Aims and expected outcomes

The design of the study is described in Keeves: The IEA Study of Science III.

Target Populations

Population 1

All students aged 10:00 to 10:11 at the time of testing.
Included are students at the grade level where most of the students are aged 10.

Population 2

All students aged 14:00 to 14:11 at the time of testing.
Included are students at the grade level where most of the students are aged 14.

Population 3

All students in the terminal or pre-university year of full-time secondary education programme coomonly designed to pepare students for tertiary studies at universities or similar institutions.

Subpopulation 3S comprises those students studying science at the level which would enable them to proceed to tertiary studies in science.
These students are divided in subpopulations

- 3B Biology
- 3C Chemistry
- 3P Physics

these groups of students are considered to be science specialists.

Subpopulation 3N: Non-science specialists

In principle, the definition of the student populations determined the types of schools to be sampled. However, in certain countries types of schools which were particularly difficult to sample or which contained small fractions of the student population were excluded.
The precise definition of the target populations and excluded populations can be found in the information about individual countries.

Weighting

In all datafiles a variable, called STRWGT is included,
This variable is a student weight on stratum level, i.e. all students within each stratum have the same weights.
The weights are computed as follows:

Achieved sampling fraction of students on country level =
n' / N = Achieved number of students / Total number of students

Achieved sampling fraction of students on stratum level =
n'(h) / N(h) = Achieved number of students / Total number of students

STRWGT(h) = (n' / N) / (n'(h) / N(h))

The data

The data are available on separate diskettes.
Data are available from the following respondent levels:
ES = E : Educational System (country or part of a country)
SM = M : Stratum
SC = C : School
TE = T : Teacher
OT = O : OTL (Opportunity to Learn) on school or teacher level
(depending on the country; see variable RATING)
ST = S : Student (all instruments in one file)

All data have been combined over all countries for each respondent level, except for the student data (because of the filesize).

All data, including the student data, are also available per country. If you want to combine one or more student data files, it is strongly advised to put them together in the order of the codes in the variable ID_ES_NI (standard numeric country codes), as the files on the other levels are in this order and a different order makes it more difficult to merge data from different respondent levels.
The order of variable ID_ES_NI is the same as the order in which the country files have been put on diskette.

For population 1 the data are on 5 diskettes (1.44 Mb; 3.5 inch).
The total file size of the raw data is 21 Mb for the student files and 3.2 Mb for the other files.
In this version, no OTL data for population 1 are available.

For population 2 the data are on 8 diskettes (1.44 Mb; 3.5 inch).
The total file size of the raw data is 36 Mb for the student files and 9.6 Mb for the other files.

For population 3 the data are on 8 diskettes (1.44 Mb; 3.5 inch).
The total file size of the raw data is 46 Mb for the student files and 5.7 Mb for the other files.

Personnel

International Coordination Center

Dr. Malcolm J. Rosier : International Coordinator and sampling referee.
(Australian Council for Educational Research in Melbourne, Australia).

Data processing & analyses tasks have been performed by Norbert Sellin and his team at:
- the Institute of International Education at the University of Stockholm
- the Department of Education of the University of Hamburg.

Heather Pyane

Dr. John Keeves: Overall responsability.

Dr. Neville Postlethwaite (University of Hamburg): reporting

Publications

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Some major publications are:

Science Achievement in Seventeen Countries, a Preliminary Report.
Pergamon Press, 1988

Rosier, M.J. and Keeves, J.P.: The IEA Study of Science I: Science Education and Curricula in Twenty-Three Countries. ; Pergamon Press.

Postlethwaite, T.N. and Wiley.: The IEA Study of Science II: Science Achievement in Twenty-Three Countries. ; Pergamon Press.

Keeves, J.P.: The IEA Study of Science III: Changes in Science Education and Achievement: 1970 to 1984 ; Pergamon Press.

Wolf, R.M. (ed).: The Second International Science Study, special issue of International Journal of Educational Research, vol 17, nr 3/4,
Pergamon Press, 1992.