Karlsruhe Institute of Technology

7th Metadata and Semantics Research Conference 2013, Thessaloniki, Greece

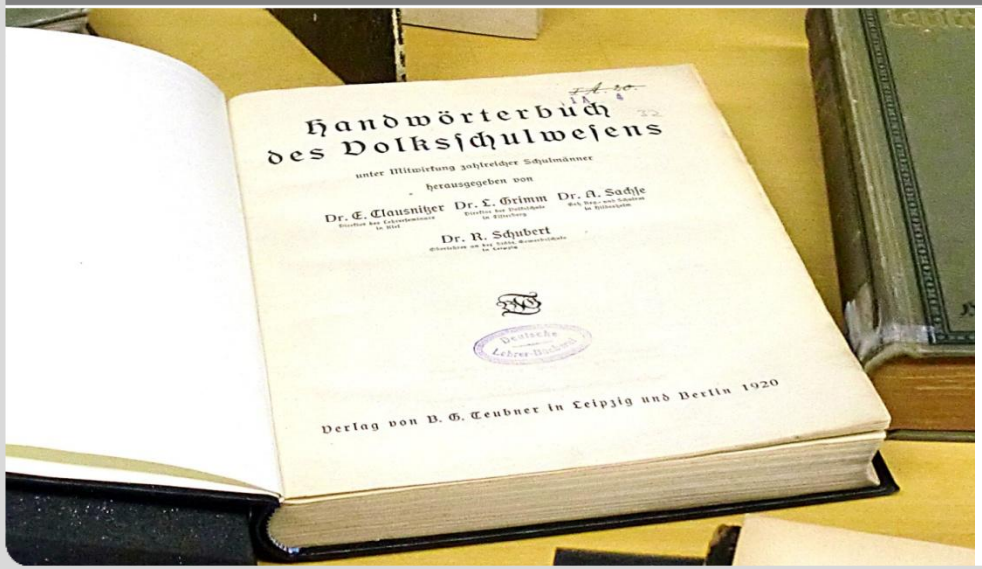
DIPF Bildungsforschung und Bildungsinformation

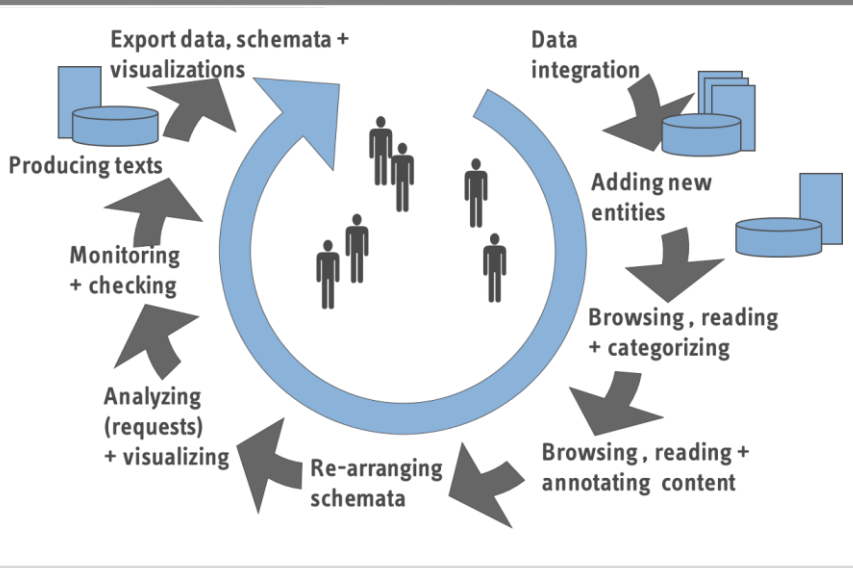
Semantically Enhanced Interactions between Heterogeneous Data Life-Cycles

Analyzing Educational Lexica in a Virtual Research Environment

Basil Ell[1], Christoph Schindler[2], Marc Rittberger[2]

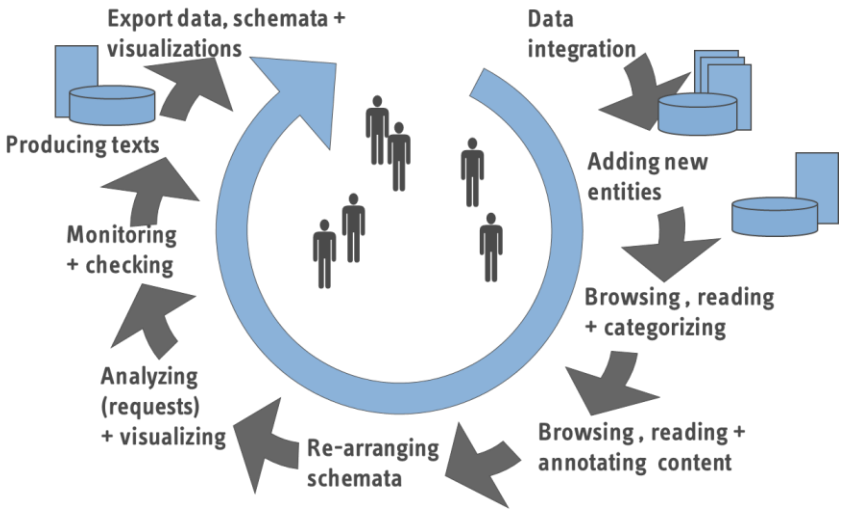
[1] Institute of Applied Informatics and Formal Description Methods (AIFB)
[2] German Institute for International Educational Research (DIPF)





Agenda

- Background: VRE SMW-CorA
- Activities & Interactions
  - Importing Research Data
  - Enriching Research Data
  - Data Cleansing
  - Exploring and Analyzing
  - Export and Sharing
- Conclusions & Outlook



BACKGROUND

Background: VRE SMW-CorA

- Main Objectives:
  - Development of a Virtual Research Environment (VRE)
  - Exemplary realization in the research field History of Education
  - Enhancing quantitative + qualitative analysis
  - Infrastructural distribution into other disciplinary contexts

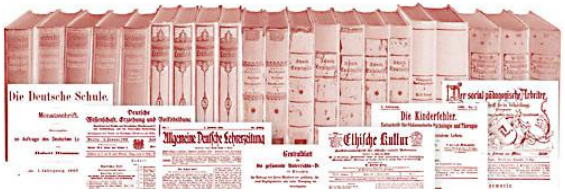
- Technological Platform:
  - MediaWiki (MW) + extension Semantic MediaWiki (SMW)

- Project:
  - „Semantic MediaWiki for Collaborative Corpora Analysis“ (SMW-CorA)
  - German Research Foundation (DFG) Funding: 2 + 1years
  - Start 01.01.2011
  - 2 exemplary realizations (educ. lexica + pupil's magazine) with 2 full-time users carrying out their Ph.D. project within the VRE

ACTIVITIES & INTERACTIONS

Importing Research Data

Scripta Paedagogica Online

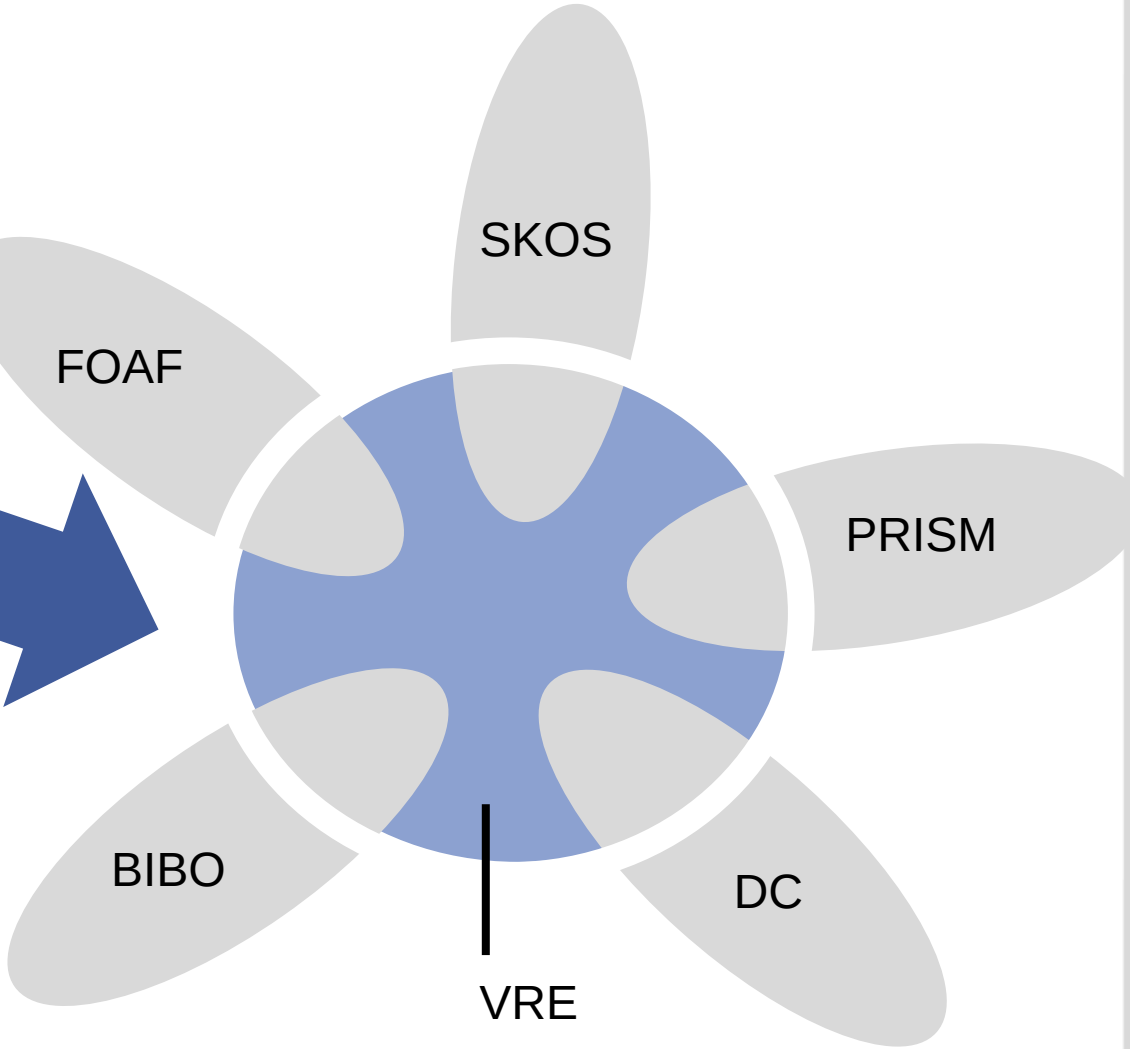


http://bbf.dipf.de/retro-digit0.htm/digitale-bbf/scripta-paedagogica-online

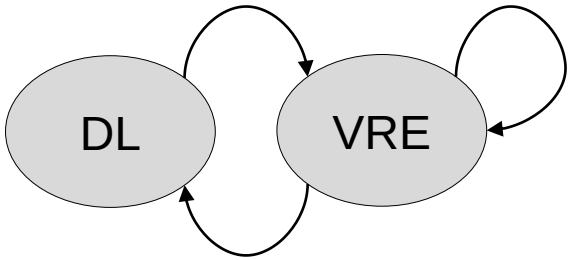
25 lexica
22.000 articles

OAI

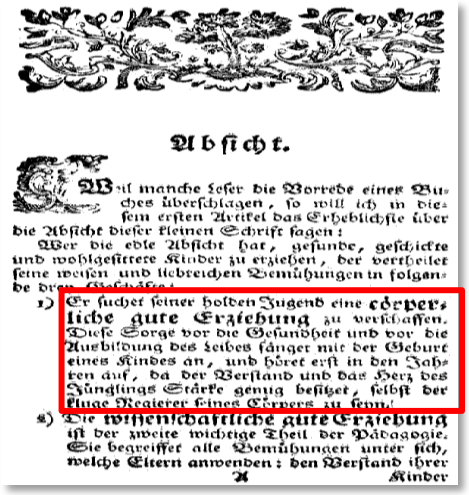
+ manual import of
62 undigitized lexica



Life-Cycles & Interactions



Enriching Research Data



Absicht.

Weil manche Leser die Vorrede eines Buches überschlagen, so will ich in diesem ersten Artikel das Erheblichste über die Absicht dieser kleinen Schrift sagen:

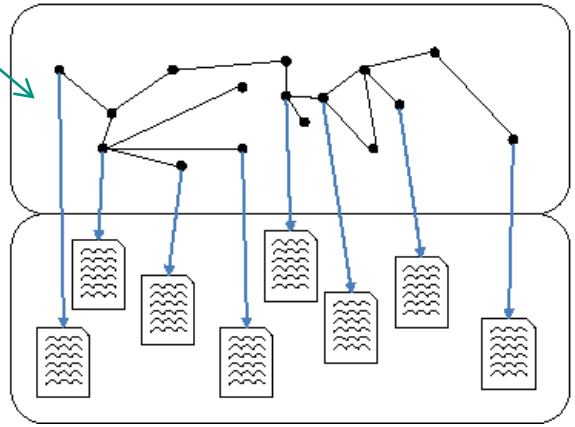
Wer die edle Absicht hat, gesunde, geschickte und wohlgesittete Kinder zu erziehen, der vertheilet seine weisen und liebreichen Bemühungen in folgende drey Geschäfte:

1) Er suchet seiner holden Jugend eine **körperliche gute Erziehung** zu verschaffen. Diese Sorge vor die Gesundheit und vor die Ausbildung des Leibes fänget mit der Geburt eines Kindes an, und höret erst in den Jahren auf, da der Verstand und das Herz des Jünglings Stärke genug besitzet, selbst der kluge Regierer seines Körpers zu seyn.

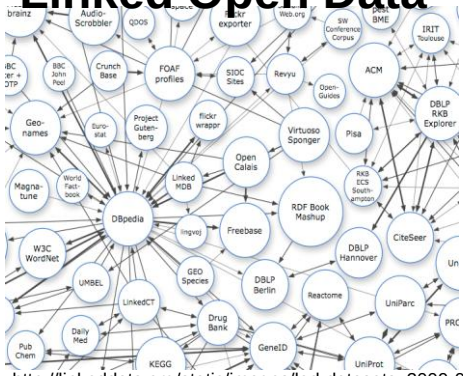
2) Die **wissenschaftliche gute Erziehung** ist der zweite wichtige Theil der Pädagogie. Sie begreifft alle Bemühungen unter sich, welche Eltern anwenden: den Verstand ihrer Kinder

* Semantically annotate parts of images
* Create data about entities
* Link entities
* Open coding

Queryable network

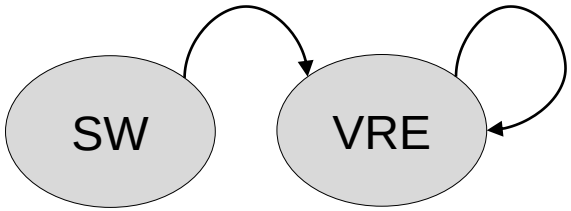


Linked Open Data



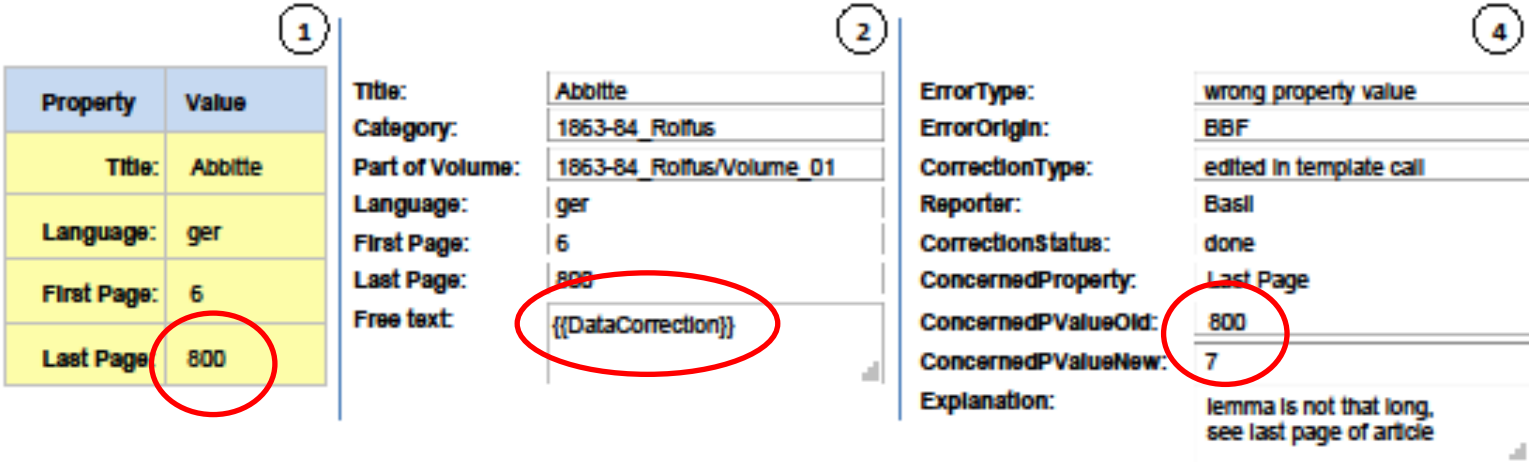
http://linkeddata.org/static/images/lod-datasets_2009-07-14_cropped.png

Life-Cycles & Interactions

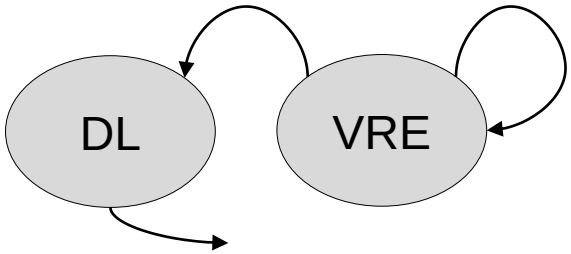


Data Cleansing

- Imported data may contain errors
- Inform the provider & other consumers and provide patches

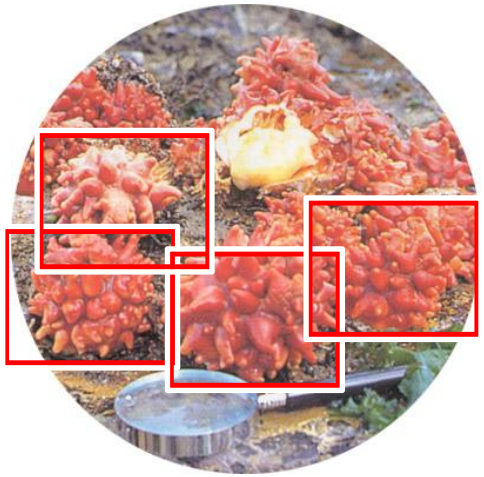


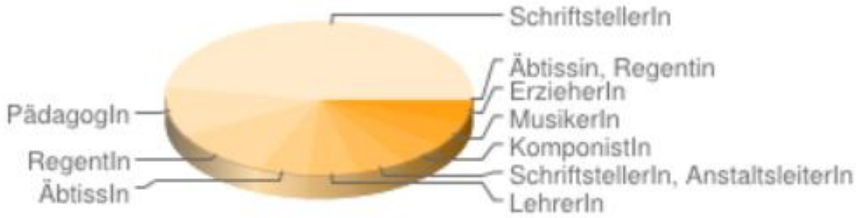
Life-Cycles & Interactions



Patch Ontology?

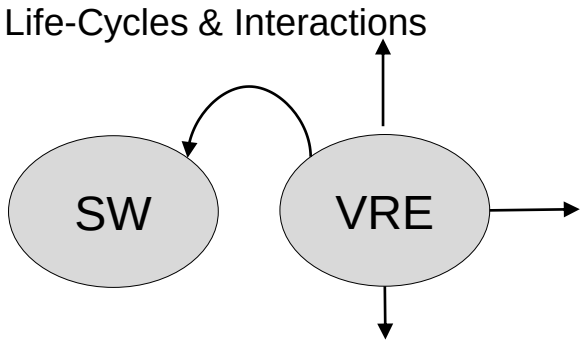
Exploring and Analyzing





Export and Sharing

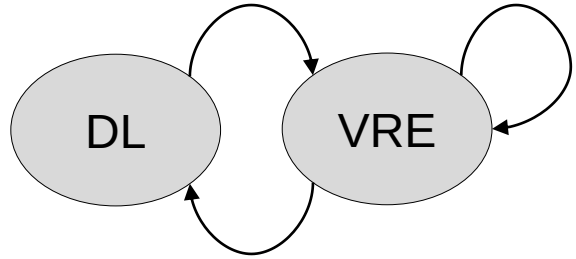
- Selectively export content using imported vocabularies:
  - Corrected data
  - Annotations / Semantic network
  - Aggregated data
  - Evidence data related to research hypothesis

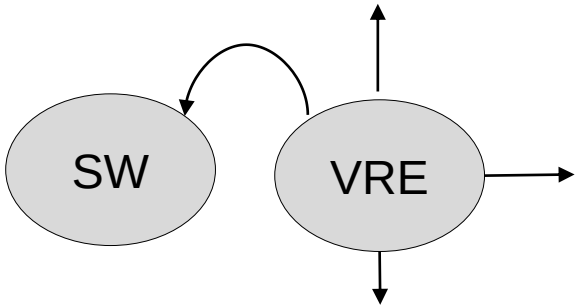


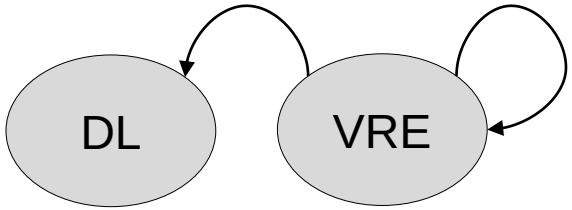
CONCLUSIONS & OUTLOOK

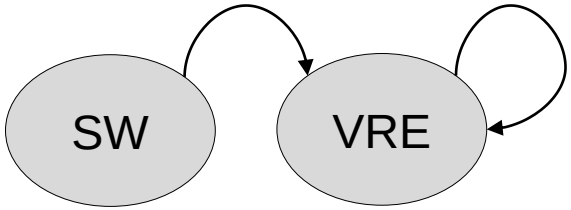
Conclusions

Life-Cycles & Interactions:









Activities:

- Importing Research Data
- Enriching Research Data
- Data Cleansing
- Exploring and Analyzing
- Export and Sharing

Outlook

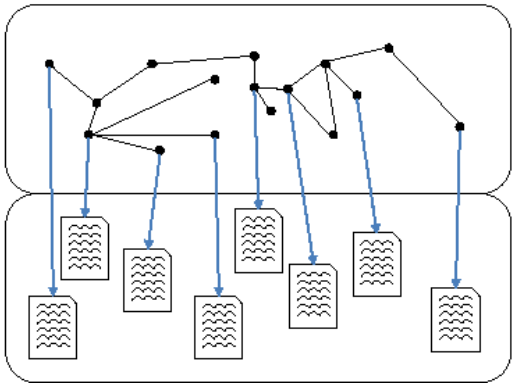
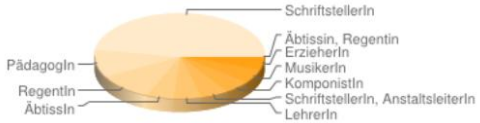
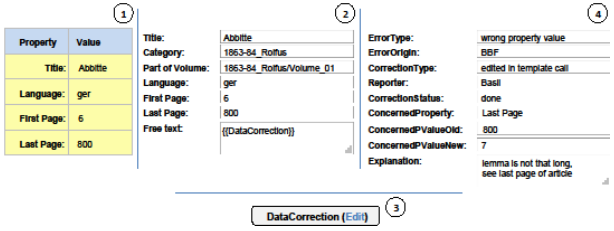
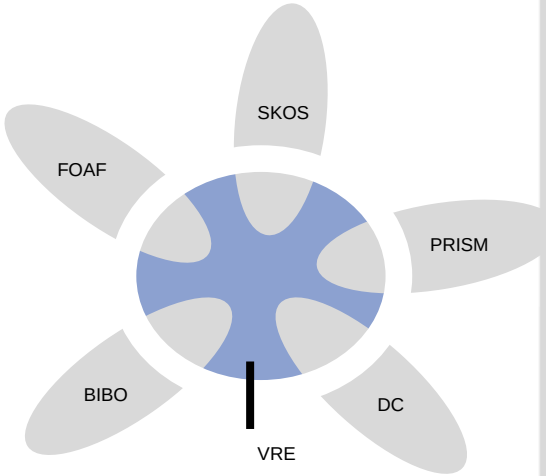
- Support more resource types besides lexica and images:
  - Video, audio, interview transcripts
- Vision:
  - future ecologies of small to large research projects and data providers
  - data flows between the participants
  - leads to enriched and improved data
  - providing benefits in a multitude of collaborations

Absicht.

Weil manche Leser die Vorrede eines Buches überschlagen, so will ich in diesem ersten Artikel das Erheblichste über die Absicht dieser kleinen Schrift sagen:

Wer die edle Absicht hat, gesunde, geschickte und wohlgesittete Kinder zu erziehen, der vertheilet seine weisen und liebreichen Bemühungen in folgende drey Stücke:

1) Er suchet seiner holden Jugend eine **körperliche gute Erziehung** zu verschaffen. Diese Sorge vor die Gesundheit und vor die Ausbildung des Leibes fänget mit der Geburt eines Kindes an, und höret erst in den Jahren auf, da der Verstand und das Herz des Jünglings Stärke genug besitzet, selbst der kluge Regierer seines Cörpers zu seyn.

2) Die **wissenschaftliche gute Erziehung** ist der zweite wichtige Theil der Pädagogie. Sie begreiffet alle Bemühungen unter sich, welche Eltern anwenden: den Verstand ihrer Kinder

Questions?