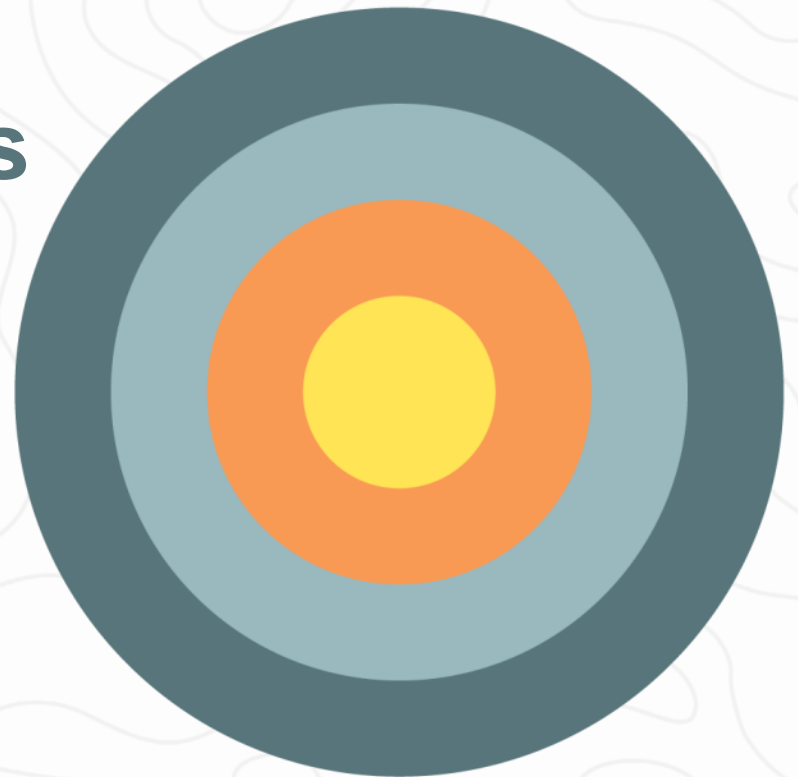


Mapping for end users

A work in progress report
Unni Knutsen and Karoline Hoff

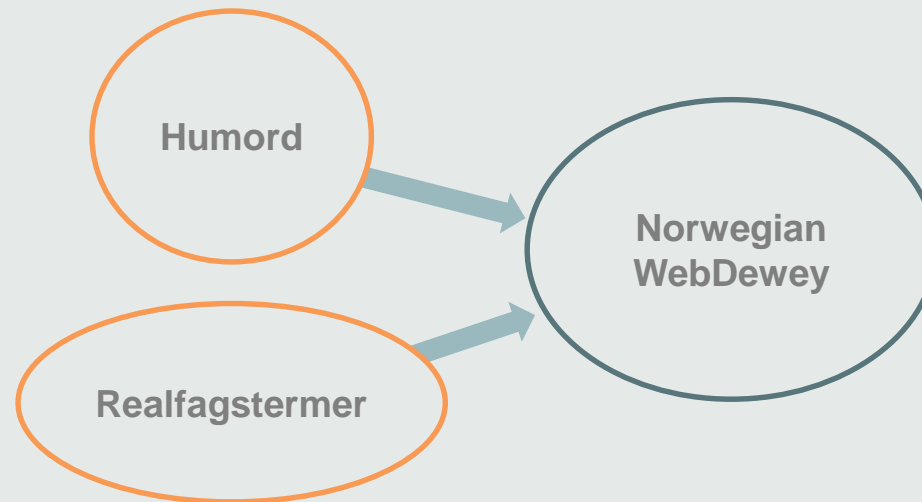


Mapping for end users



About the project

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



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.

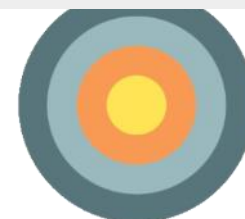
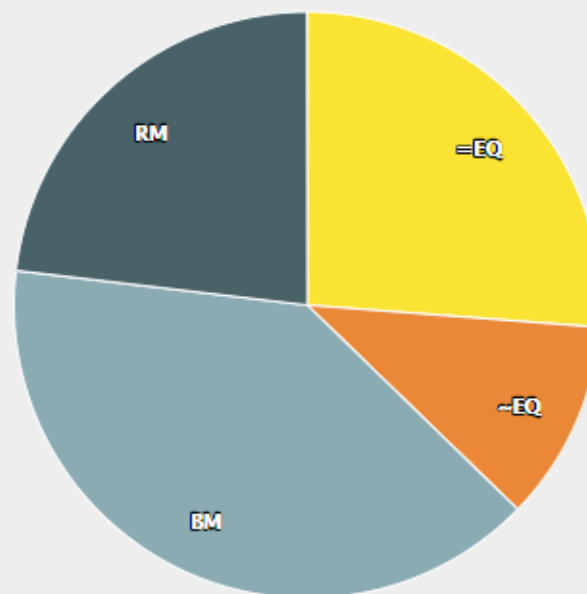


2.35

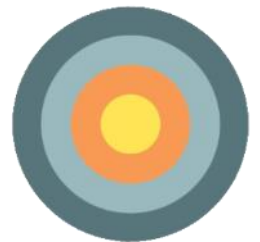
mappings per concept. **2.36** for Humord, **2.34** for Realfagstermer.

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 prototype in our end-user system
 - Complete the mappings



Three main objectives

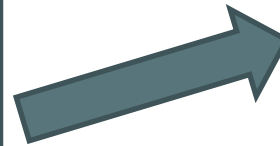
- Objective 1: Explore the end user perspective in subject oriented searching
 - Literature review
 - User observations
 - Search log analysis



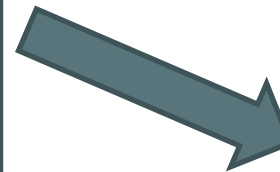
Literature review

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

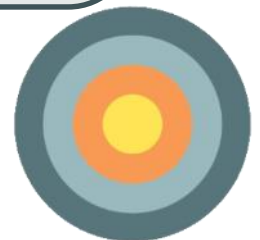
et cetera...



Search behaviour in end user systems



Subject oriented search behaviour

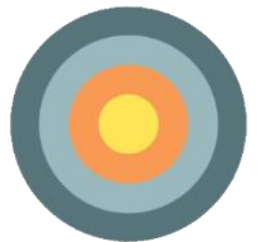


Literature review - findings

- 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)

UiO : Oria New Search E-journals Can't find it? ... Sign in English

Search anything ADVANCED SEARCH

FIND DATABASES

UiO : Oria New Search E-journals Can't find it? ... Sign in English

Search in: Everything Books in Norwegian research libraries Books at UiO

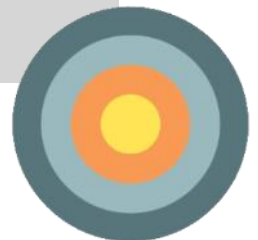
Any field ▼ contains ▼ Material Type ▼
All items ▼

AND ▼ Any field ▼ contains ▼ Language ▼
Any language ▼

Publication Date ▼
Any year ▼

[+ ADD A NEW LINE](#)

FIND DATABASES



Primo (Oria)

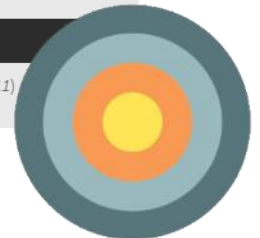
The screenshot displays the UiO Oria search interface. At the top, the navigation bar includes 'New Search', 'E-journals', and 'Can't find it?'. The search bar contains the query 'reading habits' and a dropdown menu set to 'Everything'. To the right, there are icons for 'Sign in' and 'English', and a 'FIND DATABASES' button.

The search results are displayed on 'PAGE 1' with '216,288 Results'. A 'Personalize' toggle is visible. The results list includes:

- Result 1:** An article titled 'READING HABITS' by Speer, W. Braden, published in 'The Journal of the American Dental Association' in January 2011. It is marked as 'PEER REVIEWED' and has a 'Full text available' link.
- Result 2:** A record with 'MULTIPLE EDITONS' titled 'Reading among grade six learners in Namibia and Norway : an investigation of reading habits and attitudes of learners in the Khomas and Oshana regions of Namibia and the Hedmark region in Norway' by Gerd Wikan, Maria Louise Mostert, Anne Marit Vesteraas Danbolt, Kari Nes, Francis Nyathi, and Job Hengari. It notes '2 versions of this record exist'.
- Result 3:** An article titled 'Reading habits' by Speer, W. Braden, published in 'Journal of the American Dental Association' in January 2011. It is also marked as 'PEER REVIEWED' and has a 'Full text available' link.

On the right side, there is a 'Tweak my results' panel with options to 'Expand beyond library collections', 'Sort by Relevance', and filters for 'Show only' (Library collections, From Peer-review..., Full Text Online, Physical documents) and 'Resource Type' (Articles, Books, Reviews, Newspaper Articles, Conference Proceedings). A 'Department' filter is also present, showing 'UiO Humanities and Soci...' and 'UiO Theological Library'.

Mapping for end users

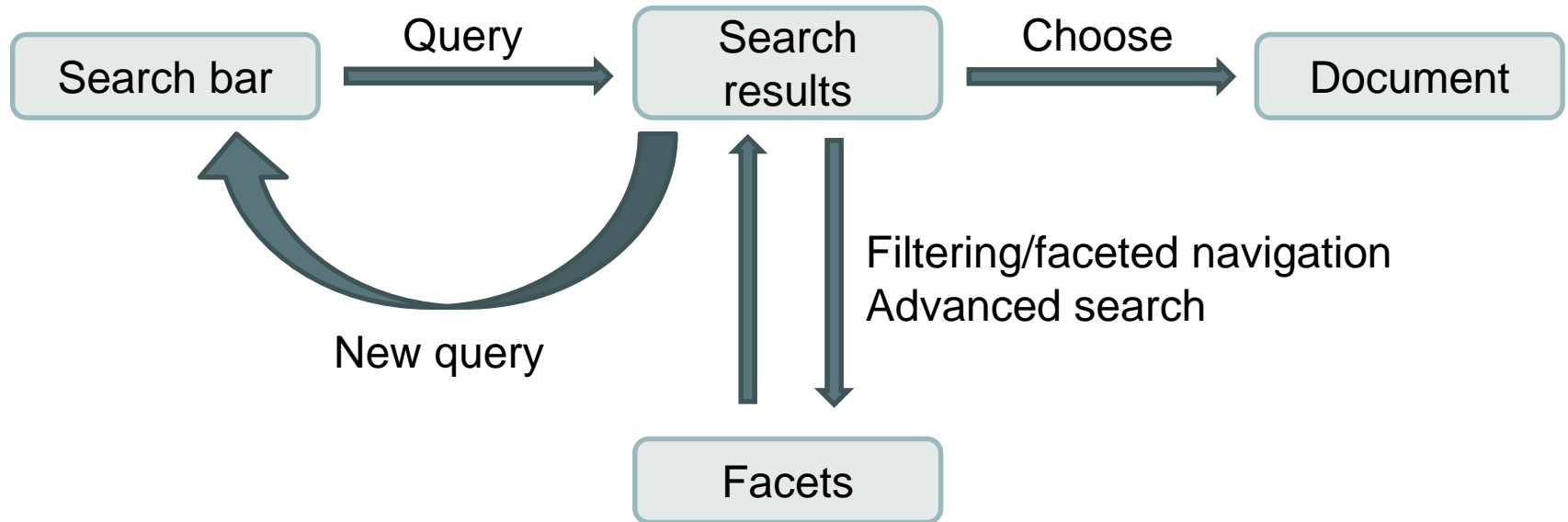


Method

- 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?



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



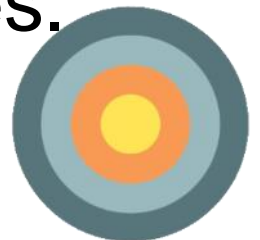
Many hits, noisy search results

- 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 everything”
- 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»

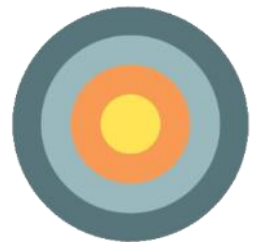


Summary

- 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

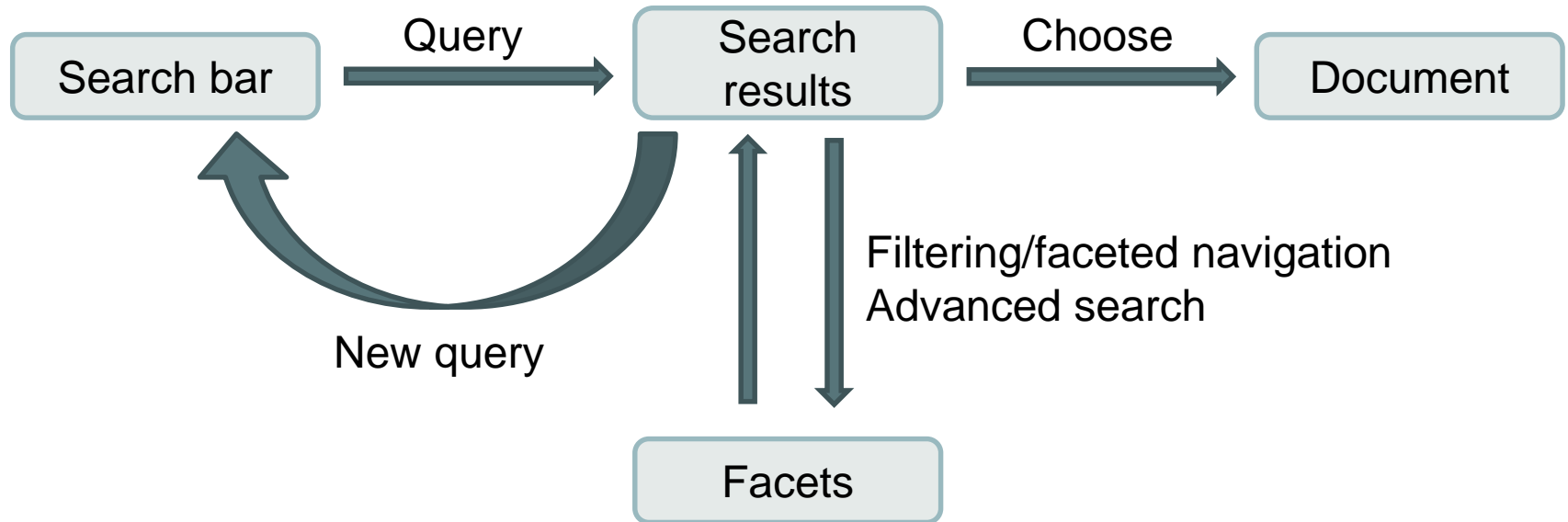


Method

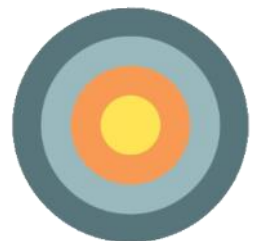
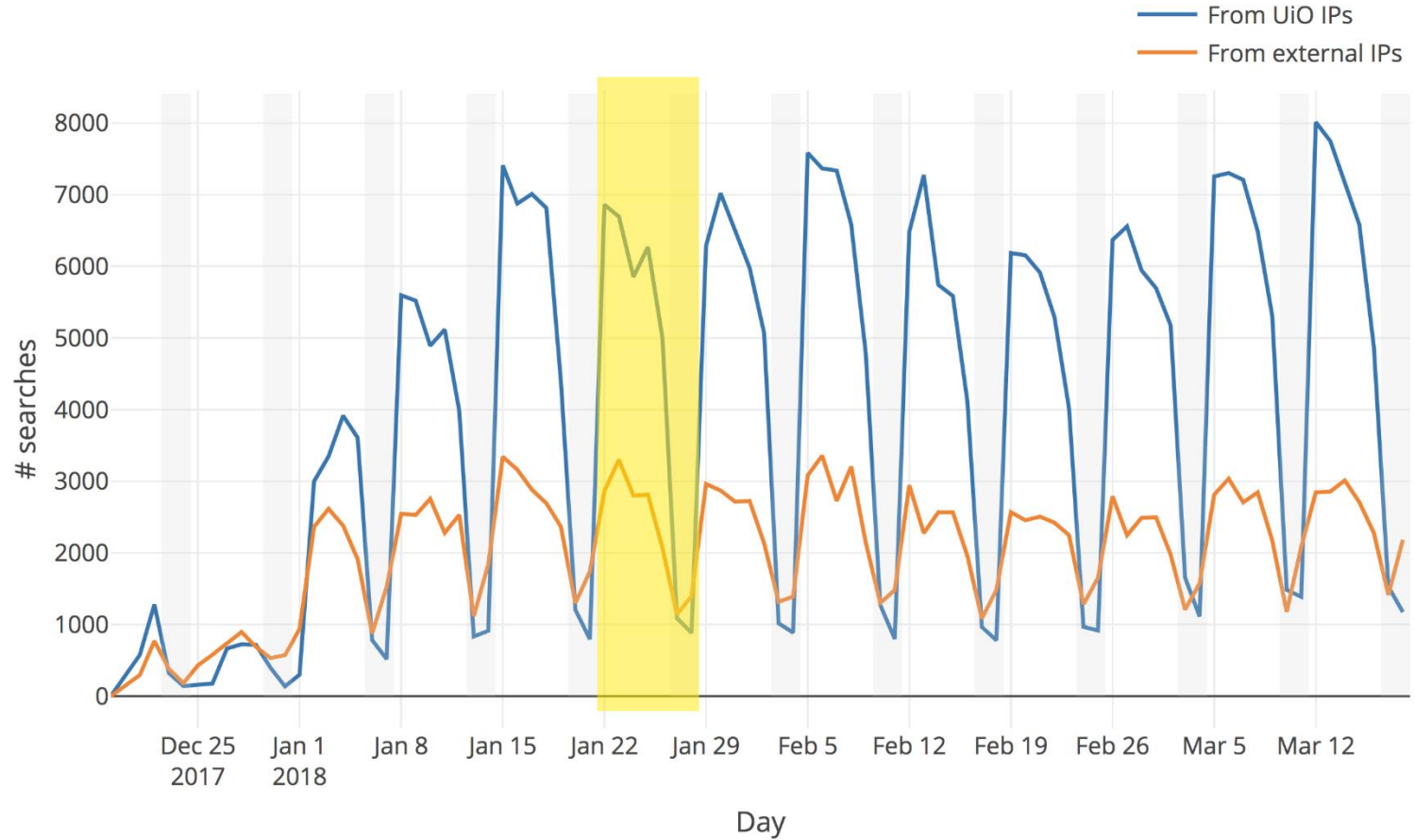
- Week 4
 - 15397 sessions
 - 48919 searches
 - Selection of 2000 sessions
 - Manually analyzed
 - Constituting 3900 search tasks
 - No way of filtering users



What are we looking for?

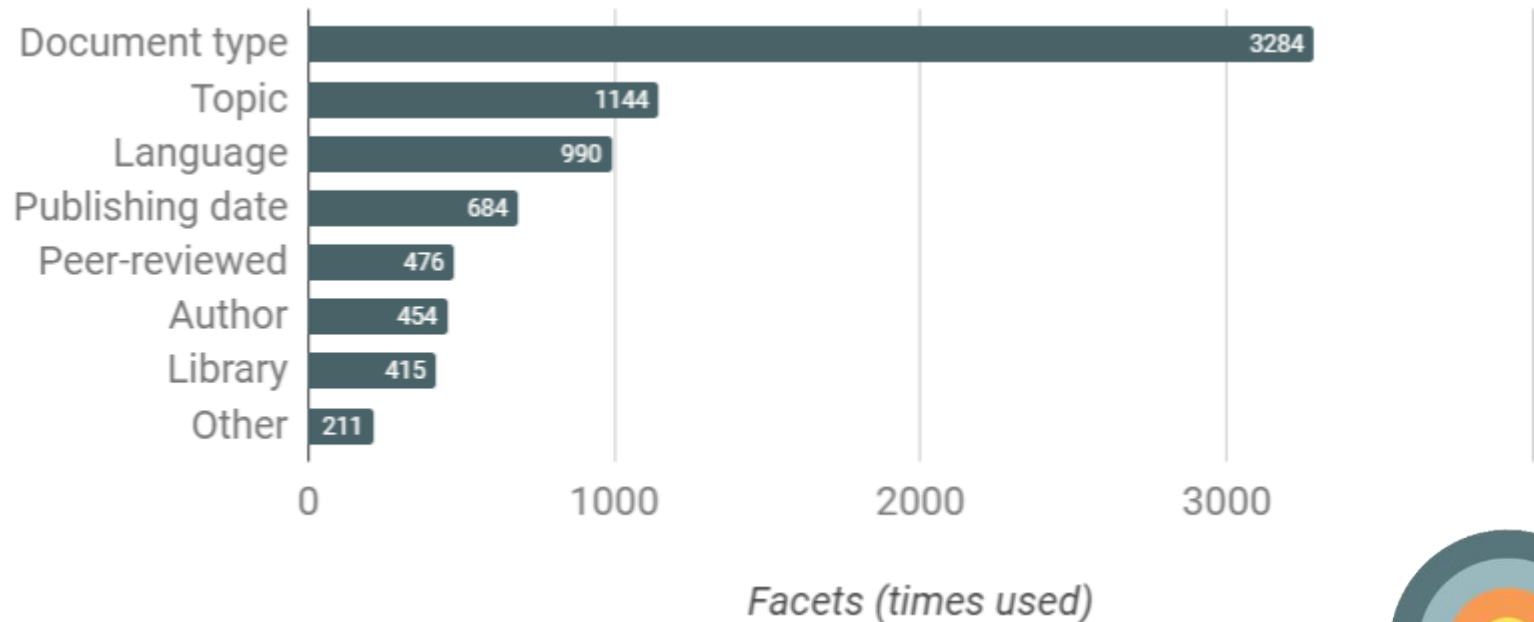


Oria searches

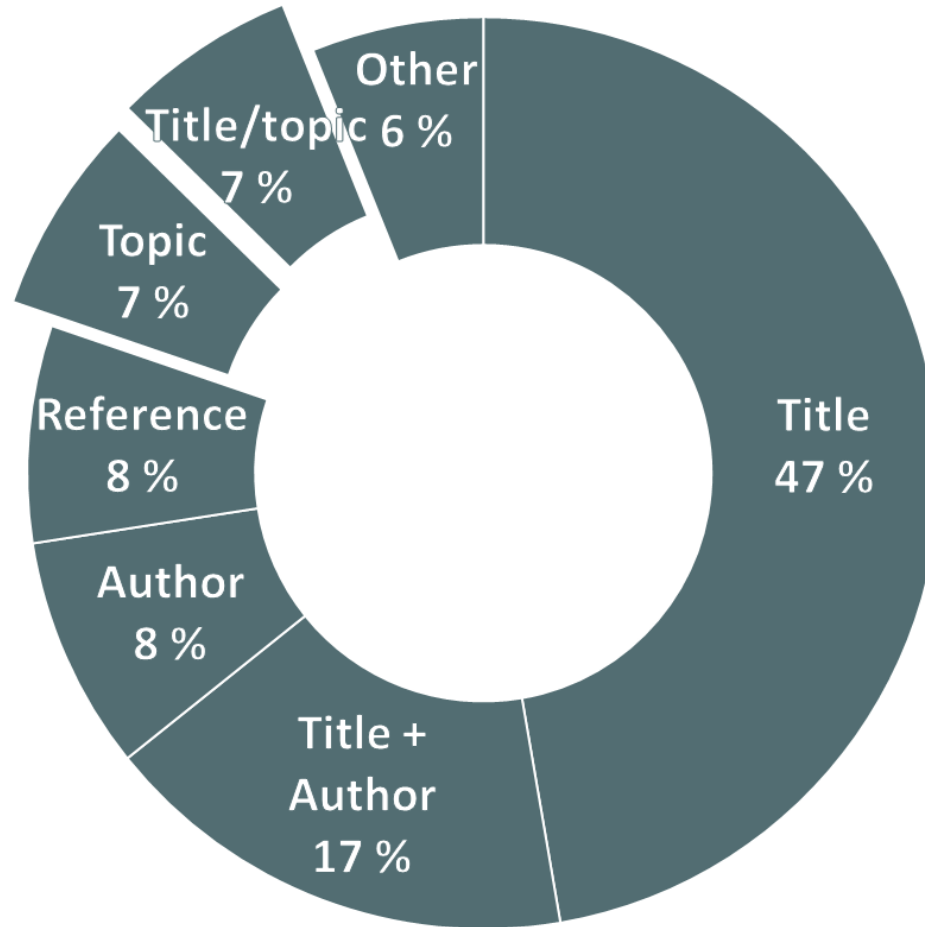


Findings – in total

- 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



Findings – in the selection



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

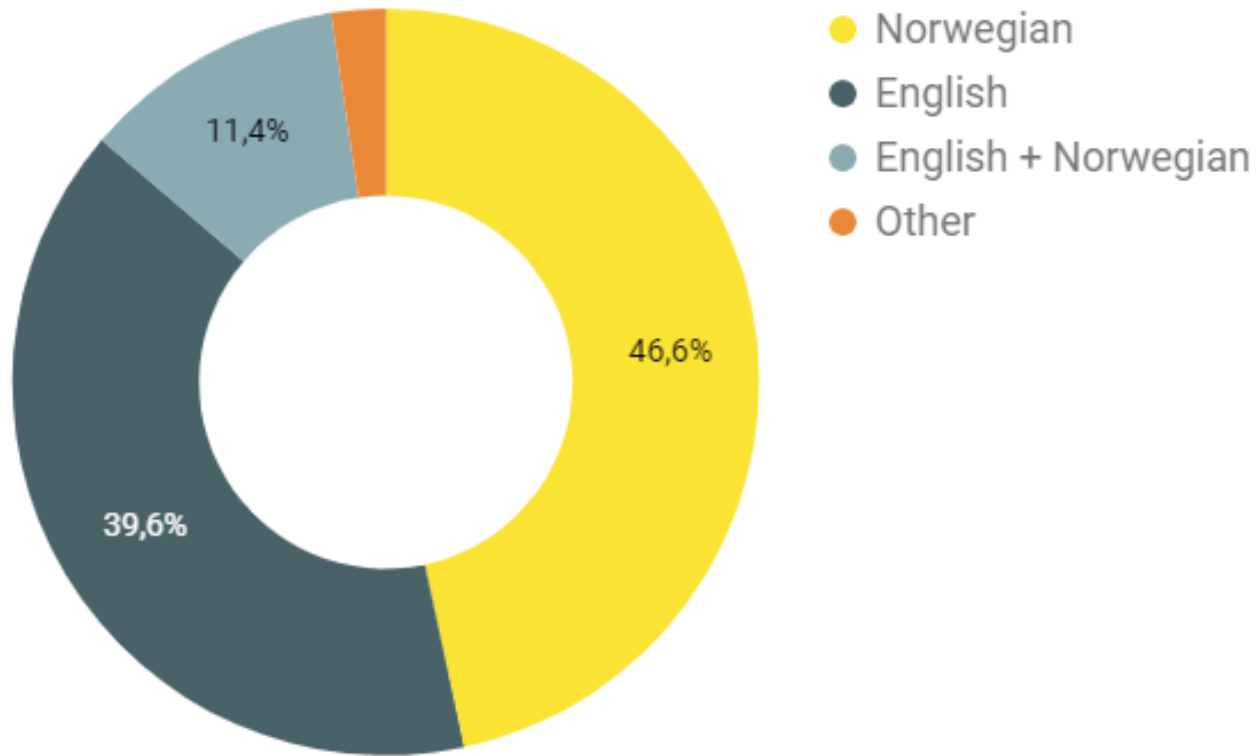


Method - Topically oriented searches

- 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

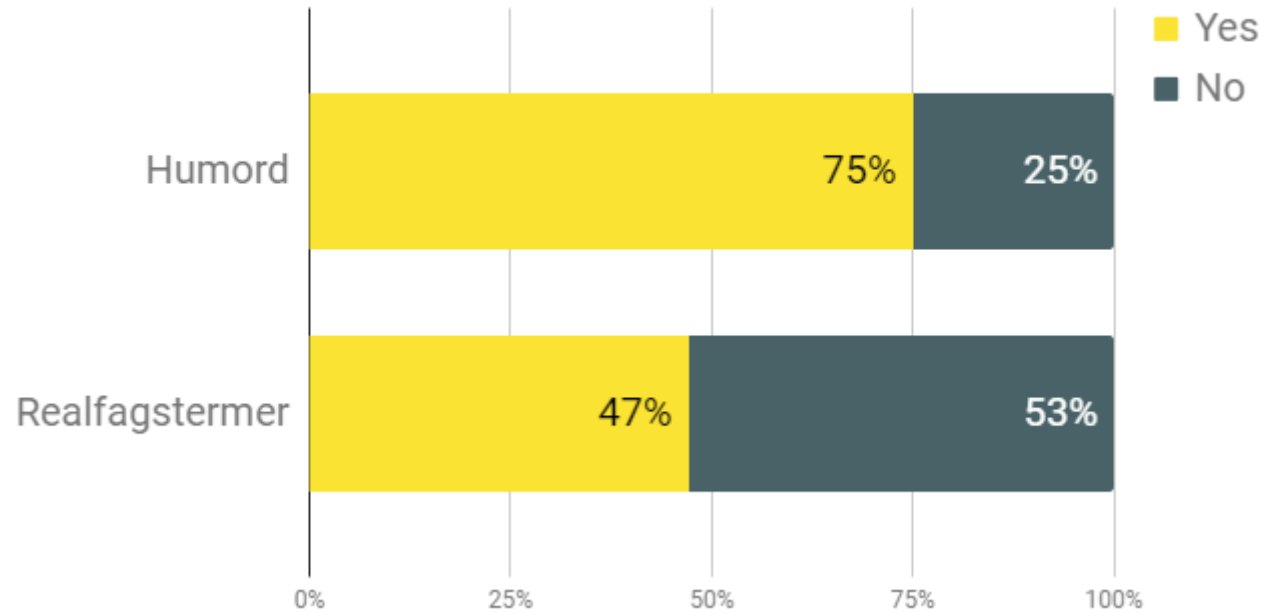


Mapping for end users



Are the search terms in our vocabularies?

Search terms matcing Humord and Realfagstermer



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?

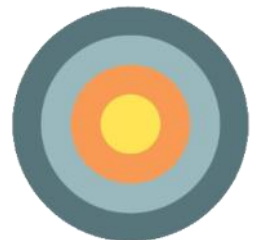
- Retrieved «bankruptcy» in title, description and subject heading fields

[Global Insolvency and Bankruptcy Practice for Sustainable Economic Development : Vol 2, International Best Practice](#)
[Hajjiri, Tarek >](#)
Author [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

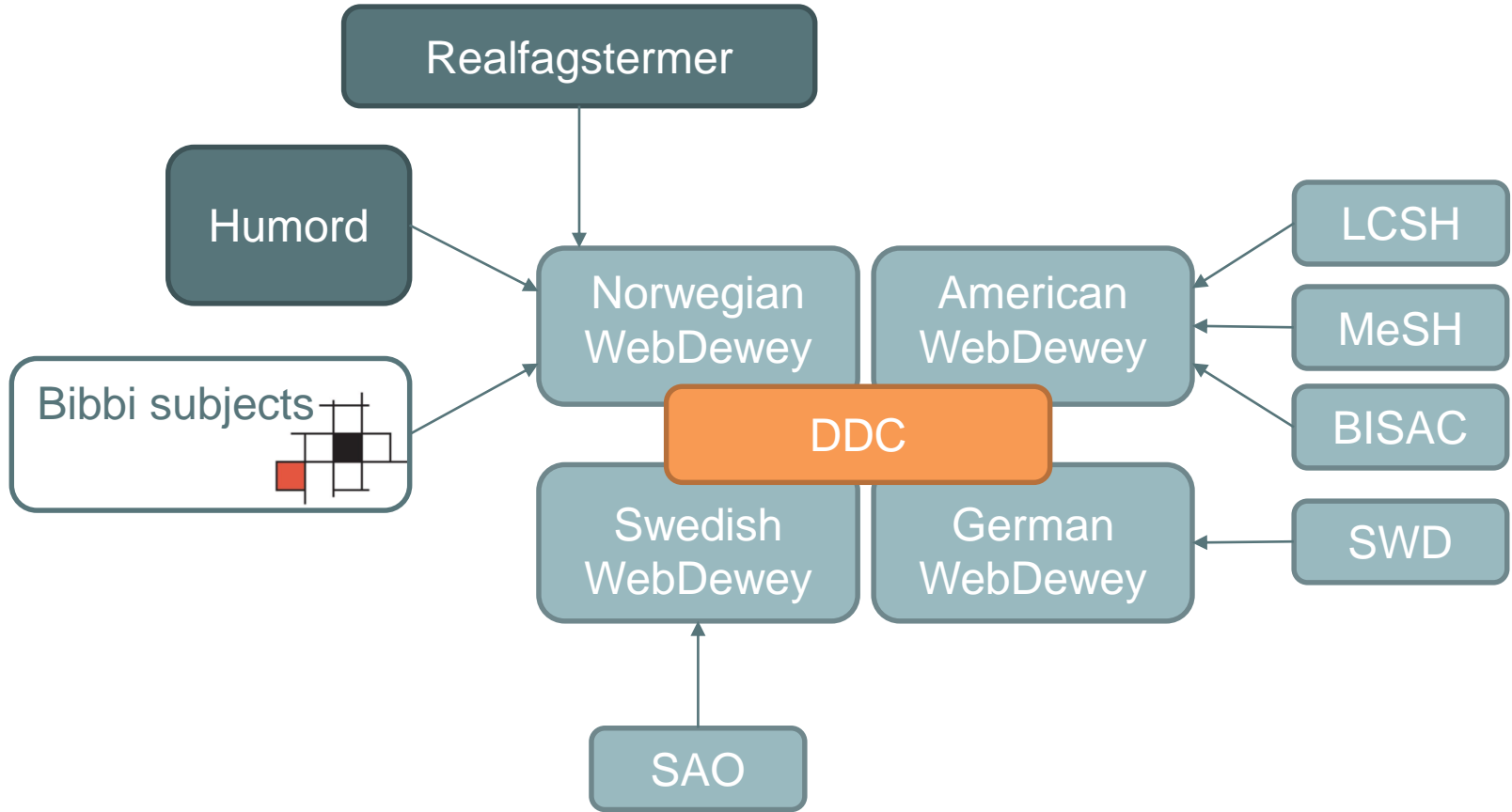
Summary

- 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

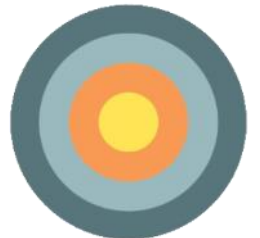


How can mappings be helpful?





Mapping for end users



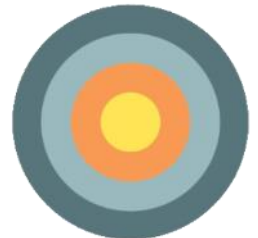
Mapping will benefit our users:

- 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 «spøkelseser» (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 «spøkelseser» (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 Odde"

Gunn Tøsdal
cop. 2000

Tilgjengelig fra UiO : Universitetsbiblioteket >

Tilgjengelig online >

4



BOK

De döda återvänder : folketro om tillvarons gränsland

Ebbe Schön
2000

Tilgjengelig fra UiO : Universitetsbiblioteket >

5



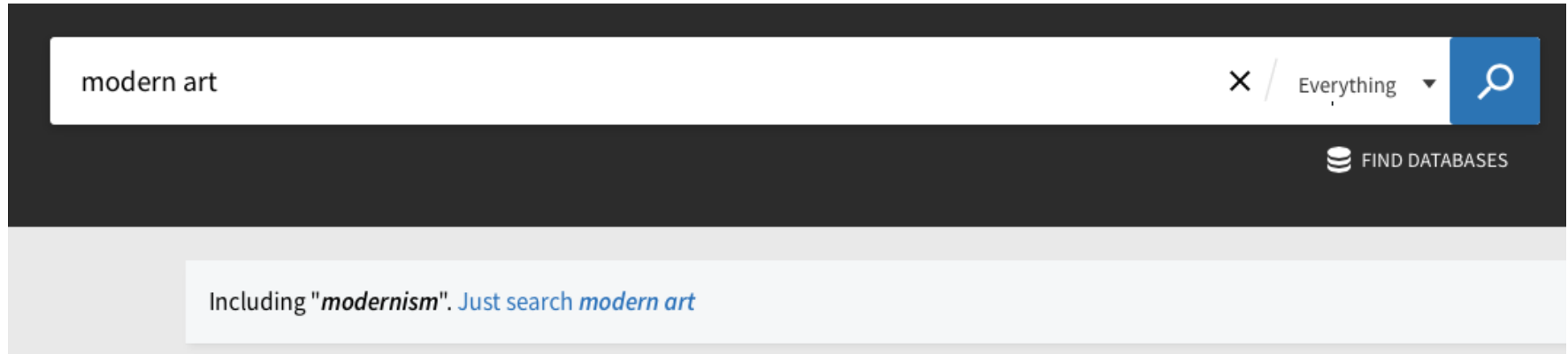
BOK

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)

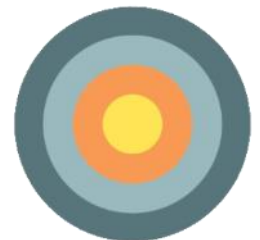


The DDC class is broad in scope

- 1  **MULTIPLE EDITIONS**
Prototype development of a multi-needle Langmuir probe system
 Tore André Bekkeng

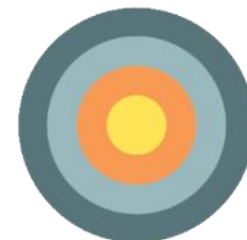
 2 versions of this record exist. [Click to see all editions >](#)
- 2  **DOCTORAL THESIS**
Development of miniaturized multi-needle langmuir probe system for in-situ measurements of Electron density and spacecraft floating potential
 Tore André Bekkeng; Universitetet i Oslo Fysisk institutt; Universitetet 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



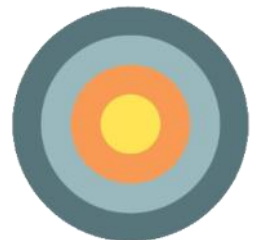
The mapping may be misleading

- 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)



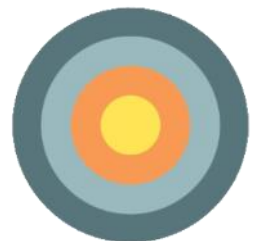
Future plans

- 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)

