EduArc – A FAIR and User-Centred Infrastructure for Learning Resources

Partners: Universities of Duisburg-Essen and Oldenburg, DIPF, ZBW   *Funding:* BMBF, Oct 2018 – Mar 2022

goal

The project aims at conceptualising a **user-centred infrastructure** that allows access and use of learning and teaching material for higher education, specifically Open Educational Resources (OER), from **diverse relevant sources** like learning management systems and existing university repositories.

challenges

Technical // Infrastructure

- de-duplicating and merging resources
- assigning missing unique identifiers
- extracting usage data for learning analytics support

Inter-relational // Metadata

- mapping different metadata schemes
- integrating structured vocabularies for different disciplines
- managing different resource versions
- enriching metadata with user-generated data

user-centred participatory design

How are OER created and used?
interviews with lecturers concerning practices on learning and teaching resource creation and use
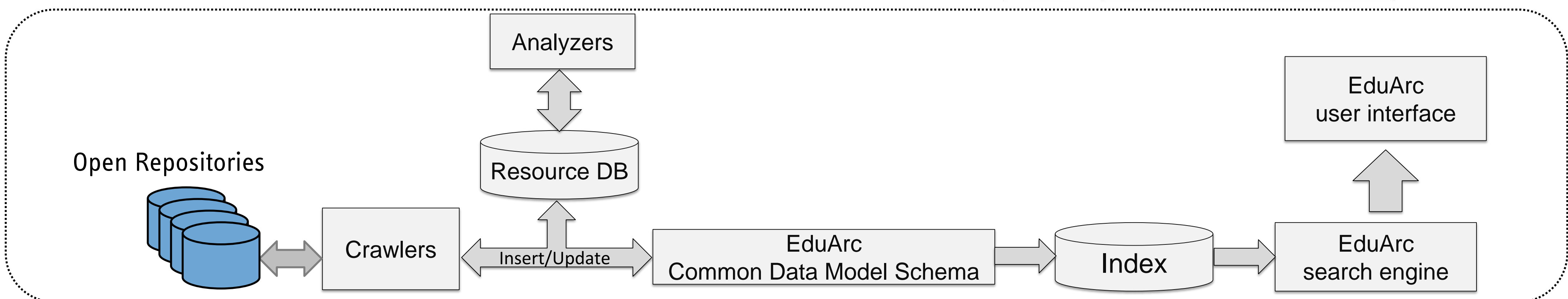

What supports users in describing OER?
user study on OER tagging

- Important categories: Content, type of school, grade level, subject, material
- Combination of free tags and drop-down
  - Free tag fields with auto-completion
  - drop-down for fields like subject, domain
- Additional field with „free tags"
- Explanation of CC-License → Licence Guide
- Useful expansions:
  - Number of tags being allocated by users
  - recommendation system -> suggesting useful tags

Which criteria are relevant for users?
user study on repository design

First mock-ups

realisation of FAIR principles

Findability:

- (F1) unique identifiers for metadata
- (F2) metadata scheme based on common standards like LOM and LRMI
- (F3) unique identifiers for resources
- (F4) registry of relevant OER sources

Accessibility:

- (A1) metadata is accessible through a secure HTTPs client communication protocol.
- (A1.1) the HTTPs protocol facilitates the accessibility of EduArc metadata.
- (A1.2) authentication through concrete licences for each resource and user-specific rights for OER creation
- (A2) efforts to archive metadata independently from resources

Interoperability:

- (I1) common data model based on Learning Object Metadata (LOM) standard (transferred to json format), with focus on higher education, developed by Länderübergreifende AG OER-Repositorien
- (I2) use of vocabularies that are currently developed within OER community
- (I3) mapping of standard metadata schemes LOM, LRMI, schema.org, and Elixier (German meta search for OER in school education)

Reusability:

- (R1) metadata contains a variety of relevant mandatory and recommended fields for learning and teaching resources,
- (R1.1)…, including concrete (CC) licencing,
- (R1.2)…, author and institution information, and the repository of a harvested resource
- (R1.3) collaboration with German OER communities and working groups, and seeks feedback from higher education lecturers

References // FAIR: https://www.go-fair.org // Wilkinson, M. D., Dumontier, M., Aalbersberg, I. J. J., Appleton, G., Axton, M., Baak, A., . . . Mons, B. (2016). The FAIR Guiding Principles for scientific data management and stewardship. Scientific Data, 3, 160018. https://doi.org/10.1038/sdata.2016.18 // Länderübergreifende AG OER-Repositorien (Feb 2020). LOM for Higher Education OER Repositories, https://dini-ag-kim.github.io/hs-oer-lom-profil/draft/

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