

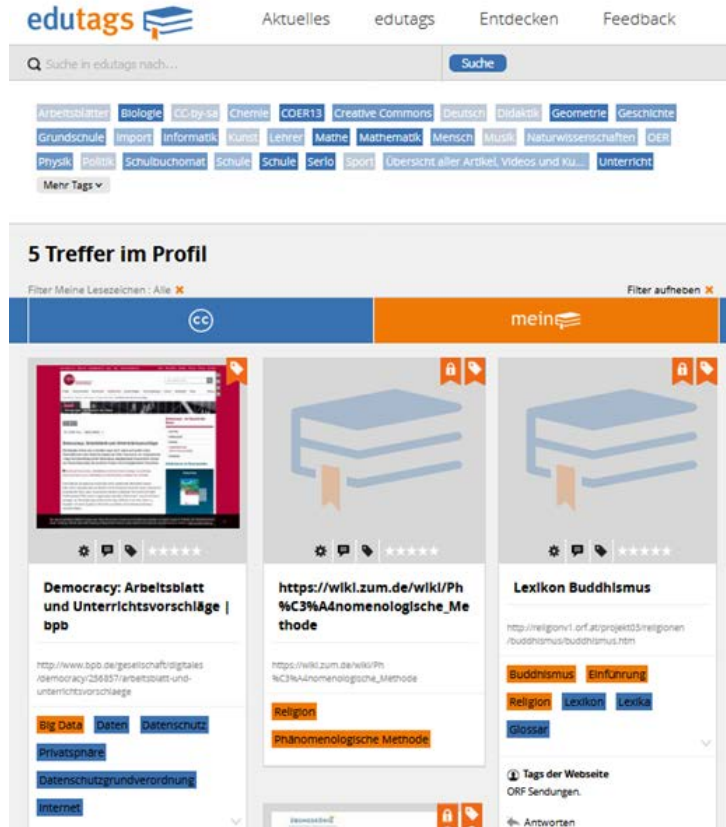
# Improving tag literacy to enhance metadata and retrieval for open educational resources

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The screenshot shows the edutags website interface. At the top, there is a navigation bar with 'Aktuelles', 'edutags', 'Entdecken', and 'Feedback'. Below it is a search bar with the text 'Suche in edutags nach...' and a 'Suche' button. A horizontal menu of tags is displayed, including 'Arbeitsblätter', 'Biologie', 'CD-by-SA', 'Chemie', 'COER13', 'Creative Commons', 'Deutsch', 'Didaktik', 'Geometrie', 'Geschichte', 'Grundschule', 'Impressum', 'Informatik', 'Kunst', 'Lehrer', 'Mathe', 'Mathematik', 'Mensch', 'Musik', 'Naturwissenschaften', 'OER', 'Physik', 'Politik', 'Schulbuchmarkt', 'Schule', 'Serlo', 'Sport', and 'Übersicht aller Artikel, Videos und Ku...'. Below the search bar, there is a section titled '5 Treffer im Profil' with a filter for 'Meine Lesezeichen: Alle'. The main content area displays three search results, each with a book icon and a rating. The first result is 'Democracy: Arbeitsblatt und Unterrichtsvorschläge | bpb' with a URL 'http://www.bpb.de/gesellschaft/politik/sonstige/256357/arbeitsblatt-und-unterrichtsvorschlaege'. The second result is 'https://wiki.zum.de/wiki/Ph%C3%A4nomenologische\_Methode' with a URL 'https://wiki.zum.de/wiki/Ph%C3%A4nomenologische\_Methode'. The third result is 'Lexikon Buddhismus' with a URL 'http://religion1.orf.at/projekt3/religionen/buddhismus/buddhismus.htm'. Each result includes a list of tags and a 'Tags der Webseite' section.

- Open Educational Resources (OER)
  - **Re-use**, re-mix, re-distribute
- Edutags → reference service for (O)ER
  - launched 2011 at DIPF (Heinen et al., 2014)
  - focuses on school resources
  - connected to DIPF search portal *Elixir*
  - Automatic crawl collects OER and metadata by ten cooperating partners
  - Users add their own resources: Personal bookmarking lists and tags

## Goals

Get better OER *metadata* to offer better OER search options

- **make users able to contribute** to OER metadata enrichment
- **improve user tagging competencies**

Fosters positive user tagging behaviour to reach goals

## Questions

- Can we classify tags of educational resources according to existing tag categories to distinguish relevant tags for enriching metadata and improving search?
- In which way can a tagging service effectively support users in improving their tagging to support metadata enhancement and retrieval?

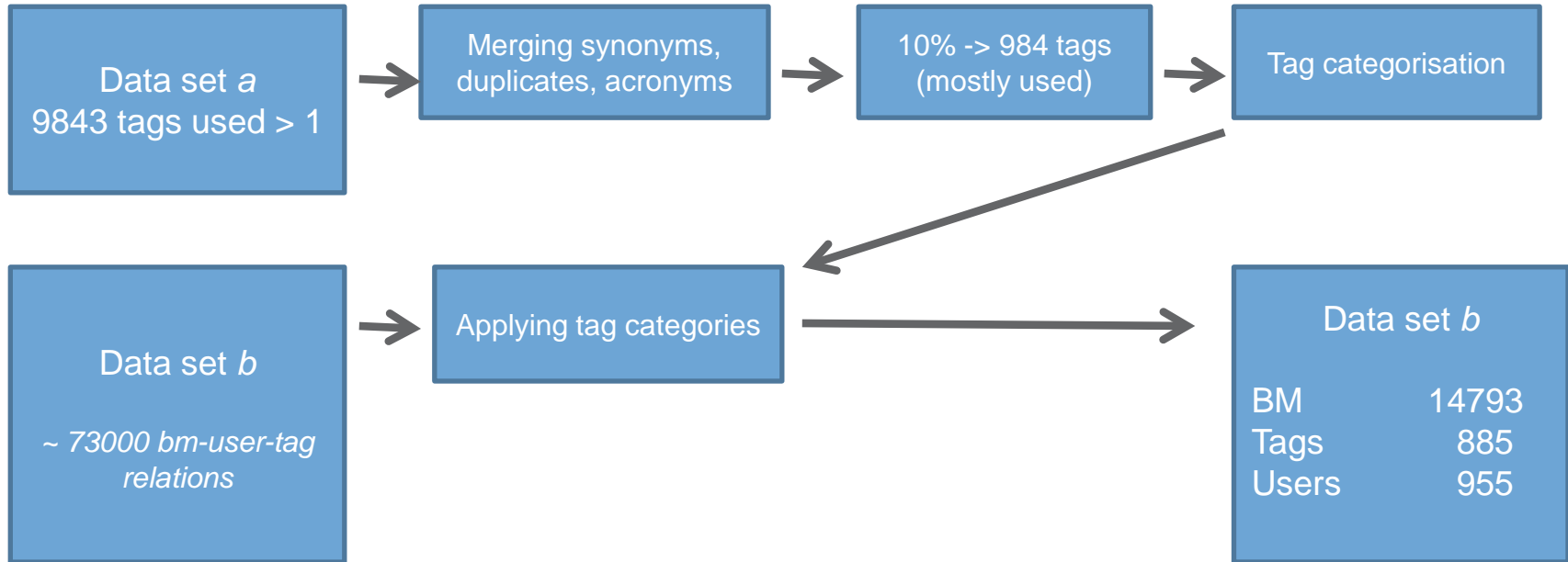
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## ACLR (2016)

- “see themselves as **contributors** to scholarship rather than only consumers of it;”
- “**value** user-generated content and **evaluate** contributions made by others”

## DigComp 2.0 (digital literacy), Vuorikari et al. (2016)

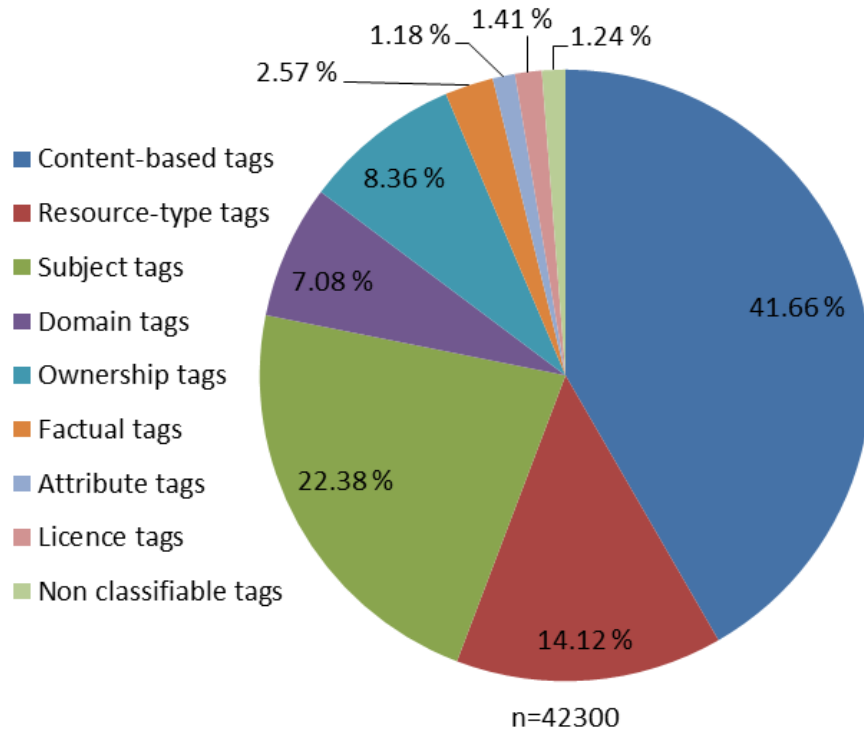
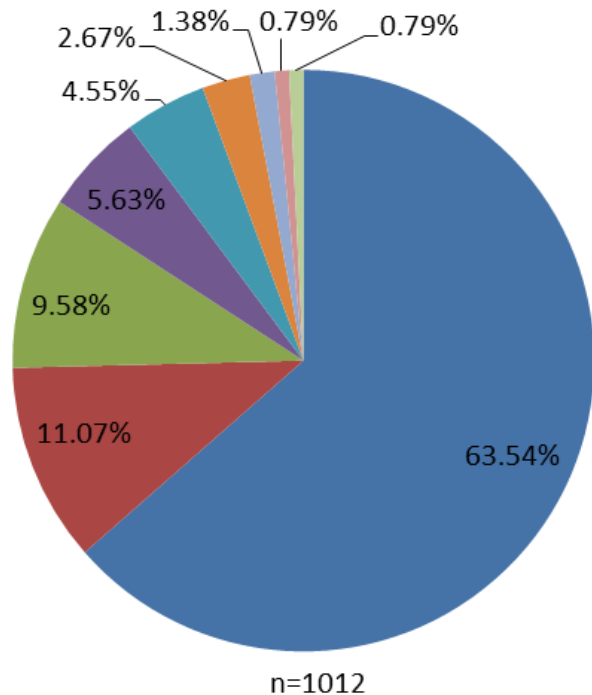
- “to use digital tools and technologies for collaborative processes, and for co-construction and **co-creation of resources and knowledge**”
  - “to **share data**, information and digital content with others through appropriate digital technologies”
- Social tagging as co-creation act of users → idea of OER



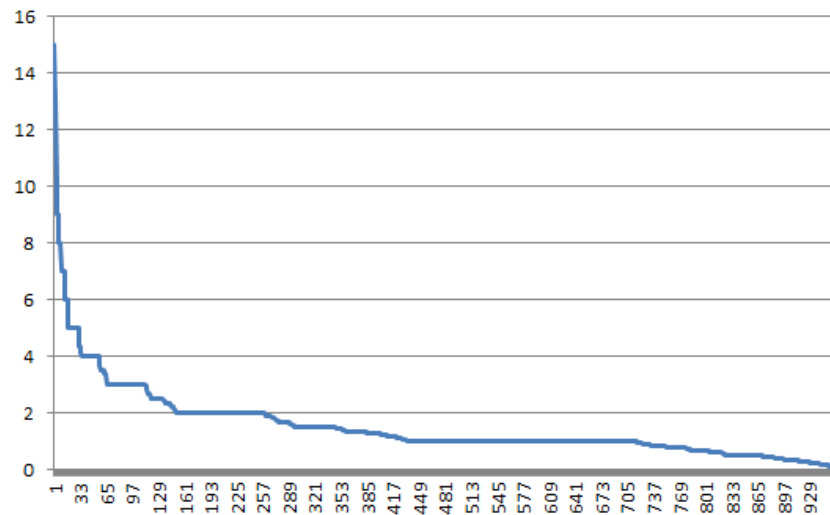
Tag-Categories	Examples
Content-based tags	Oxygen, fractions
Factual tags	Brazil, 2012
Ownership tags	Serlo, DBS
Attribute tags	simple, difficult
Subject tags	biology, history
Resource-type tags	worksheet, video
Domain tags	secondary school, adult education
License tags	CC-BY-SA, CC-BY-NC-SA

(based on Gupta et al., 2011)

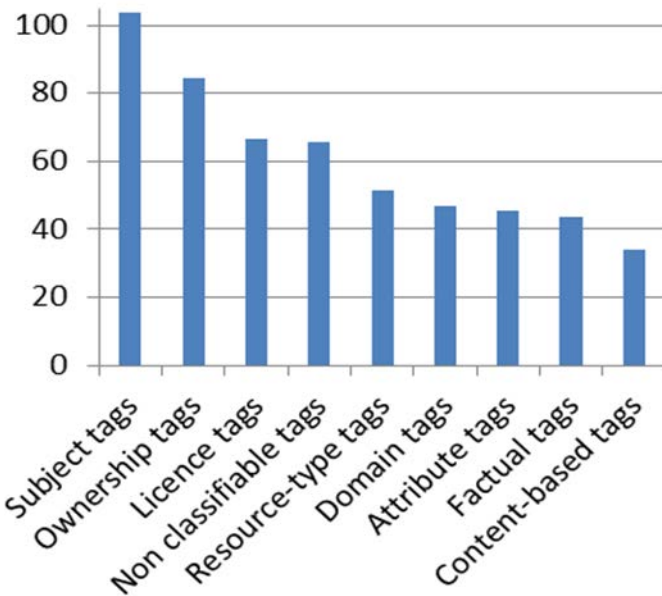
Tag category distribution from data set a (left) and data set b (right)



Tag/resource ratio per user, data set b



Average number of users assigning a common tag in a category, set b





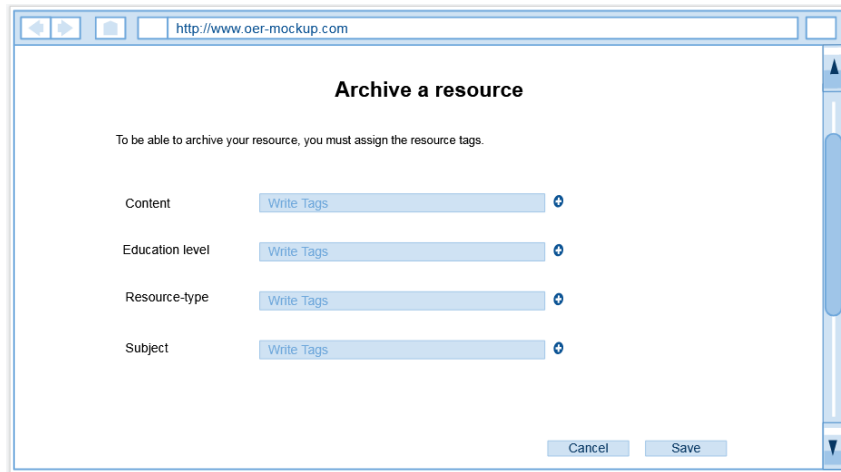
LOM-CH	Tag-Category
1.4 Description	Content-based tags
5.2 Learning resource type	Resource-type tags
5.8 Difficulty	Attribute tags
1.6 Coverage 2.1 Version 2.3 Contribute	Factual tags
9.1 Purpose 9.2 Taxon Path 10.2.1.4 Scope	Subject tags
5.6 Context 9.1 Purpose 9.2 Taxon Path 10.2.1.4 Scope	Domain tags
6.2 Copyright and other restrictions	License tags
2.3. Contribute	Ownership tags

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## Recommendations:

- Recommend OER related tag categories to users to make them aware of tagging options. A system could ask users to assign concrete categories during the bookmarking process.
- Show users the most relevant metadata fields of OER. This makes users aware of missing metadata and motivates them to add additional tags.
- Show users their own tags and allow them to edit those. Users would be able to correct typing errors, or merge synonym tags (Dennen et al., 2018).
- Show users the user network and its activities. This might foster user collaboration and awareness of the benefits of collaborative tagging.

## Tagging interface example with mandatory tag fields

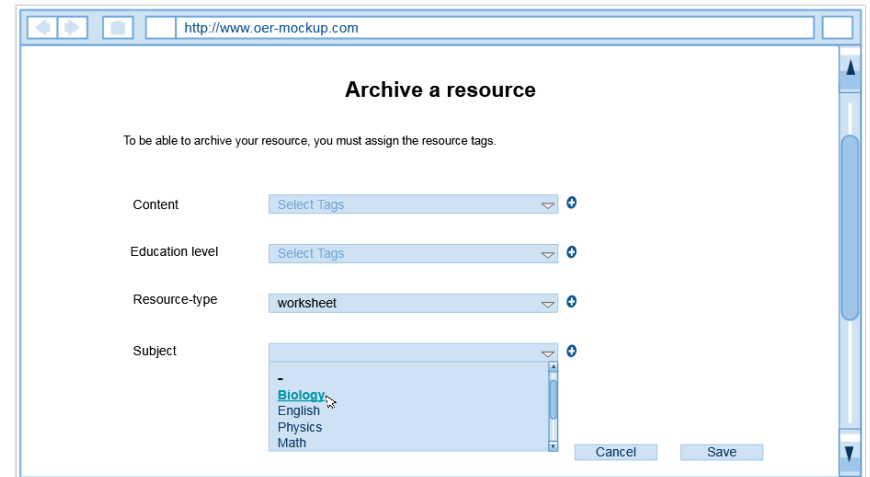


A browser window titled "Archive a resource" with the URL "http://www.oer-mockup.com". The page contains a heading "Archive a resource" and a sub-heading "To be able to archive your resource, you must assign the resource tags." Below this, there are four rows of input fields, each labeled on the left and followed by a "Write Tags" button with a plus icon:

- Content: Write Tags
- Education level: Write Tags
- Resource-type: Write Tags
- Subject: Write Tags

At the bottom right, there are "Cancel" and "Save" buttons.

## Tagging interface example with drop-down menu



A browser window titled "Archive a resource" with the URL "http://www.oer-mockup.com". The page contains a heading "Archive a resource" and a sub-heading "To be able to archive your resource, you must assign the resource tags." Below this, there are four rows of input fields, each labeled on the left and followed by a "Select Tags" button with a plus icon:

- Content: Select Tags
- Education level: Select Tags
- Resource-type: worksheet
- Subject: A drop-down menu is open, showing a list of subjects: Biology, English, Physics, and Math. A mouse cursor is pointing at "Biology".

At the bottom right, there are "Cancel" and "Save" buttons.

Thank you for your attention

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