assign mathematics homework to the TIMSS class? (YES/NO) (TQ1_40)

How often do you usually assign mathematics homework to the TIMSS class? (TQ1_41)

When you assign mathematics homework to the TIMSS class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.) (TQ1_42)

The international version of the question TQ1_41 has following options:
1) Every or almost every lesson
2) About half the lessons
3) Some lesson

The international version of the question TQ1_42 has following options:
1) Fewer than 15 minutes
2) 15-30 minutes
3) 31-60 minutes
4) 61-90 minutes
5) More than 90 minutes

Index ATDHS is assigned to three categories according to the following definitions:
1 = High: TQ1_40 = code 1 AND TQ1_41 = code 1 or 2 AND TQ1_42 = code greater than or equal to 3
3 = Low: TQ1_40 = code 2 OR cases with TQ1_40 = code 1 AND TQ1_41 = code 2 or 3 AND TQ1_42 = code 1 or 2.
2 = Medium: All other combinations.

Analysis weighted by SCIWGT.
Fourth Grade – School Questionnaire
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>acdmst</th>
<th>Label:</th>
<th>Idx Avlbl Schl Rsrs Math Instrn (ASRMI)</th>
<th>Grade: Fourth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td>Trends in Index of Availability of School Resources for Mathematics Instruction (ASRMI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>8.3</td>
<td>Math</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>For 2003, SCQ1_23a-e,g-k; and For 1995 SCQ1_15a-e,g-k</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>ACBGST01 TO ACBGST05, ACBMST07 TO ACBMST11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure:</td>
<td></td>
<td>The index is computed from principals’ responses to questions regarding shortages or inadequacies that can affect instruction in their school on a four point likert scale (1 = none, 2 = a little, 3 = some, 4 = a lot): Is your school capacity to provide instruction affected by a shortage or inadequacy of any of the following?(SCQ1_23) a = Instructional materials (e.g., textbook); b = Budget for supplies (e.g., paper, pencils); c = School buildings and grounds; d = Heating/cooling and lightening systems; e = Instructional space (e.g., classrooms); g = Computers for mathematics instruction; h = Computer software for mathematics instruction; i = Calculators for mathematics instruction; j = Library materials relevant to mathematics instruction; k = Audio-visual resources for mathematics instruction. Index ACDMST is assigned to three levels as follow: 1 = High: Average value of a-e is less than 2 AND the average value of g-k is less than 2; 3 = Low: Average value of a-e is greater than or equal to 3 AND the average value of g-k is greater than or equal to 3; 2 = Medium: All other combinations. Analysis weighted by TOTWG.</td>
<td></td>
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</tr>
</tbody>
</table>
The index is computed from teachers' responses to the following question regarding their school climate using five point likert scale (1 = very high, 2 = high, 3 = medium, 4 = low, 5 = very low):
How would you characterize each of the following within your school? (TQ1_9)

The international version of the question has following eight categories
a = Teachers' job satisfaction
b = Teachers' understanding of the school's curricular goals
c = Teachers' degree of success in implementing the school's curriculum
d = Teachers' expectations for student achievement
e = Parental support for student achievement
f = Parental involvement in school activities
g = Students' regard for school property
h = Students' desire to do well in school

Index was calculated by averaging the response given by teachers for these categories

Index ATDGCH is assigned to three levels as follow:
1 = High: Average value is less than or equal to 2
2 = Medium: Average value is greater than 2 AND less than or equal to 3
3 = Low: Average value is greater than 3

Analysis weighted by TOTWGT.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>atdgcu</th>
<th>Label:</th>
<th>Ðx Tchr Perceptn School Safety (TPSS)</th>
<th>Grade:</th>
<th>Fourth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td></td>
<td>Index of Teachers’ Perception of Safety in the Schools (TPSS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>8.7</td>
<td>Math and Science</td>
<td></td>
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<tr>
<td>Location in Questionnaire:</td>
<td>TQ1_10b-d</td>
<td></td>
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</tr>
<tr>
<td>Source Variables:</td>
<td>ATBGCUSN, ATBGCUA, ATBGCUSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure:</td>
<td></td>
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</tr>
</tbody>
</table>

The index is computed from teachers’ responses to the following question concerning security in their schools using four point Likert scale (1 = agree a lot, 2 = agree, 3 = disagree, 4 = disagree a lot): Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements (TQ1_10):

- **b** = This school is located in a safe neighborhood
- **c** = I feel safe at this school
- **d** = This school’s security policies and practices are sufficient

Index ATDGCU is assigned to three levels as follow:

- **1** = High: Code 1 or 2 to all three statements
- **3** = Low: Code 3 or 4 to all three statements
- **2** = Medium: All other combinations

Analysis weighted by TOTWGt.

**Comments**

**Missing Rules:**

Derived variable is coded as missing if one or more source variables are missing.
**Title of Exhibit:**
Trends in Index of Availability of School Resources for Science Instruction (ASRSI)

**Report Location:**
8.3 Science

**Location in Questionnaire:**
For 2003, SCQ1_23a-e,l-q; and For 1995, SCQ1_15a-e,l-q

**Source Variables:**
ACBGST01 TO ACBGST05, ACBSST12 TO ACBSST17

**Procedure:**
The index is computed from principals’ responses to questions regarding shortages or inadequacies that can affect instruction in their school on a four point likert scale (1 = none, 2 = a little, 3 = some, 4 = a lot).

Is your school capacity to provide instruction affected by a shortage or inadequacy of any of the following?(SCQ1_23)
- a = Instructional materials (e.g., textbook);
- b = Budget for supplies (e.g., paper, pencils);
- c = School buildings and grounds;
- d = Heating/cooling and lightening systems;
- e = Instructional space (e.g., classrooms);
- l = science laboratory equipment and materials;
- m = Computers for science instruction;
- n = Computer software for science instruction;
- o = Calculators for science instruction;
- p = Library materials relevant to science instruction;
- q = Audio-visual resources for science instruction.

Index ACDSST is assigned to three levels as follow:
1 = High: Average value of a-e is less than 2 AND the average value of l-q is less than 2
3 = Low: Average value of a-e is greater than or equal to 3 AND the average value of l-q is greater than or equal to 3
2 = Medium: All other combinations

Analysis weighted by TOTWGT.

**Comments**

**Missing Rules:**
Derived variable is coded as missing if two or more of SCQ1_23a-e are missing OR three or more SCQ1_23 l-q are missing.
The Index of Principals' Perception of School Climate (PPSC) is computed from principals' responses to eight questions regarding school climate using a four-point Likert scale (1 = very high, 2 = high, 3 = medium, 4 = low, 5 = very low).

How would you characterize each of the following within your school?

1. Teachers' job satisfaction
2. Teachers' understanding of the school's curricular goals
3. Teachers' degree of success in implementing the school's curriculum
4. Teachers' expectations for student achievement
5. Parental support for student achievement
6. Parental involvement in school activities
7. Students' regard for school property
8. Students' desire to do well in school

Index is calculated by averaging the responses for the above eight categories. The index is assigned to three levels as follows:

- 1 = High: Average value is less than or equal to 2
- 2 = Medium: Average value is greater than 2 AND less than or equal to 3
- 3 = Low: Average value is greater than 3

Analysis weighted by TOTWGT.
**Derived Variable Name:** acdgsp  
**Label:** Idx Good School/Class Attendance (GSCA)  
**Grade:** Fourth

<table>
<thead>
<tr>
<th><strong>Title of Exhibit:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trends in Index of Good School and Class Attendance (GSCA)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Report Location:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>8.6 Math and Science</td>
</tr>
</tbody>
</table>

| **Location in Questionnaire:** |
| SCQ1_22A, B_a-c |

| **Source Variables:** |
| ACBGFP01, ACBGFP02, ACBGFP03, ACBGSP01, ACBGSP02, ACBGSP03 |

| **Procedure:** |
| The index is computed from principals’ responses to two questions concerning the problem behaviors of students in their schools: |
| How often each of the following behavior occur among eighth grade students in your school? |
| (SCQ1_22A) |
| using a 5 point likert scale: 1) Never, 2) Rarely, 3) Monthly, 4) Weekly 5) Daily |
| If the behavior occurs, how severe a problem does it present? (SCQ1_22B) |
| using a 3-point likert scale: 1) Not a problem, 2) Minor problem, 3) Serious problem |
| The international version of both the question have following three problem behavior categories |
| a = Arriving late at school |
| b = Absenteeism (i.e., unjustified absences) |
| c = Skipping class <hours/periods> |
| Index ACDGSP is assigned to three levels as follow: |
| 1 = High: SCQ1_22A_a-c = code 1 OR SCQ1_22B_a-c code 1 or missing |
| 3 = Low: SCQ1_22B_a-c code 3 for atleast 2 categories OR code 3 for 1 category and code 3 for other two categories OR if there is one missing source variable and code 3 for other two. |
| 2 = Medium: All other combinations |
| Analysis weighted by TOTWGT. |

| **Comments** |
| |

| **Missing Rules:** |
| Derived variable is coded as missing if two or three source variables are missing. |
Variables Derived from more than one Questionnaire
### Derived Variable Name: btdgmhy  
**Label:** Average Yearly Math Instructional Time (hrs)  
**Grade:** Eighth

<table>
<thead>
<tr>
<th>Title of Exhibit:</th>
<th>Mathematics Instructional Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Report Location:</strong></td>
<td>7.3 Math</td>
</tr>
<tr>
<td><strong>Location in Questionnaire:</strong></td>
<td>SCQ2_11A, B, and TQM2_18</td>
</tr>
<tr>
<td><strong>Source Variables:</strong></td>
<td>BCBGDWFU, BCBGDWHA, BCBGDYSO, BTBMINTMT</td>
</tr>
</tbody>
</table>

**Procedure:**

Based on the principals’ responses for the following question:

A. How many days per year is your school open for instruction for eighth grade students? (SCQ2_11A)

B. How many instructional days are there in the school week (typical calendar week from Monday through Saturday) for eighth grade students? (SCQ2_11B)

Based on the teachers’ responses for the following question:

How many minutes per week do you teach mathematics to the TIMSS class? (TQM2_18)

Compute Students’ Average Yearly Mathematics Instructional Time in Hours (BTDGMHY) as follows:

**Step 1:** Compute total instructional weeks/year: Recode “None” as zero (SCQ2_11Ba,b option 7=0).

SCQ2_11A (days/year) divided by [SCQ2_11Ba + SCQ2_11Bb] (days/week). If SCQ2_11Bb is missing, total instructional weeks/year = SCQ2_11A divided by SCQ2_11Ba. Note: Set “total instructional weeks/year” to missing if it is less than 30 or more than 48; OR (SCQ2_11Ba + SCQ2_11Bb/2) is less than 4 or greater than 6.

**Step 2:** Compute mathematics instructional hours/week: TQM2_18 divided by 60.

**Step 3:** Compute mathematics instructional hours/year: Multiply total instructional weeks/year (step 1 above) by mathematics instructional hours per year (step 2).

---

**Comments**

Derived variable not included in the international database.

**Missing Rules:**

Derived variable is coded as missing if either SCQ2_11A, or SCQ2_11Ba, or TQM2_18 missing
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdgmpt</th>
<th>Label:</th>
<th>Mathematics Instructional Time</th>
<th>Grade: Eighth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
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<td></td>
<td></td>
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<tr>
<td>Report Location:</td>
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<tr>
<td>Location in Questionnaire:</td>
<td></td>
<td></td>
<td>SCQ2_11A, B, C and TQM2_18</td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BCBGDWFU, BCBGDWHA, BCBGDYSO, BTBMTIMT, BCBGTITD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure:</td>
<td></td>
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</tbody>
</table>

Based on the principals’ responses for the following questions regarding instruction in their school:
A. How many days per year is your school open for instruction for eighth grade students? (SCQ2_11A)
B. How many instructional days are there in the school week (typical calendar week from Monday through Saturday) for eighth grade students? (SCQ2_11B)
C. To the nearest half-hour, what is the total instructional time in a typical full day (excluding lunch breaks, study hall, and after school activities) for eighth grade students? (SCQ2_11C)

Based on the teachers’ responses for the following question:
How many minutes per week do you teach mathematics to the TIMSS cass? (SCQ2_11C)

Compute Mathematics Instructional Time as Percent of Total Instructional Time (BTDGMPT) as follows:

Recode SCQ2_11C option 1=4, option 2=4.5, option 3=5, option 4=5.5, option 5=6, option 6=6.5

Step 1: Compute total instructional hours/year: 
\[
\frac{[\text{SCQ2}_11\text{A}} + (\text{SCQ2}_11\text{C} / 2) \times \text{SCQ2}_11\text{Bb}]}{\text{SCQ2}_11\text{Ba} + \text{SCQ2}_11\text{Bb}}
\]

If SCQ2_11Ba is valid and SCQ2_11Bb is missing, total instructional hours/year = (SCQ2_11A) (SCQ2_11C).

Step 2: Compute mathematics instructional hours/year as a percent of total instructional time:

mathematics instructional hours/year (BTDGMHY) divided by total instructional hours/year (result of Step 1) multiplied by 100.

Analysis weighted by MATWGT.

Comments
Derived variable not included in the international database.

Missing Rules:
Derived variable is coded as missing if SCQ2_11A, Ba, C or TQM2_18 missing OR if the derived number of “total instructional weeks/year” is missing.
<table>
<thead>
<tr>
<th>Derived Variable Name:</th>
<th>btdgshy</th>
<th>Label:</th>
<th>Average Yearly Sci Instructional Time (hrs)</th>
<th>Grade: Eighth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td>Instructional Time in the Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report Location:</td>
<td>7.3</td>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location in Questionnaire:</td>
<td>SCQ2_11A, B and TQS2_18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Variables:</td>
<td>BCBGDWFU, BCBGDWHA, BCBGDYSO, BTBSTIMT</td>
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<tr>
<td>Procedure:</td>
<td>Based on the principals’ responses for the following question:</td>
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<tr>
<td></td>
<td>A. How many days per year is your school open for instruction for eighth grade students? (SCQ2_11A)</td>
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<td></td>
<td>B. How many instructional days are there in the school week (typical calendar week from Monday through Saturday) for eighth grade students?(SCQ2_11B)</td>
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<tr>
<td></td>
<td>Based on the teachers’ responses for the following question:</td>
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<tr>
<td></td>
<td>How many minutes per week do you teach mathematics to the TIMSS cass?(TQS2_18)</td>
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<td></td>
<td>Compute Students’ Average Yearly Science Instructional Time in Hours (BTDGSHY) as follows:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 1: Compute total instructional weeks/year: Recode “None” as zero (SCQ2_11Ba,b option 7=0).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SCQ2_11A (days/year) divided by [SCQ2_11Ba + SCQ2_11Bb] (days/week). If SCQ2_11Bb is missing, total instructional weeks/year= SCQ2_11A divided by SCQ2_11Ba.</td>
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<tr>
<td></td>
<td>Note: Set “total instructional weeks/year” to missing if it is less than 30 or more than 48; OR (SCQ2_11Ba + SCQ2_11Bb/2) is less than 4 or greater than 6.</td>
<td></td>
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<tr>
<td></td>
<td>Step 2: Compute science instructional hours/week:TQS2_18 divided by 60.</td>
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<tr>
<td></td>
<td>Step 3: Compute science instructional hours/year: Multiply total instructional weeks/year(step 1 above) by science instructional hours per year (step 2).</td>
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</tr>
</tbody>
</table>

**Comments**

Derived variable not included in the international database.

**Missing Rules:**

Derived variable is coded as missing if SCQ2_11A, Ba, C or TQS2_18 missing.
The derived variable is coded as missing if SCQ2_11A, B, C and TQS2_18 missing OR if the derived number of “total instructional weeks/year” is missing.
Based on the principals’ responses for the following questions regarding instruction in their school:
A. How many days per year is your school open for instruction for eighth grade students? (SCQ1_11A)
B. How many instructional days are there in the school week (typical calendar week from Monday through Saturday) for eighth grade students? (SCQ1_11B)

Based on the teachers’ responses for the following question:
How many minutes per week do you teach mathematics to the TIMSS case? (TQ1_15)

Compute Students’ Average Yearly Mathematics Instructional Time in Hours (ATDGMHY) as follows:
Step 1: Compute total instructional weeks/year: Recode “None” as zero (SCQ1_11Ba,b option 7=0).
SCQ1_11A (days/year) divided by [SCQ1_11Ba + SCQ2_11Bb] (days/week). If SCQ1_11Bb is missing, total instructional weeks/year= SCQ1_11A divided by SCQ1_11Ba.

Note: Set “total instructional weeks/year” to missing if it is less than 30 or more than 48; OR (SCQ1_11Ba + SCQ1_11Bb/2) is less than 4 or greater than 6.

Step 2: Compute mathematics instructional hours/week: TQ1_15 divided by 60.
Step 3: Compute mathematics instructional hours/year: Multiply total instructional weeks/year (step 1 above) by mathematics instructional hours per year (step 2 above).
Derived Variable Name: atdgmpt  
Label: Math Time As Percent of Total Instructional  
Grade: Fourth

Title of Exhibit: Mathematics Instructional Time

Report Location: SCQ1_11A, B, C and TQ1_15
Location in Questionnaire: ACBGDWFU, ACBGDWHA, ACBGDYSO, ATBMTIMT, ACBGITID
Source Variables: Based on the principals' responses for the following questions regarding instruction in their school:
Procedure: A. How many days per year is your school open for instruction for eighth grade students?(SCQ1_11A)
B. How many instructional days are there in the school week (typical calendar week from Monday through Saturday) for eighth grade students?(SCQ1_11B)
C. To the nearest half-hour, what is the total instructional time in a typical full day (excluding lunch breaks, study hall, and after school activities) for eighth grade students? (SCQ1_11C)
Based on the teachers' responses for the following question:
How many minutes per week do you teach mathematics to the TIMSS casst?(TQ1_15)
Compute Mathematics Instructional Time as Percent of Total Instructional Time (ATDGMPT) as follows:
Recode SCQ2_11C option 1=4, option 2=4.5, option 3=5, option 4=5.5, option 5=6, option 6=6.5
Step 1: Compute total instructional hours/year: [ (SCQ1_11A) (SCQ1_11C) ((SCQ1_11B) / (SCQ1_11Ba + Bb)) ] + [ (SCQ1_11A) (SCQ1_11C / 2) ((SCQ1_11Bb) / (SCQ1_11Bb + Bb)) ]
If SCQ1_11Ba is valid and SCQ1_11Bb is missing, total instructional hours/year= (SCQ1_11A)
(SCQ1_11C).
Step 2: Compute mathematics instructional hours/year as a percent of total instructional time:
mathematics instructional hours/year (ATDGMHY) divided by total instructional hours/year (result of Step 1) multiplied by 100.
Analysis weighted by MATWGT.

Comments: Derived variable not included in the international database.

Missing Rules: Derived variable is coded as missing if SCQ1_11A, B, C or TQ1_15 missing OR if the derived number of "total instructional weeks/year" is missing.
<table>
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<tr>
<th>Derived Variable Name:</th>
<th>atdgshy</th>
<th>Label:</th>
<th>Average Yearly Science Instructional Time (hrs)</th>
<th>Grade: Fourth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Exhibit:</td>
<td></td>
<td>Instructional Time in the Sciences</td>
<td></td>
<td></td>
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<tr>
<td>Report Location:</td>
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<tr>
<td>Location in Questionnaire:</td>
<td></td>
<td>SCQ1_11A, B and TQ1_33A, B</td>
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<tr>
<td>Source Variables:</td>
<td></td>
<td>ACBGDFWU, ACBGDWA, ACBGDYSO, ATBSBSSBJ, ATBSYMW, ATBSNMT</td>
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<tr>
<td>Procedure:</td>
<td></td>
<td>Based on the principals’ responses for the following questions regarding instruction in their school:</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>A. How many days per year is your school open for instruction for eighth grade students? (SCQ1_11A)</td>
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<td></td>
<td>B. How many instructional days are there in the school week (typical calendar week from Monday through Saturday) for eighth grade students? (SCQ1_11B)</td>
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<td>C. To the nearest half-hour, what is the total instructional time in a typical full day (excluding lunch breaks, study hall, and after school activities) for eighth grade students? (SCQ1_11C)</td>
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<td></td>
<td>Based on the teachers’ responses for the following question:</td>
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<tr>
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<td></td>
<td>How many minutes per week do you teach science to the TIMSS cases? (TQ1_33A)</td>
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<tr>
<td></td>
<td></td>
<td>Compute Students’ Average Yearly Science Instructional Time in Hours:</td>
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<td></td>
<td></td>
<td>Step 1: Compute total instructional weeks/year: Recode “None” as zero (SCQ2_11B, a option 7=0). SCQ2_11A (days/year) divided by [SCQ2_11B + SCQ2_11B] (days/week). If SCQ2_11B is missing, total instructional weeks/year = SCQ2_11A divided by SCQ2_11B. Note: Set “total instructional weeks/year” to missing if it is less than 30 or more than 48; OR (SCQ2_11B + SCQ2_11B) is less than 4 or greater than 6.</td>
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<td>Step 2: Compute science instructional hours/week:TQ1_33A divided by 60. (use the valid response from TQ1_33A or B)</td>
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<tr>
<td></td>
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<td>Step 3: Compute science instructional hours/year.: Multiply total instructional weeks/year (step 1 above) by science instructional hours per year (step 2).</td>
<td></td>
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</tr>
</tbody>
</table>

**Comments**

Derived variable not included in the international database.

**Missing Rules:**

Derived variable is coded as missing if SCQ1_11A, B, C or TQ1_33A, B missing.
Derived Variable Name: atdgspt  Label: Sci Time As Percent of Total Instructional  Grade: Fourth

Title of Exhibit: Instructional Time in the Sciences

Report Location: 7.3 Science

Location in Questionnaire: SCQ1_11A, B, C and TQ1_33A, B

Source Variables: ACBGDFWFU, ACBGDWHA, ACBGDYSO, ATBSSSBJ, ATBSYMT, ATBSNMT, ACBGTITD

Procedure: Based on the principals’ responses for the following questions regarding instruction in their school:
A. How many days per year is your school open for instruction for eighth grade students?(SCQ1_11A)
B. How many instructional days are there in the school week (typical calendar week from Monday through Saturday) for eighth grade students?(SCQ1_11B)
C. To the nearest half-hour, what is the total instructional time in a typical full day (excluding lunch breaks, study hall, and after school activities) for eighth grade students? (SCQ1_11C)

Based on the teachers’ responses for the following question:
How many minutes per week do you teach science to the TIMSS cas?(TQ1_15)

Compute Science Instructional Time as Percent of Total Instructional Time as follows:
Recode SCQ2_11C option 1=4, option 2=4.5, option 3=5, option 4=5.5, option 5=6, option 6=6.5
Step 1: Compute total instructional hours/year: [(SCQ1_11A) (SCQ1_11C) (SCQ1_11Ba) / (SCQ1_11Ba + Bb)] + [(SCQ1_11A) (SCQ1_11C / 2) (SCQ1_11Bb) / (SCQ1_11Ba + Bb)]

If SCQ1_11Ba is valid and SCQ1_11Bb is missing, total instructional hours/year= (SCQ1_11A) (SCQ1_11C).

Step 2: Compute science instructional hours/year as a percent of total instructional time: science instructional hours/year divided by result of Step 1 multiplied by 100.
Analysis weighted by SCIWGT.

Comments
Derived variable not included in the international database.

Missing Rules:
Derived variable is coded as missing if SCQ1_11A, B, C or TQ1_33A, B missing OR if the derived number of “total instructional weeks/year” is missing.