

Second Information Technology in Education Study

SITES 2006 User Guide for the International Database



Edited by
Falk Brese
Ralph Carstens

Contributors
Eugenio J. Gonzalez
Juliane Hencke
Olaf Zuehlke



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International Association for the
Evaluation of Educational Achievement

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For more information about the IEA SITES 2006 International Database contact:
IEA Data Processing and Research Center
Mexikoring 37
22297 Hamburg
Germany
email: sites@iea-dpc.de

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Overview of the SITES 2006 International Database

Falk Brese
Ralph Carstens

1.1 Introduction

To support and promote secondary analyses, the International Association for the Evaluation of Educational Achievement (IEA) is making the SITES 2006 international database and accompanying User Guide available to researchers, analysts, and public users. The database comprises national contexts and school- and teacher-level data from 23 education systems, all of which gave IEA permission to release their national data. It includes information from roughly 8,000 schools, including more than 13,000 mathematics and over 16,000 science teachers.

The SITES 2006 User Guide describes the content, format, and usage of the SITES 2006 international database. Chapter 2 describes the structure of the database in detail including information about the response, sampling, and derived variables and their coding. Chapter 3 details the weighting and variance estimation methods used in SITES 2006 and provides information on the use of weights and guidelines for estimating variance when conducting secondary analysis. Chapter 4 provides instructions on analyzing the SITES 2006 international database using IEA's International Database (IDB) Analyzer software to replicate the results presented in the SITES 2006 international report as well as to conduct secondary analysis. The appendices contain the international version of each of the SITES 2006 questionnaires.

Since SITES 2006 was an ambitious and demanding study, involving complex procedures for drawing samples, collecting data, and analyzing and reporting findings, it is necessary to have an understanding of the characteristics of the study in order to work effectively with the data. Although the SITES 2006 design, operations, and data gathering resembled to a large extent the procedures used in IEA's past and current student achievement studies such as TIMSS and PIRLS, SITES' adult target populations, for example, implied certain consequences and necessities for data collection and analysis.

The SITES 2006 User Guide describes the organization, content, and usage of the international database, while the SITES 2006 Technical Report (Carstens & Pelgrum, 2009) provides a comprehensive account of the methodological and analytical implementation of the study. It is imperative, therefore, that this user guide be used in conjunction with the technical report. The international report (Law, Pelgrum, & Plomp, 2008) is another key resource for the analysis itself. Using all these publications will allow analysts to confidently replicate the procedures used, and to accurately undertake new analyses in areas of special interest.¹

¹ Further information about the international report, its supplementary online appendices, as well as order details and links are provided on the study's website at <http://www.sites2006.net>

1.2 An Overview of SITES 2006

For more than 50 years, IEA has been conducting comparative studies in education. IEA's Second Information Technology in Education Study (SITES) produced internationally comparable indicators on information and communication technology (ICT) usage and practices, as well as an in-depth analysis of the way in which ICT impacts teaching and learning processes. SITES 2006 is the fourth in IEA's series of ICT-related surveys, which began in 1987 with the IEA Computers in Education Study (COMPED), followed by SITES Module 1 (1997–2000) and SITES Module 2 (2000–2004). COMPED focused on the use of computers in schools and the effects of this usage within schools. SITES Module 1 looked at the readiness of schools to integrate ICT into teaching and learning. SITES Module 2 concerned 174 case studies of innovative pedagogical practices in different countries, examining and comparing the characteristics of these practices as well as the factors associated with them.

SITES 2006 is the fourth project in this series. It consists of a survey of schools and teachers of mathematics and science. Its aim is to understand what pedagogical practices teachers and schools in different education systems apply and how ICT is used in these practices. The study's initial findings are presented in Law, Pelgrum, & Plomp (2008).

1.2.1 Participating Education Systems

Table 1.1 shows information about the 22 education systems that participated in SITES 2006. In addition to these 22, Australia participated as a benchmarking country and collected data during the following school year.² Altogether, SITES 2006 covered education systems from five different continents. Fifteen of these systems had already participated in SITES Module 1.

The ISO 3166-1 definition for country codes was used to identify education systems. For education systems not listed in the ISO 3166-1, the IEA Data Processing and Research Center (DPC) derived new alphanumeric and associated numeric codes. The three letter alphanumeric code is used in filenames and identifies the education systems associated with that file. The numeric code is used within the data files to identify the education system for each record.

The survey was administered towards the end of the school year. In order to conform to this timeline, 18 education systems followed the northern hemisphere (NH) timeline and administered the survey in the first half of calendar year 2006. Four education systems administered the survey towards the end of the calendar year 2006, following the southern hemisphere timeline (SH).³

In the Russian Federation, regions were selected as a first sampling stage. A sample of schools from within each region was selected. In the case of the Moscow region, the sample was extended to arrive at optimized estimates for the region. Therefore, data from schools sampled for the Moscow region contributed to both the estimates for the Moscow region and for the Russian Federation. All records from the Moscow region sample were consequently also added to the Russian Federation data.

1.2.2 Management

SITES 2006 was managed by a consortium involving the following partners and key staff:

- University of Twente: Tjeerd Plomp (study director), Hans Pelgrum (international coordinator and responsible for the development and reporting of the school questionnaires), Joke Voogt

² See Appendix E for characteristics of the Australian sample.

³ Australia also administered the survey towards the end of the school year following a southern hemisphere timeline, but this occurred one year later, towards the end of 2007.

Table 1.1 Participating Education Systems in SITES 2006

Education System	ISO 3166-1 Alpha-3 code	ISO 3166-1 Numeric code (IDCOUNTRY)	Hemisphere	SITES Module 1 Participation
Alberta Province, Canada	CAB*	9134*	NH	
Catalonia, Spain	ECT*	7241*	NH	
Chile	CHL	152	SH	
Chinese Taipei	TWN	158	NH	•
Denmark	DNK	208	NH	•
Estonia	EST	233	NH	
Finland	FIN	246	NH	•
France	FRA	250	NH	•
Hong Kong SAR	HKG	344	NH	•
Israel	ISR	376	NH	•
Italy	ITA	380	NH	•
Japan	JPN	392	SH	•
Lithuania	LTU	440	NH	•
Moscow, Russian Federation	RUM*	6431*	NH	
Norway	NOR	578	NH	•
Ontario Province, Canada	COT*	9132*	NH	
Russian Federation	RUS	643	NH	•
Singapore	SGP	702	SH	•
Slovak Republic	SVK	703	NH	
Slovenia	SVN	705	NH	•
South Africa	ZAF	710	SH	•
Thailand	THA	764	NH	•
Benchmarking Participant				
Australia	AUS	36	SH	

* Education systems marked with an asterisk are not part of the ISO 3166-1 definition. Codes have been defined by the IEA DPC.

- Hong Kong University: Nancy Law (co-international coordinator) and Angela Chow (research officer)
- IEA Data Processing and Research Center: Dirk Hastedt, Ralph Carstens, Falk Brese (procedures, manuals, data collection and processing, analysis), Olaf Zuehlke (sampling)
- IEA Secretariat: Barbara Malak-Minkiewicz (member relations, translation verification), Jur Hartenberg (financial management)
- University of Liege, Belgium: Christian Monseur (sampling referee and analysis).

A Steering Committee provided overall guidance. It consisted of Ron Anderson from the University of Minnesota and Alfons ten Brummelhuis from the Foundation for ICT at school in the Netherlands.

Each participating education system appointed a National Research Coordinator (NRC) who, together with staff members at their national center, was responsible for implementing the study within their education system in accordance with the SITES 2006 guidelines and procedures. The quality of the SITES 2006 collection and data was dependent on the work of the NRCs and their colleagues in carrying out the complex sampling, translation, and data collection tasks with dedication, competence, and energy.

A complete list of involved persons and their contact details is included in the SITES 2006 international report (Law, Pelgrum, & Plomp, 2008) as well as the SITES 2006 Technical Report (Carstens & Pelgrum, 2009).

1.2.3 Target Populations and Questionnaires

SITES 2006 surveyed schools that enrolled students in the target grade that represents the 8th year of schooling, counting from the first year of ISCED Level 1. The target population included school principals, ICT coordinators, and mathematics and science teachers from those schools. For a detailed description of the target populations see Chapter 6 in the SITES 2006 Technical Report (Carstens & Pelgrum, 2009). On average, 400 schools enrolling students in the target grade and four teachers per school (two mathematics and two science teachers) were surveyed in each participating education system.

The study administered three questionnaires to respondents in schools: a school questionnaire to the principals, a technical questionnaire to ICT coordinators, and a teacher questionnaire to mathematics and science teachers. Furthermore, NRCs were asked to complete the National Context Questionnaire. This questionnaire was administered online and gathered data about system-level information related to structure, funding, curriculum, and educational processes. Appendices A to D contain all four questionnaires including the variable names as used in the international database.

To conduct a valid analysis of the SITES 2006 data and to correctly interpret the results, it is important to be aware of adaptations to the questionnaires that might have been made by national centers. In some instances, the international version of a question or item had to be adapted by all participating education systems, e.g. the target grade. In other cases, national centers adapted questions or items for socio-cultural reasons or because the international version was (partly or completely) not applicable in their education system. Users of the international database are encouraged to refer to Appendix D of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009) for more details about national adaptations in SITES 2006 and potential consequences for comparability across education systems.

1.2.4 Sampling and Survey Operations

In SITES 2006, a two-stage stratified cluster sampling procedure was used. National centers provided a list of all target grade schools to the IEA DPC. The school samples were drawn by staff at the IEA DPC proportional to the school size, taking into account national stratification needs. After agreeing to participate in SITES 2006, schools provided national centers with a list of all eligible mathematics and science teachers teaching in the target grade. National centers drew two random samples of mathematics and science teachers using software provided by the IEA DPC.

Once schools and teachers had been sampled, administration of the survey began. National centers could opt to administer the survey questionnaires online or on paper. National centers were free to choose which modes would be the default at the national, school, or individual level. Usually, national centers asked individual respondents to select their preferred mode.

The SITES 2006 survey was administered from March to June 2006 in the northern hemisphere and from September to October 2006 in the southern hemisphere. Due to low initial response rates, several national centers were granted an extension of the administration period.

For more information about the sample design, survey operations, and online data collection procedures please refer to Chapters 6, 7, and 8 of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009).

After data collection and capture, several quality control and assurance procedures were implemented to ensure high quality and international comparability of the data from participation education systems. National centers ran standardized checks on their data in order to detect inconsistencies, duplicate records, or problematic reliability of data entry. During data processing, the IEA DPC investigated the quality of the data using about 135 different structural, validity, and consistency checks. The DPC and national centers worked closely to resolve any issues that were detected.

The cleaned data from participating education systems were then weighted and transformed to the international database structure such that every dataset consisted of the same variables with the same coding scheme. Adaptations done by national centers were recoded to recover the international data structure according to rules devised by the DPC and the national centers. In addition, school-level data from responses to the school and the technical questionnaires were merged into one file per education system at the school level. Furthermore, data from the teacher questionnaire were split into one file per education system containing data from mathematics teachers and one file per education system containing data from science teachers.

Please refer to Chapter 9 of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009) for details on data processing and the creation of the SITES 2006 international database, Chapter 10 for details of the weighting and variance estimation procedures, and Appendix D for details about education system-specific adaptations and their handling.

1.2.5 Quality of Samples and International Reporting

The quality of the achieved sample within each education system participating in SITES 2006 was assessed by categorizing the participation rates of each of the three surveyed population (schools, mathematics teachers, and science teachers). The categorization resulted in either full reporting or annotated reporting due to the potentially reduced quality of the sample. In addition, education systems in which the achieved sample did not cover at least 90% of the desired population were flagged in the SITES 2006 international report. For teacher data, a flag also indicated one education system that collected data on teacher participation only after survey administration. Finally, annotated reporting was used for those education systems that did not completely follow the internationally defined procedure to randomly select and provide a target grade reference to teachers for answering Parts I–VI and Part VIII of the SITES 2006 Teacher Questionnaire.

Attention Point

To identify possible limitations, users of the SITES 2006 international database are encouraged to consult Chapter 10 of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009) for more details about the quality rating of the SITES 2006 samples and Chapter 12 for details about the flagging and reporting policy in the SITES 2006 international report.

References

Carstens, R., & Pelgrum, W.J. (Eds.) (2009). *IEA SITES 2006 Technical Report*. Amsterdam: International Association for the Evaluation of Educational Achievement.

International Organization for Standardization (2008). *ISO 3166 Maintenance agency (ISO 3166/MA) - ISO's focal point for country codes*. Retrieved from http://www.iso.org/iso/country_codes.htm on July 8, 2008.

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Wikipedia (2008). *ISO 3166-1*. Retrieved from http://en.wikipedia.org/wiki/ISO_3166-1 on July 8, 2008.

The SITES 2006 Data Files

Falk Brese
Ralph Carstens

This SITES 2006 User Guide is produced as part of a larger package containing the SITES 2006 international database. The package is available at www.sites2006.net for download as a zipped archive, consisting of the following parts:

- **CODEBOOKS:** Codebook files with descriptions of all variables in the SITES 2006 data
- **DATA:** Data files containing data from school principals, ICT coordinators, and teachers in SPSS and SAS XPORT formats. The National Context Questionnaire data file is available in SPSS format only.
- **PROGRAMS:** IEA IDB Analyzer setup file
- **REPORTS:** The SITES 2006 IDB User Guide and the SITES 2006 Technical Report.

The file names within the package generally follow the DOS file naming convention: file names with up to eight characters, followed by a three-character extension (as in FILENAME.EXT). Files with the same names are complementary to each other, and the extension identifies their function or type. The extensions used for the files contained in the package are the following:

- .PDF – Codebooks and reports in PDF format
- .SDB – Codebooks in standard Dbase format (readable in Excel)
- .TXT – Codebooks in ASCII text format
- .XPT – SAS Export data files
- .SAV – SPSS data files
- .EXE – IEA IDB Analyzer setup executable file.

Attention Point

At a later stage, the IEA SITES 2006 IDB will also be made available through IEA's Study Data Repository system at <http://rms.iaa-dpc.org/>

2.1 Data Files, Codebooks, and Formats

This section describes the file types, contents, and formats of the SITES 2006 data. For each file type, a separate file is available for each participating education systems. Files of the same type are structurally isomorphic, i.e. each file includes the same uniformly defined set of variables.

During data capture, one file type for the school principal data, one for the ICT coordinator data, and one for teacher data were used. Since both the principal and the ICT coordinator responses related to the school level and matched each other 1:1, they

were consequently merged to form a combined school-level data file for the international database. To simplify logistics, a single teacher data entry file was used. The file contained responses from both the mathematics and science teachers. Since teachers belonged to only one of two independently sampled populations, analysis of combined mathematics and science teacher data is neither conceptually meaningful nor possible from a sampling and weighting perspective. To reflect this, the international database includes one file for the mathematics teacher data and one for the science teacher data. Thus, the SITES 2006 international database consists of the following file types (file type acronyms in brackets):

- a school-level data file with information collected from principals and ICT coordinators (BCG),
- a mathematics teacher file with information collected from mathematics teachers (BTM), and
- a science teacher file with information collected from science teachers (BTS).

Additionally, there is a single national context questionnaire data file with all systems' data included (see Section 2.7).

The filenames consist of an eight-character string followed by a three-character file extension and use the following naming conventions:

- The first character of a file name is always “B”, denoting populations associated with ISECD level 2 teaching and learning.
- The second character indicates the level of the information included in a file. The letter “N” indicates a national-level data file, the letter “C” a school-level data file, the letter “T” a teacher-level data file. Note that the letter “C” for the school-level may not be intuitive but was chosen for reasons of consistency with other IEA studies such as TIMSS and PIRLS.
- The third character indicates the context or scope of the information in a file. The letter “G” is used for general questionnaire data, the letter “M” for mathematics teacher-related data, and “S” for science teacher-related data.
- The fourth to sixth characters identify the participating education system using a three-character alphanumeric abbreviation based on the ISO 3166 coding scheme. Table 1.1 in Chapter 1 lists the codes of all participating education systems. The national context questionnaire data file uses the three-letter combination “SIT”.
- The seventh and eighth characters indicate the study cycle. The combination “S1” is used for SITES 2006.
- The three-character file extensions used for the data files are .SAV for the SPSS format and .XPT for the SAS XPORT format.

For example, the file name “BTMZAFS1.SAV” indicates a SITES 2006 mathematics teacher file for South Africa in SPSS format.

All information related to the structure of the data files, as well as the source, format, descriptive labels, and response option codes for all variables, is additionally contained in codebook files. Each data file is accompanied by a codebook file. The naming convention for a codebook file is as follows:

- The first three characters of the filename are identical to the file naming convention presented above.
- The next three characters identify the files as a SITES 2006 codebook and are always “SIT”.
- The seventh and eighth characters are always “S1” to indicate the SITES 2006 study cycle.
- The three-character file extension is either .SDB for standard dBase format, .TXT for plain ASCII format and .PDF for Adobe Acrobat format.

The standard dBase (.SDB) codebook files can be read using Microsoft Excel or most standard database and spreadsheet programs. Important codebook fields include FIELD_LABL, which contains extended textual information for all variables, QUEST_LOC, which provides the location of questions within their respective survey instruments, and FIELD_CODE, which lists all acceptable responses allowed in the database.

The SPSS dictionary information and the separate codebook files should be sufficient to inform any necessary conversion of data files into other formats for use outside of SPSS or SAS, such as raw ASCII, tab delimited, Microsoft Excel, Stata, or SPSS Portable.

The standard format for the SITES 2006 public-use international database is SPSS, which is accessible to virtually all secondary analysts. The SPSS files include full dictionary information, i.e. variable name, format (type, width, and decimals), label, value labels, missing values, and appropriately set measurement level (nominal, ordinal, or scale). The dictionary information can be accessed in list form through the SPSS “View → Variables” menu or in output form from through the “File → Display Data File Information” menu. Given this, SPSS users will most likely not need to consult the separate codebooks files as all relevant meta information has become part of the SPSS files.

The international database is additionally included in SAS XPORT transport format. The national context questionnaire data is only available in SPSS format and there is no separate codebook file describing its structure. Analytical support is provided for SPSS only, through the IEA IDB Analyzer (see Chapter 4 of this User Guide).

2.2 Cases Included

The international database includes all cases that satisfied the SITES 2006 sampling standards. Data from those respondents who either did not participate or did not pass adjudication, for example because within-school participation was not sufficient, were removed from the final data.

Detailed information about the data collection, capturing, processing, editing, weighting, and adjudication of the international database are included in the SITES 2006 Technical Report (Carstens & Pelgrum, 2009). Details regarding the file types and the variables they contain are described in the following sections.

For the international database the data cleaning process at the IEA DPC ensured that information coded in each variable was in fact internationally comparable, that national adaptations were reflected appropriately in all concerned variables, that questions not internationally comparable were removed from the database, and eventually that all entries could be successfully linked between levels.

2.3 Survey Variables

In addition to the data from the responses to the questions in the questionnaires (Section 2.4), the data files contain some more variables with identification (Section 2.3.1), tracking and administrative information (Section 2.3.2). Furthermore, sampling and weighting variables (Section 2.3.3) are included in all school-level and teacher-level data files.

2.3.1 Identification Variables

The following identification variables are used to uniquely identify each record in the data files:

- IDCNTY: Two- to four-digit numeric code identifying the education system. If possible, the ISO 3166-1 codes were used. For some education systems that are not

represented in the ISO 3166-1 code list, a numeric code was created and assigned by the IEA DPC (see Table 1.1).

- **IDSCHOOL:** In all school- and teacher-level files, this one- to four-digit numeric code identifies the school within an education system. The codes are only unique within an education system. To uniquely identify schools across education systems IDSCHOOL has to be used in combination with IDCNTRY.
- **IDTECH:** This three- to six-digit numeric code in the school-level file identifying ICT coordinators within schools within an education system is simply the combination of the school ID (IDSCHOOL) and the sequential number "01".
- **IDTEACH:** Five- to eight-digit numeric code to identify teachers within schools. It is composed of the school ID (IDSCHOOL), the teacher population identification ("01" for mathematics teachers and "02" for science teachers), and a sequential two-digit number within each school.
- **IDPOP:** Identifies the population. For SITES 2006 the value is always "2", indicating secondary education. This is similar to the population coding in previous IEA studies.

2.3.2 Tracking and Administrative Variables

The SITES 2006 international database includes several variables that provide information about survey administration, participation, and some basic characteristics of respondents. The following variables are used for this purpose in the school- and teacher-level files:

- **PSYSTEM, CSYSTEM, TSYSTEM:** Numeric variable uniquely identifying each record in the original data files provided by participating education systems. PSYSTEM was used for records from the School Questionnaire data files, CSYSTEM for records from the Technical Questionnaire data files and TSYSTEM for records from the Teacher Questionnaire data files. An offset of 5,000 was added to the sequential numbers if the questionnaire was answered on-line. An offset of 10,000 was added if the information about the assigned questionnaire mode was omitted.
- **PITPART, CITPART, ITPART:** These variables provide the final participation information for school principals (PITPART), ICT coordinators (CITPART) and teachers (ITPART).
- **PITODC, CITODC, ITODC:** Indication of the questionnaire administration mode for school principals (PITODC), ICT coordinators (CITODC), and teachers (ITODC). The value was set to "0" for questionnaire administered on paper and "1" for questionnaires administered online.
- **INSIT06:** Indication if the record belongs to the SITES 2006 international sample. In the final international database, this variable takes the values "1" for all records.
- **VERSION:** Release version number of the SITES 2006 international database.
- **DPCDATE:** File creation date.

The teacher data files (BTM/BTS) consist of additional variables providing information about teachers and further details about the administration:

- **ITSEX:** Teacher gender information as stated in the Teacher Tracking Form. If the information was not available on the Tracking Form but the teacher provided the gender information in the questionnaire (question BTG32A1), the questionnaire information was copied over.
- **ITBIRTHY:** Teacher birth year information as stated in the Teacher Tracking Form.
- **ITEXCLUD:** Variable indicating if a teacher was excluded from the survey. In the final IDB, this variable takes the value "9" (not excluded) for all records.
- **ITLANG:** Language used for the Teacher Questionnaire. If an education system only used one language the value was set to "1" for all teachers.

- ITSUBJ: Teacher population identification with value “1” for mathematics teachers and value “2” for science teachers.
- ITMATH: Secondary ID for science teachers. Teachers teaching both mathematics and science (or one or more science subjects in education systems where science is taught in separate subjects) were listed twice, once in the tracking form for mathematics teachers and once in the tracking form for science teachers. On each mathematics teacher tracking form the corresponding ID from the science teacher tracking form was copied for teachers teaching both subjects.
- ITSCI: Secondary ID for math teachers. Teachers teaching both mathematics and science (or one or more science subjects in education systems where science is taught in separate subjects) were listed twice, once in the tracking form for mathematics teachers and once in the tracking form for science teachers. On each science teacher tracking form the corresponding ID from the mathematics teacher tracking form was copied for teachers teaching both subjects.

2.3.3 Sampling and Weighting Variables

To calculate population estimates and correct jackknife variance estimates, sampling and weighting variables are provided in the data files. Further details about weighting and variance estimation are provided in Chapter 3 of this User Guide.

The following weight variables are included in the SITES 2006 international database:

- SCHWGT: School weight (included in the school-level files)
- MTOTWGT: Total mathematics teacher weight (included in the mathematics teacher-level files)
- STOTWGT: Total science teacher weight (included in the science teacher-level files).

In addition, the following weighting factors are included:

- WGTFACT1: School weighting factor (included in the school and teacher-level files)
- WGTADJ1: School non-response adjustment (included in the school and teacher-level files)
- WGTFACT2: Teacher weighting factor (included in the teacher-level files)
- WGTADJ2: Teacher non-response adjustment (included in the teacher-level files).

The following variance estimation variables (or “jackknife variables”) are included in the SITES 2006 international database. The actual replicate weights are computed “on-the-fly” and are not part of the data files.

- JKCZONE: Jackknife zone to which the school is assigned (included in the school-level files)
- JKCREP: Jackknife replicate to which the school is assigned (included in the school-level files)
- JKZONE: Jackknife zone to which the teacher’s school is assigned (included in the teacher-level files)
- JKREP: Jackknife replication unit to which the teacher’s school is assigned (included in the teacher-level files).

Furthermore, the school-level and teacher-level files contain several stratification variables, which are listed below. See Chapter 6 and Appendix C of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009) for more details on national stratification variables and their meaning.

- IDSTRATE: Explicit stratum the school was allocated to. Stratification codes are comparable only within but not across education systems.
- IDSTRATI: Implicit stratum based on the sampling forms and plans and as assigned during the selection.

- IDSTRATU: Unique information about the implicit stratification that takes the same number for each level of IDSTRATE. Secondary analysts are therefore encouraged to use this variable for the purpose of analysis and for grouping schools and teachers sharing implicit stratification. Note however that the school and teacher samples selected for SITES 2006 may not have been optimized to yield precise estimates for domains or sub-populations that were only used in implicit stratification.

2.4 Questionnaire Variables

All variables in the SITES 2006 questionnaires can be identified by their variable names. The variable names follow a systematic naming convention.

- The first three digits indicate the source of the data: Variable names beginning with BCP indicate data from the Principal Questionnaire, variable names beginning with BCT indicate data from the Technical Questionnaire, and variable names beginning with BTG indicate data from the Teacher Questionnaire.
- The fourth and fifth digit represents the question number within the questionnaire.
- The sixth digit indicates the dimension of the question. For single item questions the letter A is used. If a question is further divided into several items, letters indicate the items in alphabetic order.
- If questions are even further divided, e.g. in complex matrix questions like Question 12 in the Technical Questionnaire, the seventh digit sequentially identifies the sub-items. If there is no such further division, this digit is set to 1.

2.5 Coding Missing Data

A response to a question can be missing for one or more reasons. The question could have been excluded from the questionnaire (“Not Administered”), the respondent may have chosen not to respond to the question (“Omitted” response), or simply did not have time to reach the question in the instrument (“Not Reached” response). SITES 2006 did not use a special code to indicate invalid responses. These kinds of missing data are handled differently during data processing and therefore are coded differently in the data files. Depending on the file format, different codes are used to represent the missing data. The following missing codes are used in the data files.

2.5.1 Not Administered Questions

A response to a question is coded as “Not Administered” in the following cases:

- If a returned questionnaire is empty or a lost, all variables referring to that questionnaire are coded as not administered. For online questionnaires, this applies to respondents who never logged in.
- For socio-cultural reasons, a country may have chosen not to administer a certain question in its national questionnaire as documented in the “national adaptation forms.” The variables corresponding to the question that was removed are coded as not administered.

The code for not administered questions in SPSS files is SYSMIS (.). The code for not administered questions in the SAS files is “.A”.

This code was assigned at the IEA DPC after data collection.

2.5.2 Omitted or Invalid Responses

The response to a question was coded as omitted when the question was administered but not answered, or when an invalid response was given. The following cases are coded as an omitted or invalid response:

- The question was administered but no response was provided.

- The respondent selected more than the expected number of checkboxes or gave a response to a question that was not interpretable.
- If a particular question (or a whole page) was misprinted or left out of a questionnaire or for other reasons was not available to the respondent.

The code for these responses in SPSS files are “9”, “99”, “999”, and so on (depending on the field length of the variable). The code for omitted or invalid responses in SAS files is “.”.

This code was assigned by the national center during data capture or by the IEA DPC during data cleaning and editing.

2.5.3 Logically Not Applicable

The response to a variable is coded as “Logically Not Applicable” if:

- The previous filter question was answered in a way that made a response to dependent questions logically impossible, and the dependent questions were validly skipped.

This code was assigned at the IEA DPC after data collection.

Logically not applicable responses are coded in the SPSS files as “6”, “96”, “996”, and so on (depending on the field length of the variable). The code for logically not applicable responses in SAS files is “.B”.

Attention Point

Depending on the analysis attempted, it is recommended that analysts review the questionnaire to determine whether any of their included questions are dependent on previous responses, as in such a case coverage may be reduced. It might then be advisable to filter the dataset and only select respondents to which the question applied.

2.5.4 Not Reached

A special missing code was assigned to questions that were deemed “Not Reached” to distinguish them from “Omitted” responses. “Omitted” questions are those that a respondent most certainly read, but either consciously decided not to answer or accidentally skipped. Not reached codes are assigned for questions the respondent did not reach; that is the respondent started answering the questionnaire but stopped answering before he or she reached the end of the questionnaire, most likely due to a lack of time. “Not reached” variables are exclusively located towards the end of questionnaire.

Before using the “Not Reached” code, the last valid answer given in a questionnaire was identified. The first omitted response after this last answer was coded as “Omitted”, but all following responses were then coded as “Not Reached.”

For example, and assuming the SPSS data file format, the response pattern “1 9 4 2 9 9 9 9 9” (where “9” represents “Omitted”) is recoded to “1 9 4 2 9 7 7 7 7” (where “7” represents “Not Reached”). When recoding “Omitted” values to “Not Reached” all “Not administered” values were ignored. For example the pattern “3 1 5 2 9 9 9 8 9 9” (where “8” represents “Not Administered”) would be recoded to “3 1 5 2 9 7 7 8 7 7.”

This code was assigned by the IEA DPC after data collection.

In SPSS files “Not Reached” variables are coded to “7”, “97”, “997”, and so on (depending on the field length of the variable). In SAS data files the code for “Not Reached” is “.R”.

2.6 Variables and Scales Derived from the Questionnaire Data

The SITES 2006 international report (Law, Pelgrum, & Plomp, 2008) was based on analyses of individual variables as well as composites created from multiple variables. In the SITES 2006 questionnaires, there were several questions about various aspects of a single construct. In these cases, responses to the individual items were combined to create a derived variable that provided a more comprehensive picture of the construct of interest than the individual variables could on their own. The key methods for extracting and verifying multi-item constructs were exploratory and confirmatory factor analysis. Scale variables in SITES 2006 were computed as simple sum scores of the manifest variables in contrast to other methods employed in similar research such as polytomous IRT scoring or regression-based factor scores based on score coefficients.

For example, teachers' self-reported technical competence as reported on Pages 191–194 in the international report was based on eight manifest variables from the teacher questionnaire (Question 21, Items A–H). The corresponding syntax in SPSS would be as follows:

Figure 2.1 Example SPSS Syntax to Create a Sum-score for the scale GEN_IT

```
GEN_IT=MEAN.8(BTG21A1,BTG21B1,BTG21C1,BTG21D1,BTG21E1,BTG21F1,BTG21G1,BTG21H1).
```

As can be seen, the mean GEN_IT of variables BTG21A1 to BTG21H1 is computed for any record that has data available for all eight variables. In the above SPSS function “MEAN”, the “.8” portion specifies the minimum number of valid arguments.

In general, records were included in the derived variable calculation only if there were data available for all of the variables involved. This approach is usually referred to as “listwise deletion”.

Attention Point

To consistently reproduce the composites and their analysis in the international report, it is necessary to follow the “listwise deletion” approach in secondary analysis.

Chapter 11 of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009) includes comprehensive information about the scale and indicator construction in the study. For the above example, information about the included variables, as well as country-by-country scale reliability coefficients, is included in Section 11.4.9 of the technical report.

Given that all scales and indicators reported in SITES 2006 followed the cautious and straightforward calculation described above, it should be easy for secondary analysts to re-compute a case's derived variable using the questionnaire data included in the international database and by following the documentation in Chapter 11 of the SITES 2006 Technical Report. Derived scale and indicator variables are therefore not included in the international database and should be computed as needed and desired by database users. The authors and editors of the international as well as the technical report are available for further support regarding the computation and any conceptual questions.

Attention Point

It is important to note that the SITES 2006 international report flagged education systems in relation to the achieved participation rate and whether the internationally defined procedures for the teacher's target class selection were followed. Details about these rules and reporting standards are included in Chapters 10 and 12 of the SITES 2006 Technical Report. Additionally, Chapter 11 of the SITES Technical Report may indicate limitations arising from low or only marginally acceptable scale reliabilities that may indicate reduced measurement invariance across education systems. Users of the SITES 2006 international database are strongly advised to consult these pieces of documentation carefully should the intended analysis involve the comparison of one or more derived composite variables across countries.

The school-level file BCG includes a set of derived variables for the Questions 5 and 15 in the SITES 2006 Technical Questionnaire.

- The variable BCT05A1O holds the original information for the total number of computers in the school as reported by ICT coordinators. Because implausible combinations were detected, the main questionnaire variable BCT05A1 was recoded if either the sum of the items B–D (computers available only to students plus those only available to teachers plus those only available to administrative staff) or any of the values in items E, F, or G was higher than the value in A.
- The variables BCT15A1O to BCT15H1O hold original information for the amount of time spent on ICT related support on average per week. If a value larger than 50 was detected in the first item A (time spent by the ICT coordinator), this and all values in items B–H were set to “omitted” in the main questionnaire variables BCT15A1 to BCT15H1.

The main value for including the original variables for Questions 5 and 15 in the database is for analysts who wish to apply a different data editing or cleaning approach to these data.

2.7 National Context Data

National or country aspects sometimes account for elements of the education system and educational processes. In SITES 2006, a National Context Questionnaire (NCQ) was designed to explore these possibilities. This section describes the format and content of the questionnaire.

The NCQ was administered to all National Research Coordinators (NRC) in English. Responses are qualitative in nature and were collected via the internet by means of an online questionnaire. The responses were verified, as far as possible, discussed with NRCs, and reconciled if needed. The final NCQ data set comprises data from all 22 core education systems plus Australia. Variables for data taken from the United Nations Development Program (UNDP) Human Development Report 2006 are set to system missing (“”) for Australia, which entered the survey as a benchmarking participant at a stage where the NCQ file was almost finalized.

Full documentation of the NCQ design, contents, administration, analysis, outcomes, and reporting are provided in Chapter 3 of the international report (Law, Pelgrum, & Plomp, 2008) and Chapter 2 of the technical report (Carstens & Pelgrum, 2009). The questionnaire itself, including variable names, can be found in Appendix A of this User Guide.

The NCQ data is provided as a single file called BNGSITS1.sav in fully labeled SPSS format. Given its qualitative nature, there is neither a corresponding SAS file nor a separate codebook file.

References

Carstens, R., & Pelgrum, W.J. (Eds.) (2009). *IEA SITES 2006 Technical Report*. Amsterdam: International Association for the Evaluation of Educational Achievement.

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Weights and Variance Estimation

Olaf Zuehlke

3.1 Overview

This chapter gives a brief introduction to the use of weighting and variance estimation variables in SITES 2006. The names and locations of these variables in the international database are described and their specific roles in school and teacher analysis are explained. Examples for the importance of using the appropriate weighting and variance estimation techniques are given.

3.2 Sampling Weights

3.2.1 *Why Weights Are Needed*

All data in the SITES 2006 international database are derived from randomly drawn samples of schools and teachers. Of course, the results of the study should not only hold for the sampled schools and teachers, but for the entire education system that is participating in the SITES 2006 study. To make correct inferences about the education system, it is necessary to take into account the complex nature of the sampling design implemented in SITES 2006.

Details about the sampling design are reported in Chapter 6 of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009).

The SITES 2006 sampling design called for different selection probabilities at the school and at the teacher sampling level. Sampling weights reflect and compensate the disproportional selection probabilities of the schools as well as of the teachers. If any unit of response had a small selection probability, this was compensated with a large weight, and vice versa. Given that some sampled schools and teachers refused to participate in SITES 2006, it was necessary to adjust the sampling weights for the sample size loss. Thus, the sampling weights were multiplied by non-response adjustments. The final (total) weights are the product of weight factors and adjustment factors that reflect the selection probabilities and the non-response patterns at all levels of analysis.

Details about weighting and adjustment are reported in Chapter 10 of the SITES 2006 Technical Report (Carstens & Pelgrum, 2009).

3.2.2 *Selecting the Appropriate Weight Variable*

For analysis concerning a single level, different weights must be applied:

- For school level analyses (principals, technical coordinators), SCHWGT must be used.
- For mathematics teacher analyses, MTOTWGT must be used.
- For science teacher analyses, STOTWGT must be used.

If researchers plan to analyze data from more than one level, they must carefully choose the correct weight.

- Analyzing combined teacher data and school data is straightforward with the IDB Analyzer. The software can be used to easily add school-level data to the teacher data. This way, school information becomes an attribute of the teacher, and the user can analyze information from both files. For example, the research question could be of this type: “What percentage of teachers who use the internet for teaching work at schools that have computers in most classrooms?” MTOTWGT or STOTWGT respectively should be used for this type of data analysis.
- Descriptive statistics obtained from a combined file can deviate from results obtained from the two original files. If a school variable and a teacher variable are analyzed jointly, a missing value in the school variable can set the teacher variable to missing (and vice versa).
- If teacher information is regarded as an attribute of the school information (for example, the research questions could state: “what percentage of schools that have computers in most classrooms employ any teachers who use the Internet for teaching?”), this cannot be handled easily with the IDB Analyzer. The researcher must use other software (e.g., SPSS, SAS) to aggregate the teacher data and to merge the teacher information to the school file. When statements are made about schools that have aggregated teacher information attached, SCHWGT should be used.
- It is neither possible nor meaningful to combine the files of mathematics teachers and science teachers, and to make statements about “teachers who teach mathematics, or science, or both” for two key reasons. First, teachers of mathematics and science constitute two separate target populations and the questionnaires were administered within the subject areas. Secondly, some teachers taught both subjects and consequently could and actually were selected twice. This is not reflected by the sampling weights.
- When analyzing weighted school or teacher data for groups of education systems, the researchers must be aware of a pitfall. If the education system identification variable IDCNTY is used as a grouping variable, all weighted results are correct within each education system. However, if any international average gets directly computed using SCHWGT, MTOTWGT or STOTWGT, larger education systems contribute more to this average than smaller education systems. Usually, this is not the intention of the researcher (though it might just well be). Instead of performing weighted analyses across groups of education systems, it would be necessary to do weighted analyses separately for each education system, and to calculate an average of these results afterwards (see also the section below about the senate weight).

3.2.3 Example for Analyzing Weighted Data

Not using weights in data analysis can lead to severely biased results. The following example illustrates the importance of using weights in research with SITES 2006 data.

A researcher may be interested in the average number of girls in schools in Thailand (variable BCP19A1 in file BCG). Using unweighted data (e.g., in SPSS), it seems to him that the average number of girls in each school is approximately 547.

Figure 3.1 Example of Un-weighted Analysis in SPSS

Descriptive Statistics		
	N	Mean
SHCHA/TOTAL NUMBER OF GIRLS IN SCHOOL	417	546,99
Valid N (listwise)	417	

Using weighted data with the IDB Analyzer, it shows that in Thailand, the estimate for the average number of girls per school, taking differential selection probabilities into consideration, is actually only 301.

Figure 3.2 Example of Weighted Analysis Using the IDB Analyzer

Average for BCP19A1 by (IDCNTRY)

COUNTRY ID	N of Cases	Sum of SCHWGT	BCP19A1 (Mean)
Thailand	417	9003	301,14

The large difference between the un-weighted and the weighted result can easily be explained by the SITES 2006 sampling design, in which the proportion of large schools in the sample is higher than in the population. The sampling weights compensate for that disproportional school sample allocation, and not using weights leads to an incorrect and biased population estimate.

Results equivalent to the above can be obtained by using the SPSS “Weight Cases ...” menu item or “WEIGHT BY” syntax.

3.3 Normalizing Weights

In other IEA studies, a “senate weight” (SENWGT) and a “house weight” (HOUWGT) were calculated. These weights are not included in the SITES 2006 international database, but researchers can easily calculate them, since they are the result of a linear transformation of the SITES 2006 weighting variables.

For cross-education system analyses in which education systems should be treated equally, a “senate weight” can be computed that transforms the weights in such a way that the sum of weights across all cases is equal to a fixed constant, 500 in the example below.

For each mathematics teacher i the senate weight variable can be computed as

$$SENWGT_i = MTOTWGT_i \cdot \left(\frac{500}{\sum_i MTOTWGT_i} \right)$$

Similarly, researchers who are interested in science teachers should use STOTWGT instead of MTOTWGT, and those who are interested in schools, SCHWGT. Instead of 500, any other constant value can be used.

The senate weight will give inaccurate results if a lot of cases in a variable of interest are missing and if the missing data varies substantially between countries. In student achievement studies, where every student is assigned an achievement score, this is not a large problem. In SITES 2006, however, almost every variable has some entries set to missing; therefore, the senate weight should be used cautiously.

Some researchers pursuing advanced analyses may use software that does not automatically normalize weights but demands the sum of the weights to be equal to the achieved sample size (i.e. the mean of all weights is equal to 1).

A “house weight” with this property can easily be computed. With n being the number of responding mathematics teachers in an education system, for each mathematics teacher i the variable can be computed as

$$HOUWGT_i = MTOTWGT_i \cdot \left(\frac{n}{\sum_i MTOTWGT_i} \right)$$

Similarly for science teachers, STOTWGT instead of MTOTWGT should be used, and for schools, SCHWGT should be used.

3.4 Variance Estimation

3.4.1 Why Variance Estimation Is Needed

Since all estimates, statements, and inferences in SITES 2006 are based on sample data, they can only be stated with a degree of uncertainty. With all research that is performed using SITES 2006 data, the precision of the population estimates should be reported.

Because of the complex sampling design used in SITES 2006, it is not possible to calculate standard errors or to easily perform significance tests with standard software packages. While these programs implicitly assume that the data is derived from a simple random sample, the SITES 2006 teacher data come from a two-stage stratified cluster sample (each school being regarded as a “cluster” of teachers). Any method for estimating sampling variance must take this design into account.

The SITES 2006 international database contains variables that allow for the use of a variance estimation method called “Jackknife Repeated Replication” (JRR). These variables are referred to as “jackknife zones” and as “jackknife replicates.” With the IDB Analyzer software, it is possible to implement the JRR method easily (for details about the JRR technique, please refer to Chapter 10 of the SITES 2006 Technical Report).

3.4.2 Selecting the Appropriate Variance Estimation Variables

For school level analysis, the variables to use are JKCZONE and JKCREP. For teacher level analysis, the variables to use are JKZONE and JKREP.

In most education systems, the teachers in a school are assigned to the same jackknife zone as the school itself. In some of the smaller participating education systems, schools and teachers had to be assigned to different zones. Just as with weights, researchers should choose the correct jackknife variables when working with combined data sets. When the calculations are performed with the IDB Analyzer, the correct variables will be selected automatically. If other software is used, “-zone” variables usually have to be specified as “stratum” or “strata” variables, while the “rep” variables commonly are referred to as “cluster” variables.

Attention Point

To limit the size and complexity of the IDB, the data files do not include the 100 replicate weight variables used for variance estimation. The IEA IDB Analyzer computes the replicate weights “on the fly” when an analysis is conducted.

3.4.3 Example for Variance Estimation

Not using the jackknife variables in data analysis will lead to incorrect estimates of sampling precision. The following example illustrates the importance of using the JRR technique in research and analysis with SITES 2006 data. In this example, problems occur when the statistical analysis package SPSS is used for data analysis. The IEA IDB Analyzer was specifically designed to overcome these problems. Analysts should note that in addition to the IDB Analyzer, a growing number of other software packages become available to handle the paired jackknife replication method implemented in SITES 2006. The software package Wesvar (Westat, 2008) for complex sample analysis is made available free of charge by Westat Inc. and may be downloaded from Westat’s webpage. SAS Version 9.2 (SAS Institute, 2008) also includes support for the replication method used in SITES 2006 and is commercially available from SAS Institute Inc.

A researcher may be interested in the average size of the SITES 2006 target class in Thailand (variable BTG01A1). Using SPSS directly and thereby ignoring the complex sample design and clustering effects, he finds that the (weighted) average class size is about 31.8, and the standard error seems to be close to 0.1.

Figure 3.3 Example of Incorrect Variance Estimation in SPSS

	N	Mean	
	Statistic	Statistic	Std. Error
INF/HOW MANY STUDENTS IN TARGET CLASS	11971	31,81	,104
Valid N (listwise)	11971		

Using the JRR technique with the IDB Analyzer, it is apparent that the correct estimate for the actual standard error is almost three times as large.

Figure 3.4 Example of Correct Variance Estimation using the IDB Analyzer

Average for BTG01A1 by (IDCNTRY)

COUNTRY ID	N of Cases	Sum of MTOTWGT	BTG01A1 (Mean)	BTG01A1 (s.e.)
Thailand	664	11971	31,81	,30

This difference could be explained by the fact that classrooms within a school usually have a similar size. Teachers from the same school are likely to give similar answers to this question. This effect is not taken into account by SPSS directly, but by the IDB Analyzer.

References

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Analyzing the SITES 2006 Data Using the IEA IDB Analyzer

Juliane Hencke
Eugenio J. Gonzales

4.1 Overview

This chapter describes the use of the IEA International Database (IDB) Analyzer software (IEA, 2009) for analyzing the SITES 2006 international data files. Example analyses will illustrate the capabilities of the IEA IDB Analyzer to compute a variety of statistics, including percentages, means, regression coefficients, and correlations and their corresponding standard errors. The examples use school and mathematics teacher data to replicate some of the SITES 2006 results included in the main international publication for SITES 2006, *Pedagogical practices and ICT use around the world: findings from an international comparative study* (Law, Pelgrum, & Plomp, 2008), as well as other useful analyses for investigating policy-relevant research questions.

4.2 The IEA IDB Analyzer

Developed by the IEA Data Processing and Research Center (IEA DPC), the IEA IDB Analyzer is a stand-alone software that operates in conjunction with the Statistical Package for the Social Sciences (SPSS, 2008). The IEA IDB Analyzer enables users to combine SPSS data files from IEA's large-scale assessments and conduct analyses using SPSS without actually writing syntax code. The IEA IDB Analyzer generates SPSS syntax that takes into account information from the sampling design in the computation of statistics and their standard errors. In addition, the generated SPSS syntax correctly handles plausible values (multiple imputation)⁵ for calculating estimates of achievement scores and their corresponding standard errors by combining both sampling and imputation variance.

The IEA IDB Analyzer consists of two modules, the merge module and the analysis module, which are executed as independent applications. The merge module is used to create analysis datasets by combining data files of different types and from different education systems, and selecting subsets of variables for analysis. The analysis module provides procedures for computing various statistics and their standard errors for variables of interest. These procedures can be applied for an education system and for specific subgroups within an education system. Both modules can be accessed by using the Windows Start menu (Start → All Programs → IEA → IDB Analyzer → Merge Module / Analysis Module).

The IEA IDB Analyzer requires PCs running Microsoft Windows 2000, XP, or any later version. The IEA IDB Analyzer further requires a working installation of the Microsoft .NET 2.0 framework and includes this, if required, as part of the setup routine. Local administrator rights are required for a successful installation of the IEA IDB

⁵ In SITES plausible values are not used so this functionality will not be discussed in this chapter.

Analyzer. The software will produce scripts to be run with SPSS. Therefore, SPSS needs to be installed for merging files and running analysis.

The IEA IDB Analyzer currently is available free of charge from the IEA website at: <http://www.iea.nl>.

4.3 Merging Files with the IEA IDB Analyzer

Data from IEA studies, such as SITES 2006, are generally distributed separately by education system and file type. The merge module of the IEA IDB Analyzer allows the user to combine data from different education systems into a single dataset for analysis. It also facilitates the combination of data from different sources (e.g., school and mathematics teacher files) into one SPSS dataset. Combining files from different education system will permit conducting cross-education system analyses.

When running the merge module, the IEA IDB Analyzer creates SPSS code that can be used later without need for the IEA IDB Analyzer itself. The data files created using the merge module can be processed either with the analysis module of the IEA IDB Analyzer, or by any other analysis software that accepts SPSS input files.

To create an SPSS data file with more than one education system's data or to combine more than one file type, analysts should do the following:

1. Open the merge module of the IEA IDB Analyzer from the Windows Start menu.
2. In the **Select Data Directory** field, browse to the folder where the SPSS IDB data files are located. For example, in Figure 4.1, all SPSS data files are located in the "C:\IntData\SITES\Data" folder. The program will automatically recognize and complete the study **Type**, **Year**, and **Grade** fields and list all education systems available in this folder as possible candidates for merging. If the folder contains data from more than one IEA study, or from more than one grade, the IEA IDB Analyzer will prompt users to select files from the desired study and grade for analyses.
3. Select the education systems of interest from the **Available Participants** list and use the arrow buttons to include them in the list of **Selected Participants**. To select multiple education systems, hold the CTRL key of the keyboard when selecting the education systems. In Figure 4.1, Chile, Chinese Taipei, Finland, Hong Kong SAR, and Israel have been selected (see page 31). Notice that the education systems are displayed in alphabetical order sorted by the education system's name and not by the system's three-letter code.
4. Press the **Next>>** button to proceed. The software will open the second window of the merge module, as shown in Figure 4.2, to select the file types and the variables to be included in the merged data file.
5. Select the file types for merging by checking the appropriate boxes to the left of the window. For example, in Figure 4.2, the school data file is selected.
6. Select the variables required from the list of variables available in left panel. Please note that identification and sampling variables are selected automatically by the IEA IDB Analyzer. In the example shown in Figure 4.2, all school variables are selected.
7. Specify the desired name of the merged data file and the folder where it will be stored in the **Output Files** field. The IEA IDB Analyzer also will create an SPSS syntax file (*.SPS) of the same name and in the same folder with the code necessary to perform the merge. In the example shown in Figure 4.2, the merged file BCGALL.SAV and the syntax file BCGALL.SPS will both be stored in the root directory of your computer. The merged data file will contain school data with the variables shown in the **Selected Variables** panel to the right.

- Click on the **Start SPSS** button to create the SPSS syntax file and open it in an SPSS syntax window ready for execution. The syntax file must be executed by opening the **Run** menu of SPSS and selecting the **All** menu option. The IEA IDB Analyzer will give a warning if it is about to overwrite an existing file in the specified folder.

Figure 4.1 Merge Module – Selecting Participants

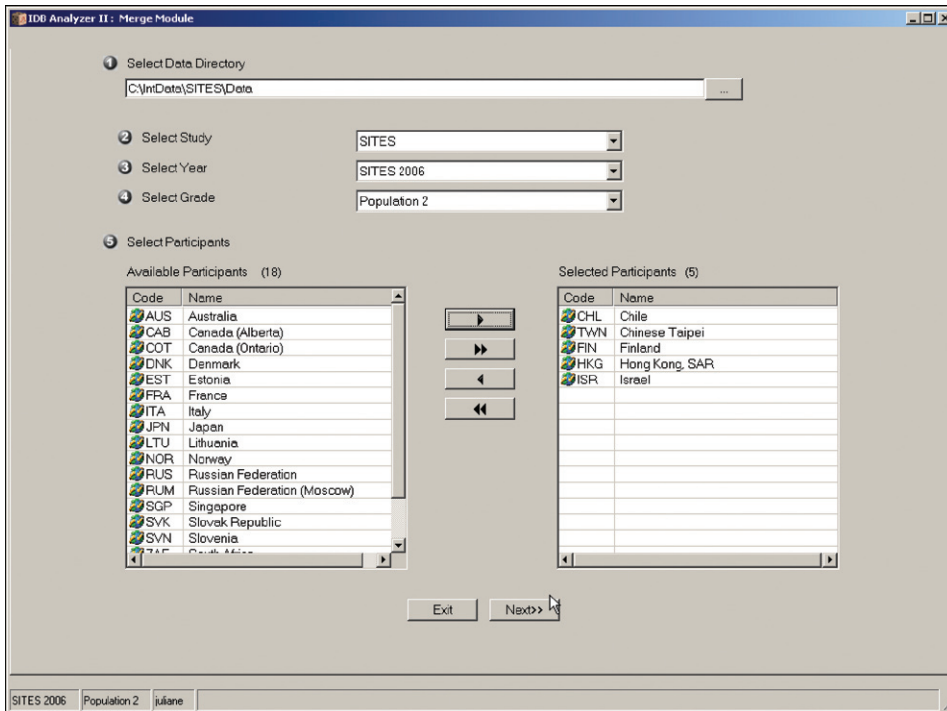
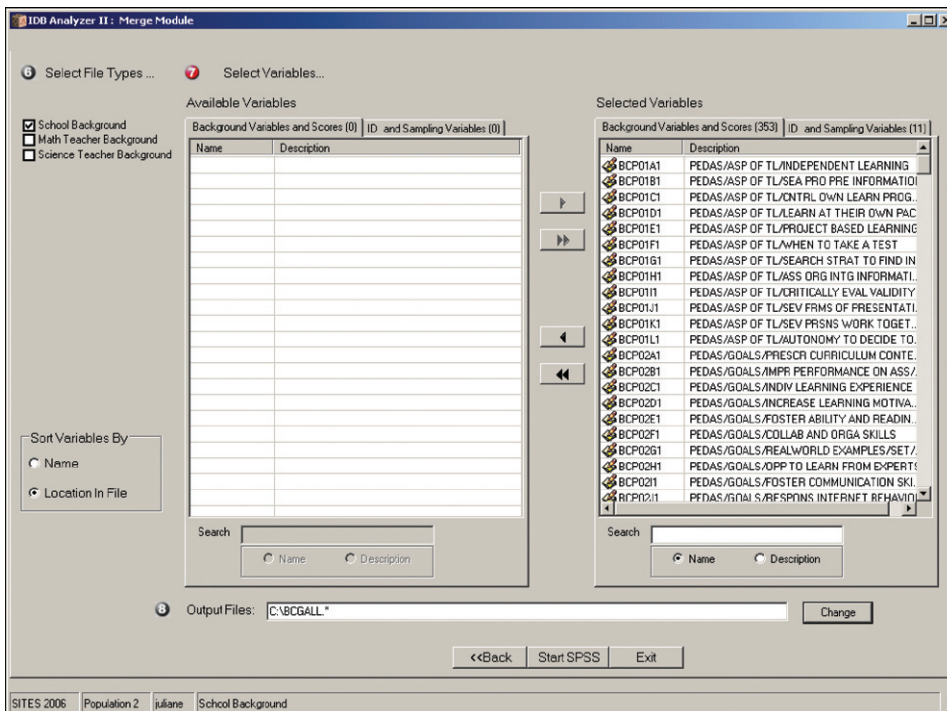


Figure 4.2 Merge Module – Selecting File Types and Variables



Researchers should check the resulting SPSS output file for possible warnings. If warnings appear, this may indicate that the merge process was not performed properly and the resulting merged data file might not be the one expected.

4.4 Performing Analyses with the IEA IDB Analyzer

This section describes a few analysis types available within the IEA IDB Analyzer to compute specific statistics with their correct standard errors. Making use of these analysis types for analyzing the SITES 2006 data is the best way to ensure that the analyses will be done properly. By using the IDB Analyzer, sampling weights are always used to analyze the SITES 2006 data and standard errors are correctly computed using the required jackknife repeated replication (JRR) method.

The analysis module of the IEA IDB Analyzer is used to analyze the data, whether or not these have been pre-processed with the merge module. It can also create code for several analysis procedures.

Table 4.1 lists the analysis available with the SITES 2006 data using the IEA IDB Analyzer:

Table 4.1 Types of Analysis for SITES 2006 Data

Analysis Type	Description
Percentages (only)	Computes percentages by subgroups defined by grouping variable(s)
Percentages and Means	Computes percentages, means, and standard deviations for selected variables by subgroups defined by the grouping variable(s)
Regression	Computes regression coefficients for selected variables predicting a dependent variable by subgroups defined by grouping variable(s)
Correlations	Computes means, standard deviations, and correlation for selected variables by subgroups defined by the grouping variable(s)

Depending on the type of analysis chosen, the analysis module of the IEA IDB Analyzer requires variables to be selected for the following purposes:

- **Grouping Variable(s)**
This is the list of variables that are to be used to define the subgroups. The list can consist of one or more variables. The IEA IDB Analyzer always includes IDCNTY as the first grouping variable and there should always be at least one grouping variable. If the option **Exclude Missing from Analysis** is checked, only cases that have non-missing values in the grouping variables will be used in the analysis. Note that this box needs to remain checked when reproducing results from the international report.
- **Analysis Variable(s)**
This is the list of variables for which the statistics are to be computed. Researchers may select more than one analysis variable. Each of these variables will be analyzed separately.
- **Dependent Variable**
This is the dependent variable to be predicted by the list of analysis or independent variables in regression analysis. Only one dependent variable can be listed for regression analysis.
- **Weight Variable**
The sampling weight that will be used in the analysis. Generally, SCHWGT should be used when analyzing school data files. MTOTWGT should be used when analyzing mathematics teacher data files and STOTWGT should be used when analyzing science teacher data. The selection of a weight variable is mandatory.

- **Jackknifing Variables**

This window lists the variables that capture the assignment of cases to sampling zones (JKCZONE/JKZONE) and whether the case is to be dropped or have its weight doubled when computing the set of replicate weights (JKCREP/JKREP). The IEA IDB Analyzer automatically uses these variables to compute the replicate weights that are used in all analysis types⁶.

The examples presented in this section all use the SPSS data file called “BCGALL.SAV” as input, which contains the school data files for the five participating education systems (Chile, Chinese Taipei, Finland, Hong Kong SAR, and Israel) used in the merge example before. In this example all school variables were selected. The merged file was created using the merge module of the IEA IDB Analyzer.

4.4.1 Computing Percentages (only) and their Standard Errors

To compute percentages of variables with their JRR standard errors analysts will need to select **Percentages only** as the type of analysis. This type can compute the percentages within specified subgroups and will also compute the appropriate standard errors for those.

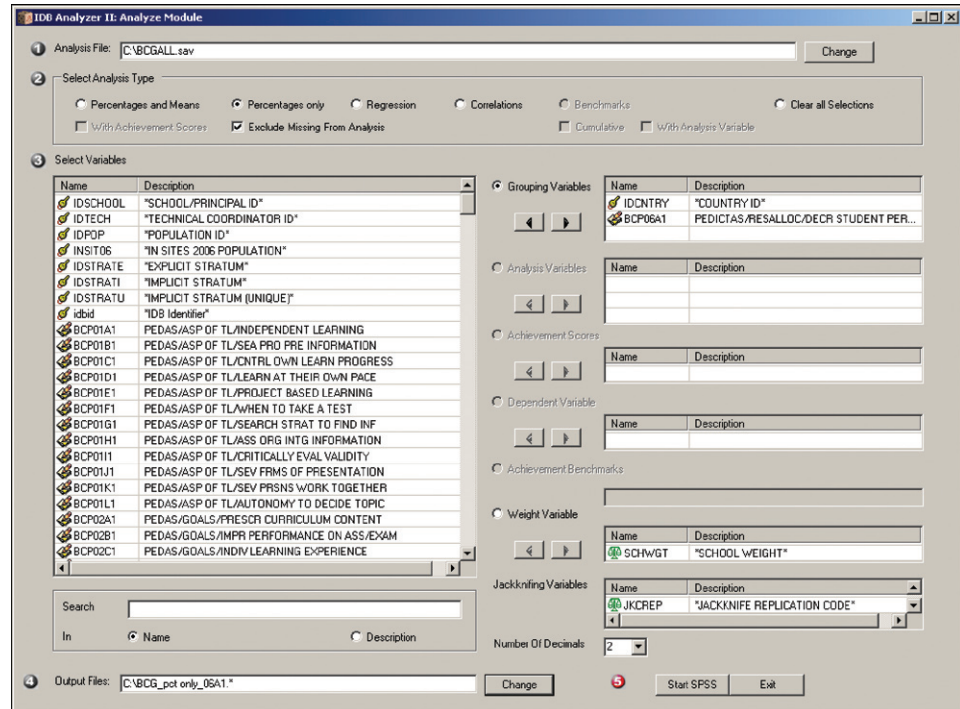
This example will compute the percentages for school principals giving high priority to a decrease of the student-computer ratio (BCP06A1) and its standard error within each education system (IDCNTY), using the weighting variable SCHWGT. The data will be read from the data file “BCGALL.SAV” and the standard errors will be computed based on 100 replicate weights.

The steps in the IEA IDB Analyzer are as follows:

1. Open the analysis module of the IEA IDB Analyzer.
2. Select the data file called “BCGALL.SAV” that was merged in the previous step.
3. As type of the analysis select **Percentages only**. Note that the program by default will exclude missing values on the grouping variable from the analysis. This can be deactivated by removing the checkmark from the option **Exclude Missing from Analysis**.
4. In the next step analysts will need to define the grouping variables. As **Grouping Variable** the software always selects variable IDCNTY by default since computing estimates for the entire SITES 2006 international database regardless of country is hardly ever desirable. Analysts will need to add BCP06A1 for this example. To do this, select the variable from the variable list on the left hand side of the window and press the right arrow button belonging to the section of the grouping variable. This will move the variable BCP06A1 from the variable list on the left hand side into the field for the grouping variables on the right hand side.
5. The weight variable is automatically defined by the software. As this is an example for analysis at the school level, the weight SCHWGT is selected by default. Additionally the jackknifing variables JKCZONE and JKCREP are defined.
6. Specify the name and folder of the output files in the **Output Files** field. The IEA IDB Analyzer will use this name and folder to create three output files: i) an SPSS syntax file that contains the code for performing the analysis, ii) an SPSS data file with the results, and iii) an Excel file with these same results.
7. Press the Start SPSS button to create the SPSS syntax file and open it in an SPSS syntax window. The syntax file will be executed by opening the **Run** menu of SPSS and selecting the **All** menu option. If necessary, the IEA IDB Analyzer will produce a prompt to confirm the overwriting of already existing files.

⁶ For information on the use of replicate weights please refer to the corresponding chapter in the SITES 2006 Technical Report and Chapter 3 in this User Guide.

Figure 4.3 Analysis Module – Computing Percentages (only)



A printout of the results is presented in Figure 4.4. It produces the percentages of school principals answering a decrease of the student-computer ratio has no, low, medium, or high priority for the selected five education systems.

Figure 4.4 SPSS Output for Percentages (only)

COUNTRY ID	PEDICTAS/RESALLOC/DECR STUDENT PER COMP	N of Cases	Sum of SCHWGT	Percent	Percent (s.e.)
Chile	NOT A PRIORITY	34	319	7.11	1.31
	LOW PRIORITY	20	307	6.95	1.38
	MEDIUM PRIORITY	115	1039	23.14	1.87
	HIGH PRIORITY	297	2823	62.91	2.29
Chinese Taipei	NOT A PRIORITY	5	14	1.68	.71
	LOW PRIORITY	36	77	9.29	1.60
	MEDIUM PRIORITY	175	354	42.97	2.56
	HIGH PRIORITY	174	380	46.06	2.74
Finland	NOT A PRIORITY	11	25	4.21	1.44
	LOW PRIORITY	50	115	19.39	2.30
	MEDIUM PRIORITY	144	329	55.35	3.32
	HIGH PRIORITY	54	125	21.06	2.78
Hong Kong, SAR	NOT A PRIORITY	26	42	12.38	2.32
	LOW PRIORITY	44	71	21.11	2.80
	MEDIUM PRIORITY	89	143	42.44	3.16
	HIGH PRIORITY	50	81	24.06	2.96
Israel	NOT A PRIORITY	15	31	4.84	1.30
	LOW PRIORITY	25	51	8.07	1.68
	MEDIUM PRIORITY	70	157	24.81	2.96
	HIGH PRIORITY	176	393	62.27	2.86

From the first four lines of the results shown in Figure 4.4, it can be seen that in Chile there are 34 schools in the sample where the school principal answered that decreasing the student-computer ratio is not a priority. The 34 schools in this category represent 319 schools in the whole population in Chile. Schools where the decrease of the student-computer ratio is not a priority made up 7.11% of Chilean school population. The standard error of this percentage is 1.31.

4.4.2 Computing Percentages and Means and their Standard Errors

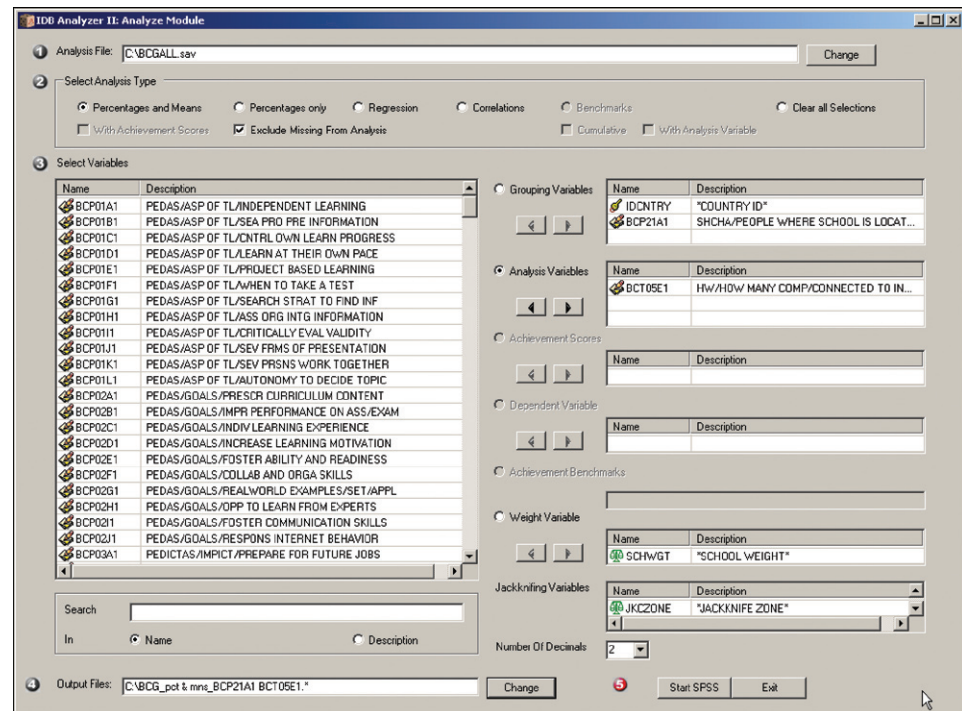
To compute percentages and means of continuous variables with their corresponding standard errors researchers will need to select **Percentages and Means** as type of analysis. An example will help to demonstrate this. This analysis type computes the percentages of schools within specified subgroups and their mean and standard deviation on the continuous variable selected. This analysis type also computes the appropriate standard errors for those percentages, means, and standard deviations.

This example will compute the average number of computers with internet access (BCT05E1) for each category of school location (BCP21A1) and their associated standard errors for each education system (IDCNTRY), using the weighting variable SCHWGT. The data will be read from the data file "BCGALL.SAV" and the standard errors will be computed based on 100 replicate weights.

The steps in the IEA IDB Analyzer are as follows:

1. Open the analysis module of the IEA IDB Analyzer.
2. Select the data file called "BCGALL.SAV" that was merged in the previous step.
3. As type of the analysis select **Percentages and Means**. Please note that the program will by default exclude from the analysis cases with missing grouping variables. This can be deactivated by removing the checkmark from the option **Exclude Missing from Analysis**.
4. In the next steps the variables need to be defined:
 - a. As **Grouping Variables** the software always selects variable IDCNTRY by default. BCP21A1 will need to be added for this example. To do this, select the variable from the variable list on the left hand side of the window and press the right arrow button belonging to the section of the grouping variable. This will move the variable BCP21A1 from the variable list on the left hand side into the field for the grouping variables on the right hand side. Note that subgroups are created and reported using the order of the variables as they appear in this list.
 - b. Next the analysis variables need to be defined. To activate this section, press the radio button **Analysis Variables**. This time select variable BCT05E1 from the list of variables and move it to the analysis variables field by pressing the right arrow button in this section. Note that more than one analysis variable can be selected.
5. The weight variable is automatically defined by the software. As this is an example for analysis on school level, the weight SCHWGT is selected by default. Additionally the jackknifing variables JKCZONE and JKCREP are defined.
6. Specify the name and folder of the output files in the **Output Files** field. The IEA IDB Analyzer will use this name and folder to create three output files: an SPSS syntax file that contains i) the code for performing the analysis, ii) an SPSS data file with the results, and iii) an Excel file with these same results.
7. Press the **Start SPSS** button to create the SPSS syntax file and open it in an SPSS syntax window. The syntax file will be executed by opening the **Run** menu of SPSS and selecting the **All** menu option. If necessary, the IEA IDB Analyzer will produce a prompt to confirm the overwriting of already existing files.

Figure 4.5 Analysis Module – Computing Percentages and Means



A printout of the results is presented in Figure 4.6. It shows the number of school principals answering in the area where their school is located and the average number of computers with internet access in each of the categories of school location for the selected five education systems.

Figure 4.6 SPSS Output for Percentages and Means

Average for BCT05E1 by (IDCNTRY BGP21A1)										
COUNTRY ID	SHCHA/PEOPLE WHERE SCHOOL IS LOCATED	N of Cases	Sum of SCHWGT	Percent	Percent (s.e.)	BCT05E1 (Mean)	BCT05E1 (s.e.)	Std.Dev.	Std.Dev. (s.e.)	Percent Missing
Chile	3,000 PEOPLE OR FEWER	53	689	16.40	1.55	5.47	.62	5.62	1.33	6.99
	3,001 TO 15,000 PEOPLE	63	594	14.12	1.55	14.68	1.50	11.52	1.09	5.99
	15,001 TO 50,000 PEOPLE	66	623	14.82	1.55	17.44	1.07	14.45	1.65	5.16
	50,001 TO 100,000 PEOPLE	56	492	11.70	1.43	20.21	2.62	19.14	2.76	6.10
	100,001 TO 500,000 PEOPLE	127	1080	25.70	2.03	21.35	1.50	19.10	2.44	5.26
Chinese Taipei	MORE THAN 500,000 PEOPLE	80	725	17.25	1.89	27.39	2.82	25.89	3.07	6.30
	3,000 PEOPLE OR FEWER	6	17	2.12	.90	69.07	13.24	45.44	15.95	.00
	3,001 TO 15,000 PEOPLE	41	120	14.99	1.82	73.21	4.96	33.84	6.02	.00
	15,001 TO 50,000 PEOPLE	75	188	23.53	2.03	123.14	8.73	72.37	9.23	2.01
	50,001 TO 100,000 PEOPLE	62	115	14.35	1.79	142.15	9.85	65.09	5.93	.00
Finland	100,001 TO 500,000 PEOPLE	120	216	26.93	2.00	208.27	15.42	143.48	16.65	.67
	MORE THAN 500,000 PEOPLE	76	145	18.08	1.56	212.01	13.39	106.23	14.43	2.30
	3,000 PEOPLE OR FEWER	19	57	11.19	2.38	34.15	3.17	13.90	2.71	2.58
	3,001 TO 15,000 PEOPLE	83	192	37.59	3.35	51.79	2.75	24.31	1.87	10.70
	15,001 TO 50,000 PEOPLE	55	113	22.06	2.87	65.17	2.37	24.69	2.37	11.88

In the first line of the results shown in Figure 4.6, in Chile there are 53 schools located in villages with “3,000 people or fewer” representing an estimated 689 schools in the whole population being located in such an area. On average, schools located in an area with “3,000 people or fewer” in Chile have only 5.47 computers with internet access available. The standard error of the mean estimate is 0.62. The standard deviation is 5.62 with a standard error of 1.33. The output’s last column also reports the percentage of responses missing for the analysis variable BCT05E1 within each level of the grouping variables IDCNTRY and BGP21A1. For about 7% of the schools located in areas with 3,000 people or fewer, the school principals did not respond to the question about the number of computers with internet access.

Conversely, Chile has 80 schools representing an estimated 725 schools in the whole population being located in a city with “more than 500,000 people”. Here the estimated mean number of computers with Internet access is 27.39 with a standard error of 2.82.

4.4.3 Computing Regression Coefficients and their Standard Errors

The analysis type **Regression** is used to perform single or multiple linear regression between a dependent (explained) variable and one or more independent (to be explained) variables. This example demonstrates the use of this type of analysis, which computes the regression coefficients and their corresponding standard errors. Note that the IDB Analyzer provides convenient tools to estimate coefficients and sampling errors reflecting the sample design only and that analysts would need to verify any assumptions about the data’s characteristics, distributions, etc. beforehand (e.g., normality, outliers, multicollinearity, or heteroscedasticity).

This example will show a linear regression with the location of the school (recoded variable REC21A1) as a predictor of the student-computer-ratio (computed variable RECCSRAT), using the weight variable SCHWGT. It will compute the regression coefficients and their standard errors. The data will be read from the data file “BCGALL.SAV” and the standard errors will be computed based on 100 replicate weights.

Please note that this example uses the values of the variables BCP19A1 and BCP19B1 as well as the values of variable BCT05A1 to compute the student-computer-ratio in variable RECCSRAT. This is done by dividing the sum of the enrollment of girls (BCP19A1) and boys (BCP19B1) in the school by the number of computers in the school (BCT05A1). The values of the variable BCP21A1 (indicating the location of the school) are recoded into variable REC21A1. The categories were combined into two groups (often referred to as dummy-coding). The first group of schools is located in an area with “50,000 people or fewer.” The other group of schools is located in an area with “more than 50,000 people.” Please refer to the output section for an explanation of why this was done. These recodes should be done using SPSS directly. No recodes can be performed using the IEA IDB Analyzer.

The IEA IDB Analyzer does not support direct recoding of data. The SPSS code for the recodes that reads the merged data file BCGALL.SAV and saves it under the same name including the new variables RECCSRAT and REC21A1 is presented in Figure 4.7. Note that this code would need to be run directly in SPSS.

Figure 4.7 Example SPSS Syntax to Dummy Recode Variables for Analysis

```
get file = "c:\bcgall.sav" .

* Compute new variable RECCSRAT as student-computer-ratio .
if (BCT05A1>0) RECCSRAT = (BCP19A1 + BCP19B1) / BCT05A1 .
variable labels RECCSRAT 'Computed student-computer-ratio' .

* Compute new variable REC21A1 .
recode BCP21A1
(1=0) (2=0) (3=0) (4=1) (5=1) (6=1) (else=system) into REC21A1 .
variable labels REC21A1 'Recoded school location' .
value labels REC21A1
      0 '50,000 people or fewer'
      1 'more than 50,000 people' .

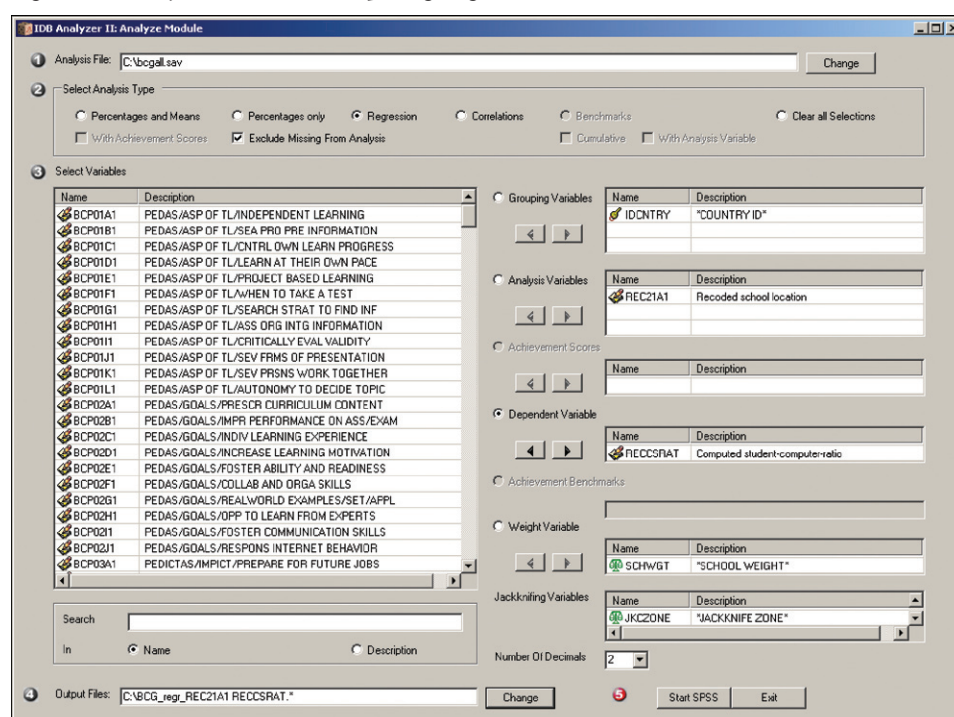
save outfile = "c:\bcgall.sav" .
```

For the purpose of this example, analysts can simply copy the above SPSS code into the SPSS syntax window and run it. This will add the two recoded variables to the data file, which then can be selected for the regression analysis in the IEA IDB Analyzer.

The steps in the IEA IDB Analyzer are as follows:

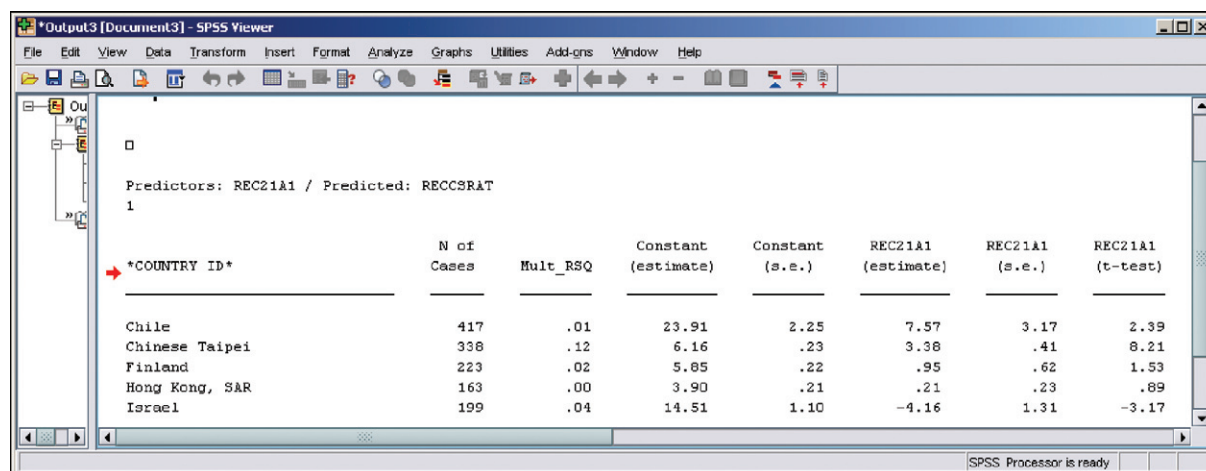
1. Open the Analysis module of the IEA IDB Analyzer.
2. Select the data file called “BCGALL.SAV” that was recoded earlier.
3. As type of the analysis select **Regression**.
4. In the next steps all variables need to be defined:
 - a. As **Grouping Variable** the software always selects variable IDCNTY by default. No other variable needs to be added for this example.
 - b. Next the analysis variable needs to be defined. To activate this section, press the radio button **Analysis Variables**. This time select variable REC21A1 from the list of variables and move it to the analysis variables field by pressing the right arrow button in this section. Please note that if this variable does not exist in the variable list, the recoding step before was not conducted successfully.
 - c. Select the radio button for the **Dependent Variable**. Select variable RECCSRAT from the variable list and move it to the dependent variable field by pressing the right arrow button in this section. Please note that if this variable does not exist in the variable list, the recoding step before was not conducted successfully.
5. The weight variable is automatically selected by the software. As this is an example for analysis on school level, the weight SCHWGT is selected by default. Additionally the jackknifing variables JKCZONE and JKCREP are defined.
6. Specify the name and folder of the output files in the **Output Files** field. The IEA IDB Analyzer will use this name and folder to create three output files: i) an SPSS syntax file that contains the code for performing the analysis, ii) an SPSS data file with the results, and iii) an Excel file with these same results.
7. Press the **Start SPSS** button to create the SPSS syntax file and open it in an SPSS syntax window. The syntax file will be executed by opening the **Run** menu of SPSS and selecting the **All** menu option. If necessary, the IEA IDB Analyzer will produce a prompt to confirm the overwriting of already existing files.

Figure 4.8 Analysis Module – Computing Regression



A printout of the results is presented in Figure 4.9. It performs a linear regression in each education system, with the community size variable (REC21A1) as a predictor of the student-computer-ratio (RECCSRAT)—it regresses RECCSRAT on REC21A1—and displays the results for the five selected education systems.

Figure 4.9 SPSS Output for Regression



COUNTRY ID	N of Cases	Mult_RSQ	Constant (estimate)	Constant (s.e.)	REC21A1 (estimate)	REC21A1 (s.e.)	REC21A1 (t-test)
Chile	417	.01	23.91	2.25	7.57	3.17	2.39
Chinese Taipei	338	.12	6.16	.23	3.38	.41	8.21
Finland	223	.02	5.85	.22	.95	.62	1.53
Hong Kong, SAR	163	.00	3.90	.21	.21	.23	.89
Israel	199	.04	14.51	1.10	-4.16	1.31	-3.17

The regression performed by our example uses the recoded variables REC21A1 and RECCSRAT. By using these variables, the intercept or constant will be the estimated student-computer-ratio for schools located in an area with “50,000 people or fewer”, whereas the regression coefficient, REC21A1 (estimate), will be the estimated difference in the student-computer-ratio in schools located in an area with “more than 50,000 people”. This will also allow us to perform a t-test to determine if the student-computer-ratio is significantly different between schools located in areas with “50,000 people or fewer” and schools located in areas with “more than 50,000 people”.

The results displayed in Figure 4.9 show that in Chile the estimated mean student-computer-ratio in schools located in an area with “50,000 people or fewer” is 23.91 students per computer (Constant (estimate)), with a standard error of 2.25. Compared to this, if a school is located in an area with “more than 50,000 people” the estimated difference in the student-computer-ratio is 7.57 (REC21A1 (estimate)). This means that the student-computer-ratio is 31.48 students per computer in schools that are in an area with “more than 50,000 people,” and therefore this ratio is higher than in schools which are located in an area with “50,000 people or fewer.” With an estimated standard error of 3.17 (REC21A1 (s.e.)), this difference is statistically significant at a 95% confidence level because REC21A1 (t-test) is bigger than the absolute value of 1.96. In contrast, the computed t-test for Finland and Hong Kong suggests that the null hypothesis (no difference in student-computer-ratio due to community size) can not be rejected.

4.4.4 Computing Correlations and their Standard Errors

The analysis type **Correlations** is used to calculate correlation coefficients between selected analysis variables.

This example will compute the Pearson correlation between the priority of resource allocation that a school principal gives to improve the ability of teachers to make good pedagogical use of ICT (BCP06G1) and the priority of resource allocation to broaden teachers’ pedagogical repertoire and to widen their pedagogical competence to engage in new methods of teaching and learning (BCP06H1).

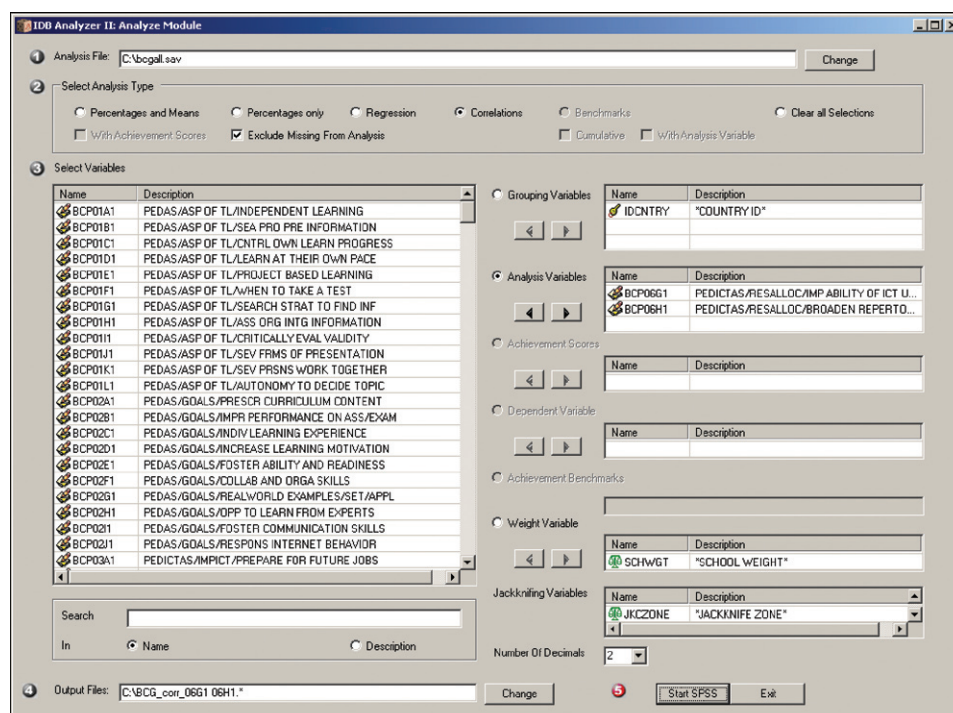
The steps in the IEA IDB Analyzer are as follows:

1. Open the analysis module of the IEA IDB Analyzer.

2. Select the data file called “BCGALL.SAV” that was merged in the previous step.
3. As type of the analysis select **Correlations**.
4. In the next steps all variables need to be defined:
 - a. As **Grouping Variable** the software always selects variable IDCNTY by default. No other variable needs to be added for this example.
 - b. Next select the analysis variables. To activate this section, press the radio button **Analysis Variables**. This time select variables BCP06G1 and BCP06H1 from the list of variables and move them to the analysis variables window by pressing the right arrow button in this section.
5. The weight variable is automatically selected by the software. As this is an example for analysis at the school level, the weight SCHWGT is selected by default. Additionally the jackknifing variables JKCZONE and JKCREP are defined.
6. Specify the name and folder of the output files in the **Output Files** field. The IEA IDB Analyzer will use this name and folder to create three output files: i) an SPSS syntax file that contains the code for performing the analysis, ii) an SPSS data file with the results, and iii) an Excel file with these same results.
7. Press the **Start SPSS** button to create the SPSS syntax file and open it in an SPSS syntax window. The syntax file will be executed by opening the **Run** menu of SPSS and selecting the **All** menu option. If necessary, the IEA IDB Analyzer will produce a prompt to confirm the overwriting of already existing files.

Figure 4.10 shows the setup screen with the selections made for computing the correlations between the two selected variables. Figure 4.11 shows the results from the analysis.

Figure 4.10 Analysis Module – Computing Correlations



The output in Figure 4.11 displays, for each group defined by the grouping variables, the correlation coefficients for each possible pair of variables. The diagonal and elements above the diagonal of the correlation matrix are displayed with their corresponding standard errors.

Figure 4.11 SPSS Output for Correlations

The screenshot shows the SPSS Output window with five correlation matrices. Each matrix is for a different IDCNTY group. The variables analyzed are BCF06G1 and BCF06H1. The output includes the sum of weights, mean, standard error, standard deviation, and the correlation coefficient with its standard error for each variable.

Correlation matrix for: IDCNTY= 152 *									
Variable	Sum of Wgts	Mean	s.e.	StdDev	s.e.	Correlations and s.e.			
BCF06G1	4510.87	3.83	.022	.41	.028	1.0000	.0000	.5919	.0621
BCF06H1	4510.87	3.87	.019	.37	.029			1.0000	.0000

Correlation matrix for: IDCNTY= 158 *									
Variable	Sum of Wgts	Mean	s.e.	StdDev	s.e.	Correlations and s.e.			
BCF06G1	823.50	3.81	.022	.40	.022	1.0000	.0000	.5544	.0527
BCF06H1	823.50	3.75	.025	.44	.016			1.0000	.0000

Correlation matrix for: IDCNTY= 246 *									
Variable	Sum of Wgts	Mean	s.e.	StdDev	s.e.	Correlations and s.e.			
BCF06G1	596.98	3.53	.034	.58	.024	1.0000	.0000	.8273	.0307
BCF06H1	596.98	3.48	.037	.58	.022			1.0000	.0000

Correlation matrix for: IDCNTY= 344 *									
Variable	Sum of Wgts	Mean	s.e.	StdDev	s.e.	Correlations and s.e.			
BCF06G1	337.65	3.27	.049	.66	.032	1.0000	.0000	.5803	.0650
BCF06H1	337.65	3.29	.047	.64	.032			1.0000	.0000

Correlation matrix for: IDCNTY= 376 *									
Variable	Sum of Wgts	Mean	s.e.	StdDev	s.e.	Correlations and s.e.			
BCF06G1	632.49	3.52	.048	.72	.048	1.0000	.0000	.8069	.0373
BCF06H1	632.49	3.50	.053	.76	.049			1.0000	.0000

The results displayed in Figure 4.11 indicate that the correlation between the two variables in the analysis for the first group (IDCNTY=152 [Chile]) is 0.5919, whereas the standard error is 0.0621. For the second group (IDCNTY = 158 [Chinese Taipei]) the correlation between these variables is 0.5544 and the standard error for the correlation is 0.0527. In addition to the correlations the output also displays the mean and standard deviation for each variable in the analysis, together with the corresponding standard errors.

Due to limitations in the current implementation of the correlation analysis, the grouping variables are not displayed with labels. The user will need to keep a record of the labels for each of the values of the grouping variables in order to interpret the results. These are available in the technical documentation for the study and can also be obtained by using the **Percentages Only** procedure within the IEA IDB Analyzer or looking them up in the codebooks for the files.

4.5 Performing Analyses from the SITES 2006 Report

4.5.1 Analysis with School-level Variables

The example of a school-level analysis will investigate the percentages and standard errors of schools in which common types of technology applications and facilities were available. The results of this analysis are presented in Table 4.5 of the SITES 2006 international report (see Figure 4.12 below). Parts of the results are also reproduced here in Figure 4.15. This example uses the analysis type **Percentages only** since the purpose is to compute the percentage of schools having equipment and hands-on materials available.

The first step in the analysis is to identify the variables of interest in the appropriate data files and to review the documentation for any specific cultural and national adaptations to the questions of interest (Appendix D of the SITES 2006 Technical Report). The variable BCT04A1 in the school files contains information on the availability of equipment and hands-on materials. The next step is to review the documentation of national adaptations to the questionnaires to ensure that there were no deviations listed

for this variable (see Appendix D of the SITES 2006 Technical Report). If no adaptations were made, the analysis can continue without additional modifications.

The next step is to identify the variables relevant to the analysis in the appropriate files. Since this example uses a school-level variable, it should be identified in the school file. To support this, the appendices of this User Guide provide all questionnaires and include the respective variables names as used in the international database. This data file will provide the variable that contains the information about the availability of equipment and hands-on materials (BCT04A1).

The merge module of the IEA IDB Analyzer will combine data from the school files of the desired education systems. The school data for five education systems (Chile, Chinese Taipei, Finland, Hong Kong SAR, and Israel) are merged by clicking on the **Merge button**. The merged data file will be called "BCGALL.SAV".

Figure 4.12 Table 4.5 from the SITES 2006 International Report for Example School-level Analysis (Law, Pelgrum, & Plomp, 2008, pp. 81)

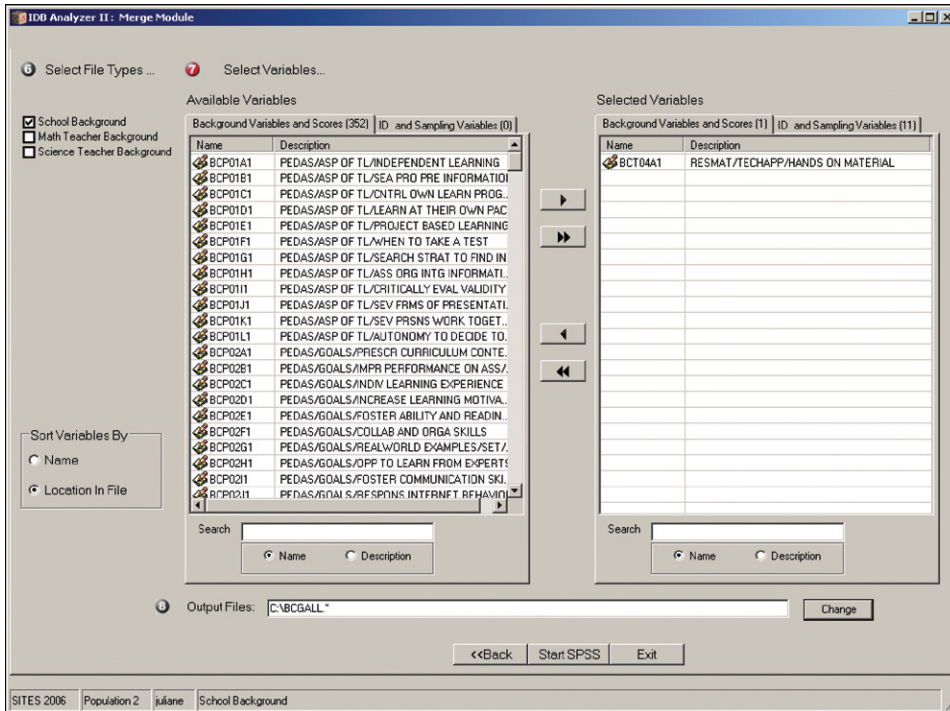
Table 4.5 Percentages (standard errors) of schools in which common types of technology applications and facilities were available

Education system	Equipment	Tutorial software	General software	Multimedia production	Data logging	Simulation	Communication software	Digital resources	Mobile devices	Smart board	LMS	Mail accounts (teachers)	Mail accounts (students)
^{2,3} Alberta Province, Canada	88 (3.0)	68 (4.0)	100 (0.0)	81 (3.1)	44 (3.6)	43 (4.0)	76 (3.5)	87 (3.1)	22 (3.4)	47 (4.1)	48 (4.1)	95 (1.5)	53 (4.3)
Catalonia, Spain	88 (1.6)	57 (2.7)	99 (0.7)	84 (2.3)	73 (2.8)	59 (3.0)	89 (1.9)	87 (1.7)	21 (2.1)	07 (1.6)	44 (2.9)	88 (1.9)	49 (2.7)
¹ Chile	47 (1.8)	45 (2.2)	90 (1.3)	54 (2.4)	63 (2.1)	48 (2.2)	79 (1.8)	72 (1.9)	13 (1.5)	06 (1.3)	39 (2.4)	68 (2.0)	52 (2.2)
Chinese Taipei	96 (1.1)	48 (2.5)	99 (0.4)	89 (1.6)	54 (2.5)	21 (2.1)	93 (1.3)	74 (2.5)	10 (1.7)	07 (1.3)	42 (2.8)	95 (1.2)	74 (2.2)
² Finland	96 (1.2)	66 (2.8)	99 (0.7)	77 (2.6)	64 (3.2)	20 (2.4)	92 (1.7)	78 (2.6)	11 (2.1)	10 (1.8)	46 (2.7)	97 (1.1)	59 (2.8)
² Hong Kong SAR	97 (1.1)	72 (3.0)	100 (0.0)	97 (1.0)	77 (2.7)	47 (3.0)	98 (0.8)	89 (2.0)	20 (2.7)	26 (2.7)	91 (1.8)	98 (1.0)	88 (2.0)
⁴ Israel	70 (2.9)	46 (3.3)	96 (1.3)	44 (3.1)	55 (3.6)	16 (2.1)	84 (2.5)	53 (3.1)	13 (1.7)	08 (1.5)	46 (3.0)	54 (3.1)	40 (3.1)
¹ Italy	85 (2.1)	60 (3.2)	99 (0.6)	63 (2.9)	70 (2.6)	37 (2.8)	73 (2.8)	60 (3.1)	11 (2.0)	11 (1.6)	19 (2.2)	64 (2.7)	14 (2.0)
¹ Japan	94 (1.2)	58 (2.5)	97 (0.7)	76 (2.4)	22 (2.1)	39 (2.2)	62 (2.5)	51 (2.4)	03 (0.8)	20 (2.2)	35 (2.4)	56 (2.2)	22 (2.1)
² Lithuania	72 (3.1)	74 (2.9)	90 (2.1)	70 (2.9)	70 (3.4)	37 (3.8)	94 (1.5)	87 (2.4)	38 (3.2)	32 (2.9)	19 (2.6)	62 (3.5)	58 (3.6)
Moscow, Russian Federation	65 (2.6)	65 (2.4)	81 (2.1)	47 (2.9)	24 (2.4)	24 (2.4)	81 (2.0)	55 (2.6)	26 (2.3)	21 (1.9)	09 (1.4)	53 (2.5)	38 (2.3)
² Ontario Province, Canada	81 (2.5)	78 (2.7)	99 (0.5)	83 (2.4)	75 (3.0)	59 (3.4)	64 (3.2)	90 (1.9)	09 (2.0)	21 (2.3)	54 (3.0)	100 (0.2)	32 (3.1)
Russian Federation	47 (3.9)	61 (3.2)	73 (3.5)	34 (2.7)	10 (1.8)	27 (3.2)	36 (2.7)	49 (3.9)	15 (2.1)	02 (0.5)	05 (1.2)	18 (2.3)	13 (2.1)
Singapore	98 (1.1)	85 (2.9)	100 (0.0)	93 (2.1)	95 (1.8)	66 (4.2)	98 (1.2)	92 (2.2)	34 (3.5)	28 (3.4)	95 (1.8)	100 (0.0)	58 (3.9)
Slovak Republic	75 (2.3)	48 (2.8)	97 (0.9)	68 (2.6)	25 (2.3)	40 (2.9)	97 (1.0)	83 (2.0)	21 (2.0)	17 (2.3)	25 (2.6)	81 (2.0)	72 (2.7)
Slovenia	92 (1.4)	87 (2.0)	100 (0.3)	80 (2.1)	93 (1.3)	55 (2.6)	98 (0.7)	78 (2.1)	21 (2.3)	04 (1.0)	48 (2.5)	97 (1.0)	91 (1.5)
South Africa	17 (1.4)	10 (1.4)	35 (2.2)	07 (1.0)	11 (1.6)	04 (0.8)	14 (1.4)	20 (2.0)	13 (1.8)	09 (1.0)	07 (1.3)	13 (1.4)	08 (1.4)
¹ Thailand	40 (2.4)	17 (2.0)	51 (2.8)	22 (1.9)	04 (1.0)	06 (1.2)	44 (2.4)	49 (2.7)	05 (1.1)	06 (1.2)	13 (1.8)	11 (1.5)	10 (1.3)
⁴ Denmark	94 (2.0)	93 (1.9)	99 (1.0)	89 (2.4)	44 (3.7)	53 (3.9)	97 (1.2)	93 (2.0)	11 (2.3)	25 (3.2)	51 (3.7)	96 (1.4)	89 (2.3)
⁴ Estonia	66 (3.8)	64 (3.6)	98 (1.1)	57 (4.1)	35 (3.4)	21 (3.4)	93 (2.0)	67 (3.8)	22 (3.2)	21 (2.8)	21 (3.4)	94 (1.8)	57 (4.2)
⁴ France	86 (2.5)	80 (3.5)	99 (1.0)	68 (3.3)	76 (3.5)	50 (3.6)	71 (3.3)	83 (2.6)	18 (2.7)	14 (2.6)	26 (3.5)	78 (2.8)	48 (3.7)
⁴ Norway	92 (2.4)	88 (2.5)	100 (0.0)	78 (3.2)	28 (3.3)	34 (3.9)	95 (1.3)	83 (3.1)	13 (2.7)	07 (1.8)	70 (4.0)	89 (2.6)	54 (4.5)

Notes:
² School participation rate after including replacement schools is below 70%
¹ School participation rate before including replacement schools is below 83%
³ Less than 70% of the school-level questionnaires in the participating schools were returned
⁴ Nationally defined population covers less than 90% of the nationally desired population.

Figure 4.13 below shows the set-up screen for the IEA IDB Analyzer Merge module with the variables selected for the analysis. Notice that the school file (BCG) is selected. The identification variables are automatically selected by the IEA IDB Analyzer.

Figure 4.13 Merge Module for Example School-level Analysis



For this analysis there is no need to recode the data. The analysis is conducted with the IEA IDB Analyzer analysis module. Figure 4.14 shows the set-up for this analysis and Figure 4.15 shows the results. In the set-up screen for the analysis module the analysis type selected is **Percentages only**. Variables IDCNTRY and BCT04A1 have been selected as **Grouping Variables**. As **Weight Variable** the IEA IDB Analyzer automatically selected the variable SCHWGT.

Figure 4.14 Analysis Module for Example School-level Analysis

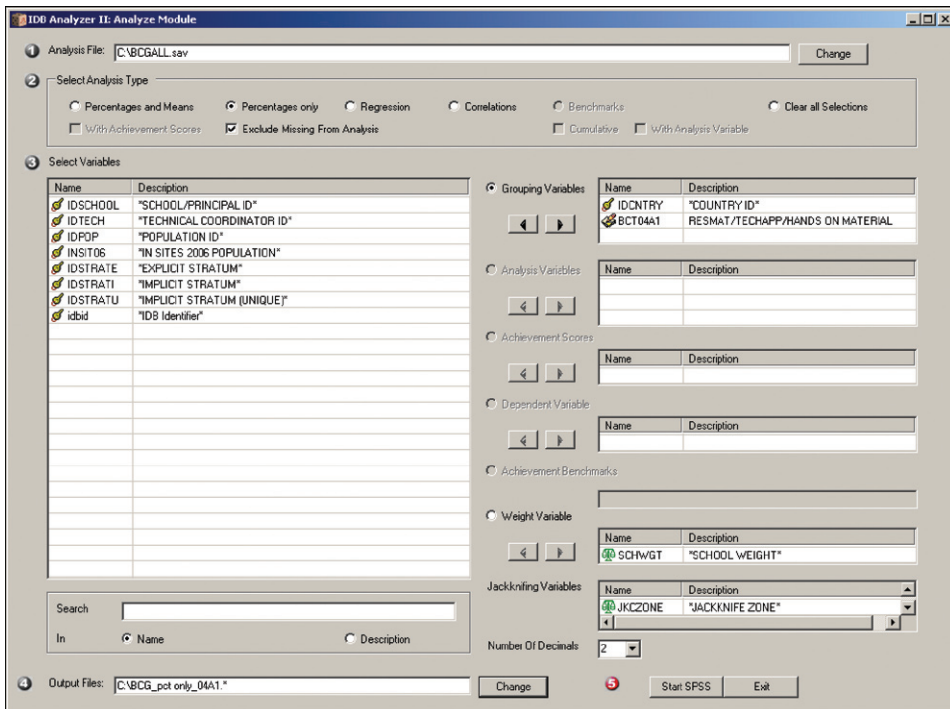


Figure 4.15 SPSS Output for Example School-level Analysis

Percentages by (IDCNTRY BCT04A1)
1

COUNTRY ID	RESMAT/TECHAPP/HANDS ON MATERIAL	N of Cases	Sum of SCHWGT	Percent	Percent (s.e.)
Chile	AVAILABLE	249	2173	46.90	1.81
	NEEDED BUT NOT AVAILABLE	233	2376	51.29	1.80
	NOT NEEDED AND NOT AVAILABLE	9	84	1.81	.62
Chinese Taipei	AVAILABLE	383	801	96.47	1.06
	NEEDED BUT NOT AVAILABLE	11	26	3.16	.99
	NOT NEEDED AND NOT AVAILABLE	1	3	.38	.38
Finland	AVAILABLE	263	603	95.77	1.22
	NEEDED BUT NOT AVAILABLE	11	24	3.83	1.16
	NOT NEEDED AND NOT AVAILABLE	1	3	.40	.01
Hong Kong, SAR	AVAILABLE	246	393	96.85	1.12
	NEEDED BUT NOT AVAILABLE	7	11	2.74	1.03
	NOT NEEDED AND NOT AVAILABLE	1	2	.42	.01
Israel	AVAILABLE	210	449	69.76	2.87
	NEEDED BUT NOT AVAILABLE	65	148	23.01	2.84
	NOT NEEDED AND NOT AVAILABLE	18	47	7.24	1.54

In this example, each education system's results are presented in three lines, one for each value of the BCT04A1 variable. The education systems are identified in the first column. The second column describes the categories of BCT04A1 being reported. The third column reports the number of valid cases and the fourth the sum of weights of the sampled schools. The last two columns display the percentage of schools in each category and its standard error.

The first three lines in Figure 4.15 show that in Chile 46.90% of schools have equipment and hands-on materials available, 51.29% of schools need equipment and hands-on materials, but do not have it available, and 1.81% of schools reported that they do not have and do not need this type of technology applications and facilities available. They also show the standard errors for the percentages in each category.

Note that the first line for each education system in the output in Figure 4.15 matches the percentages and standard errors reported in Table 4.5 (Figure 4.12) in the SITES 2006 international report.

4.5.2 Analysis with Teacher-level Variables

The example of a teacher-level analysis will investigate the percentage of mathematics teachers using ICT by gender. The results of such an analysis are presented in Table 6.2 of the SITES 2006 international report (Figure 4.16). Parts of it are reproduced here in Figure 4.19. After merging the mathematics teacher data for five education systems (Chile, Chinese Taipei, Finland, Hong Kong SAR, and Israel), the example will use the analysis type **Percentages only**.

Figure 4.16 Table 6.2 from the SITES 2006 International Report for the Example Teacher-level Analysis (Law, Pelgrum, & Plomp, 2008, pp. 187)

Table 6.2 Number of male teachers and female teachers and the percentage of teachers in each gender group who used ICT with their target classes

Education system	Mathematics teachers					Science teachers				
	N	Male use ICT %	N	Female use ICT %	Sig.	N	Male use ICT %	N	Female use ICT %	Sig.
Catalonia, Spain	318	37 (0.03)	344	40 (0.03)		215	54 (0.03)	318	57 (0.03)	
¹ Chile	225	51 (0.04)	319	59 (0.03)	**	135	67 (0.04)	389	65 (0.03)	
Chinese Taipei	419	39 (0.02)	429	32 (0.02)	**	493	51 (0.02)	301	45 (0.03)	**
² Finland	224	51 (0.04)	327	45 (0.03)	**	213	63 (0.04)	331	59 (0.03)	*
² Hong Kong SAR	330	68 (0.03)	240	73 (0.03)		263	78 (0.03)	184	89 (0.02)	**
¹ Israel	185	25 (0.03)	653	22 (0.02)		125	55 (0.05)	572	53 (0.03)	
¹ Italy	121	59 (0.05)	533	58 (0.02)		124	64 (0.05)	545	57 (0.03)	**
^{1,3} Japan	315	25 (0.03)	151	18 (0.03)	**	345	46 (0.02)	94	36 (0.06)	**
² Ontario Province, Canada	182	78 (0.03)	228	74 (0.03)	**	128	76 (0.04)	177	76 (0.03)	
Singapore	179	73 (0.04)	301	73 (0.03)		169	82 (0.03)	279	85 (0.02)	
Slovak Republic	105	52 (0.05)	452	51 (0.02)		265	56 (0.04)	796	56 (0.02)	
Slovenia	143	51 (0.04)	568	37 (0.02)	**	137	77 (0.04)	555	66 (0.02)	**
^{1,2} Alberta Province, Canada	179	62 (0.04)	171	62 (0.04)		174	80 (0.03)	154	78 (0.04)	
¹ Denmark	222	78 (0.03)	123	76 (0.04)		280	67 (0.03)	128	77 (0.04)	**
⁴ Estonia	25	45 (0.10)	209	39 (0.04)		70	56 (0.06)	302	54 (0.03)	
⁴ France	200	55 (0.04)	219	44 (0.04)	**	189	59 (0.04)	225	51 (0.04)	**
^{1,2} Lithuania	26	56 (0.10)	350	62 (0.03)		71	64 (0.07)	396	66 (0.03)	
¹ Moscow, Russian Federation	17	19 (0.10)	581	46 (0.02)	**	137	59 (0.04)	1435	57 (0.02)	
⁴ Norway	179	81 (0.03)	114	80 (0.04)		175	76 (0.03)	101	72 (0.04)	
¹ Russian Federation	53	38 (0.11)	1182	41 (0.04)	**	319	53 (0.04)	2702	48 (0.03)	**
¹ South Africa	230	19 (0.03)	259	17 (0.02)	**	183	15 (0.03)	242	17 (0.03)	
^{1,1} Thailand	200	47 (0.04)	457	43 (0.03)	**	188	60 (0.04)	466	56 (0.03)	**

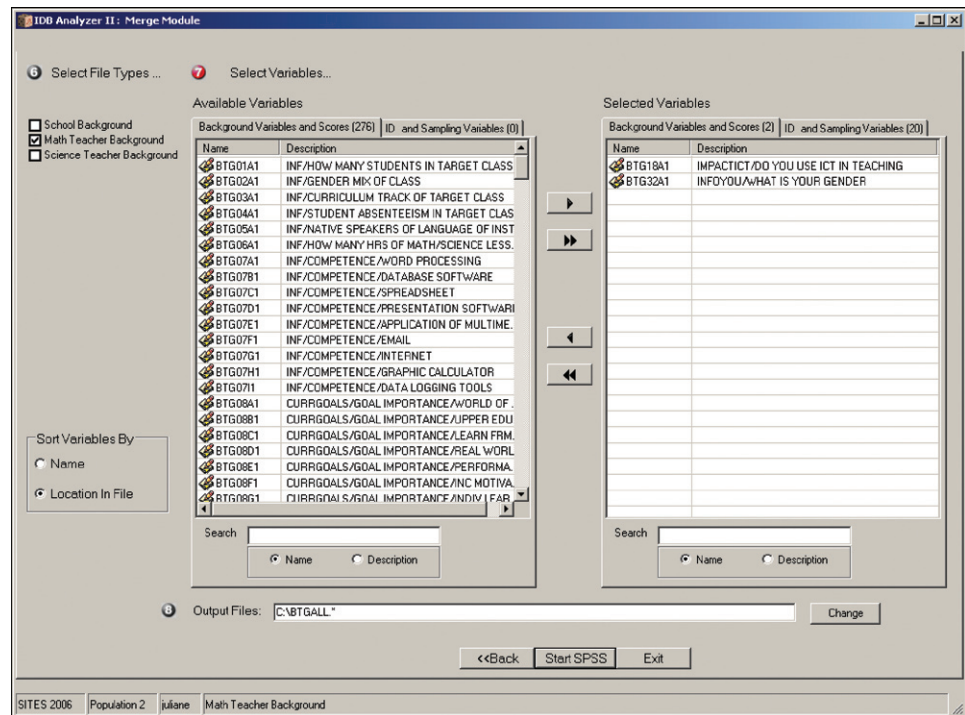
Notes:
 ICT-use percentages are weighted statistics. However, N listed in the tables is the unweighted number of teachers. Gender was not part of the sampling criteria and N is included to indicate the size of the actual sample within each gender.
 Value labels for the response categories: 1=never, 2=sometimes, 3=often, 4=always
 * School participation rate after including replacement schools is below 70%
¹ International procedures for target-class selection was not followed in all schools
 * Differences between male teachers and female teachers is significant at $p < 0.05$
 ** Differences between male teachers and female teachers is significant at $p < 0.01$
¹ School participation rate before including replacement schools is below 85%
² School participation rate after including replacement schools is below 85%
³ Teacher participation data were collected after survey administration
⁴ Nationally defined population covers less than 90% of the nationally desired population.

As with the previous analysis, the first step is to identify the variables relevant to the analysis in the appropriate files, and review the documentation for any specific cultural and national adaptations to the questions of interest (Appendix D of the SITES 2006 Technical Report). Since the example uses a teacher-level variable, the relevant variables can be found in the mathematics teacher file. From this file the variable that contains the information on the teachers' gender (BTG32A1) and the variable that contains the information on teachers' ICT usage in the target class (BTG18A1) are extracted.

For combining the data from the desired education systems this example will use the merge module of IEA IDB Analyzer. The mathematics teacher data for five education systems (Chile, Chinese Taipei, Finland, Hong Kong SAR, and Israel) are merged by clicking on the **Merge** button. In general, merging teacher data files works the same way as merging school data files.

Figure 4.17 shows the set-up screen of the IEA IDB Analyzer merge module where BTM has been selected as the file type. In this example the merged file will be saved to a file called "BTMALL.SAV". The identification variables are automatically selected by the IEA IDB Analyzer.

Figure 4.17 Merge Module for Example Teacher-level Analysis



For this analysis there is no need to recode the data, and conducting the analysis with the IEA IDB Analyzer analysis module is the next step. Figure 4.18 shows how the set-up screen of the analysis module looks when performing this analysis. Notice that for analysis type **Percentages only** is selected. Under **Grouping Variables** IDCNTRY, BTG32A1, and BTG18A1 are selected. MTOTWGT is selected as the **Weight Variable** since this analysis used mathematics teacher data. This is unlike the analysis at the school level, where the IDB Analyzer predefines the appropriate weight variable. When conducting teacher-level analysis with the IEA IDB Analyzer, the user has to define the weight. The output of this set-up is shown in Figure 4.19.

Figure 4.18 Analysis Module for Example Teacher-level Analysis

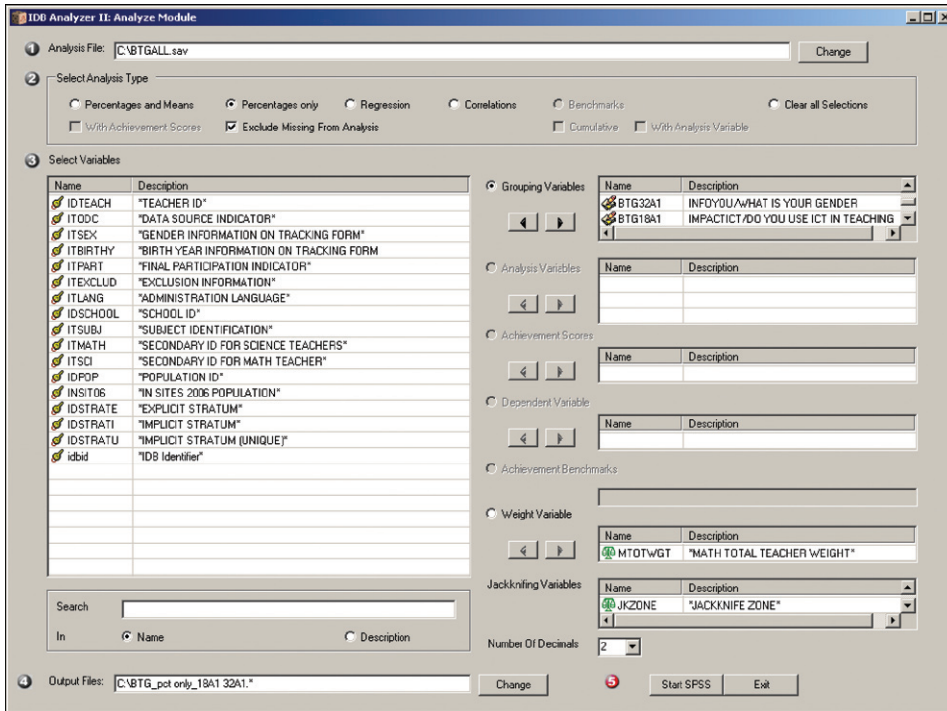


Figure 4.19 SPSS Output for Example Teacher-level Analysis

COUNTRY ID	INFOYOU/WHAT IS YOUR GENDER	IMPACTICT/DO YOU USE ICT IN TEACHING	N of Cases	Sum of MTOTWGT	Percent	Percent (s.e.)
Chile	MALE	NO	106	1124	49.02	3.52
		YES	119	1168	50.98	3.52
	FEMALE	NO	137	1262	40.81	2.81
		YES	182	1831	59.19	2.81
Chinese Taipei	MALE	NO	248	1380	61.06	2.33
		YES	171	860	38.94	2.33
	FEMALE	NO	288	1566	68.01	2.26
		YES	141	746	31.99	2.26
Finland	MALE	NO	118	457	48.64	3.85
		YES	106	462	51.36	3.85
	FEMALE	NO	189	759	55.26	3.29
		YES	138	614	44.74	3.29
Hong Kong, SAR	MALE	NO	104	260	32.37	2.63
		YES	226	543	67.63	2.63
	FEMALE	NO	66	161	27.19	3.04
		YES	174	431	72.81	3.04
Israel	MALE	NO	141	416	75.03	3.06
		YES	44	138	24.97	3.06
	FEMALE	NO	515	1621	78.27	1.82
		YES	138	450	21.73	1.82

In this example, each education system's results are presented in four lines: two lines for each value of teachers' gender (variable BTG32A1) and one line for each value of usage of ICT (variable BTG18A1) within each teachers' gender group. The results are presented in much the same manner as in the previous example, where the education systems are identified in the first column and the second and third columns describe the

categories of BTG32A1 (gender) and BTG18A1 (ICT use) being reported. The first two lines in Figure 4.19, show that in Chile there are 49.02% male mathematics teachers using no ICT in the teaching and learning activities of the target class, while 50.98% of the male mathematics teachers use ICT. In comparison, 40.81% of the female mathematics teachers in Chile do not use ICT, whereas 59.19% of the female mathematics teachers use ICT in their teaching and learning activities in the target class. For all four percentages the appropriate standard errors are displayed in the last column of the output.

Please note that the second and the fourth line for each education system match the results presented in Columns 3 and 5 in Table 6.2 of the SITES 2006 international report (see Figure 4.16). The standard errors in Figure 4.19 are correct.

Attention Point

Note that the standard errors are different from those displayed in the SITES 2006 international report because the standard errors in Chapter 6 of the SITES 2006 international report were mistakenly reported 100 times lower than the correct values.

4.6 Other Analyses using the IEA IDB Analyzer

The examples above are just illustrations of the possible analyses that can be conducted using the IEA IDB Analyzer. Questions about the IEA IDB Analyzer should be directed to sites@iea-dpc.de.

References

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- Law, N., Pelgrum, W. J., & Plomp, T. (Eds.). (2008). *Pedagogical practices and ICT use around the world: Findings from an international comparative study*. CERC Studies in Comparative Education. Hong Kong: Comparative Education Research Centre, The University of Hong Kong, and Dordrecht: Springer.
- SPSS Inc. (2008). *SPSS for Windows* (version 16.0). Computer software. Chicago, IL: SPSS Inc.

Appendices

Appendix A – SITES 2006 National Context Questionnaire

A



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IEA SITES 2006 National Context Questionnaire (NCQ)

Dear NRC,

As discussed at the NRC meeting last December in Phuket (Thailand) we are asking each NRC to complete this questionnaire so that we have up-to-date characteristics of each system for purposes of our analysis. As you may recall, this information will be used in writing one of the chapters of the final report (chapter 2). In addition, it will be used in analyzing and interpreting the school and teacher results from the study. It is very important for the study that you provide this information.

For some open ended questions, you may want to write a long answer or revise a section of the chapter written about your country/system in 2001, and published in 2003 in the *Cross-national ICT Policy...* book by Plomp, Anderson, Law & Quale. If so, you may attach such answers to this questionnaire. (Among the SITES2006 countries, only Canada and Estonia did not have such a chapter.) You will be interested to know that the publisher has invited us to publish a 2nd edition of that volume. Our plan is to finalize the revised chapters by next summer. You will be invited to help us with that project in the near future.

Instructions

This questionnaire consists of four brief subtopics:

- A) Educational system structure and responsibility,
- B) Teacher preparation,
- C) Change in past 5 years, and
- D) System wide ICT policies.

Answers to the questions in all of these sections are needed to contextualize the findings from the school and teacher survey data. School-specific policies are not sufficient for understanding the sources and root causes of pedagogical practices, especially with respect to ICT, of teachers and the programs they participate in. These questions attempt to characterize, using fixed choice and open ended questions, the critically important activities and policies at educational levels higher than schools. You may want to involve other experts in your country or education system to validate your answers.

Please note that:

- While most questions refer to your overall system, some refer only to schools with the target grade.
- When questions refer to your overall system but school types in your system differ greatly, please answer for the school type within which your target grade of the SITES 2006 study belongs; and then explain how the school types differ in the area marked “Explanations as needed.”

This questionnaire has been developed by Ron Anderson (ISC member) in collaboration with Nancy Law, Tjeerd Plomp, Hans Pelgrum, and Alfons ten Brumelhuis (ISC member).

If you have any questions, please don't hesitate to contact Ron Anderson and/or Tjeerd Plomp.

We are looking forward to your responses,

Ron Anderson (rea@umn.edu) & Tjeerd Plomp (Study Director)

(Your name)

(Country/System)

(Date)

1 Educational System Structure and Responsibility

1. Which government levels take the responsibility for the formulation of educational policies regarding structure (overall organization) of the school system for compulsory education?

(Please Tick all that apply.)

- a Central government **NCQ011a**
- b State and/or provincial government **NCQ011b**
- c District and/or Local government **NCQ011c**
- d Non-statutory and/or professional body **NCQ011d**
- e Schools are free to decide **NCQ011e**
- f Other: (Please specify.) **NCQ011f** **NCQ011ft**

If you selected more than one of the above answers, please answer 1.1 and 1.2.

1.1 Which level has the primary (most) responsibility for these policies?

Enter a to f:..... **NCQ012**

1.2 Which level has the secondary (second most) responsibility for these policies?

Enter a to f or "none": **NCQ013**

Explanations as needed:

.....

.....

..... **NCQ014**

2. Which government levels take the responsibility for monitoring and implementing the examinations for compulsory education?

(Please Tick all that apply.)

- a Central government **NCQ021a**
- b State and/or provincial government **NCQ021b**
- c District and/or Local government **NCQ021c**
- d Non-statutory and/or professional body **NCQ021d**
- e Schools are free to decide **NCQ021e**
- f Other: (Please specify.) **NCQ021f** **NCQ021ft**

If you selected more than one of the above answers, please answer 2.1 and 2.2.

2.1 Which level has the primary (most) responsibility for these policies?

Enter a to f:..... **NCQ022**

2.2 Which level has the secondary (second most) responsibility for these policies?

Enter a to f or "none": **NCQ023**

Explanations as needed: **NCQ024**

.....

.....

.....

3. Which government levels take the responsibility for determining requirements for teacher certification?

(Please Tick all that apply.)

- a Central government **NCQ031a**
- b State and/or provincial government **NCQ031b**
- c District and/or Local government **NCQ031c**
- d Non-statutory and/or professional body **NCQ031d**
- e Schools are free to decide **NCQ031e**
- f Other: (Please specify.) **NCQ031f** **NCQ031ft**

If you selected more than one of the above answers, please answer 3.1 and 3.2.

3.1 Which level has the primary (most) responsibility for these policies?

Enter a to f: **NCQ032**

3.2 Which level has the secondary (second most) responsibility for these policies?

Enter a to f or "none": **NCQ033**

Explanations as needed:

.....

.....

..... **NCQ034**

4. What is the main funding source for public (constitutionally mandated) schooling?

(Please Tick only one source, the primary source.)

- a Central government **NCQ041**
- b State and/or provincial government **NCQ041**
- c District and/or Local government **NCQ041**
- d Other: ((Please specify.) **NCQ041**) **NCQ041t**
- e There are no publicly funded schools in our system **NCQ041**

Explanations as needed:

.....

.....

..... **NCQ042**

5. What percentile of schools at the SITES 2006 target grade is funded by the government at the central and/or state/provincial levels?

(Tick only one choice.) **NCQ05**

- | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| None | < 10% | 10% - 25% | 26% - 50% | 51% - 75% | 76% - 90% | >90% |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

6. What percentile of the schools at the SITES 2006 target grade is funded at the local or district government levels?

(Tick only one choice) **NCQ06**

- | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| None | < 10% | 10% - 25% | 26% - 50% | 51% - 75% | 76% - 90% | >90% |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

7. For schools that have the target grade and also are funded by the government, which alternative below best describes your system?

(Tick only one choice.) **NCQ071**

- a Only attainment targets are prescribed
- b Only attainment targets and curriculum are prescribed.....
- c Attainment targets, curriculum, and textbook lists are prescribed.....
- d Attainment targets, curriculum, textbook lists, and teaching
methods are prescribed
- e None of above prescriptions are prescribed

Explanations as needed: (Please explain if your situation does not fit above categories.)

.....

.....

..... **NCQ072**

8. Which government levels take the responsibility for determining the curriculum taught in the schools?

(Please Tick all that apply.)

- a Central government **NCQ081a**.....
- b State and/or provincial government **NCQ081b**
- c District and/or Local government **NCQ081c**.....
- d Non-statutory and/or professional body **NCQ081d**
- e Schools are free to decide **NCQ081f**.....
- f Other: (Please specify.) **NCQ081f**..... **NCQ081ft**

If you selected more than one of the above answers, please answer 8.1 and 8.2.

8.1 Which level has the primary (most) responsibility for these policies?

Enter a to f: **NCQ082**

8.2 Which level has the secondary (second most) responsibility for these policies?

Enter a to f or "none":..... **NCQ083**

Explanations as needed:

.....

.....

..... **NCQ084**

9. What is the approximate percentage of schools in the sector containing the target grade that are classified as special education schools and do not follow the mainstream syllabi or curriculum?

(This does not include schools for gifted students only.) NCQ091

..... %

Remarks:

.....

..... NCQ092

10. What is the method for evaluating student progress in order to decide on promoting students from the target grade to the next grade level?

(Tick all that apply.)

- a National examination NCQ101a
- b School internal examination NCQ101b
- c Oral and/or written examinations throughout the school year NCQ101c
- d Portfolio of student work during the school year NCQ101d
- e Other NCQ101e

Explanations as needed:

.....

..... NCQ102

11. Would all students in the target grade be required to attain specific standards in none, all, or only some of the school subjects in order to be promoted to the next grade level?

(Tick all that apply.)

- No subjects NCQ111a.....
- All school subjects NCQ111b
- Only some subjects NCQ111c

11.1 If you have answered ‘only some subjects,’ please indicate if these subjects are any of the following by ticking the boxes as appropriate:

- Mother Tongue **NCQ112a**
- Mathematics **NCQ112b**
- Science **NCQ112c**

Remarks (if any):

.....

.....

..... **NCQ113**

12. Does your system have a system-wide curriculum that includes mathematics at the target grade?

- Yes
- Yes, for some **NCQ121**
- No

If only “yes, for some” types of students or schools, please describe these types: **NCQ122)**

Remarks (if any):

.....

..... **NCQ123**

If “no”, skip to question 14.

13. How much emphasis does the mathematics curriculum at the target grade place on each of the following?

	None	Very Little	Some	A lot	
a Mastering basic skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NCQ131a
b Applying math in real-life contexts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NCQ131b
c Communicating about math	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NCQ131c
d Integrating math with ICT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NCQ131d

Comments: **NCQ132**

.....

.....

14. Does your system have a system-wide curriculum that includes science at the target grade?

- Yes
- Yes, for some **NCQ141**
- No

If only “yes, for some” types of students or schools, please describe these types:
NCQ142

Remarks (if any):

.....

.....

..... **NCQ143**

If “no”, skip to question 16

15. How much emphasis does the science curriculum at the target grade place on each of the following?

None Very Little Some A lot

- a Knowing basic science facts **NCQ151a**
- b Applying science to real-life problems **NCQ151b**
- c Communicating about science **NCQ151c**
- d Integrating science with ICT **NCQ151d**

Remarks (For example, if there are several science subjects at the target level with differing emphasis across them, please describe the situation.):

.....

.....

..... **NCQ152**

2 Teacher Preparation

Reminder. Questions in this section refer to your overall educational system, that is, the target grade is not explicitly specified. However, if school types in your system differ greatly, please answer for the school type within which your target grade of the SITES 2006 study belongs; and then explain how the school types differ in the area marked “Explanations as needed.”

16. What is the normal requirement for being certified as a teacher?

(Tick only one choice.) **NCQ161**

- a Postsecondary diploma and/or certificate in education only.....
- b Postsecondary degree in a major discipline only.....
- c Postsecondary degree in a major discipline and diploma and/or
certificate in education
- d Other requirements (please specify) **NCQ161t**.....
- e Requirements are defined only at local or school level.....

Explanations as needed:

.....

.....

..... **NCQ162**

17. Are there ICT specific requirements for being certified as a teacher?

(Tick all that apply.)

- a No requirements **NCQ171a**
- b Requirement to meet specified benchmarks in technical
competence **NCQ171b**
- c Requirement to meet specified benchmarks in using ICT in
subject-based teaching **NCQ171c**
- d Requirement to meet specified benchmarks in general
pedagogical ICT competence **NCQ171d**
(i.e. competence in integrating ICT into students’ learning activities)
- e Others (please specify) **NCQ171e**
- f Requirements are defined only at local or school level **NCQ171f**

Explanations as needed

.....

.....

..... **NCQ172**

18. Are qualified teachers in the target grade required to undertake regularly any inservice and or professional development activities on any of the following

aspects?

(Tick all that apply.)

- a Major subject area of teaching **NCQ181a**
- b Pedagogical practice **NCQ181b**.....
- c Enhancing students’ motivation to learn **NCQ181c**.....
- d Child development **NCQ181d**.....
- e ICT skills **NCQ181e**.....
- f Use of ICT in subject-based or cross-curricular teaching **NCQ181f**.....
- g Use of ICT in project-based learning **NCQ181g**
- h Others (please specify) **NCQ181h**.....
- i Requirements are defined only at local or school level **NCQ181i**.....

Explanations as needed:

.....

.....

..... **NCQ182**

19. Do any government agencies subsidize inservice training or professional development courses for teachers in any of the following areas?

(Tick all that apply.)

- a ICT skills **NCQ191a**
- b Use of ICT in subject-based or cross-curricular teaching **NCQ191b**.....
- c Use of ICT in school and/or classroom administration
and/or management work **NCQ191c**
- d Use of ICT for new approaches in learning and teaching **NCQ191d**

Explanations as needed:

.....

.....

..... **NCQ192**

3 Change in past five years

Note: The next question block applies to your entire compulsory educational system in the past five years. (Keep in mind that the country chapters were written about five years ago, in 2001.)

20. In the past five years to what extent have each of these items decreased, not changed, or increased?

(Tick all that apply.)

	Decreased	No			
Increased	Increased	Don't Change	Slightly	A Lot	Know
<i>[Spending for ICT in education]</i>					
a Total spending on ICT in Education NCQ201a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Spending on Internet connections and networking NCQ201b	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Spending on classroom ICT (hardware and software) NCQ201c	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Spending on instructional technology support staffing NCQ201d	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Spending on professional development related to ICT NCQ201e	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Funding for professional development related to using ICT in teaching NCQ201f	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g Funding for professional development related to using ICT in teaching for such methods as inquiry, collaboration, and authentic assessment NCQ201g	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h Funding for school level leadership development for strategic implementation of ICT in learning and teaching NCQ201h	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>[Pedagogy]</i>					
i Emphasis on students completing set tasks to demonstrate mastery NCQ201i	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j Emphasis on providing individualized student learning experiences to address different learning needs NCQ201j	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k Emphasis on open-ended inquiry-based learning learning tasks in classrooms NCQ201k	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l Emphasis on student collaboration for project based learning NCQ201l	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m Emphasis on inter-classroom collaboration within schools NCQ201m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n Emphasis on inter-school collaboration among teachers NCQ201n	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>[Assessment]</i>					
o Encouragements and support to set up international collaborative learning projects NCQ201o	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p Importance of students' performance in standardized tests for tracking student progress NCQ201p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q Importance of students' performance in standardized tests for assessing school effectiveness NCQ201q	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | | | |
|---|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| r | Importance of alternative, authentic modes of assessment NCQ201r | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| s | Encouragement of collaborative tasks and peers assessment NCQ201s | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Explanations as needed: **NCQ202**

21. Please review your answers to the previous question (question 20) regarding recent 5-year trends in ICT spending, pedagogy, and assessment. Consider if there were any trends that were different for the schools with the target grade. Please describe any such trends and how these differed from compulsory schools as a whole within your system. **NCQ21**

.....

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.....

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22. In the past 5 years were there any national or system-wide curriculum priorities in Math and/or Science that changed or policies in these areas that were initiated? Please summarize these changes and how they might help to explain findings from the principal and teacher surveys. **NCQ22**

.....

.....

.....

.....

.....

4 National or system wide policies and practices on the use of ICT

**23. Does your system have a national or system wide ICT policy in education?
Such a policy may consist of several separate policies.**

- Yes. Please continue with next question.
 No. (Go to question 25)

NCQ23

24. Which of the following components are included in this ICT policy?

(Tick all that apply.)

- a Clear vision and goals for ICT NCQ24a.....
- b An explicit goal that the use of ICT is to support curriculum
 innovation NCQ24b
- c Descriptions of specific desired modes for integrating ICT in
 teaching and learning NCQ24c
- d Desired minimum level of access, e.g., student-computer ratio
 NCQ24d
- e Desired level of internet connectivity NCQ24e.....
- f Goal to reduce the digital divide NCQ24f
- g Steps to be taken to ensure ICT access outside of school
 NCQ24g
- h Specifications on teachers’ professional development requirement in
 ICT NCQ24h
- i Policy to stimulate greater teachers’ professional development in ICT
 NCQ24i
- j Specifications on evaluation of implementations of the policy on
 ICT in education NCQ24j
- k Specifications on funding level and/or arrangement associated
 with the policy NCQ24k
- l Other, specify NCQ24l

.....
 NCQ24lt

25. How is the provision of hardware and software to schools managed?

(Tick all that apply.)

- a Schools' hardware and/or software are specified and provided
through a centralized system run by the government. **NCQ25a**
- b Schools are allocated funding for the purchase of hardware and/or
software as specified in pre-approved applications submitted by schools.
NCQ25b
- c Schools are only given partial funding for the purchase of hardware
and/or software as specified in pre-approved applications and have
to supplement the difference from the schools' own funds. **NCQ25c**
- d Schools are provided with government funding (total or partial) for
computer connectivity and internet access. **NCQ25d**
- e Funding for ICT has moved from being earmarked provisions to
being an integral part of the total school funding from the government
and the school is free to decide the percentage of school funds a
ctually spent on ICT. **NCQ25e**
- f Schools do not receive any government funding for purchasing
hardware and/or software. **NCQ25f**
- g Other **NCQ25g**
(Please be specific.)

.....
NCQ25gt

26. Is language an obstacle for schools in ICT implementation in learning and teaching in your system? (For example, important websites may not be written in a language that students can read.)

Yes, language is an obstacle

No, not an obstacle

NCQ26

27. If language is an obstacle, please describe to what extent it is an obstacle and what steps have been taken to minimize it.

.....
.....
.....**NCQ27**

28. Does your system have a system-wide program regarding student ICT-related skills at the target grade?

Yes

No

NCQ281

If YES, is part of the school curriculum? Is it associated with a specific subject? If so, what subject?

..... **NCQ282**

If no, skip to question 30.

- 29. Does the program promote using ICT in**
- | | Yes | No | |
|--|--------------------------|--------------------------|--------|
| a traditionally important approaches | <input type="checkbox"/> | <input type="checkbox"/> | NCQ29a |
| b student-centered pedagogies | <input type="checkbox"/> | <input type="checkbox"/> | NCQ29b |
| c online learning or distance education | <input type="checkbox"/> | <input type="checkbox"/> | NCQ29c |
| d connecting with other schools and cultures | <input type="checkbox"/> | <input type="checkbox"/> | NCQ29d |
| e collaborative team learning | <input type="checkbox"/> | <input type="checkbox"/> | NCQ29e |
| f communication and presentation | <input type="checkbox"/> | <input type="checkbox"/> | NCQ29f |

30. Do any of your educational system’s policy documents promote approaches that mention “21st Century skills”? (The SITES2006 Conceptual Framework document defines 21st Century skills as having two components: “collaborative inquiry and connectedness.”)

- | | Yes | No | |
|---------------------|--------------------------|--------------------------|--------|
| 21st Century skills | <input type="checkbox"/> | <input type="checkbox"/> | NCQ301 |

If yes, please describe the policy and how it relates to ICT. Also describe how “21st Century skills” are defined. And include a website address for any relevant documents.

.....

.....

..... NCQ302

31. Please list other useful website addresses with key information for understanding either the general education policies or the ICT in education policies and practices in your country and/or system:

.....

.....

..... NCQ321

32. Are there any other things that we should know about your educational system for purposes of SITES2006 analysis?

.....

.....

..... NCQ322

Thank you very much for your time and effort in completing this questionnaire for SITES2006.

It will contribute greatly to the study!

**Appendix B – SITES 2006 Principal
Questionnaire**

B

SITES 2006
**Second Information Technology in
Education Study**



Principal Questionnaire
(International English Version)



International Association for the Evaluation of
Educational Achievement
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Introduction

The Second Information Technology in Education Study (SITES 2006) is an international assessment of teaching and learning practices and of how Information and Communication Technologies (ICT) support these in secondary schools around the world. Approximately 20 countries will provide information from representative samples of teachers on how they organize their teaching and learning, the ICT facilities they have available at school, how they use ICT for teaching and learning, and the obstacles or difficulties they experience in relation to these technologies. This information will give better insight into the current state of pedagogical approaches and of how technologies support them. It will also allow educational practitioners and policy-makers to gain a better understanding of areas needing intervention and additional support.

[Name of country], along with about 20 other countries, is taking part in this international study of pedagogical practices and the way that ICT supports these. The study is being conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA).

We are asking you for your help in order to determine the current state of pedagogical approaches to and the use of ICT. Please try to answer each question as accurately as you can.

Confidentiality

All information that is collected in this study will be treated confidentially. At no time will the name of any school or individual be identified. While results will be made available by country and by type of school within a country, you are guaranteed that neither your school nor any of its personnel will be identified in any report of the results of the study. *[For countries which have ethical survey guidelines which emphasize voluntary participation: Participation in this survey is voluntary and any individual may withdraw at any time.]*

About this Questionnaire

- This questionnaire asks for information from schools about education and policy matters related to pedagogical practices and computers. We would like the person who completes this questionnaire to be the principal of the school. **If you do not have the information to answer particular questions, please consult other persons in the school.** This questionnaire will take approximately 30 minutes to complete.
- The words computers and ICT (Information and Communication Technologies) are used interchangeably in this questionnaire.
- Please note that some questions refer to the entire school, while other questions refer to Grade <target grade> only. *[For countries, in which the definition of 'school' is not obvious to respondents add appropriate description depending on how sampling units were defined in the national sampling plan: When questions refer to 'your school' we mean by 'school': <national school definition>.]*
- Guidelines for answering the questions are typed in italics. Most questions can be answered by marking the one most appropriate answer.
- If you are completing the paper version of this questionnaire, please use a writing pen or ballpoint to write your answers.
- When you have completed this questionnaire, please [National Return Procedures and Date].

Further information

- When in doubt about any aspect of the questionnaire, or if you would like more information about it or the study, you can reach us by phone at the following numbers:
[National Center Contact Information]

Thank you very much for your cooperation!

Pedagogy at Your School

The following questions address the characteristics of teaching and learning in your school.

1. To what extent is each of the following aspects of teaching and learning currently present in your school?

Please mark only one choice in each row.

		1	2	3
		Not at all	To some extent	A lot
A	Students develop abilities to undertake independent learning. BCP01A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	Students learn to search for, process and present information. BCP01B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	Students are largely responsible for controlling their own learning progress. BCP01C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	Students learn and/or work during lessons at their own pace. BCP01D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E	Students are involved in cooperative and/or project-based learning. BCP01E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	Students determine for themselves when to take a test. BCP01F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	Students learn search strategies to find diverse types of relevant information. BCP01G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H	Students learn to assemble, organize and integrate information. BCP01H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I	Students learn to critically evaluate the validity and value of information obtained from their searches on the Internet. BCP01I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J	Students present work using several forms of presentation (e.g., text, visual, verbal, electronic). BCP01J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K	Students are assigned projects that require several persons working together for an extended period of time. BCP01K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L	Students have autonomy to decide what topics to study. BCP01L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. To what extent do you agree or disagree that the school leadership (you and/or other school leaders) encourages Mathematics and Science teachers at Grade <target grade> to achieve the following goals?

Please mark only one choice in each row.

		1	2	3	4
		Strongly disagree	Disagree	Agree	Strongly agree
A	To cover the prescribed curriculum content BCP02A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	To improve students' performance on assessments/examinations BCP02B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	To individualize student learning experiences in order to address different learning needs BCP02C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	To increase learning motivation and make learning more interesting BCP02D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E	To foster students' ability and readiness to set own learning goals and to plan, monitor and evaluate own progress BCP02E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	To foster collaborative and organizational skills when working in teams BCP02F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	To provide activities which incorporate real-world examples/settings/applications for student learning BCP02G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H	To provide opportunities for students to learn from experts and peers from other schools/organizations/countries BCP02H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I	To foster communication skills in face-to-face and/or on-line situations BCP02I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J	To prepare students for responsible Internet behavior (e.g., not to commit mail-bombing, such as spam, etc.) and/or to cope with cybercrime (e.g., Internet fraud, illegal access to secure information, etc.) BCP02J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pedagogy and ICT in your school

This section asks you to answer questions about pedagogy and ICT in your school.

- 3. For each of the following, how important is the use of ICT at Grade <target grade> in your school?**
Please mark only one choice in each row.

	1	2	3	4
	Not at all disagree	A little	Somewhat	A lot agree
A To prepare students for the world of work BCP03A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B To improve students' performance on assessments/examinations BCP03B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C To promote active learning strategies BCP03C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D To individualize student learning experiences in order to address different learning needs BCP03D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E To foster collaborative and organizational skills when working in teams BCP03E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F To develop students' independence and responsibility for their own learning BCP03F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G To do exercises to practice skills and procedures BCP03G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H To increase learning motivation and make learning more interesting BCP03H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I To satisfy parents' and the community's expectations BCP03I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J To act as a catalyst in changing the pedagogical approaches of teachers BCP03J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. To what extent do you agree or disagree that the school leadership (you and/or other school leaders) encourages teachers at Grade <target grade> to use ICT in each of the following activities?

Please mark only one choice in each row.

	1	2	3	4
	Strongly disagree	Disagree	Agree	Strongly agree
A Organize, monitor and support team-building and collaboration among students BCP04A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Organize and/or mediate communication between students and experts/external mentors BCP04B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Facilitate collaboration (within or outside of school) on student activities BCP04C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Collaborate with parents/guardians/ caretakers in supporting/monitoring students' learning and/or in providing counseling BCP04D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Provide students with experiences that show them how certain activities are done in real life or by experts BCP04E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Are the following actions with regard to ICT at Grade <target grade> taken in your school?

Please mark only one choice in each row.

		1	2
		No	Yes
A	Setting up security measures to prevent unauthorized system access or entry BCP05A1	<input type="checkbox"/>	<input type="checkbox"/>
B	Restricting the number of hours students are allowed to use the computer BCP05B1	<input type="checkbox"/>	<input type="checkbox"/>
C	Allowing students to access school computers outside school hours BCP05C1	<input type="checkbox"/>	<input type="checkbox"/>
D	Allowing students to access computers outside class hours (but during school hours) BCP05D1	<input type="checkbox"/>	<input type="checkbox"/>
E	Honouring of intellectual property rights (e.g., software copyrights) BCP05E1	<input type="checkbox"/>	<input type="checkbox"/>
F	Prohibiting access to adult-only material (e.g., pornography, violence) BCP05F1	<input type="checkbox"/>	<input type="checkbox"/>
G	Restricting the playing of games on school computers BCP05G1	<input type="checkbox"/>	<input type="checkbox"/>
H	Specifying the compulsory computer-related knowledge and skills that students need BCP05H1	<input type="checkbox"/>	<input type="checkbox"/>
I	Giving the local community (parents and/or others) access to school computers and/or the Internet BCP05I1	<input type="checkbox"/>	<input type="checkbox"/>
J	Complementing printed lesson materials with digital resources for teaching and learning BCP05J1	<input type="checkbox"/>	<input type="checkbox"/>
K	Providing teachers with laptop computers and/or other mobile learning devices BCP05K1	<input type="checkbox"/>	<input type="checkbox"/>
L	Providing students with laptop computers and/or other mobile learning devices BCP05L1	<input type="checkbox"/>	<input type="checkbox"/>

6. What priority level do you give to resource allocation in your school in order to enhance the use of ICT in teaching and learning for the Grade <target grade> students in your school?

Please mark only one choice in each row.

		1	2	3	4
		Not a priority	Low priority	Medium priority	High priority
A	To decrease the number of students per computer BCP06A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	To increase the number of computers connected to the Internet BCP06B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	To increase the bandwidth for Internet access of the computers connected to the Internet BCP06C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	To increase the range of digital learning resources related to the school curriculum BCP06D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E	To establish/enhance an online learning support platform and its management so that teaching and learning can take place any time, anywhere BCP06E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	To improve the technical skills of teachers BCP06F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	To improve the ability of teachers to make good pedagogical use of ICT BCP06G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H	To broaden teachers' pedagogical repertoire and to widen their pedagogical competence to engage in new methods of teaching and learning BCP06H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I	To improve students' ICT skills BCP06I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J	To provide teachers with incentives (including salary adjustment, promotion, etc.) to integrate ICT use in their teaching BCP06J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K	To increase the number of teachers using ICT for teaching/learning purposes BCP06K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Has the school leadership (you and/or other school leaders) taken any of the following actions during the past few years?

Please mark only one choice in each row.

	1	2
	No	Yes
A Re-allocating workload to allow for collaborative planning for innovations in the classrooms BCP07A1	<input type="checkbox"/>	<input type="checkbox"/>
B Re-allocating workload to allow for the provision of technical support for innovations BCP07B1	<input type="checkbox"/>	<input type="checkbox"/>
C Organizing workshops to demonstrate the use of ICT-supported teaching and learning BCP07C1	<input type="checkbox"/>	<input type="checkbox"/>
D Meeting teachers to review their pedagogical approach BCP07D1	<input type="checkbox"/>	<input type="checkbox"/>
E Monitoring and evaluating the implementation of pedagogical changes BCP07E1	<input type="checkbox"/>	<input type="checkbox"/>
F Establishing new teacher teams to coordinate the implementation of innovations in teachers' teaching and learning BCP07F1	<input type="checkbox"/>	<input type="checkbox"/>
G Changing class schedules to facilitate the implementation of innovations BCP07G1	<input type="checkbox"/>	<input type="checkbox"/>
H Implementing incentive schemes to encourage teachers to integrate ICT in their lessons BCP07H1	<input type="checkbox"/>	<input type="checkbox"/>
I Encouraging teachers collaborate with external experts to improve their teaching and learning practices BCP07I1	<input type="checkbox"/>	<input type="checkbox"/>
J Featuring new instructional methods in the school newspaper and/or other media (e.g., the school website) BCP07J1	<input type="checkbox"/>	<input type="checkbox"/>
K Involving parents in ICT related activities BCP07K1	<input type="checkbox"/>	<input type="checkbox"/>

8. To what extent do you agree or disagree that the school leadership (you and/or other school leaders) encourages teachers in Grade <target grade> to undertake the following activities

Please mark only one choice in each row.

	1	2	3	4
	Strongly disagree	Disagree	Agree	Strongly agree
A Assigning extended projects (2 weeks or longer) BCP08A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Assigning short-task projects BCP08B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Assigning production projects (e.g. making models or reports) BCP08C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Involving students in self-accessed courses and/or learning activities BCP08D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Involving students in open-ended scientific investigations BCP08E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Undertaking field study activities BCP08F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Using virtual laboratories, simulations BCP08G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Applying exercises to practice skills and procedures BCP08H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Involving students in laboratory experiments with clear instructions and well-defined outcomes BCP08I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Involving students in studying natural phenomena through simulations BCP08J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Involving students in processing and analyzing data BCP08K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. During this school year, how often did the school leadership (you and/or other school leaders) undertake each of the following?

Please mark only one choice in each row.

	1	2	3	4
	Not at All	A few times	Monthly	Weekly
A Organize activities to develop a common vision of what is meant by quality education BCP09A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Inform teachers about pedagogical changes taking place in the school BCP09B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Inform teachers about educational developments outside the school BCP09C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Consult teachers about desired pedagogical changes BCP09D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Discuss with teachers what they want to achieve through their lessons BCP09E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Motivate teachers to critically assess their own educational practices critically BCP09F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Encourage teachers to assess their educational practices in the context of our school's goals BCP09G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Discuss with parents/guardians/caretakers what pedagogical changes are taking place in our school BCP09H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Discuss with students the teaching and learning in our school BCP09I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. To what extent do you agree or disagree that the school leadership (you and/or other school leaders) encourages the following activities to take place in Grade <target grade>?

Please mark only one choice in each row.

	1	2	3	4
	Strongly disagree	Disagree	Agree	Strongly agree
A Teachers co-teach with their colleagues BCP10A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Teachers collaborate with teachers from other schools BCP10B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Teachers discuss the problems that they experience at work with their colleagues BCP10C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Teachers collaborate with teachers from other countries BCP10D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. To what extent do you agree or disagree that the school leadership (you and/or other school leaders) **encourages teachers to use each of the following types of assessment at Grade <target grade>?**

Please mark only one choice in each row.

	1	2	3	4
	Strongly disagree	Disagree	Agree	Strongly agree
A Written test/examination BCP11A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Written task/exercise BCP11B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Individual oral presentation BCP11C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Group presentation (oral/written) BCP11D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Project report and/or (multimedia) product BCP11E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Students' peer evaluations BCP11F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Portfolio/learning log BCP11G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Group assessment scores for collaborative tasks BCP11H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Staff Development for Teachers and the School Leadership

The following contains a number of questions about staff development for Mathematics and/or Science teachers teaching Grade <target grade> and for the school leadership.

12. Are teachers of Mathematics and/or Science at Grade <target grade> required or encouraged to acquire knowledge and skills in each of the following?

Please mark only one choice in each row.

	1	2	3
	No	Yes Encouraged	Yes Required
A Integrating Web-based learning in their instructional practice BCP12A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Using new ways of assessment (portfolios, peer reviews, etc.) BCP12B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Developing real-life assignments for students BCP12C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Using real-life assignments developed by others BCP12D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Using computers for monitoring student progress BCP12E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Organizing forms of team-teaching BCP12F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Collaborating with other teachers via ICT BCP12G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Communicating with parents via ICT BCP12H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Being knowledgeable about the pedagogical issues of integrating ICT into teaching and learning BCP12I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Using subject-specific learning software (e.g., tutorials, simulation) BCP12J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. How much of a priority is it for your school leadership (you and/or other school leaders) to acquire competencies in the following areas?

Please mark only one choice in each row.

	1 Not considered	2 Low priority	3 Medium priority	4 High priority
A Developing a common pedagogical vision among teaching staff in the school BCP13A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Managing the innovation of pedagogical practices in the school BCP13B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Explaining to teachers the relevance of encouraging students to be responsible for their own learning process and outcomes BCP13C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Identifying best practices that exist outside the school regarding the integration of ICT in learning BCP13D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Promoting collaboration between teachers of different subjects BCP13E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Managing the adoption of ICT-supported methods for assessing student progress BCP13F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Organizing cooperation with other schools regarding the development of teaching and learning materials BCP13G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Organizing cooperation with other schools regarding the development of ICT-based teaching and learning BCP13H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Promoting the integration of ICT in the teaching and learning of traditional subjects BCP13I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Developing a strategic plan for integrating ICT use in teaching and learning BCP13J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pedagogical Support for Persons Using ICT

14. How frequently does each of the following persons provide pedagogical support to those teachers in Grade <target grade> who want to use ICT for their teaching and learning activities?

Note: Pedagogical support may consist of giving advice and guidance on issues related to teaching and learning. Please do not consider support that is only technical.

Please mark only one choice in each row.

	1	2	3	4	5
	Never	Few times a year	Monthly	Weekly	Not applicable
A Experienced colleagues BCP14A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B The school principal BCP14B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C The technology coordinator BCP14C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Other staff from the school BCP14D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Experts from outside the school BCP14E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. For each of the following activities, to what extent is pedagogical support available for teachers in Grade <target grade>?

Note: Pedagogical support may consist of advice and guidance (via persons, manuals, etc.) with regard to the activities mentioned below. Please do not consider support that is only technical.

Please mark only one choice in each row.

	1	2	3	4	5
	Not at all	A little	Somewhat	A lot	Not applicable
A Having students produce outcomes of media production projects (e.g., development of websites) BCP15A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Having students work on short projects (2 weeks or shorter) BCP15B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Having students work on extended projects (longer than 2 weeks) BCP15C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Having students collaborate with others by online means, such as online discussion forums BCP15D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Having students conduct open-ended scientific investigations BCP15E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Having students engage in field study activities BCP15F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Obstacles

16. To what extent is your school's capacity to realize its pedagogical goals hindered by each of the following obstacles?

Please mark only one choice in each row.

ICT-related obstacles	1	2	3	4	5
	Not at all	A little	Somewhat	A lot	Not applicable
A Insufficient qualified technical personnel to support the use of ICT BCP16A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Insufficient number of computers connected to the Internet BCP16B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Insufficient Internet bandwidth or speed BCP16C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Lack of special ICT equipment for disabled students BCP16D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Insufficient ICT equipment for instruction BCP16E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Computers are out of date BCP16F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Not enough digital educational resources for instruction BCP16G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Lack of ICT tools for science laboratory work BCP16H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Teachers' lack of ICT skills BCP16I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Insufficient time for teachers to use ICT BCP16J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other obstacles					
K Pressure to score highly on standardized tests BCP16K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Prescribed curricula are too strict BCP16L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Insufficient or inappropriate space to accommodate the school's pedagogical approaches BCP16M1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N Insufficient budget for non ICT-supplies (e.g., paper, pencils) BCP16N1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O Using ICT for teaching and/or learning is not a goal of our school BCP16O1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Organization of Learning

The questions below are about grouping of students and time schedules.

17. How often would visitors, who walk into a lesson in your school on a typical day, observe the following in Grade <target grade>?

Please mark only one choice in each row.

	1	2	3	4
	Never	Sometimes	Often	Nearly always
A Whole classes of students in their classroom with one teacher BCP17A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B In large classrooms, students working under the supervision of a team of teachers BCP17B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Individuals or small groups of students being coached by teachers BCP17C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Individuals or small groups of students working on their own at places they choose themselves BCP17D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. How often could students at your school expect the following to occur at Grade <target grade>?

Please mark only one choice in each row.

	1	2	3	4
	Never	Sometimes	Often	Nearly always
A Students working in different groups according to the projects they are engaged in or the subjects they are taking BCP18A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Students all working in the same group (class) BCP18B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Students spending their time in school following lessons according to a fixed schedule BCP18C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Changes to the usual time schedule if students need time to complete their projects BCP18D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Students having a lot of freedom to plan their own learning time BCP18E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

School Characteristics

The intention of this set of questions is to describe the general characteristics of your school.

19. What is the total number of boys and girls in the entire school?

Please write a whole number. Write 0 (zero), if none.

Total number of girls
 BCP19A1

Total number of boys
 BCP19B1

20. What are the lowest and highest grade levels in your school?

Please mark only one choice in each row.

		1	2	3	4	5	6	7	8	9	10	11	12	13
	Kindergarten	1	2	3	4	5	6	7	8	9	10	11	12	13
A	Lowest													
	BCP20A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	Highest													
	BCP20B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. How many people live in the city, town, or village where your school is located? BCP21A1

Please mark only one choice.

- 1 3,000 people or fewer
- 2 3,001 to 15,000 people
- 3 15,001 to 50,000 people
- 4 50,001 to 100,000 people
- 5 100,001 to 500,000 people
- 6 More than 500,000 people

22. Approximately what percentage of students are absent from your school on a typical school day? BCP22A1

BCP22A1

Please mark only one choice.

- 1 Less than 5%
- 2 5–10%
- 3 11–20%
- 4 More than 20%

23. Approximately what percentage of students in your school are native speakers of <national language = language of instruction>? BCP23A1

Please mark only one choice.

- 1 Less than 50%
- 2 50–75%
- 3 76–90%
- 4 More than 90%

24. Has your school been involved in any of the following activities during the past few years?

Please mark only one choice in each row.

	1	2
	No	Yes
A Making changes to pedagogical practices BCP24A1	<input type="checkbox"/>	<input type="checkbox"/>
B Adopting new assessment practices BCP24B1	<input type="checkbox"/>	<input type="checkbox"/>
C Connecting to the Internet BCP24C1	<input type="checkbox"/>	<input type="checkbox"/>
D Adapting buildings to suit the school's pedagogical approaches BCP24D1	<input type="checkbox"/>	<input type="checkbox"/>
E Setting up computers in classrooms BCP24E1	<input type="checkbox"/>	<input type="checkbox"/>
F Installing computer laboratories BCP24F1	<input type="checkbox"/>	<input type="checkbox"/>

25. Who at your school has the primary responsibility for making decisions about each of the following?

Please mark only one choice in each row.

	1	2	3	4	5
	External agency	School leadership	Subject department	Teachers	Not applicable
A Purchasing ICT equipment BCP25A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Selecting subject content to be learned BCP25B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Determining which pedagogical approaches will be used BCP25C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Choosing whether ICT is used BCP25D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Assessing learning progress in the classroom BCP25E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Using mobiles and/or handheld devices for instructional purposes BCP25F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Personal Background Information

Below are a few questions about your personal background.

- 26. Think about a new development/change that you consider highly satisfying, related to the learning experiences of students, that occurred in your school and under your principalship during the current academic year. Did you play any of the following roles in this new development?**

Please mark only one choice in each row.

	1 No	2 Yes
A I initiated the change, and teachers in our school further developed and implemented it. BCP26A1	<input type="checkbox"/>	<input type="checkbox"/>
B I initiated the change, and I contributed substantially to its development and implementation. BCP26B1	<input type="checkbox"/>	<input type="checkbox"/>
C Teachers initiated the change. The change was basically a bottom-up initiative that did not require my support. BCP26C1	<input type="checkbox"/>	<input type="checkbox"/>
D Teachers initiated the change. My role was mainly in the form of moral support. BCP26D1	<input type="checkbox"/>	<input type="checkbox"/>
E Teachers initiated the change, and I allocated resources and necessary staffing to support it. BCP26E1	<input type="checkbox"/>	<input type="checkbox"/>
F The school management board initiated the change, and I led its development and implementation. BCP26F1	<input type="checkbox"/>	<input type="checkbox"/>
G Parents/community groups initiated the change, and I supported its realization. BCP26G1	<input type="checkbox"/>	<input type="checkbox"/>
H Students initiated the change, and I supported its realization. BCP26H1	<input type="checkbox"/>	<input type="checkbox"/>

- 27. Including this school year, how many years have you been:**

Please mark only one choice in each row.

	1 Less than 3 years	2 3-5 years	3 6-10 years	4 11-20 years	5 21 years or more
A Principal of any school (including years as principal in this school) BCP27A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Principal of this school BCP27B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Working in any professional capacity at this school (including years as teacher, vice-principal, and principal) BCP27C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 28. What is your age? **BCP28A1****

- 1 30 years or less
 2 31-35 years
 3 36-45 years
 4 46-55 years
 5 More than 55 years

29. Please indicate whether you are: BCP29A1

- 1 Female
- 2 Male

30. Are you involved in fundraising for ICT-related matters in your school? BCP30A1

Please mark only one choice.

- 1 Yes, I personally spend quite some time doing this.
- 2 I am involved in this, but another person/other people in the school do the major part of the job.
- 3 No, we outsource fundraising matters.
- 4 No, I and those of my colleagues involved in the school's leadership, spend no or very little time on this.
- 5 Not applicable

31. Altogether, how often do you personally use a computer? BCP31A1 Filter

Please mark only one choice.

- 1 Never → *Please proceed to the end of the questionnaire.*
- 2 A few times per year
- 3 Almost monthly
- 4 Weekly
- 5 Daily

32. Do you use your computer for any of the following?

Please mark only one choice in each row.

	1	2
	No	Yes
A Writing documents and letters BCP32A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
B Budgeting, monitoring or controlling expenses BCP32B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
C Planning purposes BCP32C1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
D Communicating with teachers BCP32D1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
E Communicating with parents BCP32E1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
F Teaching/instruction BCP32F1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
G Time tabling BCP32G1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
H Searching for information BCP32H1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
I Developing and making presentations BCP32I1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
J Own professional development BCP32J1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>

33. Do you have access to a computer at home? BCP33A1 Filter

- 1 No → *Please proceed to the end of the questionnaire.*
- 2 Yes → *Please continue.*

34. Do you use this computer for the following activities?

Please mark only one choice in each row.

	1	2
	No	Yes
A School related activities BCP34A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
B Connecting to the internet BCP34B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>

This is the end of the questionnaire.

Thank you very much for your cooperation!

[Return Instructions]

Appendix C – SITES 2006 Technical Questionnaire

SITES 2006 Second Information Technology in Education Study



Technical Questionnaire (International English Version)



International Association for the Evaluation of
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Introduction

The Second Information Technology in Education Study (SITES 2006) is an international assessment of teaching and learning practices and of how Information and Communication Technologies (ICT) support these in secondary schools around the world. Approximately 20 countries will provide information from representative samples of teachers on how they organize their teaching and learning, the ICT facilities they have available at school, how they use ICT for teaching and learning, and the obstacles or difficulties they experience in relation to these technologies. This information will give better insight into the current state of pedagogical approaches and of how technologies support them. It will also allow educational practitioners and policy-makers to gain a better understanding of areas needing intervention and additional support.

[Name of country], along with about 20 other countries, is taking part in this international study of pedagogical practices and the way that ICT supports these. The study is being conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA).

We are asking you for your help in order to determine the current state of pedagogical approaches to and the use of ICT. Please try to answer each question as accurately as you can.

Confidentiality

All information that is collected in this study will be treated confidentially. At no time will the name of any school or individual be identified. While results will be made available by country and by type of school within a country, you are guaranteed that neither your school nor any of its personnel will be identified in any report of the results of the study. *[For countries which have ethical survey guidelines which emphasize voluntary participation: Participation in this survey is voluntary and any individual may withdraw at any time.]*

About this Questionnaire

- This questionnaire asks for information from schools about education and policy matters related to pedagogical practices and ICT. **If you are the person answering this questionnaire, it is important that you are someone who knows about the ICT facilities in your school and about practices regarding their use in your school.** If you do not have the information to answer particular questions, then please consult other persons in your school. The questionnaire will take you approximately 30 minutes to complete.
- The words computers and ICT (Information and Communication Technologies) are used interchangeably in this questionnaire.
- Please note that some questions refer to the entire school, other questions refer to Grades <grade range>, while some questions pertain to Grade <target grade> only. *[For countries, in which the definition of ‘school’ is not obvious to respondents add appropriate description depending on how sampling units were defined in the national sampling plan: When questions refer to ‘your school’ we mean by ‘school’: <national school definition>.]*
- Guidelines for answering the questions are typed in italics. Most questions can be answered by marking the one most appropriate answer. When a question states, *“Please mark all that apply”*, you may give more than one answer.
- If you are completing the paper version of this questionnaire, please use a writing pen or ballpoint to write your answers.
- When you have completed this questionnaire, please [National Return Procedures and Date].

Further information

- When in doubt about any aspect of the questionnaire, or if you would like more information about it or the study, you can reach us by phone at the following numbers:
[National Center Contact Information]

Thank you very much for your cooperation!

ICT in Your School

1. How many years has your school been using ICT for teaching and/or learning purposes for students in Grades <grade range>? **BCT01A1**

Please mark only one choice.

- 1 0–2 years
- 2 3–5 years
- 3 6–10 years
- 4 11–15 years
- 5 More than 15 years
- 6 Don't know

2. To what extent do you agree with each of the following statements about the use of ICT in your school?

Please mark only one choice in each row.

	1	2	3	4
	Strongly disagree	Disagree	Agree	Strongly agree
A ICT is considered relevant in our school. BCT02A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Our school has integrated ICT in most of our teaching and learning practices. BCT02B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C We have started to use ICT in the teaching and learning of school subjects. BCT02C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D We still do not know which ICT applications are useful for our school. BCT02D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Constraints rule out the use of ICT in our school. BCT02E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Approximately how often during this school year will students in Grade <target grade> be using ICT for learning in the following subject domains?

Please mark only one choice in each row.

	1	2	3	4
	Never	Sometimes	Often	Nearly always
A Mathematics BCT03A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Natural Sciences BCT03B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Social Sciences BCT03C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Language of instruction (mother tongue) BCT03D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Foreign languages BCT03E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F ICT as separate subject BCT03F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Resource Materials

4. For each of the following technology applications, indicate whether it is available and whether you need it in your school for teaching and/or learning in Grade <target grade>.

Please mark only one choice in each row.

	1	2	3
	Available	Needed but not available	Not needed and not available
A Equipment and hands-on materials (e.g., laboratory equipment, musical instruments, art materials, overhead projectors, slide projectors, electronic calculators) BCT04A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Tutorial/exercise software BCT04B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C General office suite (e.g., word-processing, database, spreadsheet, presentation software) BCT04C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Multimedia production tools (e.g., media capture and editing equipment, drawing programs, webpage/multimedia production tools) BCT04D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Data-logging tools BCT04E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Simulations/modeling software/digital learning games BCT04F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Communication software (e.g., e-mail, chat, discussion forum) BCT04G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Digital resources (e.g., portal, dictionaries, encyclopedia) BCT04H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Mobile devices (e.g., Personal Digital Assistant (PDA), cell phone) BCT04I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Smart board/interactive whiteboard BCT04J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Learning management system (e.g., web-based learning environments) BCT04K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Mail accounts for teachers BCT04L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Mail accounts for students BCT04M1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hardware

5. In your school, about how many computers (including laptops) are:

Count terminals (if they have a keyboard and a screen) as computers

Count laptops as computers

Exclude computers which are not in use

Exclude computers which are only used as servers

Exclude graphical calculators and Personal Digital Assistants (PDAs), hand-held computers and smartphones (phone integrated with PDA)

Please write a whole number. Write 0 (zero), if none

- Available in the school altogether? **BCT05A1**
- Available to students in Grades <grade range>? **BCT05B1**
- Available only to teachers? **BCT05C1**
- Available only to administrative staff? **BCT05D1**
- Connected to the Internet/World Wide Web? **BCT05E1**
- Connected to a local area network (LAN)? **BCT05F1**
- Multimedia computers (equipped with a CD-ROM and/or DVD)? **BCT05G1**

6. How many of the computers in your school are laptops?

Please write a whole number. Write 0 (zero), if none

- Laptops **BCT06A1**

7. In your school, about how many of the following (school-owned) technologies are available? A Personal Digital Assistant (PDA) is a palmtop with roughly the same functionalities as a PC.

Please write a whole number. Write 0 (zero), if none.

- PDAs and smartphones (phone integrated with PDA) **BCT07A1**
- Graphic calculators **BCT07B1**
- Smartboards (interactive whiteboard system) **BCT07C1**
- Projectors for presentation of digital materials **BCT07D1**

8. In your school, about what percentage of students bring any of the following to school?

Please mark only one choice in each row.

	1	2	3	4	5
	Less than 10%	10–24%	25–49%	50–75%	More than 75%
PDAs/smartphones BCT08A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Graphic calculators BCT08B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laptops BCT08C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Where are the computers for teaching and learning in Grade <target grade> located?*Please mark only one choice in each row.*

	1	2
	No	Yes
A Most classrooms BCT09A1	<input type="checkbox"/>	<input type="checkbox"/>
B Some classrooms BCT09B1	<input type="checkbox"/>	<input type="checkbox"/>
C Computer laboratories BCT09C1	<input type="checkbox"/>	<input type="checkbox"/>
D Library BCT09D1	<input type="checkbox"/>	<input type="checkbox"/>
E Other places BCT09E1	<input type="checkbox"/>	<input type="checkbox"/>

10. Who is involved in the maintenance of computers in your school?*Please mark only one choice in each row.*

	1	2
	No	Yes
A The school's own staff BCT10A1	<input type="checkbox"/>	<input type="checkbox"/>
B Staff from other schools BCT10B1	<input type="checkbox"/>	<input type="checkbox"/>
C An external company hired by the school BCT10C1	<input type="checkbox"/>	<input type="checkbox"/>
D An external unit arranged by the ministry/local/regional authorities BCT10D1	<input type="checkbox"/>	<input type="checkbox"/>

Staff Development

11. Have teachers in your school acquired knowledge and skills in using ICT for teaching and learning in any of the following ways?

Please mark only one choice in each row.

	1	2
	No	Yes
A Via informal contacts/communication BCT11A1	<input type="checkbox"/>	<input type="checkbox"/>
B Via the ICT coordinator or technical assistant BCT11B1	<input type="checkbox"/>	<input type="checkbox"/>
C Via in-school courses BCT11C1	<input type="checkbox"/>	<input type="checkbox"/>
D Via training from a teacher who has attended a course BCT11D1	<input type="checkbox"/>	<input type="checkbox"/>
E Via the school's working group or committee for ICT in education BCT11E1	<input type="checkbox"/>	<input type="checkbox"/>
F During meetings of the teaching staff where the use of ICT/computers in education is a regular item for discussion BCT11F1	<input type="checkbox"/>	<input type="checkbox"/>
G Via a regular newsletter (printed or electronic) BCT11G1	<input type="checkbox"/>	<input type="checkbox"/>
H Via courses conducted by an external agency or expert (in the school or on distance) BCT11H1	<input type="checkbox"/>	<input type="checkbox"/>
I Via observation of and discussion with colleagues BCT11I1	<input type="checkbox"/>	<input type="checkbox"/>
J Via reading professional journals and similar publications BCT11J1	<input type="checkbox"/>	<input type="checkbox"/>

12. For each of the following ICT-related courses, please indicate whether it is available to teachers in your school and who provides the course (inside or outside the school).

Please mark all that apply in each row.

1 – checked ; 2 – not checked

For all variables

	Filter Not available	Dependent Available provider is school-based	Dependent Available provider is an external organization
A Introductory course for Internet use and general applications (basic word-processing, spreadsheet, databases, etc.)	BCT12A1 <input type="checkbox"/>	BCT12A2 <input type="checkbox"/>	BCT12A3 <input type="checkbox"/>
B Technical course for operating and maintaining computer systems	BCT12B1 <input type="checkbox"/>	BCT12B2 <input type="checkbox"/>	BCT12B3 <input type="checkbox"/>
C Advanced course for applications/standard tools (e.g., advanced word-processing, complex relational databases)	BCT12C1 <input type="checkbox"/>	BCT12C2 <input type="checkbox"/>	BCT12C3 <input type="checkbox"/>
D Advanced course for Internet use (e.g., creating websites/developing a home page, advanced use of Internet, video conferencing)	BCT12D1 <input type="checkbox"/>	BCT12D2 <input type="checkbox"/>	BCT12D3 <input type="checkbox"/>
E Course on pedagogical issues related to integrating ICT into teaching and learning	BCT12E1 <input type="checkbox"/>	BCT12E2 <input type="checkbox"/>	BCT12E3 <input type="checkbox"/>
F Subject-specific training with learning software for specific content goals (e.g., tutorials, simulation, etc.)	BCT12F1 <input type="checkbox"/>	BCT12F2 <input type="checkbox"/>	BCT12F3 <input type="checkbox"/>
G Course on multimedia use (e.g., digital video and/or audio equipment)	BCT12G1 <input type="checkbox"/>	BCT12G2 <input type="checkbox"/>	BCT12G3 <input type="checkbox"/>

Support Facilities for ICT

13. Do you hold any of the following positions at your school?

Please mark only one choice in each row.

	1	2
	No	Yes
A Principal BCT13A1	<input type="checkbox"/>	<input type="checkbox"/>
B Deputy principal BCT13B1	<input type="checkbox"/>	<input type="checkbox"/>
C Head of department BCT13C1	<input type="checkbox"/>	<input type="checkbox"/>
D Teacher BCT13D1	<input type="checkbox"/>	<input type="checkbox"/>
E Librarian BCT13E1	<input type="checkbox"/>	<input type="checkbox"/>
F Other than above BCT13F1	<input type="checkbox"/>	<input type="checkbox"/>

14. Which of the following duties do you have?

Please mark only one choice in each row.

	1	2
	No	Yes
A I teach ICT courses to students. BCT14A1	<input type="checkbox"/>	<input type="checkbox"/>
B I teach ICT courses to teachers and other school staff. BCT14B1	<input type="checkbox"/>	<input type="checkbox"/>
C I teach Mathematics and/or Science. BCT14C1	<input type="checkbox"/>	<input type="checkbox"/>
D I teach other subjects. BCT14D1	<input type="checkbox"/>	<input type="checkbox"/>
E I formally serve as ICT coordinator. BCT14E1	<input type="checkbox"/>	<input type="checkbox"/>
F I informally serve as ICT coordinator. BCT14F1	<input type="checkbox"/>	<input type="checkbox"/>

15. Approximately how many 60 minute periods, on average per week, do the following persons spend on providing ICT support to teachers and students at your school?

Note: "Support" includes any services (formal or informal, technical or pedagogical) that help teachers and students use ICT.

Please write a whole number. Write 0 (zero) if none.

- Yourself **BCT15A1**
- ICT staff (not including yourself) **BCT15B1**
- Other administrators and staff (e.g., media specialist) **BCT15C1**
- Teachers **BCT15D1**
- Students from own school who are assigned to provide this service **BCT15E1**
- Volunteers from outside the school (e.g., parents) **BCT15F1**
- Personnel from external companies **BCT15G1**
- Others **BCT15H1**

16. To what extent is technical support available in your school if teachers want to use ICT for the following activities?

Please mark only one choice in each row.

	1	2	3	4
	No support	Some support	Extensive support	Not applicable
A Assigning extended projects (2 weeks or longer) BCT16A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Assigning short-task projects BCT16B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Assigning production projects (e.g. making models or reports) BCT16C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Involving students in self-accessed courses and/or learning activities BCT16D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Involving students in scientific investigations (open-ended) BCT16E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Undertaking field study activities BCT16F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Using virtual laboratories, simulations BCT16G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Applying exercises to practice skills and procedures BCT16H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Involving students in laboratory experiments with clear instructions and well-defined outcomes BCT16I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Involving students in studying natural phenomena through simulations BCT16J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Involving students in processing and analyzing data BCT16K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Obstacles

17. To what extent is your school's capacity to realize its pedagogical goals hindered by each of the following obstacles?

Please mark only one choice in each row.

	1	2	3	4	5
	Not at all	Very little	Somewhat	To a great extent	Not applicable
A Insufficient qualified technical personnel to support the use of ICT BCT17A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Insufficient number of computers connected to the Internet BCT17B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Insufficient Internet bandwidth or speed BCT17C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Lack of special ICT equipment for disabled students BCT17D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Insufficient ICT equipment for instruction BCT17E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Computers are out of date BCT17F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Not enough digital educational resources for instruction BCT17G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Lack of ICT tools for science laboratory work BCT17H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Teachers' lack of ICT skills BCT17I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Insufficient time for teachers to use ICT BCT17J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other obstacles					
K Pressure to score highly on standardized tests BCT17K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Prescribed curricula are too strict BCT17L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Insufficient or inappropriate space to accommodate the school's pedagogical approaches BCT17M1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N Insufficient budget for non ICT-supplies (e.g., paper, pencils) BCT17N1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O Using ICT for teaching and learning is not a goal of our school BCT17O1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Do you have access to a computer at home? **BCT18A1 Filter**

- 1 No → Please proceed to the end of the questionnaire.
 2 Yes → Please continue.

19. Do you use this computer for the following activities?

Please mark only one choice in each row.

	1	2
	No	Yes
A School related activities BCT19A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
B Connecting to the internet BCT19B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>

This is the end of the questionnaire.

Thank you very much for your cooperation!

[Return Instructions]

Appendix D – SITES 2006 Teacher Questionnaire

D

SITES 2006 Second Information Technology in Education Study



Teacher Questionnaire (International English Version)

This questionnaire comprises the following parts:

- Part I: Information about the Target Class
- Part II: Curriculum Goals
- Part III: Teacher Practice
- Part IV: Student Practice
- Part V: Learning Resources and Technology Infrastructure
- Part VI: Impact of ICT Use
- Part VII: Information about You and Your School
- Part VIII: Specific Pedagogical Practice that Uses ICT



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Introduction

The Second Information Technology in Education Study (SITES 2006) is an international assessment of teaching and learning practices and of how Information and Communication Technologies (ICT) support these in secondary schools around the world. Approximately 20 countries will provide information from representative samples of teachers on how they organize their teaching and learning, the ICT facilities they have available at school, how they use ICT for teaching and learning, and the obstacles or difficulties they experience in relation to these technologies. This information will give better insight into the current state of pedagogical approaches and of how technologies support them. It will also allow educational practitioners and policy-makers to gain a better understanding of areas needing intervention and additional support.

[Name of country], along with about 20 other countries, is taking part in this international study of pedagogical practices and the way that ICT supports these. This questionnaire is being administered to representative samples of teachers in these countries. The study is being conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA).

We are asking you for your help in order to determine the current state of pedagogical approaches to and the use of ICT in [Name of country]. Please try to answer each question as accurately as you can.

Confidentiality

All information that is collected in this study will be treated confidentially. At no time will the name of any school or individual be identified. While results will be made available by country and by type of school within a country, you are guaranteed that neither your school nor any of its personnel will be identified in any report of the results of the study. [*For countries which have ethical survey guidelines which emphasize voluntary participation: Participation in this survey is voluntary and any individual may withdraw at any time.*]

About this Questionnaire

- This questionnaire asks for information from teachers about education and policy matters related to pedagogical practices and computers. The questionnaire will take you approximately 30 minutes to complete.
- The words computers and ICT (Information and Communication Technologies) are used interchangeably in this questionnaire.
- Guidelines for answering the questions are typed in *italics*.
- Most questions can be answered by marking the one most appropriate answer. A few questions (9, 14, 15, and 16) require responses to two parts, (a) and (b). Mark one most appropriate answer for each of the two parts in each row.
- If you are completing a paper version of this questionnaire, please use a writing pen or ballpoint to write your answers.
- When you have completed this questionnaire, please [National Return Procedures and Return Date].

Further information

- When in doubt about any aspect of the questionnaire, or if you would like more information about it or the study, you can reach us by phone at the following numbers: [National Center Contact Information]

Thank you very much for your cooperation!

Subject and Target Class References

When a question refers to the “target class”, please think only about the class/course you are teaching in this school year that is specified on the cover page. You will answer all questions with reference to the teaching of the subject (domain) that is specified on the cover page in this class.

Part I: Information about the Target Class

1. How many students are there in the target class?

BTG01A1

2. What is the gender mix of this class? BTG02A1

1	2	3
All boys	All girls	Both boys and girls
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Which curriculum track is the target class in? BTG03A1

1	2	3
Academic	Vocational	No tracking
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Approximately what percentage of students are absent in the target class on a typical school day? BTG04A1

1	2	3	4
Less than 5%	5–10%	11–20%	More than 20%
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Approximately what percentage of students in the target class are native speakers of the language of instruction? BTG05A1

1	2	3	4
More than 90%	76–90%	50–75%	Less than 50%
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How many hours of scheduled class time do you spend with the target class on Mathematics/Science lessons per week? BTG06A1

Please answer this questions with reference to the subject (domain) that is specified on the cover page.

1	2	3	4	5
Less than two hours	2– 4 hrs	5– 6 hrs	7– 8 hrs	More than 8 hrs
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. What proportion of students in your class has competence in the following?

Please mark only one choice in each row.

	1	2	3	4	5
	Operation skills	Nearly none	Some students	Majority of students	Don't know
A Word-processing BTG07A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Database software BTG07B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Spreadsheet BTG07C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Presentation software BTG07D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Application of multimedia BTG07E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F E-mail BTG07F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Internet BTG07G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Graphic calculator BTG07H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Data-logging tools BTG07I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part II: Curriculum Goals

8. In your teaching of the target class in this school year, how important is it for you to achieve the following goals?

Please mark only one choice in each row.

	1	2	3	4
	Not at all	A little	Somewhat	Very much
A To prepare students for the world of work BTG08A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B To prepare students for upper secondary education and beyond BTG08B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C To provide opportunities for students to learn from experts and peers from other schools/countries BTG08C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D To provide activities which incorporate real-world examples/settings/applications for student learning BTG08D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E To improve students' performance in assessments/examinations BTG08E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F To increase learning motivation and make learning more interesting BTG08F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G To individualize student learning experiences in order to address different learning needs BTG08G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H To foster students' ability and readiness to set their own learning goals and to plan, monitor and evaluate their own progress BTG08H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I To foster students' collaborative and organizational skills for working in teams BTG08I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J To foster students' communication skills in face-to-face and/or online situations BTG08J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K To satisfy parents' and the community's expectations BTG08K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L To prepare students for competent ICT use BTG08L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M To prepare students for responsible Internet behavior (e.g., not to commit mail-bombing, etc.) and/or to cope with cybercrime (e.g., Internet fraud, illegal access to secure information, etc.) BTG08M1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part III: Teacher Practice

9. In your teaching of the target class in this school year,
 (a) How often is the scheduled learning time of the class used for the following activities?
 (b) Has ICT been used when these activities took place?

Please mark only one choice for each of the two parts in each row.

	(a) How often is the scheduled learning time used for the following activities?				(b) ICT used?	
	1 Never	2 Sometimes	3 Often	4 Nearly always	1 No	2 Yes
A Extended projects (2 weeks or longer) BTG09A1/BTG09A2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Short-task projects BTG09B1/BTG09B2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Product creation (e.g., making a model or a report) BTG09C1/BTG09C2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Self-accessed courses and/or learning activities BTG09D1/BTG09D2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Scientific investigations (open-ended) BTG09E1/ BTG09E2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Field study activities BTG09F1/BTG 09F2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Teacher's lectures BTG09G1/BTG09G2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Exercises to practice skills and procedures BTG09H1/ BTG09H2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Laboratory experiments with clear instructions and well-defined outcomes BTG09I1/BTG09I2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Discovering mathematics principles and concepts BTG09J1/BTG 09J2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Studying natural phenomena through simulations BTG09K1/BTG09K2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Looking up ideas and information BTG09L1/BTG 09L2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Processing and analyzing data BTG09M1/BTG 09M2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. When I am instructing students in the target class (excluding field trips), they are:

BTG10A1

Please mark only one choice.

- | | | | |
|--|--|---|---|
| <p>1</p> <p>Always in the same location with me</p> <p><input type="checkbox"/></p> | <p>2</p> <p>Sometimes in locations away from me</p> <p><input type="checkbox"/></p> | <p>3</p> <p>Often in locations way from me</p> <p><input type="checkbox"/></p> | <p>4</p> <p>Always in locations away from me</p> <p><input type="checkbox"/></p> |
|--|--|---|---|

11. When students in the target class participate in planned learning activities, they:

BTG11A1

Please mark only one choice.

- | | | | |
|---|--|--|---|
| <p>1</p> <p>Always work in the same location</p> <p><input type="checkbox"/></p> | <p>2</p> <p>Sometimes work in different locations</p> <p><input type="checkbox"/></p> | <p>3</p> <p>Often work in different locations</p> <p><input type="checkbox"/></p> | <p>4</p> <p>Always work in different locations</p> <p><input type="checkbox"/></p> |
|---|--|--|---|

12. The learning activities for students in the target class are planned so that these take place:

BTG12A1

Please mark only one choice.

- | | | | |
|---|---|---|--|
| <p>1</p> <p>Always during scheduled school hours</p> <p><input type="checkbox"/></p> | <p>2</p> <p>Sometimes outside scheduled school hours</p> <p><input type="checkbox"/></p> | <p>3</p> <p>Often outside scheduled school hours</p> <p><input type="checkbox"/></p> | <p>4</p> <p>At any time (no scheduled school hours)</p> <p><input type="checkbox"/></p> |
|---|---|---|--|

13. I provide feedback to students in the target class:

BTG13A1

Please mark only one choice.

- | | | | |
|---|---|---|--|
| <p>1</p> <p>Always during school hours</p> <p><input type="checkbox"/></p> | <p>2</p> <p>Sometimes outside scheduled school hours</p> <p><input type="checkbox"/></p> | <p>3</p> <p>Often outside scheduled school hours</p> <p><input type="checkbox"/></p> | <p>4</p> <p>At any time (no scheduled school hours)</p> <p><input type="checkbox"/></p> |
|---|---|---|--|

14. In your teaching of the target class in this school year:**(a) How often do you conduct the following?****(b) Do you use ICT for these activities?***Please mark only one choice for each of the two parts in each row.*

	(a) How often do you conduct the following?				(b) ICT used?	
	1 Never	2 Sometimes	3 Often	4 Nearly always	1 No	2 Yes
A Present information/demonstrations and/or give class instructions BTG14A1/ BTG14A2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Provide remedial or enrichment instruction to individual students and/or small groups of students BTG14B1/BTG14B2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Help/advice students in exploratory and inquiry activities BTG14C1/ BTG14C2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Organize, observe or monitor student-led whole-class discussions, demonstrations, presentations BTG14D1/ BTG14D2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Assess students' learning through tests/quizzes BTG14E1/ BTG14E2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Provide feedback to individuals and/or small groups of students BTG14F1/BTG14F2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Use classroom management to ensure an orderly, attentive classroom BTG14G1/BTG 14G2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Organize, monitor and support team-building and collaboration among students BTG14H1/ BTG14H2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Organize and/or mediate communication between students and experts/external mentors BTG14I1/BTG14I2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Liaise with collaborators (within or outside school) for student collaborative activities BTG14J1/ BTG14J2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Provide counseling to individual students BTG14K1/ BTG14K2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Collaborate with parents/guardians/ caretakers in supporting/monitoring students' learning and/or in providing counseling BTG14L1/ BTG14L2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. In your teaching of the target class in this school year:**(a) Do you use the following methods of assessing student performance?****(b) Do you use ICT to carry out these assessments?***Please mark only one choice for each of the two parts in each row.*

	(a) Assessment method used?		(b) ICT used?	
	1 No	2 Yes	1 No	2 Yes
A Written test/examination BTG15A1/BTG15A2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Written task/exercise BTG15B1/BTG15B2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Individual oral presentation BTG15C1/BTG15C2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Group presentation (oral/written) BTG15D1/BTG15D2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Project report and/or (multimedia) product BTG15E1/BTG15E2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Students' peer evaluations BTG15F1/ BTG15F2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Portfolio/learning log BTG15G1/BTG15G2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Assessment of group performance on collaborative tasks BTG15H1/ BTG15H2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part IV: Student Practice

16. In your teaching of the target class in this school year

(a) How often do your students engage in the following activities?

(b) Do your students use ICT for these activities?

Please mark only one choice for each of the two parts in each row.

	(a) How often do your students engage in the following?				(b) ICT used?	
	1 Never	2 Sometimes	3 Often	4 Nearly always	1 No	2 Yes
A Students working on the same learnings materials at the same pace and/or sequence BTG10A1/BTG16A2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Students learning and/or working during lessons at their own pace BTG16B1/BTG16B2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Complete worksheets, exercises BTG16C1/BTG16C2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Give presentations BTG16D1/BTG16D2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Determine own content goals for s learning (e.g., theme/topic for project) BTG16E1/ BTG 16E2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Explain and discuss own ideas with s teacher and peers BTG16F1/BTG16F2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Collaborate with peers from other schools within and/or outside the country BTG16G1/ BTG 16G2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Answer tests or respond to evaluations BTG16H1/ BTG 16H2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Self and/or peer evaluation BTG16I1/ BTG 16I2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Reflect on own learning experience s review (e.g., writing a learning log) and adjust own learning strategy BTG16J1/BTG 16J2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Communicate with outside parties s (e.g., with experts) BTG16K1/BTG16K2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Contribute to the community through their own learning activities (e.g., by conducting an environmental protection project) BTG16L1/ BTG16L2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part V: Learning Resources and Tools

17. How often do you incorporate the following in your teaching of the target class in this school year?

Please mark only one choice in each row.

	1 Never	2 Sometimes	3 Often	4 Nearly always
A Equipment and hands-on materials (e.g., laboratory equipment, musical instruments, art materials, overhead projectors, slide projectors, electronic calculators) BTG17A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Tutorial/exercise software BTG17B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C General office suite (e.g., word-processing, database, spreadsheet, presentation software) BTG17C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Multimedia production tools (e.g., media capture and editing equipment, drawing programs, webpage/multimedia production tools) BTG17D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Data-logging tools BTG17E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Simulations/modeling software/digital learning games BTG17F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Communication software (e.g., e-mail, chat, discussion forum) BTG17G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Digital resources (e.g., portal, dictionaries, encyclopedia) BTG17H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Mobile devices (e.g., Personal Digital Assistant (PDA), cell phone) BTG17I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Smart board/interactive whiteboard BTG17J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Learning management system (e.g., web-based learning environments) BTG17K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part VI: Impact of ICT Use

18. Do you use ICT in the teaching and learning activities of the target class?

BTG18A1 Filter

- 1 No → *Please go to question 21.*
 2 Yes → *Please continue.*

19. To what extent do you agree that the use of ICT has had the following impacts on you?

Please mark only one choice in each row.

	1	2	3	4
	Not at all	A little	Somewhat	A lot
A My ICT skills have improved. BTG19A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B I incorporate new teaching methods. BTG19B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C I provide more individualized feedback to students. BTG19C1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D I incorporate new ways of organizing student learning. BTG19D1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E I monitor more easily students' learning progress. BTG19E1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F I access more diverse/higher quality learning resources. BTG19F1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G I collaborate more with colleagues within my school. BTG19G1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H I collaborate more with peers and experts outside my school. BTG19H1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I I complete my administrative tasks more easily. BTG19I1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J My workload has increased. BTG19J1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K There is increased work pressure. BTG19K1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L I have become less effective as a teacher. BTG19L1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. To what extent has the use of ICT impacted your students in the target class in the following areas?*Please mark only one choice in each row.*

	1	2	3	4	5
	Decreased a lot	Decreased a little	No impact	Increased a little	Increased a lot
A Subject matter knowledge BTG20A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Learning motivation BTG20B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Information-handling skills BTG20C1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Problem-solving skills BTG20D1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Self-directed learning skills BTG20E1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Collaborative skills BTG20F1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Communication skills BTG20G1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H ICT skills BTG20H1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Ability to learn at their own pace BTG20I1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Self esteem BTG20J1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Achievement gap among students BTG20K1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Time spent on learning BTG20L1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M School attendance BTG20M1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N Assessment results BTG20N1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O Digital divide (i.e., inequity between students from different socioeconomic backgrounds) BTG20O1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part VII: Information about You and Your School

21. To what extent are you confident in accomplishing the following?

Please mark only one choice in each row.

General use of ICT

	1 Not at all	2 A little	3 Somewhat	4 A lot
A I can produce a letter using a word-processing program. BTG21A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B I can e-mail a file (e.g., the notes of a meeting) to a colleague. BTG21B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C I can take photos and show them on the computer. BTG21C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D I can file electronic documents in folders and sub-folders on the computer. BTG21D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E I can use a spreadsheet program for budgeting or student administration. BTG21E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F I can share knowledge and experiences with others in a discussion forum/user group on the Internet. BTG21F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G I can produce presentations with simple animation functions. BTG21G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H I can use the Internet for online purchases and payments. BTG21H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pedagogical Use of ICT

I I can prepare lessons that involve the use of ICT by students. BTG21I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J I know which teaching/learning situations are suitable for ICT use. BTG21J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K I can find useful curriculum resources on the Internet. BTG21K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L I can use ICT for monitoring students' progress and evaluating learning outcomes. BTG21L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M I can use ICT to give effective presentations/explanations. BTG21M1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N I can use ICT for collaboration with others. BTG21N1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O I can install educational software on my computer. BTG21O1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P I can use the Internet (e.g., select suitable websites, user groups/discussion forums) to support student learning. BTG21P1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. Looking ahead to the coming two years, what priority will you give to the use of ICT in enhancing your teaching practice in the following areas?

Please mark only one choice in each row.

	1 Not at all	2 Low priority	3 Medium priority	4 High priority
A To monitor more effectively the progress of my students BTG22A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B To provide exercises to students in order to practice skills and procedures BTG22B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C To provide better and more interesting lectures/ presentations to my students BTG22C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D To engage students in multimedia production projects BTG22D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E To provide more activities that address the individual differences among my students BTG22E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F To involve students in collaborative, short projects (2 weeks or shorter) BTG22F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G To involve students in extended collaborative projects (longer than 2 weeks) BTG22G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H To involve my students in scientific investigations (involving laboratory work) BTG22H1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I To provide more opportunities for my students to collaborate with or learn from people outside of their classroom, including peers and external experts BTG22I1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J To collaborate more with fellow teachers and others within and outside my school BTG22J1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K To provide more opportunities for my students to collaborate with their classmates BTG22K1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L To arrange self-accessed activities for my students BTG22L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. Do you experience the following obstacles in using ICT in your teaching?*Please mark only one choice in each row.*

	1	2
	No	Yes
A ICT is not considered to be useful in my school. BTG23A1	<input type="checkbox"/>	<input type="checkbox"/>
B My school does not have the required ICT infrastructure. BTG23B1	<input type="checkbox"/>	<input type="checkbox"/>
C I do not have the required ICT-related skills. BTG23C1	<input type="checkbox"/>	<input type="checkbox"/>
D I do not have the necessary ICT-related pedagogical skills. BTG23D1	<input type="checkbox"/>	<input type="checkbox"/>
E I do not have sufficient confidence to try new approaches alone. BTG23E1	<input type="checkbox"/>	<input type="checkbox"/>
F My students do not possess the required ICT skills. BTG23F1	<input type="checkbox"/>	<input type="checkbox"/>
G My students do not have access to the required ICT tools outside of the school premises. BTG23G1	<input type="checkbox"/>	<input type="checkbox"/>
H I do not have the time necessary to develop and implement the activities. BTG23H1	<input type="checkbox"/>	<input type="checkbox"/>
I I do not know how to identify which ICT tools will be useful. BTG23I1	<input type="checkbox"/>	<input type="checkbox"/>
J My school lacks digital learning resources. BTG23J1	<input type="checkbox"/>	<input type="checkbox"/>
K I do not have the flexibility to make my own decisions when planning lessons with ICT. BTG23K1	<input type="checkbox"/>	<input type="checkbox"/>
L I do not have access to ICT outside of the school. BTG23L1	<input type="checkbox"/>	<input type="checkbox"/>

24. Have you participated in any of the following professional development activities? If no, would you wish to attend?*Please mark only one choice in each row.*

	1	2	3
	No, I do not wish to attend	No, I would like to attend if available	Yes, I have
A Introductory course for Internet use and general applications (e.g., basic word-processing, spreadsheets, databases, etc.) BTG24A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Technical course for operating and maintaining computer systems BTG24B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Advanced course for applications/standard tools (e.g., advanced word-processing, complex relational databases) BTG24C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Advanced course for Internet use (e.g., creating websites/developing a home page, advanced use of the Internet, video conferencing) BTG24D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Course on pedagogical issues related to integrating ICT into teaching and learning BTG24E1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Subject-specific training with learning software for specific content goals (e.g., tutorials, simulation, etc.) BTG24F1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Course on multimedia operations (e.g., using digital video and/or audio equipment) BTG24G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. To what extent do the following statements about school vision apply to the staff in your school?

Please mark only one choice in each row.

	1	2	3	4
	Not at all	A little	Somewhat	A lot
A We discuss what we want to achieve through our lessons. BTG25A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Teachers are constantly motivated to critically assess their own educational practices. BTG25B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Teachers are expected to think about the school's vision and strategies with regard to educational practices. BTG25C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. To what extent do the following statements about teachers' participation in decision-making apply to you?

Please mark only one choice in each row.

	1	2	3	4
	Not at all	A little	Somewhat	A lot
A I can influence the development of the school's innovation implementation plans. BTG26A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B When implementing innovations, our school considers teachers' opinions and adjusts its action plan as needed. BTG26B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C I am able to implement innovations in my classroom according to my own judgment and insights. BTG26C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27. To what extent do the following statements about professional collaboration among teachers apply to you?

Please mark only one choice in each row.

	1	2	3	4
	Not at all	A little	Somewhat	A lot
A I co-teach with my colleagues. BTG27A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B I discuss the problems that I experience at work with my colleagues. BTG27B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C I work with teachers in other schools on collaborative activities. BTG27C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D I work with teachers in other countries on collaborative activities. BTG27D1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. To what extent do the following statements about support to teachers apply to you?*Please mark only one choice in each row.*

	1	2	3	4
	Not at all	A little	Somewhat	A lot
A When necessary, I receive sufficient technical support from my school/region/state (e.g., by having a technician in my classes) to support my teaching. BTG28A1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B My students can access computers easily outside scheduled class time without my help. BTG28B1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C The administrative work arising from the use of ICT in my teaching (e.g., booking computer laboratories, changing class schedules) is easy to do in my school. BTG28C1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29. Do you have access to a computer at home?**BTG29A1 Filter**

- 1 No → Please go to question 31.
- 2 Yes → Please continue.

30. Do you use this computer for the following activities?*Please mark only one choice in each row.*

	1	2
	No	Yes
A Teaching related activities BTG30A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>
B Connecting to the internet BTG30B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>

31. To what age group do you belong?**BTG31A1**

1	2	3	4	5	6
Below 25	25–29	30–39	40–49	50–59	60 or above
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32. What is your gender?**BTG32A1**

1	2
Male	Female
<input type="checkbox"/>	<input type="checkbox"/>

33. What is your highest level of education?

BTG33A1

Please mark only one choice.

1	2	3	4
Secondary or high school	Post-secondary education (e.g., teachers college)	Bachelor's degree	Master's degree or above
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34. Do you have a Bachelor's degree in Science or Mathematics?

BTG34A1

Please mark only one choice.

1	2	3	4
No	Degree in Mathematics only	Degree in Science Science only	Degree in both Mathematics and Science
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

35. Do you have a teaching license or certificate?

BTG35A1

1	2
No	Yes
<input type="checkbox"/>	<input type="checkbox"/>

36. How many years of experience do you have in teaching Mathematics or Science?

BTG36A1

1	2	3	4	5
Less than 2 years	2–4 years	5– 9 years	10–19 years	20 years or more
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part VIII: Specific Pedagogical Practice that Uses ICT

37. Which of the following description is applicable to you?

BTG37A1 Filter

Please mark only one choice.

- 1 I use ICT once a week or more in the target class. → Please continue.
- 2 I use ICT extensively in the target class during a limited period during the year (e.g., in a project or a theme) → *Please continue.*
- 3 None of the above → *Please go to the end of the questionnaire.*

38. Please describe the one most satisfying pedagogical practice (that you applied in the target class) in this school year, in which you and/or your students used ICT extensively with specific content related to mathematics/science.

BTG38AT Dependent

Please describe the pedagogical practice (e.g., a research project or a multimedia production), the ICT used (e.g., data logging tools, spreadsheets or web search) and its content (e.g., curricular goals; topic) in a maximum of 20 words.

39. Has the use of ICT in this pedagogical practice contributed to changes in the following students' outcomes in the target class:

Please mark only one choice in each row.

	1	2	3
	Decreased	Made no difference	Increased
A Subject-matter knowledge mastery BTG39A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B ICT skills BTG39B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Learning motivation BTG39C1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Ability to learn at own pace BTG39D1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Communication skills BTG39E1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Information-handling skills BTG39F1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Collaborative skills BTG39G1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Self-directed learning skills BTG39H1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Problem-solving skills BTG39I1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Achievement gap among students BTG39J1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Self esteem BTG39K1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

40. Has the use of ICT in this pedagogical practice contributed to changes in the following aspects of your teaching of the target class:

Please mark only one choice in each row.

	1	2	3
	Decreased	Made no difference	Increased
A Quality of coaching students BTG40A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Time available to help individual students BTG40B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Time needed to solve technical problems BTG40C1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Time needed for preparation BTG40D1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Quality of instructions given to students BTG40E1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Time needed for classroom management BTG40F1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Quality of classroom discussion BTG40G1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Collaboration between students BTG40H1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Communication with the outside world BTG40I1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Availability of new learning content BTG40J1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Variety of learning resources/materials BTG40K1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Variety of learning activities BTG40L1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Adaptation to individual needs of students BTG40M1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N Amount of effort needed to motivate students BTG40N1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O Insight into the progress of student performance BTG40O1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P Self-confidence BTG40P1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

41. In this pedagogical practice, who was the main actor in initiating the following aspects of teaching and learning:

Please mark only one choice in each row.

NA: Not applicable for this specific pedagogical practice

	1	2	3
	Teacher	Students	NA
A Determining content BTG41A1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Determining learning goals BTG41B1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Getting started BTG41C1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Organizing grouping BTG41D1 Dependent			
E Choosing learning resources/materials BTG41E1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Deciding on the location of learning BTG41F1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Planning of time BTG41G1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Deciding on the time needed for learning BTG41H1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Deciding on when to take a test BTG41I1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Demonstrating learning achievement BTG41J1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Monitoring progress BTG41K1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Providing feedback BTG41L1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Choosing learning activities/ strategies BTG41M1 Dependent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This is the end of the questionnaire.

Thank you very much for your time and effort!

[Return Instructions].

Appendix E – Characteristics of the Australian Sample

E.1 Australia – Characteristics of National Sample

- School level exclusions consisted of all non-mainstream schools, e.g., correctional schools, hospital schools, environmental schools, distance education schools, language support centers, non-English curriculum schools and special schools.
- Explicit stratification by region (Tasmania, Continent) and school size.
- Implicit stratification by state (for 'Continent') and school type (Government, Catholic, Independent), for a total of 100 implicit strata.

Table E.1 Allocation of School Sample in Australia

Explicit Stratum	Total Sampled Schools	Ineligible Schools	Requirements Not Met	Participating Schools			Non Participating Schools
				Sampled	1st Replacement	2nd Replacement	
Tasmania – (Very) Large Schools	7	0	0	3	2	0	2
Tasmania – Medium Size Schools	8	0	0	6	0	0	2
Tasmania – (Very) Small Schools	15	0	2	5	1	1	6
Continent – Very Large Schools	54	0	0	26	7	7	14
Continent – Large Schools	60	0	0	33	12	5	10
Continent – Medium Size Schools	65	0	1	32	19	3	10
Continent – Small Schools	72	0	1	24	17	10	20
Continent – Very Small Schools	135	0	4	44	34	10	43
Total	416	0	8	173	92	36	107

E.2 Australia – Sample Implementation

Australian data did not undergo a formal sampling adjudication process. However, some participation statistics can be given here.

E.2.1 Exclusion Rates

- School exclusion rate: 0.4%;
- Mathematics teacher exclusion rate: 0.3%;
- Science teacher exclusion rate: 0.3%.

E.2.2 Participation Rates*Table E.2 Participation Rates in Australia*

	un-weighted	weighted
School participation rate before replacement	41.6%	38.9%
School participation rate after replacement	72.4%	70.7%
Mathematics teacher participation rate	83.9%	84.0%
Science teacher participation rate	85.9%	86.2%
School principal participation rate	84.4%	85.5%
ICT coordinator participation rate	87.4%	86.8%

