

A Search and Query Engine for Educational Research

A field specific search-engine and a multilingual search-engine

Thomas Severiens, ISN
severiens@isn-oldenburg.de

Berlin, September 15, 2011



www.eerqi.eu



A Project funded under the
Socio-Economic Sciences
and Humanities Theme.

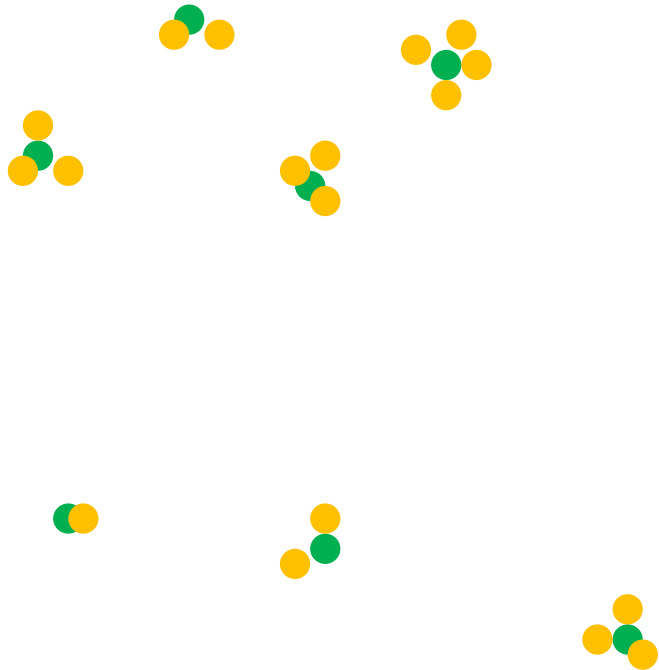
Why a Search-Engine?

- Provide consistent interface to documents from various sources
- Detect educational research in the WWW
- Multilingual document base and multilingual interface

Focussed crawling

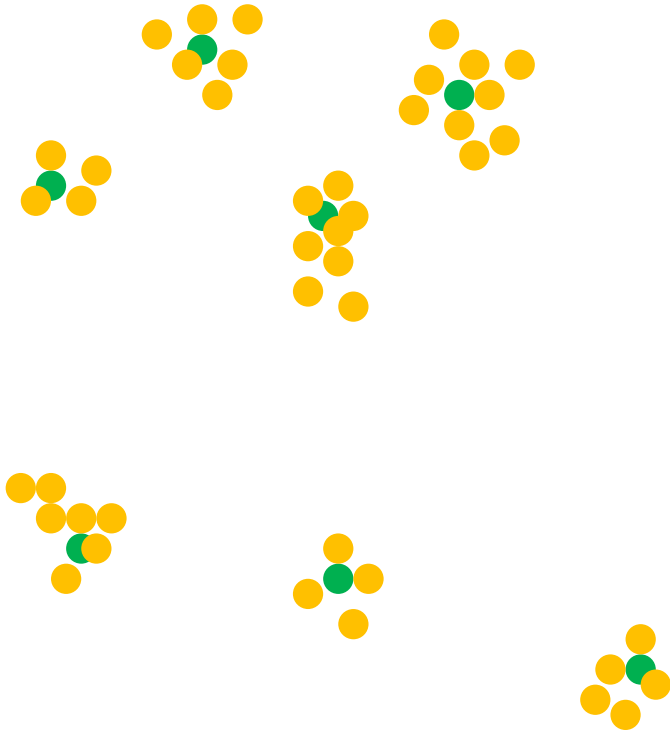
- Ask experts for good starting points

Focussed crawling



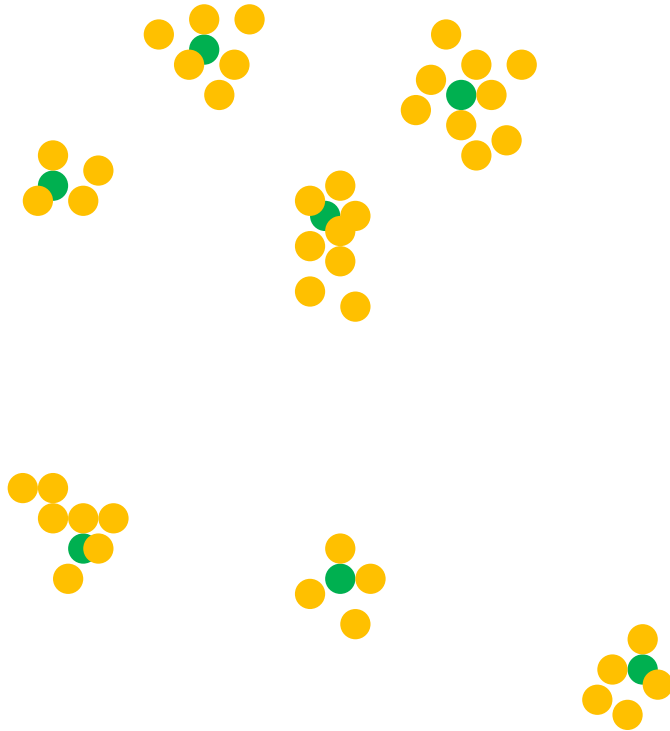
- Ask experts for good starting points
- Crawl all the links and collect more objects

Focussed crawling



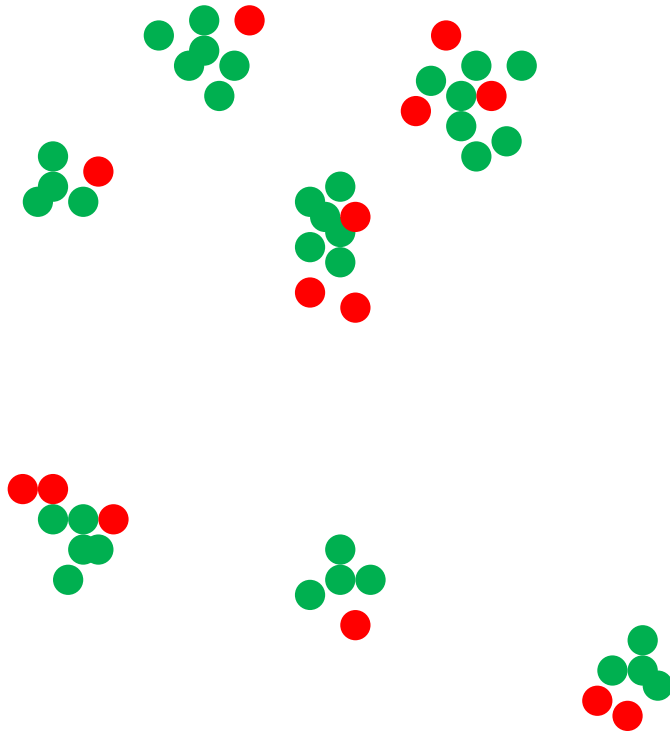
- Ask experts for good starting points
- Crawl all the links and collect more objects
- and more, more, more...

Focussed crawling



- Ask experts for good starting points
- Crawl all the links and collect more objects
- and more, more, more...
- But: **Are all of them still in the focus?**

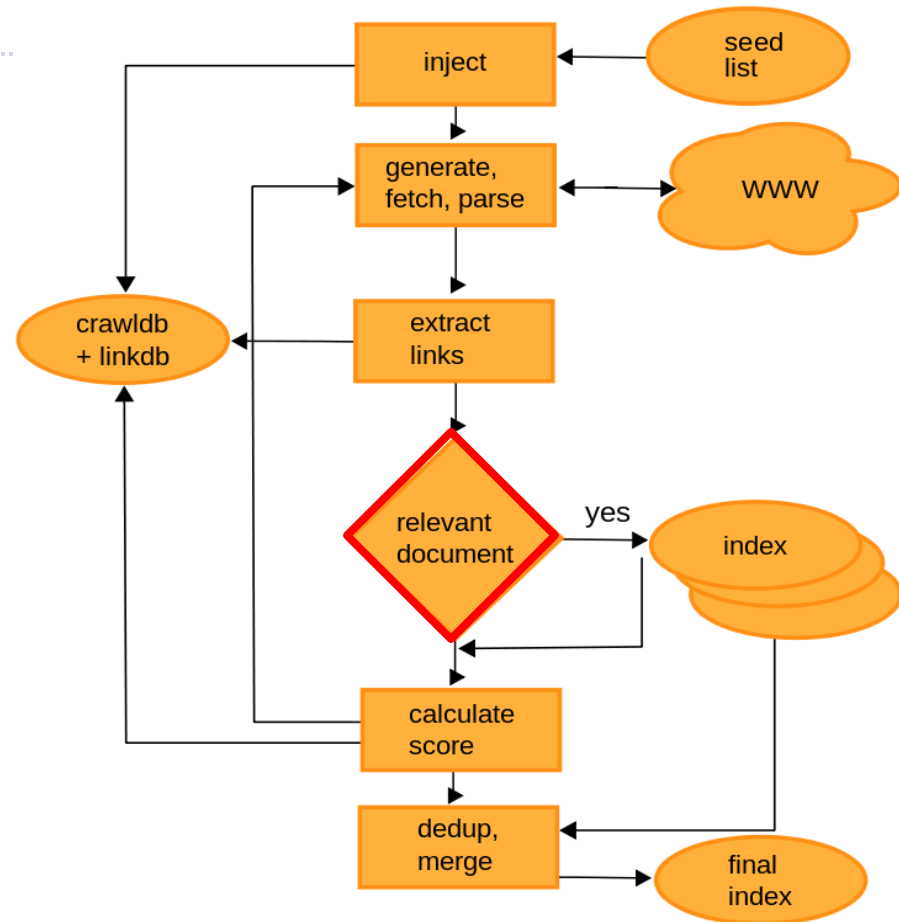
Focussed crawling



- Ask experts for good starting points
- Crawl all the links and collect more objects
- and more, more, more...
- But: Are all of them still in the focus?
- **We need an algorithm to decide, if an object is in the focus or out of...**

Focussed crawling (using Nutch)

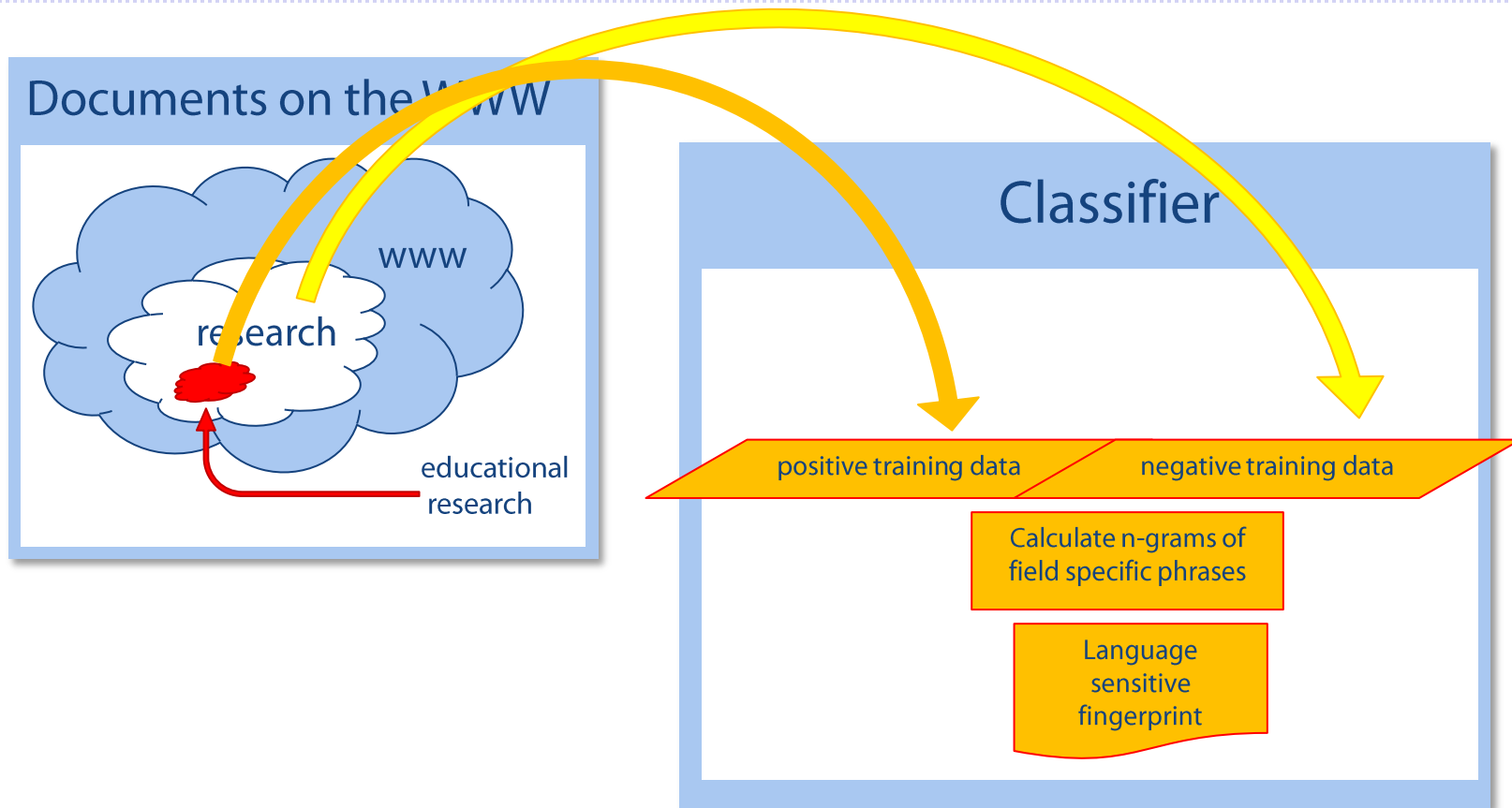
- Extended crawl cycle
- Calculate score
- Index only relevant documents
- Decider-algorithm: metadata + classifier



Thanks to Sybille Peters for this slide!

How the Classifier works:

1. Calculate the fingerprint



How the Classifier works

- Machine based learning: Training data required to train the algorithm (positive and negative data space)
- Use of the trained algorithm via API (REST-based)
- Computing done in background on a cloud of computers (6)

How good does a Classifier separate relevant from irrelevant objects?

- Degree of “separation” depends on:
 - Coverage of relevant data space by training data,
 - the more training objects, the more likely this is fulfilled,
 - many journals,
 - many authors,
 - mixture of all genres of publications,
 - no multilingual documents & separation by language,
 - typical language in negative training data, but no overlap in field specific wording

EERQI

EERQI Funding Period
Finished

About EERQI

Who is who?

To whom EERQI may
concern

Events

Publications

EERQI Search Engine

Internal Server

Imprint

Contact us

EERQI Search Engine

search:

Search Help

- content index** **metadata index** Show all metadata
- WWW index** **WWW index (+metadata)**
- document granularity page granularity

Do you want to carry out a multilingual search in English, German, French or Swedish?

Please click here [EERQI Multilingual Search](#)



Recommended sites

- www.scoopproject.org.uk
 - [Assessing quality of European socio-economic research: Towards a new prototype](#)

Do you want to carry out a **multilingual search** in **English, German, French or Swedish**?
Please click here [EERQI Multilingual Search](#)





A PROJECT FUNDED UNDER THE SOCIO-ECONOMIC SCIENCES AND HUMANITIES THEME

Grundschulunterricht Search

- My query is in**
- English
 - German
 - French
 - Swedish
- Show me documents in**
- English
 - German
 - French
 - Swedish

Technology provided by [EERQI partners](#) and by



www.eerqi.eu



A Project funded under the Socio-Economic Sciences and Humanities Theme.


 A PROJECT FUNDED UNDER
 THE SOCIO-ECONOMIC SCIENCES
 AND HUMANITIES THEME

My query is in

- English
 German
 French
 Swedish

Show me documents in

- English "primary school teaching"
 German
 French
 Swedish

 1–10 of 91 results: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) > >>

 Title: [Paper 1](#)

Language: en

students perceptions of selected aspects of **primary school teaching** This information can be useful ... and coding methods Results showed that their perceptions about **primary school teaching** were positive ... & Feldman 2002 Student teachers perceptions of **primary school teaching** A few studies investigated student 1 AUH06592 Perceptions of Primary School Teaching by First Year Education Students Myung sook AUH University of New England ABSTRACT The purpose of the study was to investigate first year Education students perceptions of selected aspects of **primary school teaching** ... Also few studies examine what reasons primary student teachers provide for their perceptions about **primary school teaching** and which are more frequently mentioned reasons for their perceptions ... This study intends to examine selected

 Title: [Microsoft Word EJES vn1 Demirkaya](#)

Language: en

indicates that such issues are not examined and discussed adequately in the department of **primary school teaching** Simon 1993 discussed the importance of knowing prospective teachers weaknesses in order to ... When conceptions of prospective teachers about both the environment were examined it was realized that non relational conceptions are more available than relational conceptions which indicates that such issues are not examined and discussed adequately in the department of **primary school teaching**

 Title: [International](#)

Journal: International Journal of Environmental and Science Education

Language: en

 Title: [no title](#)

Journal: International Journal of Instruction

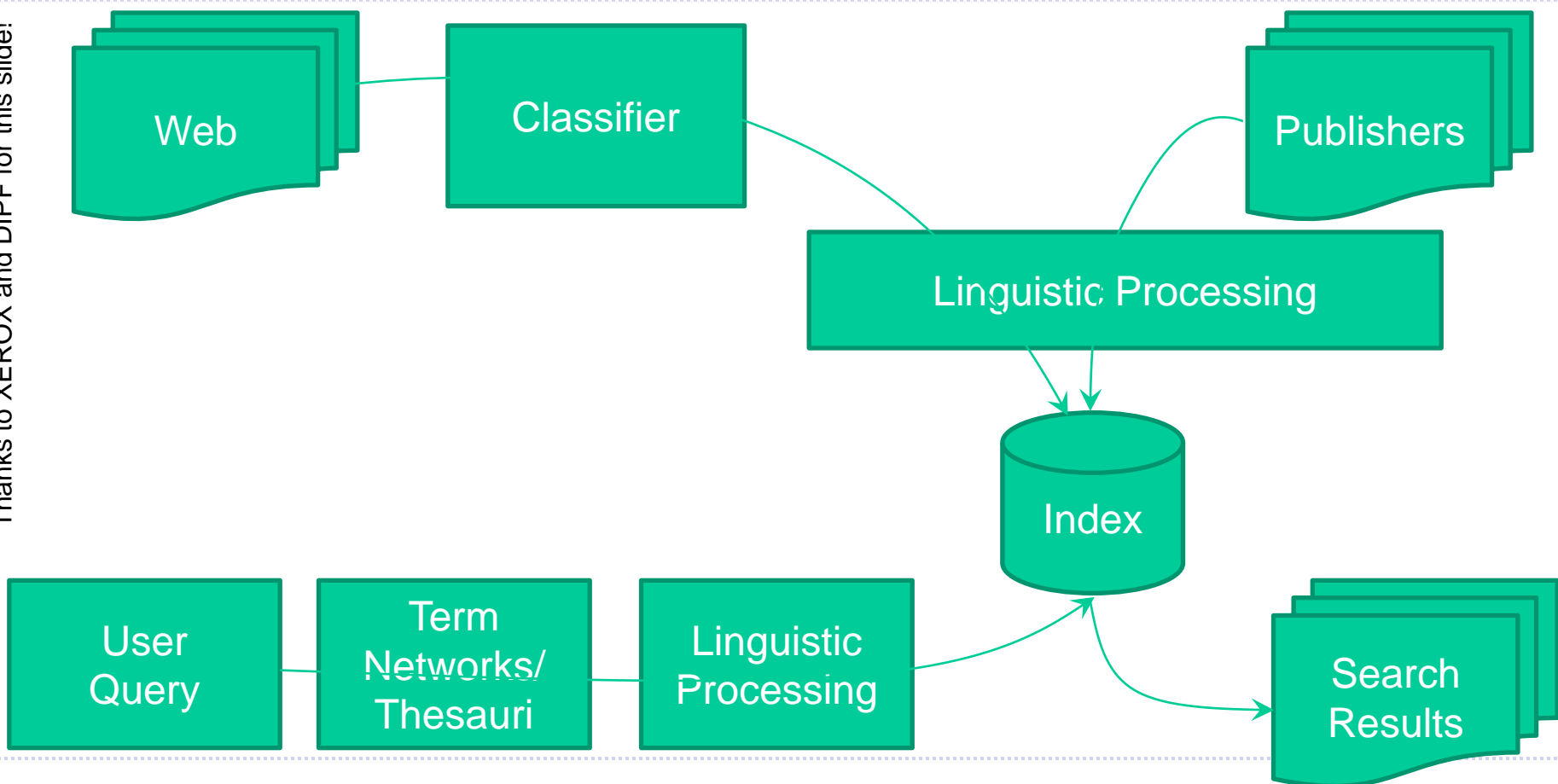
Publisher: International Journal of Instruction

Language: en

subject teaching of the teachers who are graduated from the **primary school teaching** programmes of the ... **primary school teaching** programmes and whose assignments were made by the Ministry of National Education ... Education Faculty Department of Elementary Education the **primary school teaching** programme and whose filizac@hotmail.com The aim of this study is to determine the importance of the competence and competence acquiring levels in the subject matter and subject teaching of the teachers who are graduated from the **primary school teaching** programmes of the educational faculties towards the social studies ... From the teachers included in the scope of the research it was asked to declare their opinions on the importance of the social studies competency in the proceeding of the education training activities and their acquisition levels for these competencies during their university studies ... The general purpose of this research is to determine the importance of the competence and competence acquiring levels of the teachers who are graduated from the **primary school teaching** programmes of the educational faculties towards the social studies

 Title: [no title](#)

Thanks to XEROX and DIPF for this slide!



Multilingual processing

- Add cross-language search to search engine, using
 - Term networks
 - Linguistic processing

Term networks: objective

- Enhancing the multilingual search facilities in the EERQI content base:
 - Provide related terms for user queries as suggestions for automatic or interactive „query expansion“
 - Provide translations of relevant terms in the topic area
- Problem:
 - Thesaurus terms as source for query expansion do not cover many possible query terms
 - Dictionaries as source for query expansion do not contain relations between terms and do not cover a topic area closely enough

->Construction of multilingual „term networks“