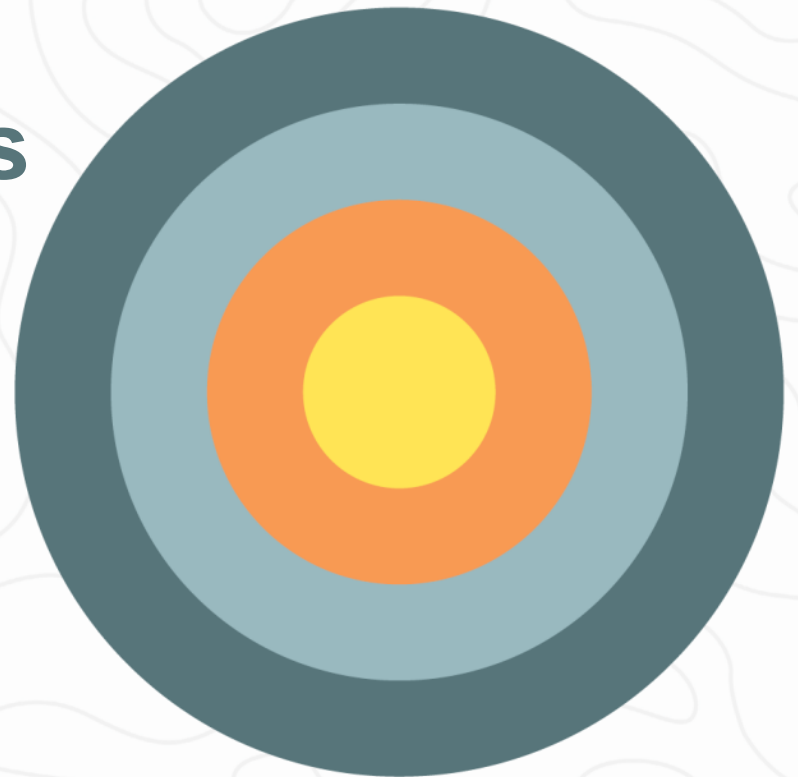# Mapping for end users

A work in progress report
Unni Knutsen and Karoline Hoff
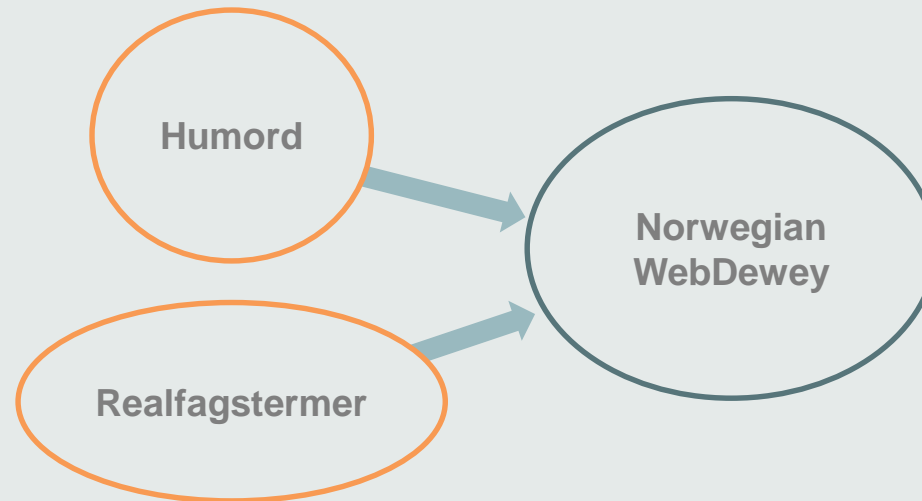
Mapping for end users

About the project

- UiO Humanities and Social Sciences Library and Science Library
- The National Library of Norway

Humord

Realfagstermer

Norwegian WebDewey

Presentation structure

- What we've done so far: The first project period 2014-2016

- What's happening now: The second project period 2017-2018

- End-user searching behavior

  – Literature review

  – Observations

  – Search log analysis

- How can mappings be helpful?

- Future plans

The first project period, 2014-2016

- Methodology (ISO standard 25964-2)
- EDUG guidelines
- Software (ccmapper)
- Mapping

24719

concepts mapped and reviewed; **16825** in Humord, **7894** in Realfagstermer.
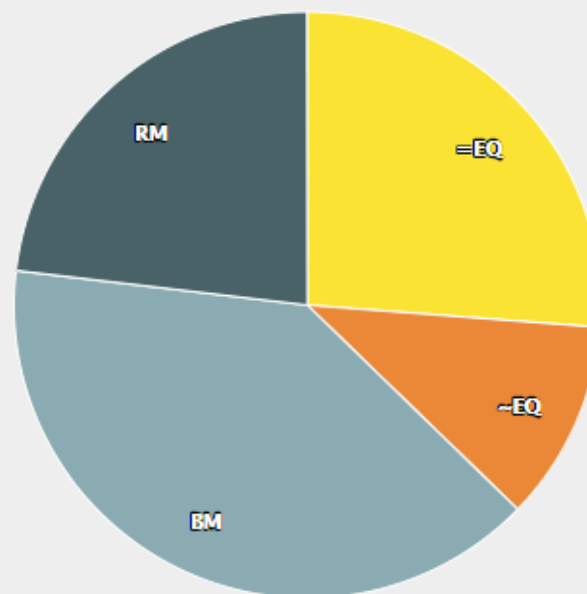
Humord: 92%

Realfagstermer: 57%

2.35

mappings per concept. **2.36** for Humord, **2.34** for Realfagstermer.

58152

reviewed mappings; **15243** exact, **6432** close, **23032** broader, **13445** related.

Mapping for end users

Present phase, 2017-2018/2019

- Three main objectives:
    - Explore mappings in an end user perspective
    - Develop a protoype in our end-user system
    - Complete the mappings

Three main objectives

- Objective 1: Explore the end user perspective in subject oriented searching
  - Literature review
  - User observations
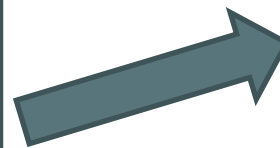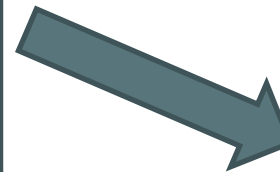 - Search log analysis

Literature review

- Information searching
- Topical search
- Subject headings searching
- Exploratory search
- Web searching
- Internet searching
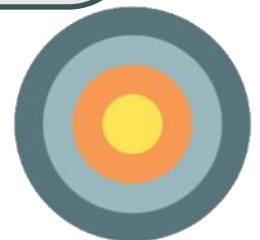- Discovery system
- Primo
- Thesaurus

et cetera…

Search behaviour in end user systems

Subject oriented search behaviour

Literature review - findings

- Students tend to use the same 4-5 search words in different combinations, rather than finding synonyms

- They don't usually use terms found in subject vocabularies or thesauruses

- They first perform very broad searches, then more specific ones

- The «Google generation» isn't automatically better at searching, or evaluating search results

User observations

Primo Library Resource Discovery Solution (Oria)

- BIBSYS

- Ex Libris

- Primo, a discovery system
  - Primo central index

Primo (Oria)

Mapping for end users

Primo (Oria)

Method

- Five bachelor students
- Four different tasks
- The students were free to search anywhere, but the end goal was to find at least one relevant document in Primo
- Data collected: observation notes, sound and screen recordings
  - Transcriptions

What are we looking for?

Search bar → Query → Search results → Choose → Document

New query

Filtering/faceted navigation
Advanced search

Facets
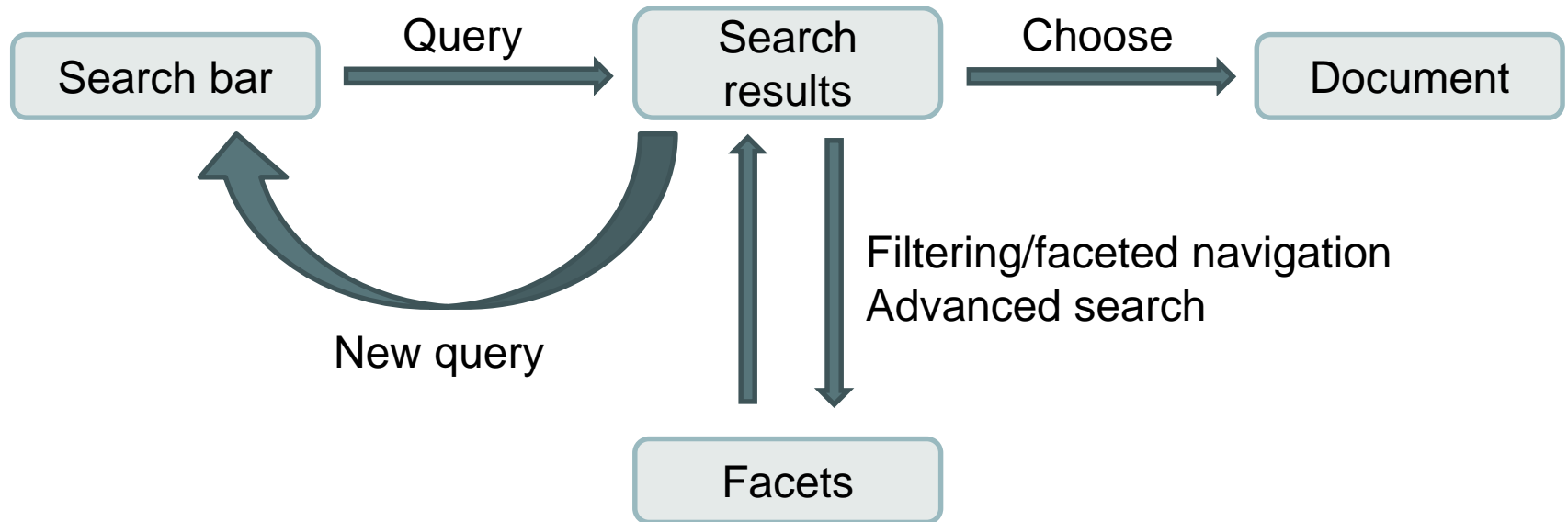
The assignments - what we wanted to find out

- How do the students deal with no results?

- How do the students react to irrelevant (noisy) search results?

- How do the students use different languages when searching?

- How do students handle unfamiliar terminology and subjects?

Observations - findings

- Search terms usually found in the assignment text
- Other terms were found in the search results
- Few synonyms
- Need to know more? Google it!

No or very few hits

- No hits → broaden the search term(s)
- Few hits → examine and evaluate the results thoroughly
  - Followed by new, broader search terms

Many hits, noisy search results

- No specific plan

- Don't mind the irrelevant hits?

- Seemingly no difference between 100 and 10 000 hits

Assessing the search results

- The most commonly used facets were the ones placed on top of the page

- Geographic search terms used as limiters

- Seemingly no plan or conscious thought behind the selection of search terms

- Great confidence in the system – "I think I've found everyting"

- Problems identifying high quality sources.
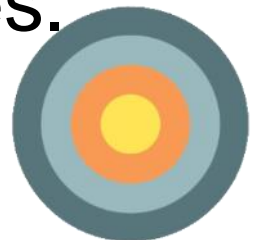
Specificity and hierarchical level

- Broad search terms
- Few terms in each query
- Difficulties → even broader terms
- Includes prepositions and conjunctions like «in», «among» and «on»

Summary

- It's hard coming up with new search terms
- The students used broad search terms
- Seemingly no plan or conscious thought behind the selection of search terms, or ideas on how to achieve better search results
- Great confidence in the system

Search log analysis

Method

- Week 4

- 15397 sessions

  - 48919 searches

- Selection of 2000 sessions

  - Manually analyzed

  - Constituting 3900 search tasks

- No way of filtering users

What are we looking for?

```
Search bar  --Query-->  Search results  --Choose-->  Document
```

New query

Facets

Filtering/faceted navigation
Advanced search

Oria searches

From UiO IPs
From external IPs

searches

8000
7000
6000
5000
4000
3000
2000
1000
0

Dec 25 2017 · Jan 1 2018 · Jan 8 · Jan 15 · Jan 22 · Jan 29 · Feb 5 · Feb 12 · Feb 19 · Feb 26 · Mar 5 · Mar 12

Day
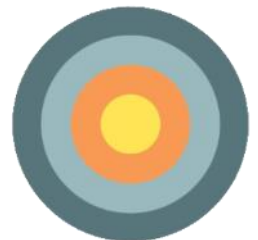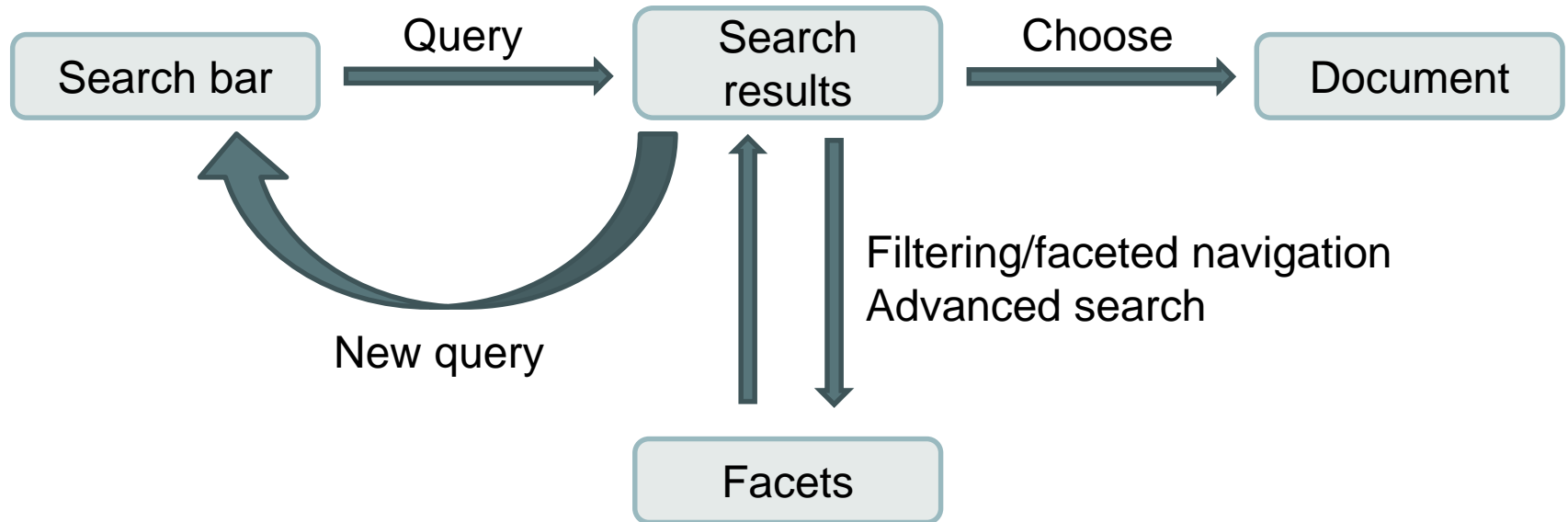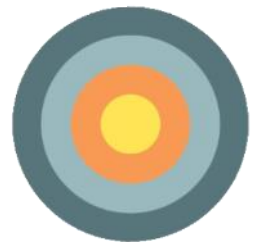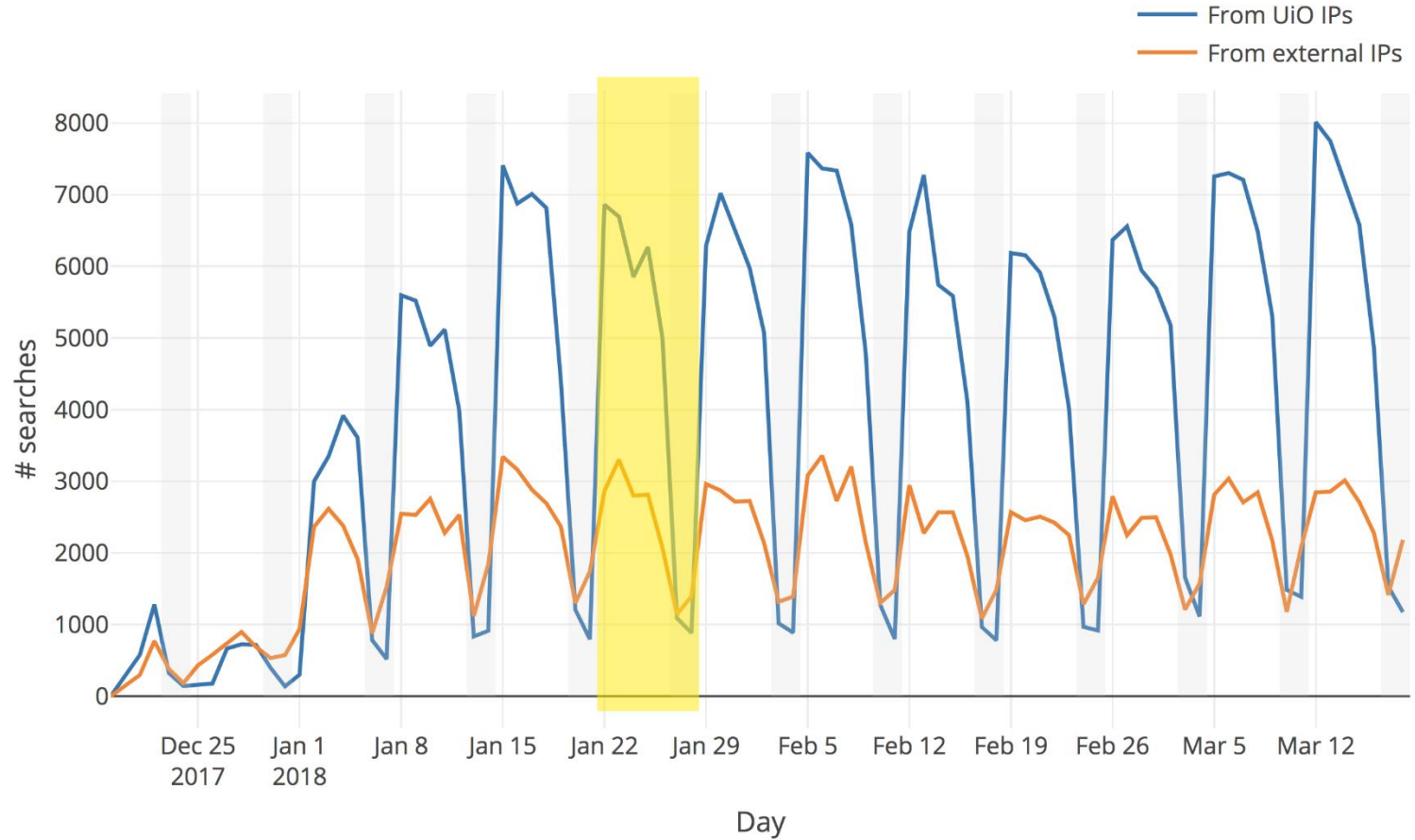
Findings – in total

- 97% of the sessions contained at least one simple search
- 8% contained at least one advanced search
- Scope: 98% «everything»
- Facets were used as limiters in 12% of the sessions

Facets (times used)

Facet	Times used
Document type	3284
Topic	1144
Language	990
Publishing date	684
Peer-reviewed	476
Author	454
Library	415
Other	211
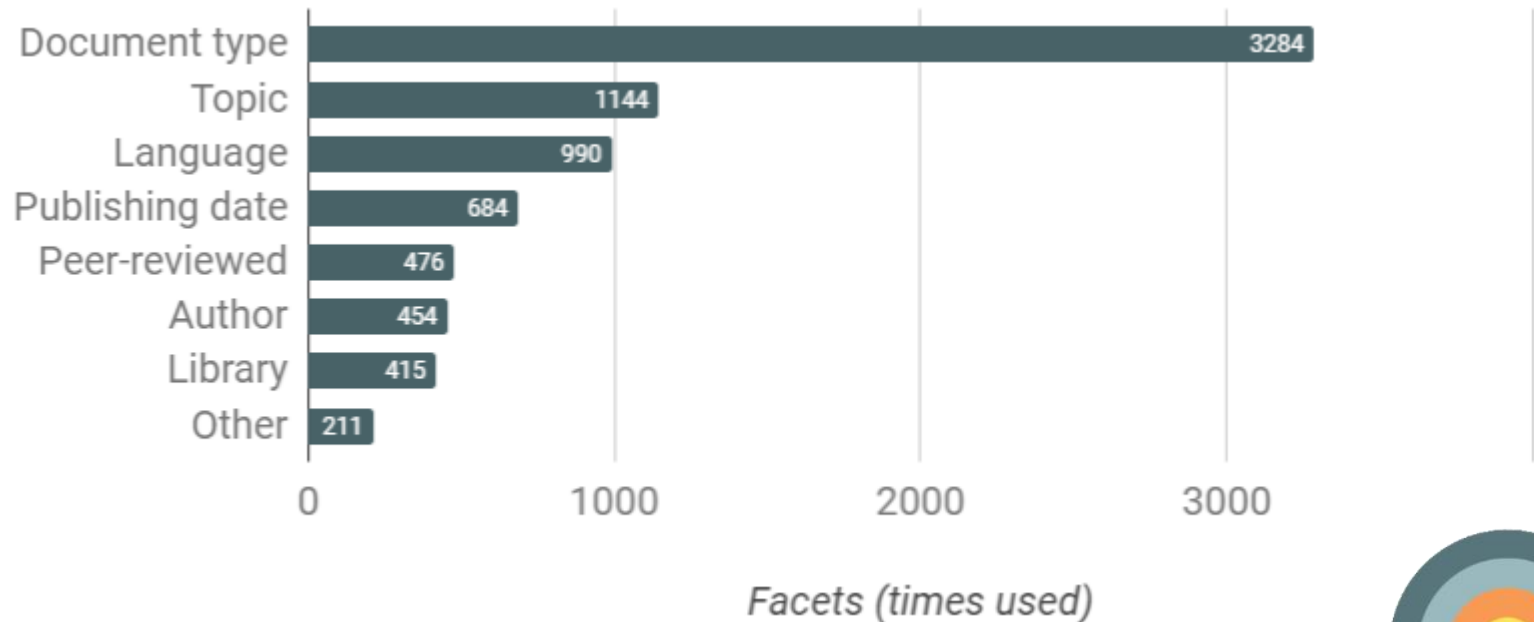
Findings – in the selection

Other 6 %

Title/topic 7 %

Topic 7 %

Reference 8 %

Author 8 %

Title 47 %

Title + Author 17 %
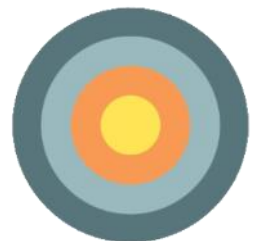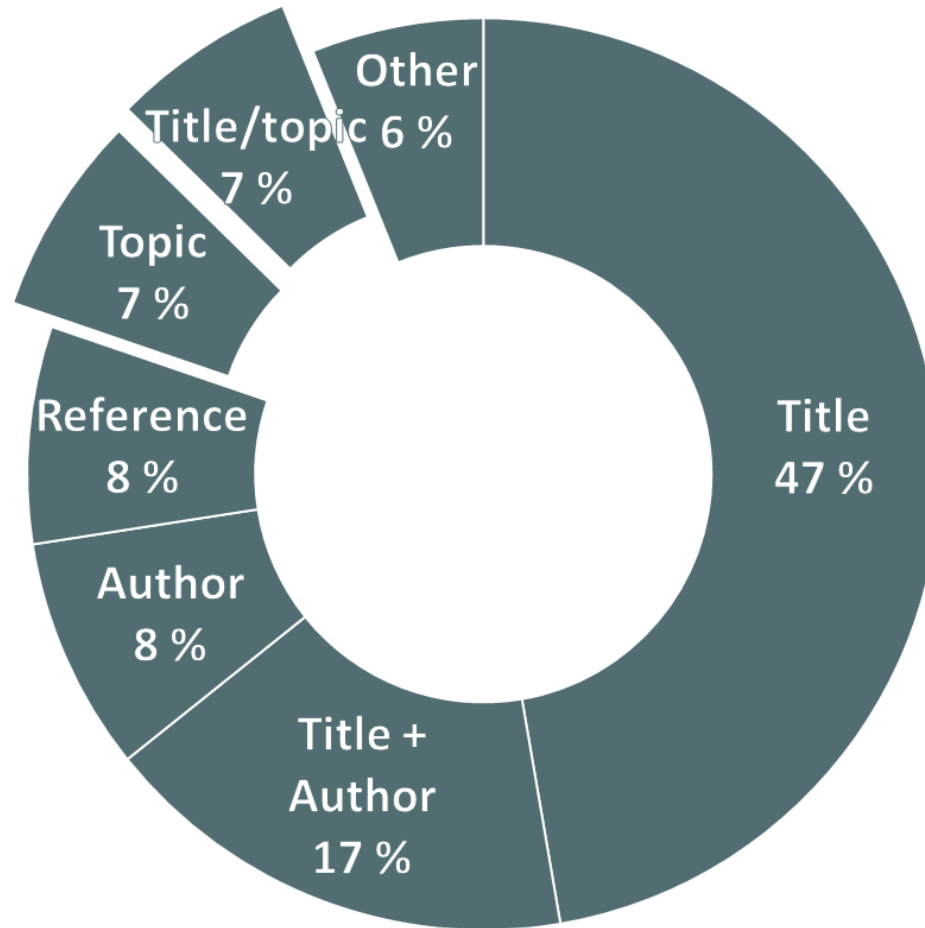
Findings

- 75% of the searches resulted in at least one opened/viewed record

- 63% of the searches categorized as «topic» or «title/topic» resulted in at least one opened record

- Our impression: the students miss out a lot of relevant documents when performing topical searches

Method - Topically oriented searches

- Of the 3900 search tasks, about 540 were categorized as «topic» or «topic/title»
- We've analyzed a selection of about 200 of these search tasks
  - Language
  - Do the search terms exist in our vocabularies?
  - What metadata does the system consider most important when ranking search results?

Languages

- Norwegian
- English
- English + Norwegian
- Other

46,6%

39,6%

11,4%
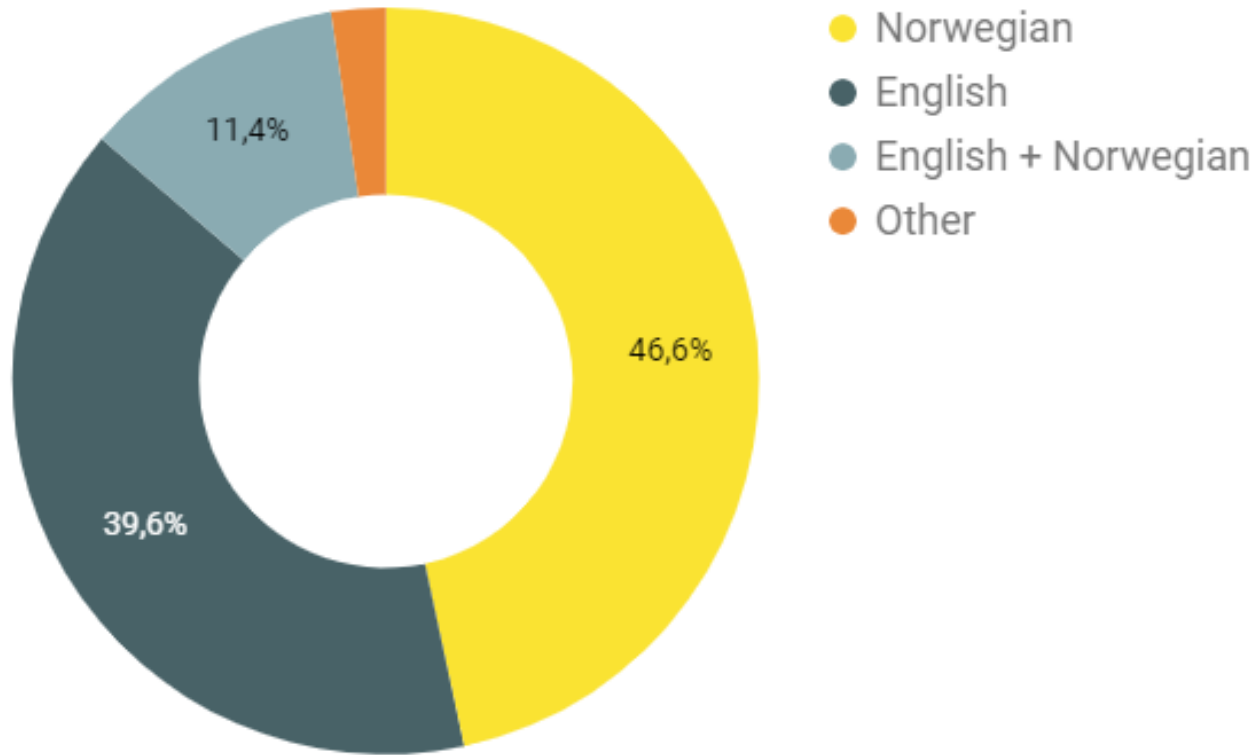
Are the search terms in our vocabularies?

Search terms matcing Humord and Realfagstermer

Yes
No

Humord — 75% / 25%

Realfagstermer — 47% / 53%

0% 25% 50% 75% 100%
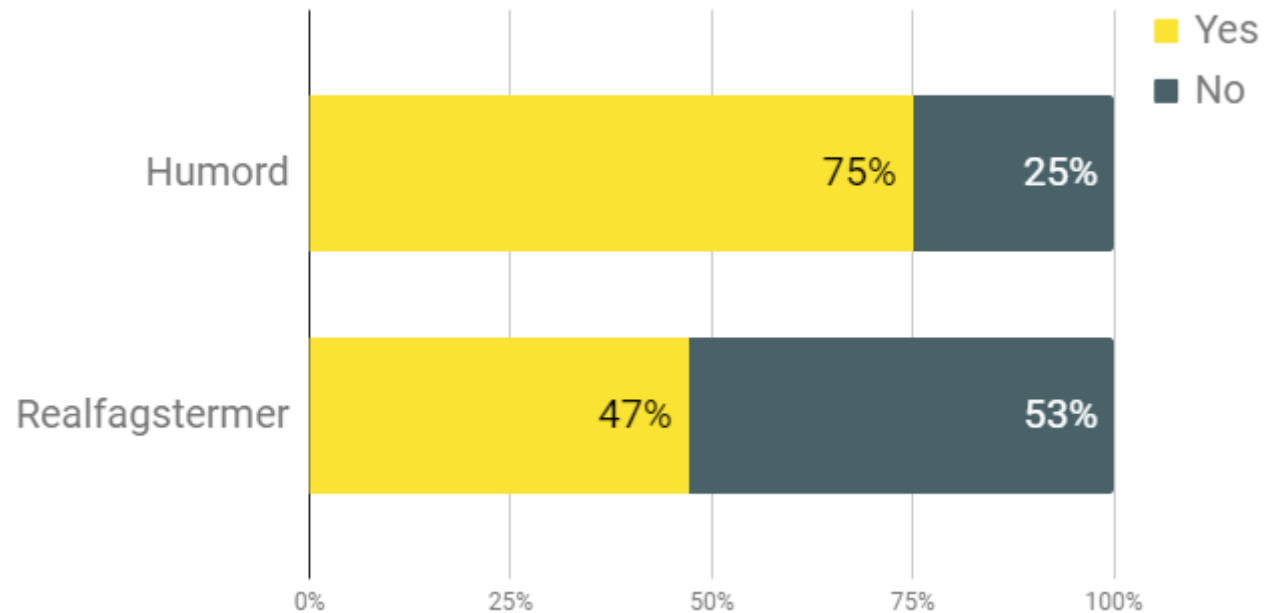
What does Ex Libris consider relevant when ranking documents?

- Search for «bankruptcy in the us»
- One of the documents examined: *Global insolvency and bankruptcy practice for sustainable economic development. : Volume 2, : International best practice*

What does Ex Libris consider relevant when ranking documents?

- Retrived «bankruptcy» in title, description and subject heading fields

Global Insolvency and Bankruptcy Practice for Sustainable Economic Development : Vol 2, International Best Practice
Hajjiri, Tarek >
yter Tarek M Hajjiri >
Adrian Cohen >
edited by Tarek M. Hajjiri, Adrian Cohen.
Palgrave Macmillan UK : Imprint: Palgrave Macmillan
2016
1 online resource (XI, 273 p.)
Engelsk
346.07/8
Bibliographic Level Mode of Issuance: Monograph
English
ISBN : 1-137-56175-0
How an economy handles financial and business distress has a major impact on confidence in business, the availability of investment, the cost of credit, and economic growth. The financial crisis of 2007-2008 and its aftermath was a catalyst to legal reform in the field of bankruptcy and restructuring law and brought an added focus to the systemic threat of bank failure to the financial system. This book is a comparative study of international practices in bankruptcy law, providing perspectives from a variety of specialisms including practitioners, lawyers, bankers, accountants and judges from the United Arab Emirates, the UK and Singapore. Including an in-depth study on English, US and Singaporean law, it offers an overview of corporate restructuring and insolvency in England and Wales and the role of insolvency practitioners in the UK. The authors explore the reorganisation process in the United States under chapter 11 of the US Bankruptcy Code, including enforcement perspectives on US bankruptcy law, before providing a comparative analysis of duties and liabilities of directors and officers under US and UK law. The final chapter offers a perspective on financial restructuring and bankruptcy from Singapore. The authors explore core questions surrounding bankruptcy law, including its ability to facilitate the turnaround of business, to enable efficient reallocation of capital, to provide coherent rules for entrepreneurs, investors, employees, and creditors, and to provide for both appropriate sanctions and for rehabilitation. ?
Bankruptcy >
Sustainable development -- Law and legislation >

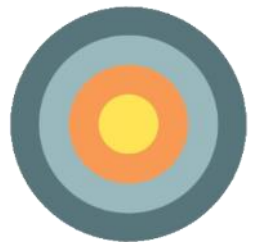Also retrieval from contents notes (505) and in citations

Summary

- Primo users are «at work»

- Mainly simple searches – little use of facets and advanced search

- Scope: «everything»

- There are indications that subject oriented searches are less successful than known item searches

- Norwegian vs. English

- More specific search terms than in the observations

How can mappings be helpful?

Realfagstermer

Humord

Bibbi subjects

Norwegian WebDewey

American WebDewey

DDC

Swedish WebDewey

German WebDewey

LCSH

MeSH

BISAC

SWD

SAO

Mapping for end users
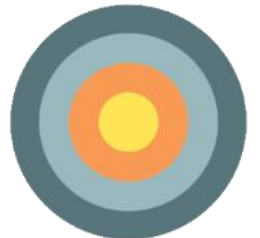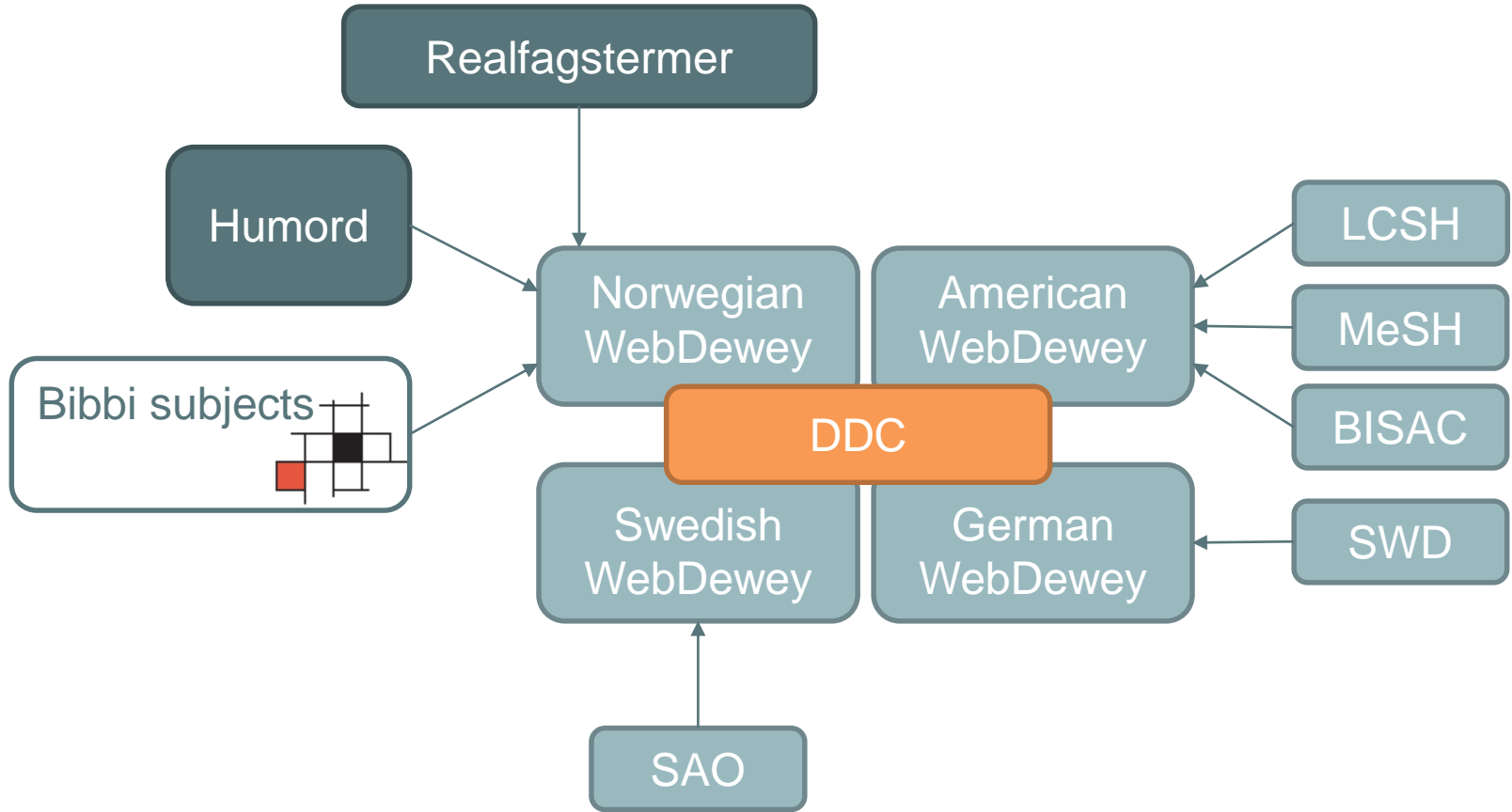
Mapping will benefit our users:

- More verbal access points (synonyms etc.)
- Controlled subject headings as access points
- Search across vocabularies with the DDC numbers as a hub
- Relevance ranking based on relationship types
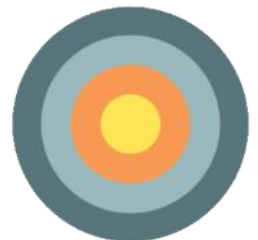
Can mapping be helpful?

- Student searched for «spøkelser» (ghosts), retrieved 439 hits (fiction, music and non-fiction)
- Refined to «master thesis» (12 hits)
- Searched for a couple of authors
- One of the titles examined reminded the student of the synonym «gjenferd» (phantoms)
- Refined to «master thesis» (6 hits)
- Norwegian language documents (unless we have added a subject heading to a foreign publication)

Can mapping be helpful?

- Humord has «gjenferd» (phantoms) as a synonym to «spøkelser» (ghosts)

- Mapping to Dewey: 133.1 =EQ (apparitions), 398.47 =EQ (ghosts), 398.25 =EQ (ghost stories)
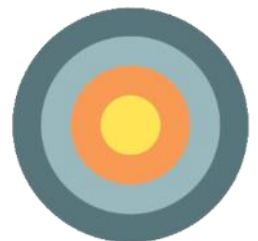
Can mapping be helpful?

- A search for «gjenferd» (phantoms) and «Spøkelser» (ghosts) combined with the three Dewey numbers retrieved 212 hits (multilingual documents)

1 BOK

Inn i det ukjente : spøkelser og gjenferd i Norge

Cherri Døhlen; Eline Myklebust Madsen 1981-

2004

📖 Tilgjengelig fra UiO : Universitetsbiblioteket ›

---

2 BOK

Spøkelser og gjenferd

Trond Berg Eriksen

1991

📖 Ikke tilgjengelig fra UiO : Universitetsbiblioteket ›

🔗 Tilgjengelig online ⧉ ›

---

3 BOK

Poltergeist : den sanne historien om "spøkelseshuset i Odda"

Gunn Tøsdal

cop. 2000

📖 Tilgjengelig fra UiO : Universitetsbiblioteket ›

🔗 Tilgjengelig online ⧉ ›

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4 BOK

De döda återvänder : folktro om tillvarons gränsland

Ebbe Schön

2000

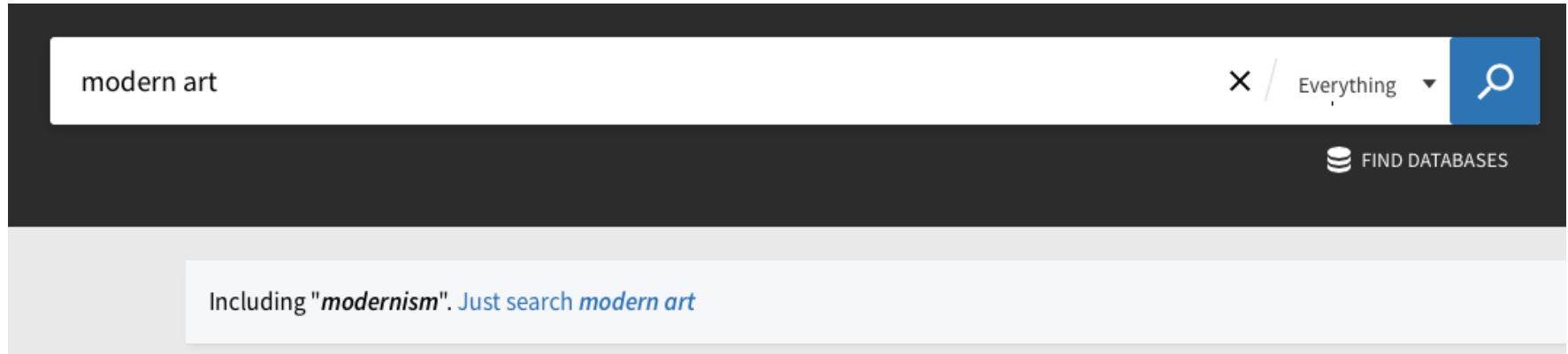📖 Tilgjengelig fra UiO : Universitetsbiblioteket ›

---

5 BOK

Gejster, genfærd og gespenster

Gorm Benzon

c1975

📖 Tilgjengelig fra UiO : Universitetsbiblioteket ›

Mapping behind the scene…

- Ex Libris provides term extensions based on LCSH and MeSH term
- We will ask for our vocabularies to be included

Mapping is not always helpful

- The terms used in searching do not match terms found in the vocabularies

- The terms used in searching partly match terms found in the vocabularies

- The DDC class is broad in scope

- The mappings can be (more or less) misleading

The terms used in searching do not match terms from the vocabularies

- The student searched for «straffeloven» (The Norwegian Penal Code)

- This term does not exist in our vocabularies, the closest match in Humord is «strafferett» (criminal law), which is mapped to 345 (=EQ)

The DDC class is broad in scope

- The student searched for «Langmuir probe»

The DDC class is broad in scope

- Realfagstermer uses this term, which is a broader mapping (BM) to 681.2 (Testing, measuring, sensing instruments)

The DDC class is broad in scope

1

MULTIPLE EDITONS
Prototype development of a multi-needle Langmuir probe system
Tore André Bekkeng

2 versions of this record exist. Click to see all editions >

2

DOCTORAL THESIS
Development of miniaturized multi-needle langmuir probe system for in-situ measurements of Electron density and spacecraft floating potential
Tore André Bekkeng; Universitetet i Oslo Fysisk institutt; Universitetet i Oslo Det matematisk naturvitenskapelige fakultet
2017
Dokumentet er en del av en overordnet post (se detaljer)

Available at UiO : Universitetsbiblioteket >

3

MASTER THESIS
Development of a prototype Langmuir probe for the ICI-1 sounding rocket
Johnny Grøneng Aase
2005

Available at UiO : Universitetsbiblioteket >

4

ARTICLE / multiple sources exist. click to see all versions
Langmuir probe analysis of highly electronegative plasmas
Bredin, Jerome ; Chabert, Pascal ; Aanesland, Ane
Applied Physics Letters, 15 April 2013, Vol.102(15)
PEER REVIEWED

Full text available >

5

ARTICLE
Experimental study of the ion current to a cylindrical Langmuir probe taking into account a finite ion temperature.(Report)
Diaz - Cabrera, J. M. ; Lucena - Polonio, M. V. ; Fernandez Palop, J. I. ; Crespo, R. Morales ; Hernandez, M. A. ; Tejero - Del - Caz, A. ; Ballesteros, J.
Journal of Applied Physics, March 15, 2012, Vol.111(6), p.063303-1-063303-6
PEER REVIEWED

Full text available >

- Still titles containing Langmuir probe are listed on top
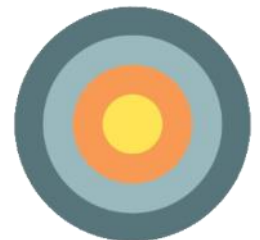
The mappings may be misleading

- The student searched for «kvinner fagforeninger Rwanda» (women, trade unions, Rwanda)

- Humord (being a post coordinated controlled vocabulary) provides a lot of mappings:
Trade unions: 331.88 =EQ, 331.87 RM, 361.766 BM, 658.3153 RM, 354.97 RM

 Women: 305.4 =EQ, H1 -082 =EQ …

 Rwanda: 967.571 =EQ, H2 -67571 =EQ, 916.7571 =EQ
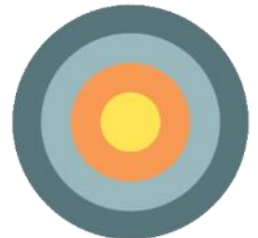
The mapping may be misleading

- Can we create a ranking system which overlooks geographic terms and common terms denoting age, sex, etc., when other subjects are included in the search?

- In this example the search should be extended to 331.88*

What about relevance ranking?

- We assume that the user is best served if the mappings are presented in this order in result lists

    =EQ (exact mapping)

    ~EQ (close mapping)

    BM (broader mapping)

    RM (related mapping)

Future plans

- Discussions with Ex Libris concerning search expansions
- Give higher priority to subject headings when ranking the results
- Suggest in more detail how mappings may provide better results
- Suggest how using the relationship types may improve relevance ranking

Future plans

- Consider translating our vocabularies to English

- Cooperate with BIBSYS to develop a prototype

- Just getting started, there is a lot of ground to be covered!

Thank you!

- Contact address: mappinggruppa@ub.uio.no

- Homepage: https://www.uio.no/for-ansatte/enhetssider/ub/prosjekter/mapping-for-sluttbrukertjenester/ (mostly in Norwegian)