

Collaborative Authoring (Systems) in APOSDLE

MoKi, TACT, APOSDLE Reader, Learning Path
Wizard



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in APOSDLE: KMI @ TU Graz

aposdle – New ways ...

... to work, learn and collaborate!

Who are we?



Barbara Kump, Psychologist

(Collaborative) Domain Modelling and
Model Evaluation
User Modelling



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(Collaborative) Domain Modelling and
Model Evaluation
Semantic Technologies and Knowledge
Representation

Context: APOSDLE

Automated support for knowledge-intensive work

- Real-time: Work-integrated learning vs. separate times for working and learning
- Real resources: Work-integrated authoring vs. separate times for working and teaching/documenting

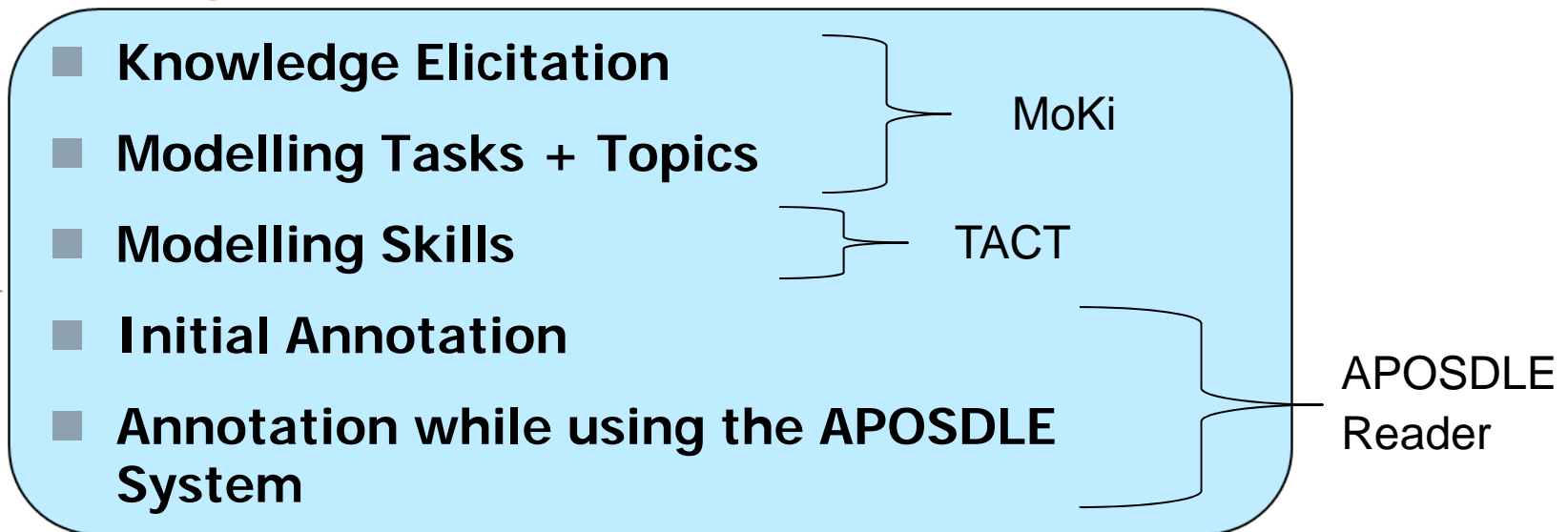
During their **work tasks**, users **learn** about relevant **topics** by means of **company-internal resources** such as experts or digital documents (text, video).



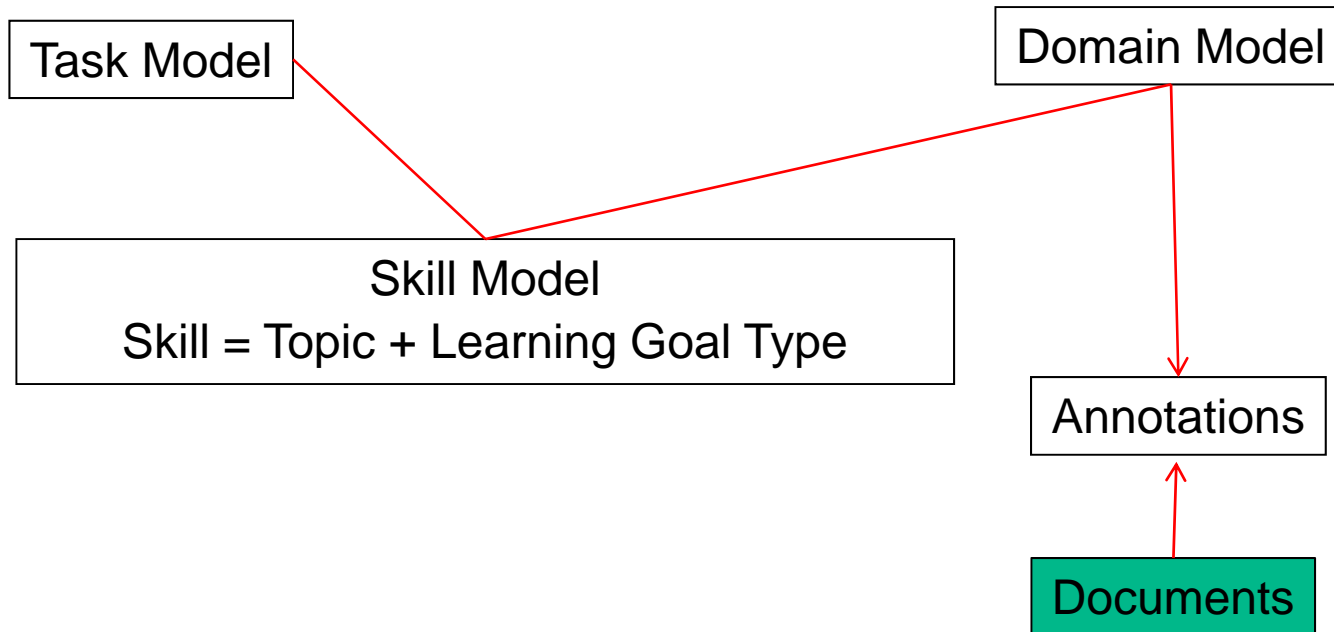
Demo

Expressing the Knowledge (Modelling, Annotation, Authoring)

- Metamodel Design
- Scope Definition



APOSDLE Meta Model (simplified)



Modelling Wiki (MoKi)

- Knowledge Elicitation from Documents (Term Extraction)
- Modelling Tasks + Topics
- Revision Support: Modelling and revision guidelines, automated checks, ontology questionnaire (inferences)
- Users: Expert knowledge engineers (coaches) + non-expert knowledge engineers (application partners)
- Domain experts in APOSDLE did not use the MoKi but were „only“ involved in modelling offline



Demo

Tool f. Modelling Skills (TACT)

- **Connecting Tasks and Topics with „sentences“ like:**
“To successfully carry out the task ‘Organise a creativity workshop’ a person must be able to understand ‘Creativity techniques’”
- **Thus modelling skills**
- **Revision support: Modelling and revision guidelines, automated checks, some support in TACT**
- **Users: Same as (coaches, non-expert KEs, no domain experts)**

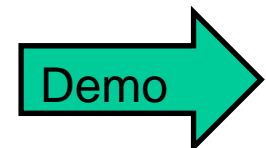
 Demo

Annotation of Resources in the APOSDLE Reader

- Annotating parts of documents / videos such that:

„This is a [Guideline](#) for [Brainstorming](#).“

- Documents / videos are results from working (project reports, presentations, etc).
- Users of the APOSDLE Reader are non-expert knowledge engineers (initial annotation)
- ... and learners (at all levels) who use the APOSDLE system



Authoring in APOSDLE

■ System Design:

- Metamodel consists of Tasks, Topics, Skills; APOSDLE knows Users' histories in terms of Topics (Skills)
- Static, designed by knowledge engineering and system experts; input from users via requirements
- Collaborative: yes, but centralised (strongly coordinated)

■ Domain Model (Tasks, topics, skills f. different application partners)

- Static, designed by non-expert knowledge engineers and domain experts but coached by KE experts.
- BUT easy to create a new model (new domain, or different model for same domain etc.)
- Collaborative: yes, distributed, asynchronous, partly in "workshop-like" style especially where domain experts were involved

Authoring in APOSDLE

- **Annotations (Relation betw Concepts and Documents/Videos)**
 - Dynamic, done by non-expert knowledge engineers and learners at all levels
- **Relations between Documents / Videos / Contacts partly implicit, in the sense of „automatically created“**

Conceptual View on (Collaborative) Authoring



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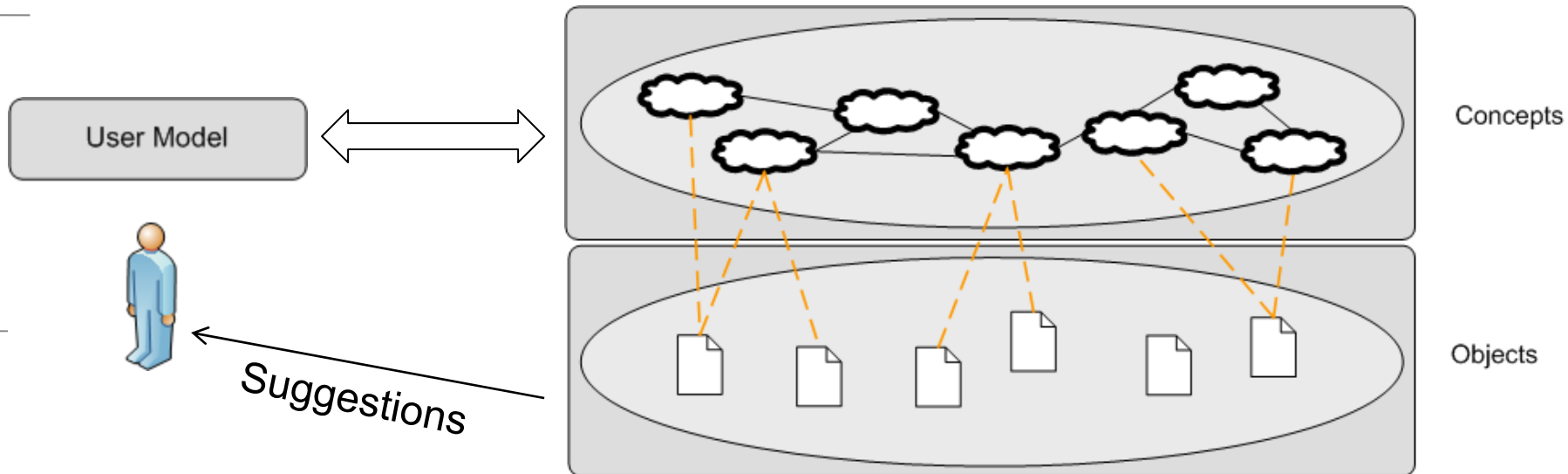
Authoring for Personalisation

“The secret of adaptivity in all adaptive hypermedia systems is **‘knowledge behind pages’**”

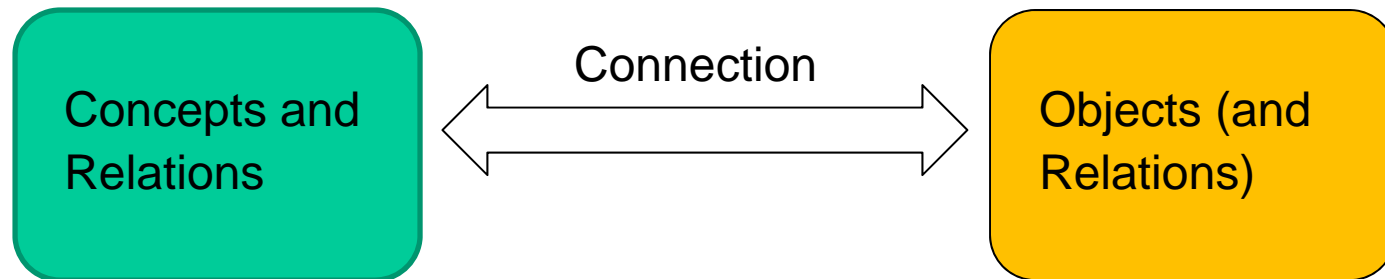
[Brusilovsky, 2003]

Goal of Authoring: Create content that is enriched with “meta-knowledge”

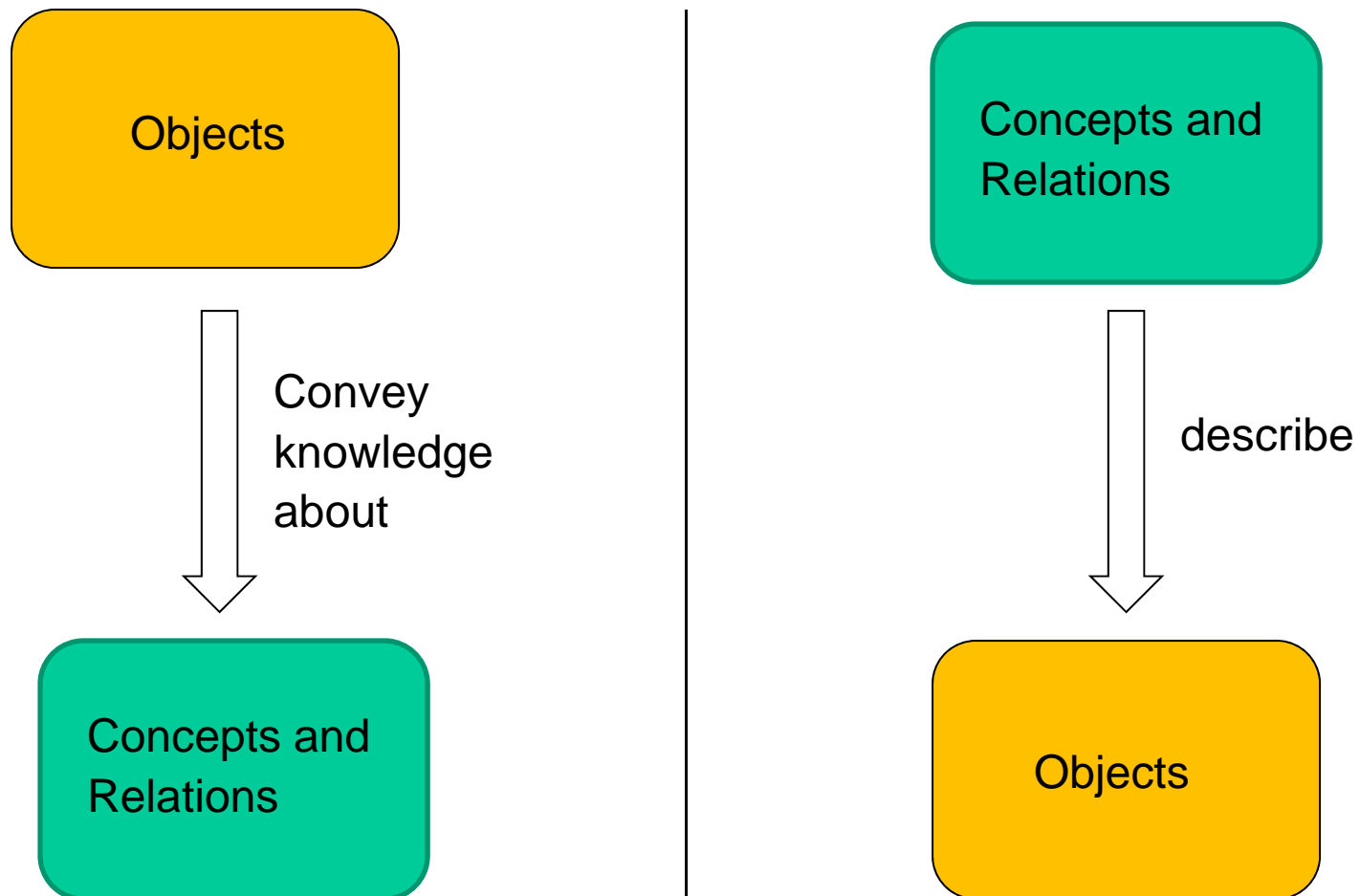
Authoring for Personalisation



What has to be modelled/authored? (neglecting the user model)



Relationship of Concepts and Objects

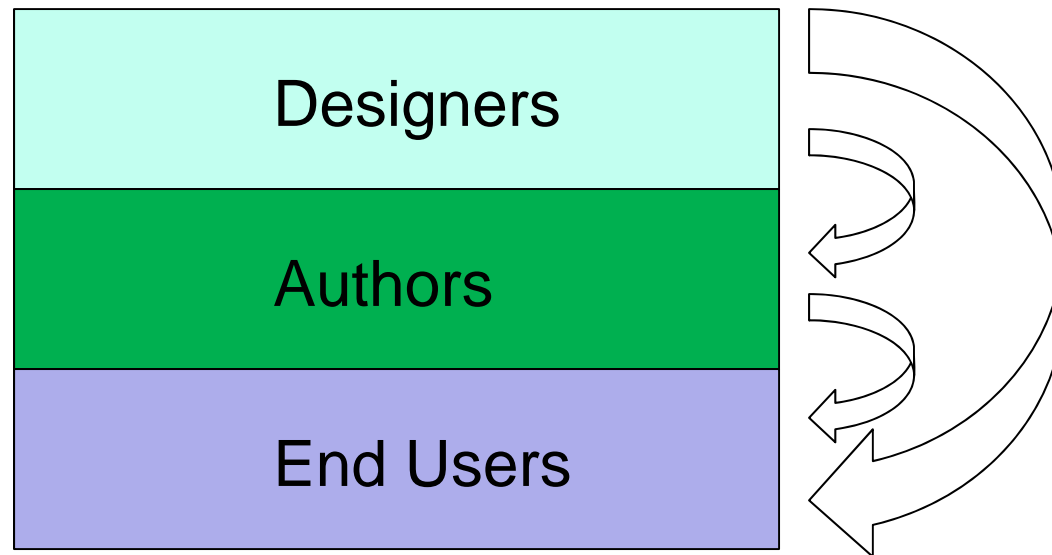


Dimensions of Authoring define requirements for authoring tools

- **Who is creating/editing/adding Concepts or Objects?**
- **Static versus dynamic sets of Concepts or Objects**
- **Explicit or implicit relations between Concepts or Objects**
- **„Collaborative Authoring“ - collaboration issues**

Who is creating/adding/editing Concepts or Objects?

- Roles involved in the design and authoring process



Static versus Dynamic Sets of Concepts or Objects

Static:

- Sets of Concepts and Objects remain the same

Dynamic:

- Users or Authors can modify the sets of Concepts or Objects



Implicit or explicit relations between Concepts or Objects?

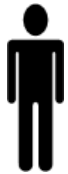
Explicit

- Concrete relations are defined by authors or users; Possibly, generic relations have also been designed by system designers;
- E.g. „is prerequisite of“

Implicit

- Generic relations are defined by designers in advance, and concrete relations are computed or inferred by the system
- E.g. „is similar with“

Single author



- Explicate knowledge
- Structure knowledge
- Different kinds of skills: knowledge representation, domain

„Collaborative Authoring“

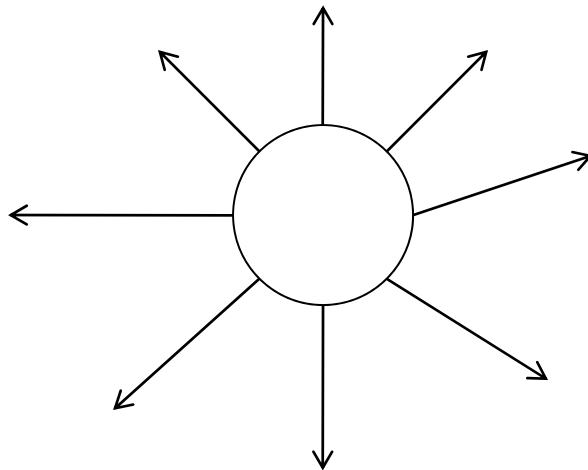


- “Organisation” (hierarchical, peer-group, de-centralised...)
- Skill distribution
- Spatial distribution
- Synchronous vs. Asynchronous
- Access Control
- Versioning (provenance of information)

Centralised versus de-centralised authoring

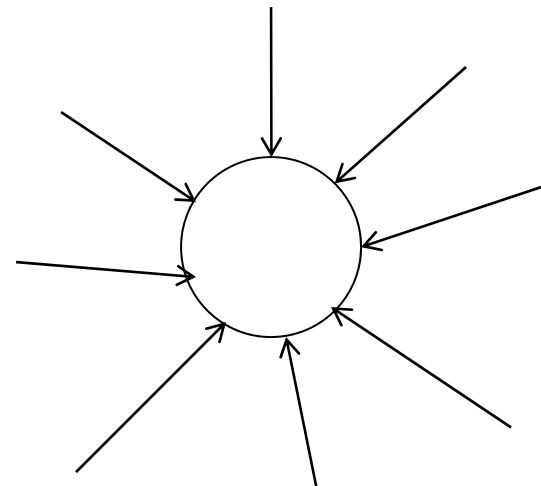
Centralised:

Concepts and relations are pre-defined, users can only use them



De-centralised:

Concepts and relations are defined and edited by users





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