German Network for Educational Research Data

Building a Federated Research Data Infrastructure for Educational Studies in Germany

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I. Situation for Researchers and Repositories in Empirical Educational Research

**Researcher:**
- Open access to research data
- Research data management
- Secondary use of qualitative data
- Undersupplied/underrepresented small scale studies

**Research data centers:**
- Inter- and multidisciplinary projects
- Mixed method approaches
- Variation of resources, topical scope, standards and workflows

**On top:**
- Complex legal and regulatory environment and sensitive data
I. Situation for Researchers and Repositories in Empirical Educational Research in Germany

- Researchers have difficulties to find adequate repositories
- Repositories are confronted with types of data outside their scope
- Increasing need for consultation in research data management issues
- No central point of educational research data access and information
- No common standard for documentation and processing of educational research data
II. An Alliance for Empirical Educational Research: Verbund Forschungsdaten Bildung

Mission:
- Building a federated infrastructure: “VerbundFDB”
- Offering support and services for researchers
- Develop and establish common standards for research data management

Funder:
Federal Ministry of Education and Research

Partners:
- The German Institute for International Educational Research (DIPF)
- The Institute for Educational Quality Improvement (IQB)
- GESIS – Leibniz-Institute for the Social Sciences
II. An Alliance for Empirical Educational Research: Verbund Forschungsdaten Bildung

- **Focus first period (2013-2016): building an Infrastructure**
  - Streamlined workflows for archiving and documentation
  - Archived 300 projects funded by BMBF
  - Offered workshops for research data management

- **Focus second period (2016-2019): broadening the network**
  - Expand the network and scope
  - Establish a central contact point for support and information
  - Train the trainers in research data management

- **Next steps: internationalization and international exchange**
  - Engage in international Networks (e.g. EOSC, RDA)
  - Provide services in English
  - Provide study documentation in English
  - Prepare for multilingual metadata
VerbundFDB Partners and Cooperations
III. Key Milestone: A Common Catalog for Educational Research Data

Establishing a central point of information about and access to educational research data

Requirements

- Metadata interoperability
- Adequate metadata quality
- Standardization and harmonization of metadata
- Presentation of metadata in retrieval system
VerbundFDB Activities and Accomplishments

- Establishment and organization of a VerbundFDB working group for metadata

- Development of a tool to manage metadata: Data Management Modul (DMM)

- Definition and Approval of a common standard for study descriptions in DMM and da|ra

- Programming a VerbundFDB-Harvester (mapping/crosswalk)

- Provision and configuration of retrieval system/catalog
A Metadata Standard for Educational Research Community

- Common denominators for describing **qualitative** and **quantitative** data
- DDI, DataCite and da|ra based and **compatible controlled vocabularies**
- **Domain specific thesaurus** for indexing (FIS Thesaurus and TheSoz)
- ISO based **standard for abstracting** the content of studies
- Referencing **only research data with persistent identifier** (e.g. DOI)
- Agreement of a **core set of mandatory submitted metadata** (da|ra and VerbundFDB)
Two Solutions for Partner’s Metadata Ingest

Option 1: Data Management Modul (DMM)

Option 2: VerbundFDB-Harvester via da|ra
Two Solutions for Partner’s Metadata Ingest

Option 1: Data Management Modul (DMM)

- Metadata is directly controlled and curated by research center
- Quality assurance by VerbundFDB curator
- Metadata exportable in JSON format
- Full support for VerbundFDB metadata standard
- Metadata maintenance in parallel systems (manually or automatically)
Two Solutions for Partner’s Metadata Ingest

Option 2: Metadata Harvesting via da|ra

- Most RatSWD data centers register research data via da|ra
- da|ra metadata is licensed CC0 and provides a set for VerbundFDB
- da|ra already supports multilingual metadata
- Service level agreement guarantees provision of technical infrastructure and high quality metadata
- Metadata not specific to educational research
- Different registration practice (granularity, versioning of data and submission of metadata)
VerbundFDB Activities and Accomplishments

- Establishment and Organization of a VerbundFDB working group for metadata ✓

- Development of a tool to manage metadata: Data Management Modul (DMM) ✓

- Definition and Approval of a common standard for study descriptions in DMM and da|ra ✓

- Programming a VerbundFDB-Harvester (mapping/crosswalk)

- Provision and configuration of retrieval system/catalog
IV. Future Challenges and Objectives for Alliance and Network

- Documentation of other/new types of educational research data (log files, digital behavioral data, software etc.)

- Support individual technological solutions (API) for metadata ingest and access for data centers

- Link related objects (e.g. researcher, funder, instruments, publications)

- Coverage/inclusion of further metadata held by institutions outside the network

- Integration of non-German metadata
References

**Literature (German):**


**Websites:**

- ApaeK - Archiv für pädagogische Kasuistik: [http://www.apaek.uni-frankfurt.de/55817402/WEIII_AG_ApaeK](http://www.apaek.uni-frankfurt.de/55817402/WEIII_AG_ApaeK)
- da|ra - Registration agency for social and economic data: [https://www.da-ra.de/en/home/](https://www.da-ra.de/en/home/)
- DJI - The German Youth Institute: [https://www.dji.de/en/the-dji.html](https://www.dji.de/en/the-dji.html)
- German Data Forum: [https://www.ratswd.de/en/start](https://www.ratswd.de/en/start)
- LIfBi - Leibniz Institute For Educational Trajectories: [https://www.lifbi.de/en-us/home.aspx](https://www.lifbi.de/en-us/home.aspx)
- Qualiservice data sharing: [http://www.qualiservice.org/](http://www.qualiservice.org/)
- VerbundFDB - Verbund Forschungsdaten Bildung: [https://www.forschungsdaten-bildung.de](https://www.forschungsdaten-bildung.de)
Merci beaucoup & thank you!

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