

Developments at the IEA DPC

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IEA DPC

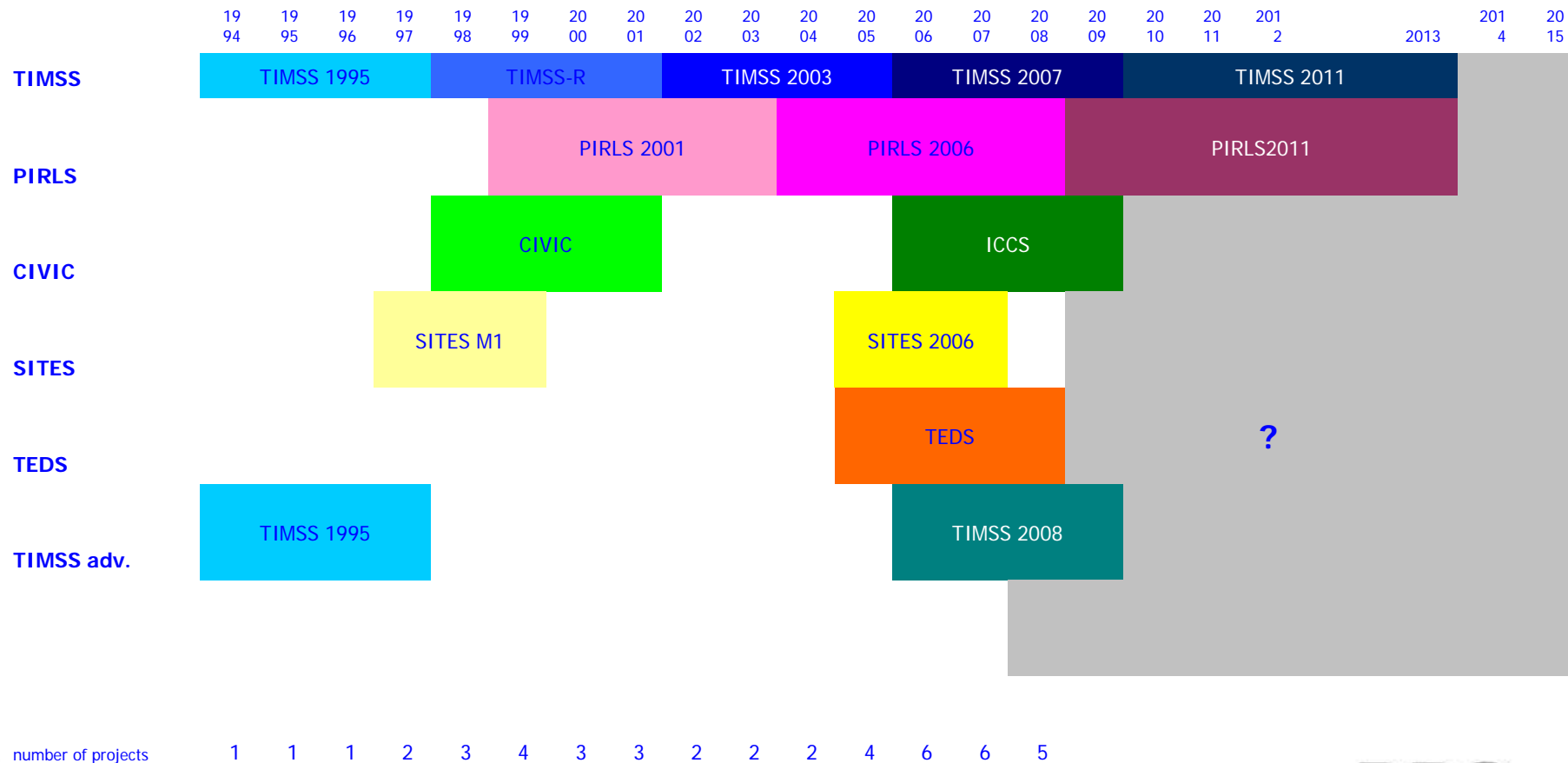


Outline

- Project development
- Staff and infrastructure development
- Support development



IEA Projects at the DPC



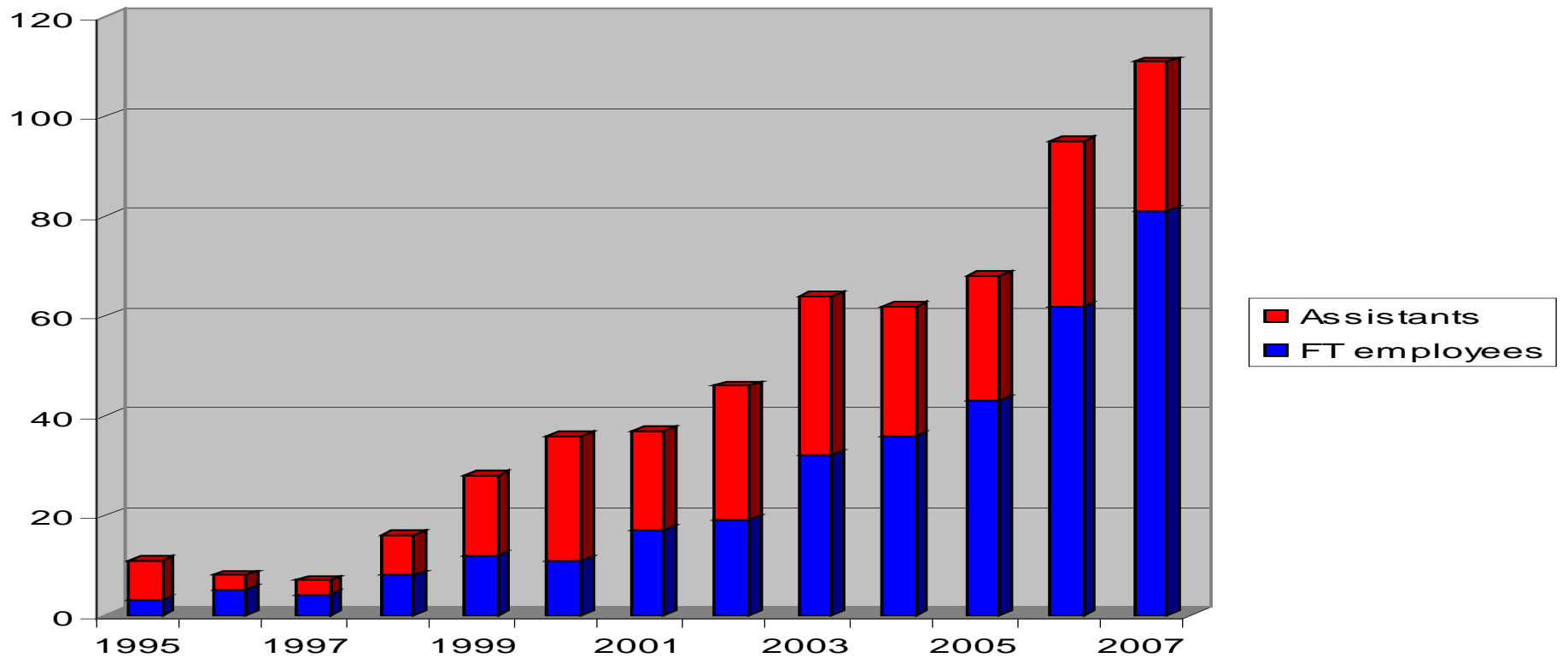
International Non-IEA Projects at the DPC

- OECD TALIS from 2006 on
 - Data Processing as well as Study Center at the DPC
- OECD PIAAC from 2008 on
 - As partner in a consortium lead by ETS

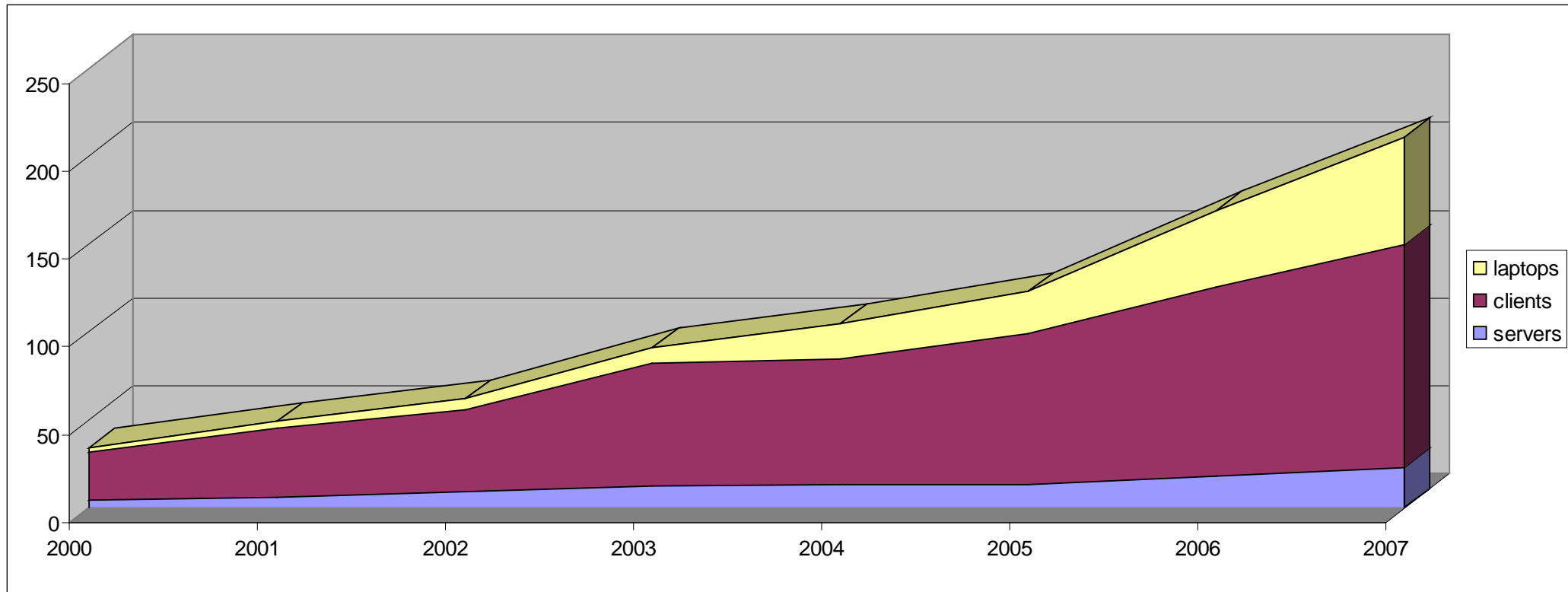


Staff Development

Employees at the DPC



Hardware Development



Study Support Software Products of the IEA DPC

- WinDEM
- WinW3S
- Survey System
- IDB Analyzer
- ODA (NESSTAR)
- RMS



Software Products of the IEA DPC

- The first software developments of the IEA DPC were mostly driven by the demand for supporting the improvement of the quality of IEA survey data
- This was achieved through software for internal use at the IEA DPC and included software for within school sampling and data entry and management – the WinW3S and WinDEM software

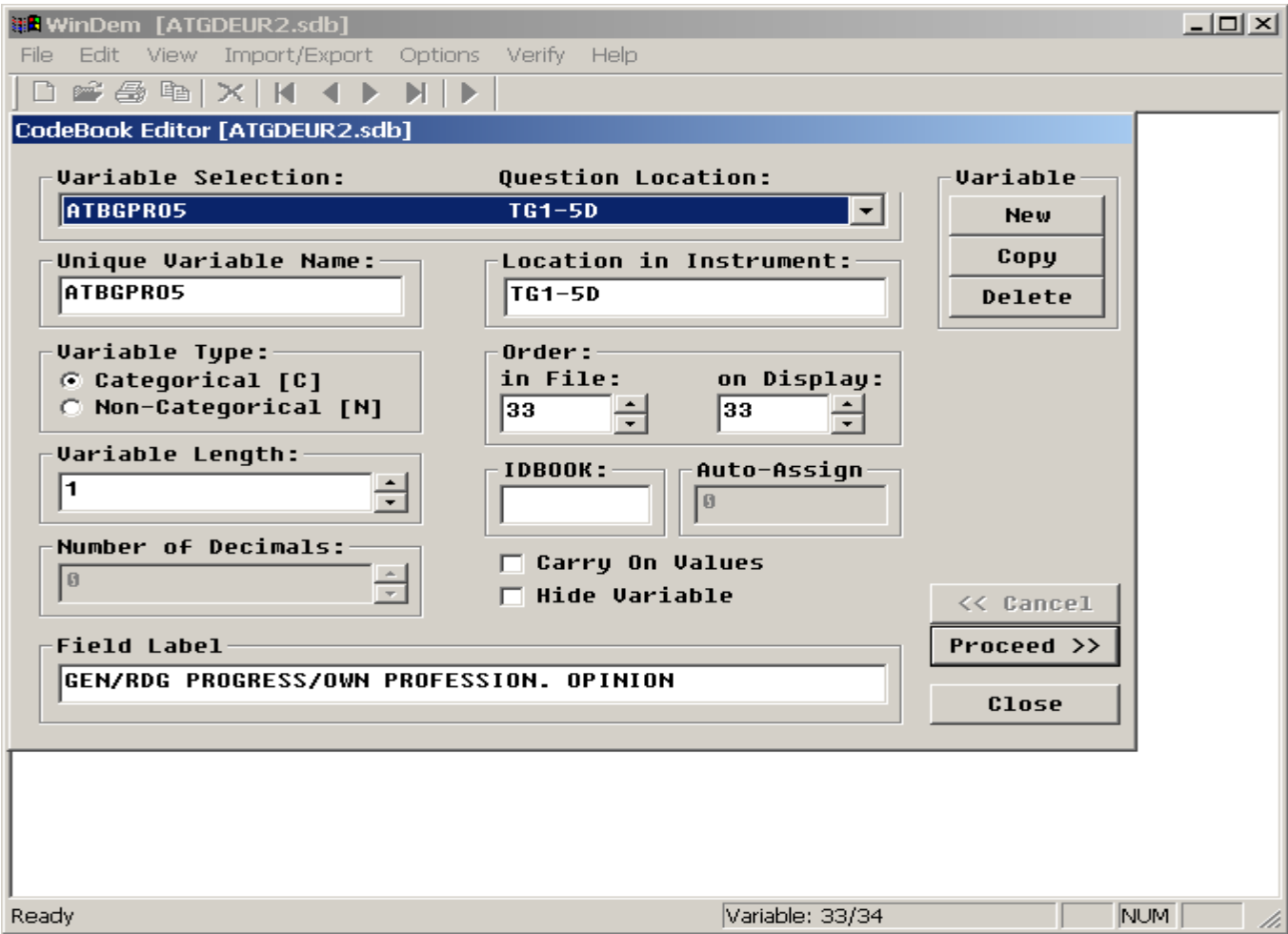


WinDEM

- First DPC software for use in the participating countries
- **Windows** based software for **d**ata **e**ntering **m**anagement
- First version was a DOS based program developed for the IEA Reading Literacy Study in 1989
- Now, powerful software to define and adapt file structures and to enter, verify and correct data



WinDEM Usage in Defining Data Structures



WinDEM is Used for Entering Data

The screenshot shows the WinDEM software interface with the following details:

- Window Title:** WinDEM [ATGDEUR2.DBF]
- Menu Bar:** File Edit View Import/Export Options Verify Help
- Toolbar:** Includes icons for file operations and navigation.
- Header Fields:** IDPUNCH: 1, IDCNTRY: , ID SCHOOL: , IDTEACH: 102, IDLINK: 2, IDCHECK: 746, ITGRADE: 98, IDCLASS: 999998
- Main Table:**

Field Name	Value	Field Name	Description
PUNCHER	1	IDPUNCH	*PUNCHER ID*
TEACHER	102	IDTEACH	*TEACHER ID*
LINK_NO	2	IDLINK	*TEACHER LINK NUMBER*
CHECKSUM	746	IDCHECK	*CHECKSUM ID*
CHECK		CHECK01	*BLANK,CORE ID INFO ENDS*
TOKEN	3	TOKEN01	*TEACHER PARTICIPATION INDICATOR*
TG1-1A	25	ATBGCSTD	GEN/STD IN CLS
TG1-1B	27	ATBG4STD	GEN/HOW MANY STD FROM #1A ARE IN 4TH GRD
TG1-2	4	ATBGRLEV	GEN/RDG LEVEL OF 4TH GRD STUDENTS
TG1-3A1	4	ATBGACTH	GEN/TIME FOR GERMAN LNG INSTRUCTION/H
TG1-3A2	45	ATBGACTM	GEN/TIME FOR GERMAN LNG INSTRUCTION/M
TG1-3B	3	ATBGHMW1	GEN/GERMAN LNG ACTIVITIES FOR HMWORK
TG1-3C	9	ATBGHMW2	GEN/TIME FOR GERMAN LNG HMWORK
CHECK		CHECK02	*BLANK,TEST PAGE ENDS*
TG1-4	1	ATBGPCAU	GEN/PC AVAILABLE FOR CLS
TG1-4AA	2	ATBGPC1	GEN/PC/1 OR MORE AVAILABLE IN CLSROOM
TG1-4AB	1	ATNGPC3	GEN/PC/AVAILABLE IN THE LIBRARY
TG1-4AC	2	ATBGPC2	GEN/PC/AVAILABLE ELSEWHERE IN SCH
- Selected Row:** TG1-3B (Value: 3) is highlighted in blue.
- Detail View:** A text box below the table shows: "I DO NOT ASSIGN HOMEWORK:1;LESS THAN ONCE A WEEK:2;1 OR 2 TIMES A WEEK:3;3 OR 4 TIMES A WEEK:4;EVERY DAY:5;omitted:9;not admin.:8;"
- Status Bar:** Ready, Record: 1/2, NUM

WinW3S

- A **Windows** based **w**ithin **s**chool **s**ampling software.
- First version developed for TIMSS 1995 as a DOS applications
- Now the software samples students or teachers within schools/institutions, links teachers to students, creates labels and forms and tracks participation status



WinW3S Creates all Necessary Lists

PIRLS 2006 (MS) - Class Listing Form

Page 1 of 1

PIRLS Participant: GERMANY

School Name: Hamburg Gy

School ID: 0001

School Coordinator: **Brigite**

Phone: **(040) 5555-1212**

(1) Class Name	(2) Grade
4a	4
4b	4

PIRLS 2006 (MS) - Student Listing Form

PIRLS Participant: GERMANY

School Name: Hamburg Gymnasium

School ID: 0001

Class Name: 4a

Teacher Name: Karina Kroger

No.	(1) Student Name	(2) Date of Birth
01		
02		
03		
04		



WinW3S Creates all Necessary Labels

- School questionnaires

School Name:	Hamburg Gymnasium
School ID:	0001
Checksum:	131

- Teacher questionnaires

School ID:	0001
Class ID:	000101
Class:	4a
Teacher:	Karina Kroger
Teacher ID:	000101
Teacher Link Number:	01
Checksum:	963

- Student booklets and student & parent questionnaires

School ID: 0001	Class ID: 000101	Grade: 4	BOOKLET SET: A
Student:	Marta S.		
Booklet:	12 R		
Student ID:	00010103		
Checksum:	142		
Reliability Scorer ID (IDSCORR):			
Main Scorer ID (IDSCORA):			



WinW3S and WinDEM

- Once WinW3S and WinDEM were separate programs. Now an integration process has been initiated.
- In previous studies data punchers in the countries had to enter redundant ID-information to assure correct identification.
- Now, WinW3S generates checksums that are also recognized by WinDEM (and also the Survey System) to avoid typos in the identification codes.



New demand: Internet Based Surveys

- In 2004 a new request was brought forward:

Surveys should be delivered online



Survey System

- A system for creating online versions of questionnaires and administer them online
- Developed in 2004 for IEA SITES
- Allows the adaptation of an international version of a questionnaire and its translation
- Minimal requirements
- Login with ID and checksum created by WinW3S



Survey System Translation Module

The screenshot displays the IEAdpc.SurveySystem.Designer 0.50.1875.28459 application. The interface is divided into two main panes. The left pane shows a tree view of the survey structure:

- SITES2006FT
 - Technical
 - Section1
 - Section2
 - Question3
 - Question3Part1
 - cv31
 - v31
 - v32
 - v33
 - v34
 - v35
 - v36
 - Section3

The right pane, titled 'Properties of 'Section2'', shows the configuration for the selected section. It includes a 'Main' section with a 'Heading' property set to 'Resource materials' (indicated by a red 'X' icon). Below this, there are sections for 'National Text' and 'International Text' for both 'Main' and 'Instruction' categories. The 'Instruction' section has a checked checkbox for 'not applicable'. The 'Name' property is set to 'Section2'.

Properties of 'Section2'	
Main	
Heading	<input type="checkbox"/> Resource materials
National Text	
International Text	Resource materials
Instruction	
National Text	<input checked="" type="checkbox"/> not applicable
International Text	
Name	Section2

Survey System (Multi-matrix Question)

OECD Teaching and Learning International Survey (TALIS) - Main Survey - English
You are logged in as: 99999999 [Logout](#)
Teacher Questionnaire - Professional Development

17. Thinking about less formal professional development, during the last 18 months, did you participate in any of the following activities, and what was the impact of these activities on your development as a teacher?

For each question below, please mark one choice in part (A). If you answer 'Yes' in part (A) then please mark one choice in part (B) to indicate how much impact it had upon your development as a teacher.

	(A) Participation		(B) Impact			
	Yes	No	No impact	A small impact	A moderate impact	A large impact
a) Reading professional literature (e.g. journals, evidence-based papers, thesis papers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Engaging in informal dialogue with your colleagues on how to improve your teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Survey System (in Korean)

OECD 교수-학습 국제 조사(TALIS) - 본조사 - 한국어 (대한민국)

다음과 같이 로그인되었습니다 : 9999 [로그아웃](#)

[학교장용 설문지](#) - 배경 정보

배경 정보

다음의 질문들은 교장선생님과 교장선생님의 교육 정도, 학교장으로서의 교장선생님의 직위에 관한 것입니다. 적합한 사각형에 표시하시어 질문에 답해주시기 바랍니다.

1. 교장선생님의 성은 무엇입니까?

여성

남성

[이전 문항](#)

1/37 [설문 목차](#)

[다음 문항](#)

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Request for Easier Analysis of IEA Data

- In 2005 a further request was brought up.
- The IEA study data from complex sampling designs - also making use of the Plausible Value methodology - was challenging for researchers to analyze
- Researchers asked for assistants in analyzing data
- This request was met by offering an increasing number of training seminars but also by developing a software application...



IDB Analyzer

- The **I**nternational **D**ata**B**ase **A**nalyzer is a software to combine and analyze data from complex samples (TIMSS, PIRLS, ...) correctly
- Based on SPSS macros developed for TIMSS 1995 by the TIMSS and PIRLS international study center



IDB Analyzer GUI

IEA DPC - IDB Jackknifing Analysis

1 Select Data File

2 Select Analysis Type

Percentages and Means Percentages only Benchmarks Regression Correlations Clear all Selections

With Achievement Scores Exclude Missing From Analysis

3 Select Variables

Name	Description
idschool	*SCHOOL ID*
idclass	*CLASS ID*
idgrade	*GRADE*
idstud	*STUDENT ID*
itbirthm	*DATE OF STUDENTS BIRTH\MONTH*
itbirthy	*DATE OF STUDENTS BIRTH\YEAR*
itsex	*SEX OF STUDENTS*
idbook	*ACHIEVEMENT TEST BOOKLET*
itadmini	*TEST ADMINISTRATORS POSITION*
itdatem	*DATE OF TESTING\MONTH*
itdatey	*DATE OF TESTING\YEAR*
itlang	*LANGUAGE OF TESTING*
idpop	*POPULATION ID*
idgrader	*STANDARDIZED GRADE ID*
intms03	*IN 2003 ASSESSMENT POPULATION*
idstrate	EXPLICIT STRATUM CODE
idstrati	IMPLICIT STRATUM CODE
intms99	*IN 2003 AND 1999 ASSESSMENT POPULATION*
intms95	*IN 2003 AND 1999 AND 1995 ASS. POP*
IDBID	*IDB Identifier*
bsbgbrty	GEN\DATE OF BIRTH\YEAR
bsbgbrtm	GEN\DATE OF BIRTH\MONTH
bsbgsex	GEN\SEX OF STUDENT

Search

In Name Description

Grouping Variables

Name	Description
idcntry	*COUNTRY ID*

Analysis Variables

Name	Description
------	-------------

Achievement Scores

Name	Description
------	-------------

Dependent Variable

Name	Description
------	-------------

Achievement Benchmarks

Name	Description
------	-------------

Weight Variable

Name	Description
totwgt	*TOTAL STUDENT WEIGHT*

Jackknifing Variable

Name	Description
jkzone	*JACKKNIFE ZONE*
jkrep	*JACKKNIFE REPLICATE CODE*

Run Analysis Exit



IDB Analyzer Output

Predictors: REGBOOK REGSEX REGFBRN REGEDUP REGPOS / Predicted

Report

C:\Seminar\Hands-On\Merge\reg



Predictors: REGBOOK REGSEX REGFBRN REGEDUP REGPOS / Predicted

COUNTRY ID	N of Cases	Mult_RSQ	Constant (estimate)	Constant (s.e.)	REGBOOK (estimate)	REGBOOK (s.e.)	REGBOOK (t-test)	REGSEX (estimate)	REGSEX (s.e.)	REGSEX (t-test)
Bahrain	3507	.11	364.40	7.50	7.09	1.36	5.22	-28.40	3.42	-8.31
→ Palestine	4618	.10	300.33	8.85	4.73	1.57	3.01	-5.15	5.70	-.89
Jordan	3808	.16	367.92	8.58	7.58	1.51	5.01	-23.37	5.77	-4.05
Lebanon	3017	.15	342.15	9.19	8.32	1.90	4.37	4.79	3.76	1.00
Morocco	2262	.05	299.23	9.82	-1.55	2.12	-1.73	13.94	3.31	4.21
Saudi Arabia	3605	.11	287.84	10.44	4.02	1.95	2.06	16.81	7.63	2.19
Syria	3606	.10	289.16	6.74	3.83	1.40	2.74	8.73	4.47	1.95
Tunisia	4232	.13	360.58	13.75	7.17	1.34	5.36	24.20	2.03	11.91
Egypt	5800	.20	307.69	7.00	-.36	1.52	-1.24	3.18	4.67	.68



New Request of Analyzing Data Online

- In 2007 another request was made.
- Reserachers and policy makers want to get a first glance at the IEA survey data without having to download it and run analysis software.
- Consequently a new devlopment was initiated...



ODA

- **O**nline **D**ata **A**nalyzer enables users to analyze IEA data online
- A system that creates tables and graphics also in downloadable format
- The results match the results of the international reports



ODA

Nesstar WebView - Microsoft Internet Explorer bereitgestellt von IEA DPC

http://www.ieadata.org/webview/index.jsp

International Association for the Evaluation of Educational Achievement

Manual
Terms of Use
Questionnaires

DESCRIPTION TABULATION

Variable **BSBGSEX : SQ2-2** * GEN\SEX OF STUDENT

Values	Categories	N	
1	GIRL	2384	50.9%
2	BOY	2296	49.1%
9	OMITTED	0	


Summary Statistics

Valid cases 4680
Missing cases 111
Minimum 1.0
Maximum 2.0
This variable is numeric

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ODA


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- IEA Surveys
 - TIMSS 2003 (4th Grade)
 - TIMSS 2003 (8th Grade)
 - TIMSS 1999 (8th Grade)
 - PIRLS 2001 (4th Grade)
 - PIRLS 2006 (beta)
 - Student Data
 - asg_all_final_20080423
 - Metadata
 - Variable Description
 - Country Name
 - ID-variables
 - Score-variables
 - Benchmark-variables
 - Derived-variables
 - Weight-variables
 - Jackknife-variables
 - Questionnaire variables
 - Basic Information about the Student
 - Q1_Gender information
 - GEN/SEX OF STUDENT**
 - Q2_Birth date information
 - Things done outside of School
 - Reading in School
 - Reading for Homework
 - Using the Computer
 - Q11_Frequency of computer use
 - GEN/USE PC WHERE/AT HOME
 - GEN/USE PC WHERE/AT SCHOOL
 - GEN/USE PC WHERE/AT SOME OTHER PLACE
 - Q12_Frequency of internet use
 - Using the Library
 - What Do You Think About Reading?
 - Your School
 - More Information About the Student
 - User defined variables
 - Bookmarks

DESCRIPTION
TABULATION
ANALYSIS

GEN/USE PC WHERE/AT HOME

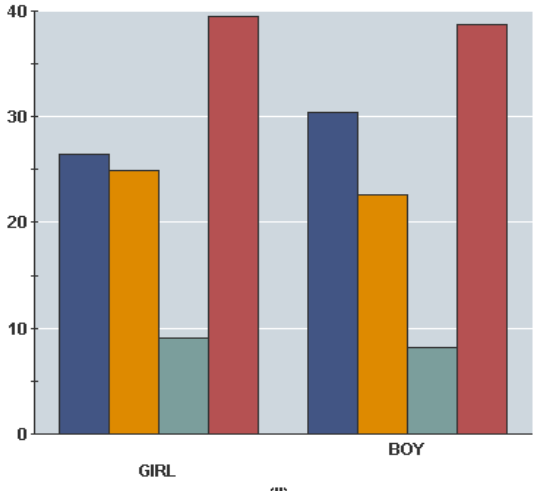
GEN/SEX OF STUDENT

GEN/USE PC WHERE/AT HOME

GEN/SEX OF STUDENT

Type

Column percentage



Gender	EVERY DAY OR ALMOST ...	ONCE OR TWICE A WEEK	ONCE OR TWICE A MONTH	NEVER OR ALMOST NEVER
GIRL	26	25	9	40
BOY	30	22	8	40

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ODA



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DESCRIPTION TABULATION ANALYSIS

Measure: SCORE PLAUSIBLE VALUE: ALL BLOCKS PV1

ASGNZLr1

- Metadata
- Variable Description
- ID-variables
- Score-variables
 - SCORE PLAUSIBLE VALUE: INFORMATION BLOCKS PV1
 - SCORE PLAUSIBLE VALUE: INFORMATION BLOCKS PV2
 - SCORE PLAUSIBLE VALUE: INFORMATION BLOCKS PV3
 - SCORE PLAUSIBLE VALUE: INFORMATION BLOCKS PV4
 - SCORE PLAUSIBLE VALUE: INFORMATION BLOCKS PV5
 - SCORE PLAUSIBLE VALUE: LITERARY BLOCKS PV1
 - SCORE PLAUSIBLE VALUE: LITERARY BLOCKS PV2
 - SCORE PLAUSIBLE VALUE: LITERARY BLOCKS PV3
 - SCORE PLAUSIBLE VALUE: LITERARY BLOCKS PV4
 - SCORE PLAUSIBLE VALUE: LITERARY BLOCKS PV5
 - SCORE PLAUSIBLE VALUE: ALL BLOCKS PV1**
 - SCORE PLAUSIBLE VALUE: ALL BLOCKS PV2
 - SCORE PLAUSIBLE VALUE: ALL BLOCKS PV3
 - SCORE PLAUSIBLE VALUE: ALL BLOCKS PV4
 - SCORE PLAUSIBLE VALUE: ALL BLOCKS PV5
- Benchmark-variables
- Derived-variables
- Weight-variables

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Request of fast Data Access

- The growing amount and size of data files of the IEA surveys creates a new obstacle to work with the data.
- The size of the international data bases makes it difficult to download the files with Internet access which is not high speed.
- Consequently we developed a system to give easier access to the international IEA data bases



RMS

- **R**epository **M**eta **S**earch is an online system to download data from IEA surveys.
- Data sets from different surveys, survey cycles and/or different countries can be selected in different data formats; a ZIP-archive will be created and provided for download



RMS select Files

IEA Study Data Repository / index / index - Mozilla Firefox

File Edit View History Bookmarks Tools Help

IEA http://rms.iea-dpc.org/#

Getting Started Latest Headlines

International Association for the Evaluation of Educational Achievement

IEA Study Data Repository

Welcome Search Basket

1. Select Study/Grade/Year

- CIVICS
- PIRLS
- RL II
- TIMSS
 - Grade 04
 - Grade 08
 - Y1995
 - Y1999
 - Y2003

TIMSS → Grade 08 → Y2003

2. Select File Types and Countries:
[Select all](#) / [Deselect all](#)

	School Background	Student Test Responses	Student Background	Scoring Reliability	Mathematics Teacher Background	Science Teacher Background
Armenia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Australia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Belgium (Flemish)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bulgaria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bahrain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spain (Basque Country)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Botswana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

javascript:__iea_rms_view._.iea_rms_m_td(27014)

Start IEA Study Data Repos... 11:38



RMS zipped Basket

IEA Study Data Repository / index / index - Microsoft Internet Explorer bereitgestellt von IEA DPC

http://rms.iea-dpc.org/#

International Association for the Evaluation of Educational Achievement

IEA Study Data Repository

Welcome Search Basket (1 item)

Archive	Size	Action	Downloadtime
<input type="checkbox"/>	test1 2 MB		

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Done

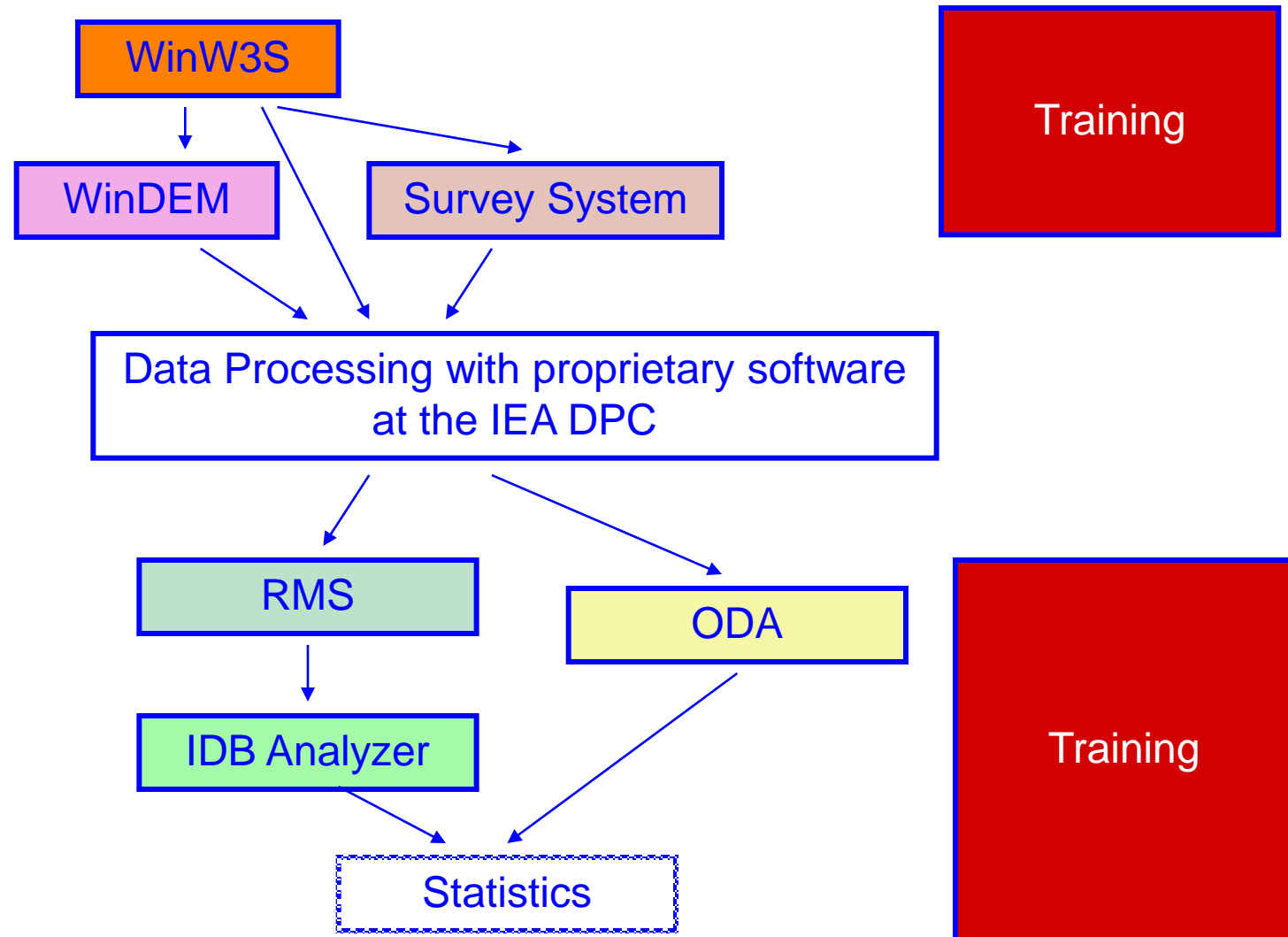
Start Microsoft PowerPoint - [...] IEA Study Data Repos...

Internet 100%

DE 11:44



IEA Software: the Full Package for the Cycle of a Study



Thank you for your attention!



INTERNATIONAL ASSOCIATION FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT

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AND RESEARCH CENTER
HAMBURG
GERMANY