The Research Data Center (FDZ) at the Institute for Educational Progress (IQB)

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27. March 2009
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Overview

• The Empirical Turnover in Educational Research and Politics in Germany

• The Institute for Educational Progress (IQB)

• The Research Data Center (FDZ) at the IQB

• Datasets currently at the FDZ at IQB

• Look behind: The first Challenges: Data Acquisition and Deliberation of Data Access

• Application and Access now

• Actual Challenges: Data Dissemination and Documentation

• Summary and Discussion
The Empirical Turnover in Germany

Germany was in empirical educational research in the 60s ...
• and participated in occasional international Large Scale Assessments (e. g. FIMS, 1964)

In the 70s and 80s Germany retreated from large scale educational research and ...
• did not participate in international Large Scale Assessments anymore (e. g. SIMS, 1978)
• neglected the development of Programs for Educational Monitoring
• neglected empirical Research in Educational Science

→ one important reason was the very controversial debate about comprehensive schools

The Empirical Turnover in Germany started in the 90s ...
• with the participation in several studies (e. g. TIMSS, 1995). Average Results started a debate.

At the beginning of the new millenium...
• the PISA-2000-shock reached the public in Germany
• as a reaction more Educational Monitoring Studies where started (e. g. IGLU, MARKUS) and Educational Standards where set (Output Orientation)
Foundation of the IQB

The Institute for Educational Progress (IQB)

- Independent scientific institution of the federal states of Germany
- Funded by the federal states (Standing Conference of Ministers of Education (KMK))
- The IQB is affiliated to the Humboldt-University Berlin
- First working period: December 2004 – September 2009
- Since independent evaluation basic funding without time restrictions

Core Services of the IQB

To further develop, specify and test the Educational Performance Standards of the KMK
- Development of large pools of test items
- Conducting empirical studies to norm and approve the educational standards
- Supply test Items for federal state programs
- Supply test items for schools internal evaluations
- Supply materials for competence based education

The Research Data Center (Forschungsdatenzentrum - FDZ) at IQB started to operate in April 2007. It is funded by the Federal Ministry of Education.
Foundation of the Research Data Center (FDZ)

- Since over 15 years a vast amount of Educational Large Scale Assessment Studies have been conducted in Germany and more are coming up

- Customary this data was only accessible for the conducting researchers

- The growing demand of the scientific community to have transparent and regulated access to these data sets lead to the foundation of the FDZ at IQB

- The specific methodological and political needs of this data sets where the central rationales for the foundation of the FDZ at IQB

- The FDZ provides access to and training on Educational Large Scale Assessment Data and serves as a mediator between politics, data producers and users

- Examples for the special methodological demands are
  - Scaling by Item Response Theory
  - Multi-Matrix-Sampling-Designs
  - Jackknifing to control for the clustered Data Structure
Available German Data Sets (March 2009)

- PIRLS (IGLU) 2001
  - Above 10,000 elementary students in fourth grade. Oversampling in 7 states.
  - E. g. Reading, Mathematics and Science, IQ, Social and Psychological Background
- PISA 2000
  - Above 45,000 secondary students of 15 years age. Oversampling all 16 states.
  - E. g. Reading, Mathematics, Science, IQ, Social and Psychological Background
- PISA 2003
  - Above 45,000 secondary students of 15 years age. Oversampling all 16 states.
  - E. g. Reading, Mathematics, Science, IQ, Social and Psychological Background
- MARKUS 2000
  - Almost 40,000 secondary students in eighth grade. Only Rhineland-Palatinate.
  - At the time Achievement Scales missing, Social and Psychological Background
- ELEMENT 2003 - 2005
  - Almost 5,000 students longitudinal from grade 5 over 6 up to 7. Only Berlin.
  - E. g. Reading, Mathematics, English, IQ, Social and Psychological Background
  - About 13,000 students longitudinal from grade 5 over 7 up to 9. Only Hamburg.
  - E. g. Reading, Mathematics, English, IQ, Social and Psychological Background
First Challenges - Acquisition of Data

• Despite conducting researcher where included in the foundation process of the FDZ at IQB data acquisition turned out to be a major problem

• From the very start important data producing agencies refused to hand over data with reference to uncertainties in the regulations

• First to hand over data even before the start of FDZ in April 2007 was the leading conducting researcher of IGLU (PIRLS) 2001 - Wilfried Bos

• It took 6 months until the second data set (PISA 2003 E) was handed over

• The PISA 2000 data set was handed over January 2009. It is unclear when e.g. TIMSS 1995 will be given to FDZ at IQB

• Another upcoming challenge will be PISA and IGLU (PIRLS) 2006 I
First Challenges - Deliberation of Data Access

• Problems on the foundation of the FDZ at IQB
  • Conducting researchers where concerned by documentation needs and loss of exclusive rights (balance between personal effort and benefit for the researcher)
  • There was a worry that wrong conduct and interpretation of analyses by the scientific community would lead to additional work due to necessities of replies
  • Federal states where concerned by total loss of control over analyses and results

• Result was a very restrictive data access regulation
  • Conducting researchers had a veto right for data applications
  • The federal states had to be asked for every state comparisons
  • Two independent researcher had to review each proposal by scientific standards

• The German Council for Social and Economic Data did not recommend the FDZ-IQB

• Reform of the data access regulation
  • First experiences showed that concerns where exaggerated
  • So we proposed an ease to the federal states that was approved end of 2008

• The German Council for Social and Economic Data now recommends the FDZ-IQB
New Rules of Data Application and Access (since Dec 2008)

• To apply for data at the FDZ at IQB
  • Write a proposal of 2-5 pages
  • State hypotheses and planned analyses

• FDZ at IQB grants access to the data if
  • The objective is scientific and not commercial
  • No regulations are violated (like state comparisons of IQ)
  • No protected thesis is affected (list by data producers handed over with data)

• Data access to data sets at FDZ at IQB can be
  • Through a scientific use file
  • Research visit at FDZ at IQB in Berlin
  • Remote computing ➔ Cooperation with IZA to apply Josua
Development of Data Applications at FDZ at IQB

Development of Data Applications at FDZ at IQB

- 2007 Dec
- 2008 Mar
- 2008 Jun
- 2008 Sep
- 2008 Dec
- 2009 Mar
Actual Challenges – Data Dissemination and Documentation

• Despite a growing number of applications for data access at FDZ at IQB since the new regulations are in power there is still a need of improvement (50/year)

• Broader informational campaign: Presentations and booths e. g. on conferences

• Improvement of the data documentation
  • Currently very low standards in data documentation in educational research
  • Usually only codebooks, international studies have a technical report
  • What is documented and how is somehow arbitrary
  • This documentation style makes it hard for the user to get an overview

• Starting up the EduDDI work group
  • Implement the DDI 3.0 standard in educational research
  • Cooperation with central educational research institutions like NEPS, IEA
  • Objective is to make meta data easier accessible

• Implementing easier ways of data access like Josua in cooperation with IZA
**Working Schedule of the FDZ**

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Summary

• Since the Empirical Turnover Educational Large Scale Assessments (ELSA) are well established in Germany

• The general claim of good scientific practice to make public data available for scientific reanalysis lead to the foundation of the FDZ at IQB

• Beside the general problems accompanied by such foundations the situation is especially political explosive in Germany

• Steps successfully taken at FDZ at IQB
  • Recognition and use by the scientific community
  • Substantial amount of data sets available
  • Approval of the necessity of data hand over is growing
  • Easier access to data for researchers

• Steps to be taken at FDZ at IQB
  • Data documentation needs to be standardized and extended
  • Data access needs to be simplified while considering data protection issues
Let’s talk!
Staff at the FDZ at the IQB

• The FDZ so far consists out of 6 persons
  • Scientific Coordinator
  • PhD Student
  • Technical Coworker
  • Secretary
  • Two student aids

• Staff will be extended
  • Graduate Students
  • Further successive extensions are planned (e.g. EduDDI)