

From Informal Learner to Active Content Provider: SLEAM approach

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Introduction

Small company needs to introduce process-embedded e-learning:

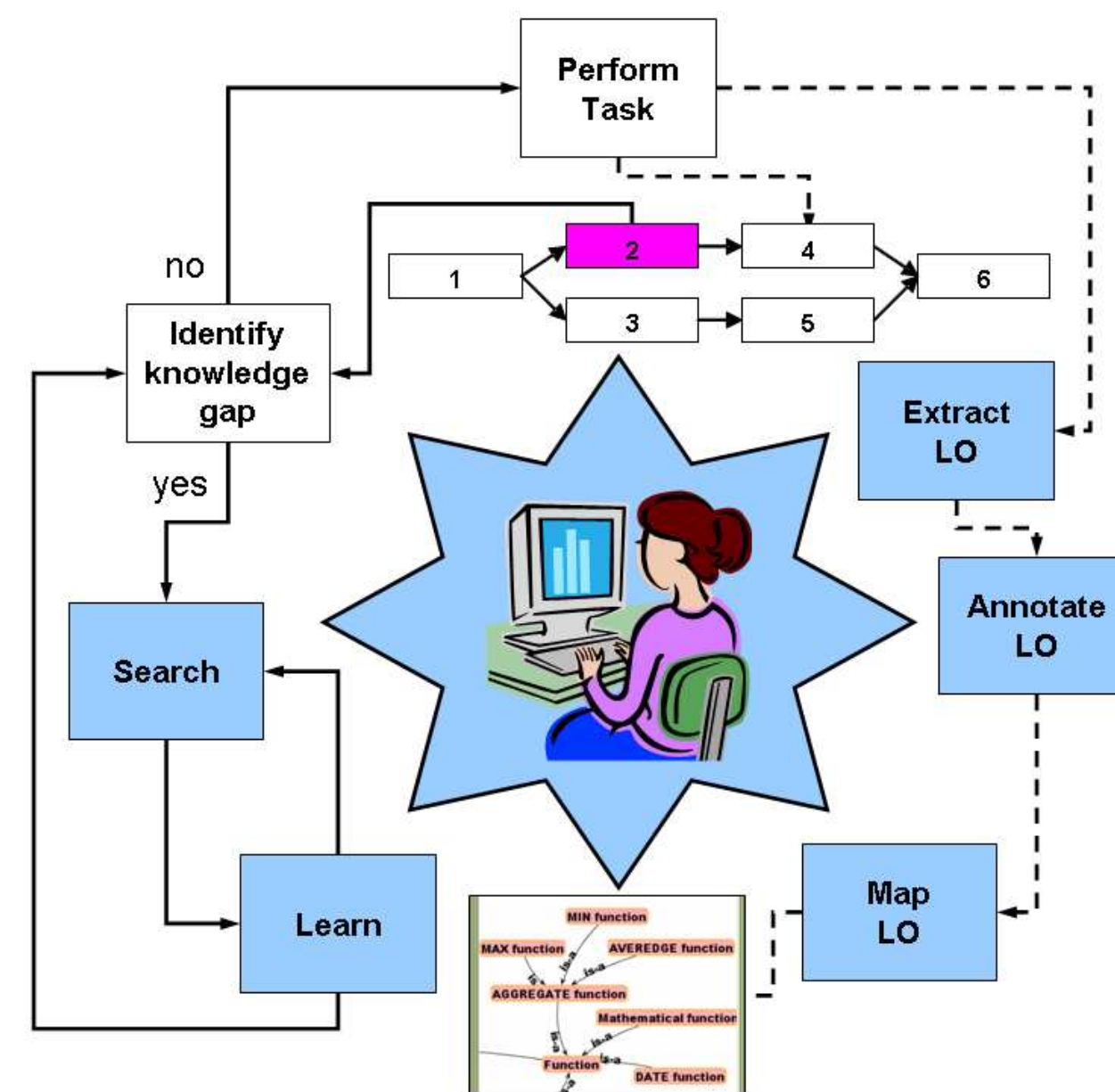
Problem: The company does not have proper learning content.

Solution: Results of information search during daily task accomplishment can be repurposed as RLOs and shared with colleagues.

Remarks:

- Preparing of learning content has to become a part of the employees' daily job.
- The process of the content creation must take as little time as possible, i.e.:
 - Tools for easy conversion of documents into RLOs are needed;
 - Authoring process shall be embedded into the process of work.

SLEAM - process



- Identify knowledge gap
- Search for material
- Learn the material
- Extract RLOs from the material
- Annotate RLOs with metadata
- Map RLOs to concept map (LCO)

Fig. 2: SLEAM approach to authoring

Problems

- Employee motivation
- Automatic metadata extraction
- Copyright problems

Next steps

- Create new import filters (e.g. PDF, PPT, DOC)
- Embed the tool into working environment (e.g. implement browser plugin that allows to call LO-Extractor to parse the current web page)
- Evaluate approach and tool internally at DFKI Knowledge Management department
- Evaluate approach and tool at industrial partner

Referenced approaches

Following authoring methods were analyzed:

- Instructional System Design (ADDIE)
- Rapid instructional design
- Rapid authoring tools
- Wiki/Blog authoring
- Concept-driven authoring

Implementation: LOExtractor tool

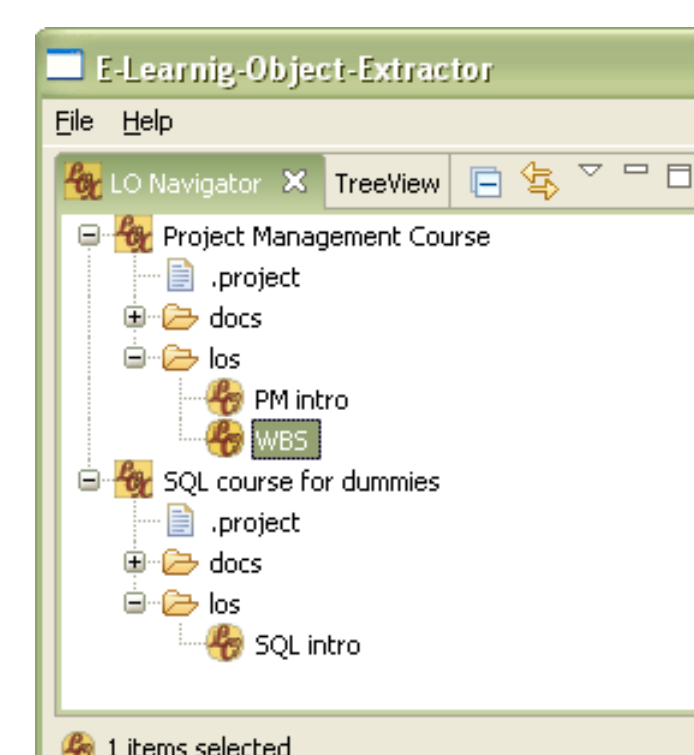


Fig. 3: Authoring projects

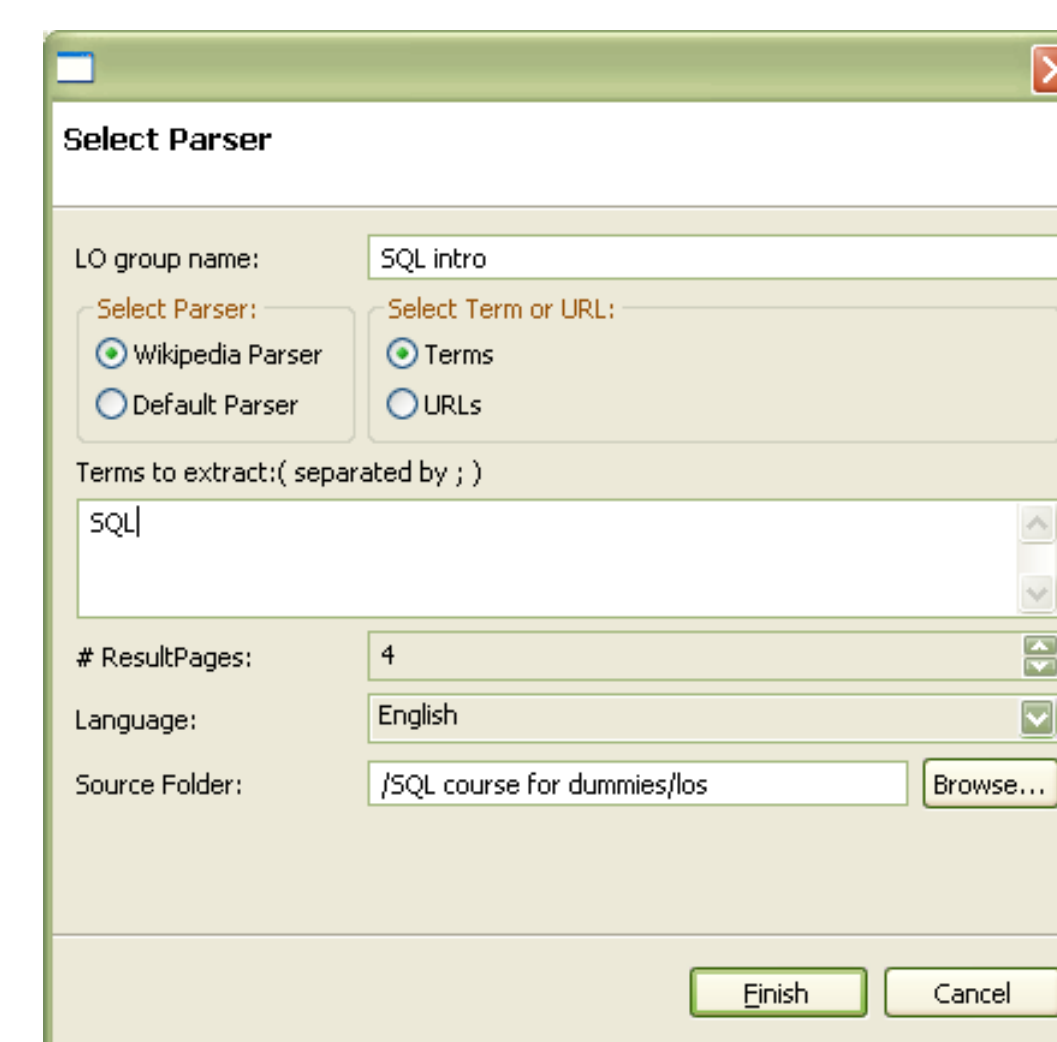


Fig. 4: Selecting parser

Learning concept ontology

Learning concept ontology is the central part of the proposed authoring process:

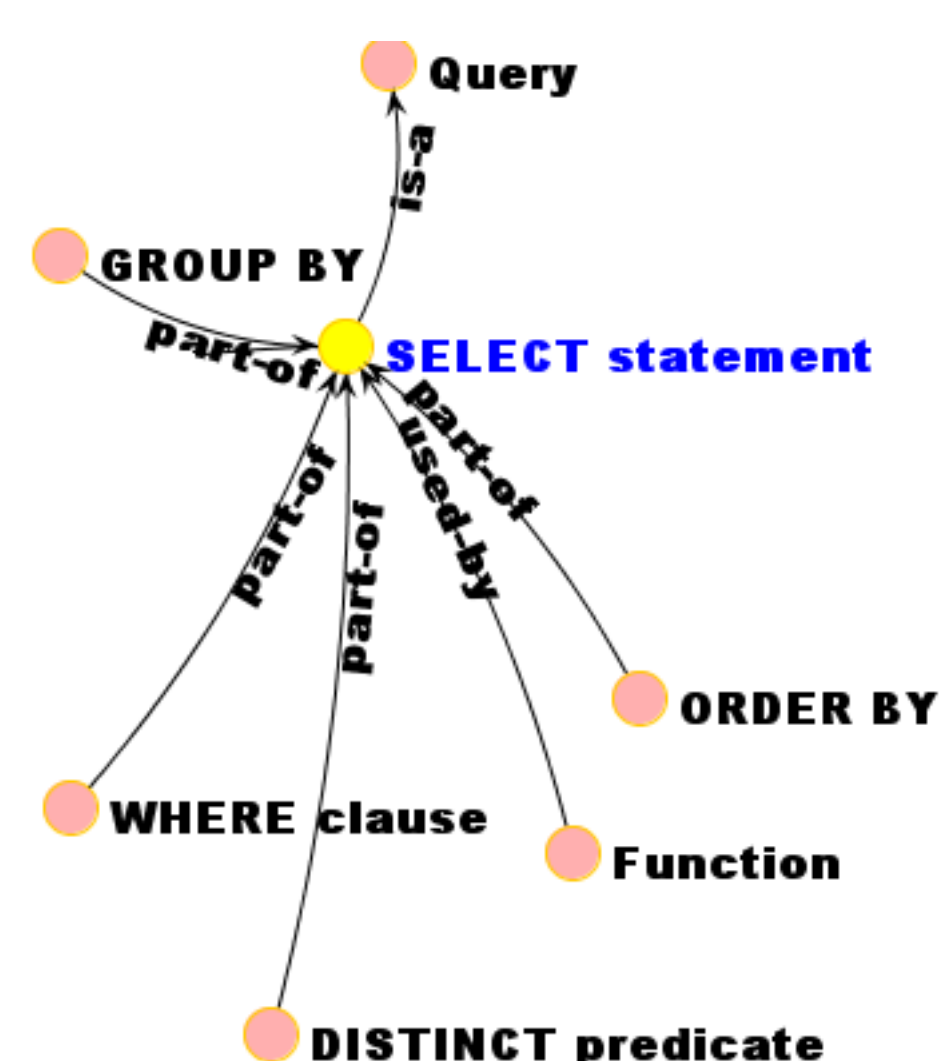


Fig. 1: LCO-driven authoring

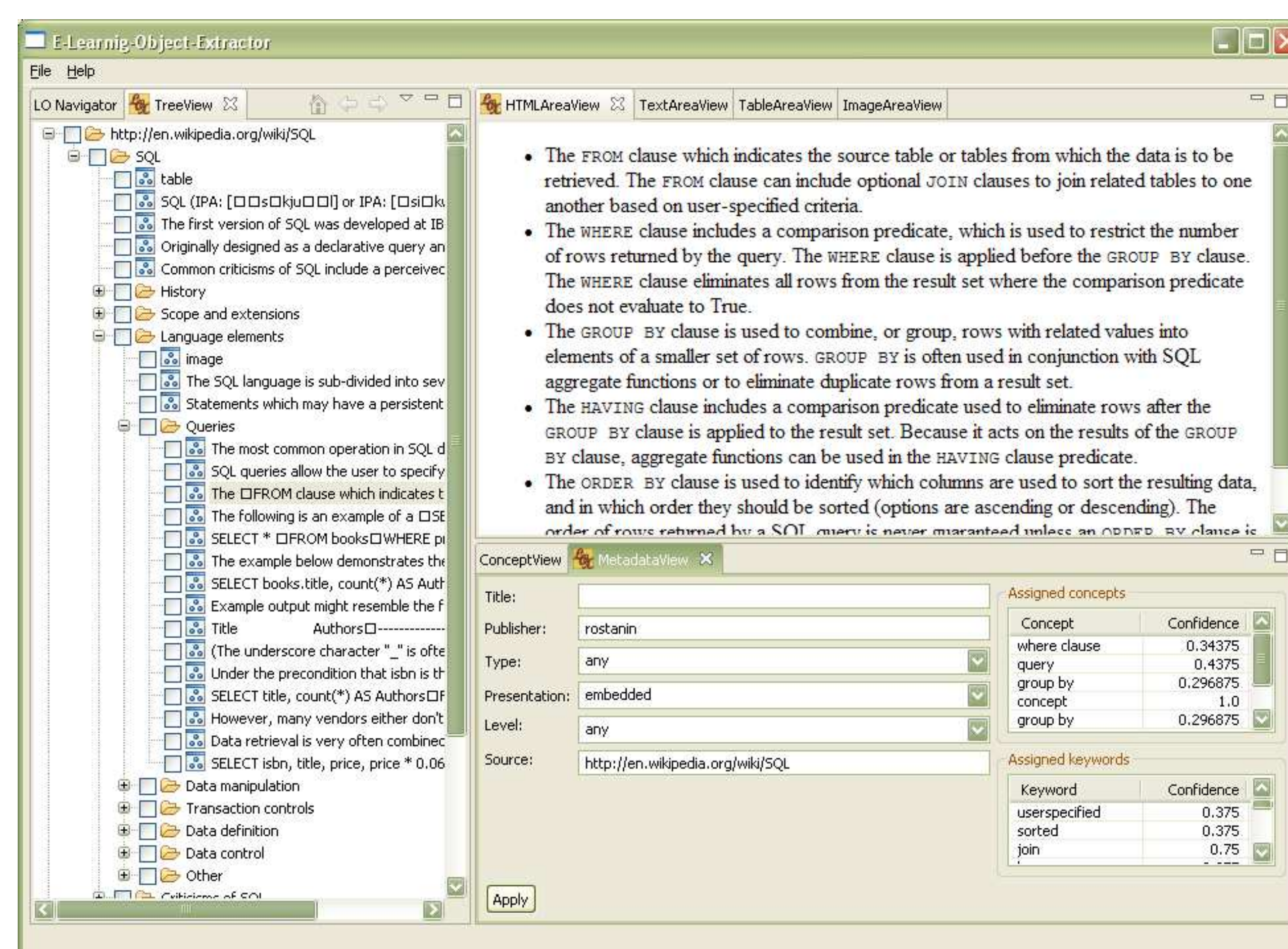


Fig. 5: LO extraction, annotation and mapping

Conclusion

- SLEAM is an approach to workflow-embedded authoring
 - Driven by learning concept ontology
 - Oriented on creating RLOs instead of courses
- LOExtractor is a rapid authoring tool supporting the SLEAM approach.
 - It allows extracting reusable RLOs from existing documents and web pages
 - It is tuned to extract RLOs from Wikimedia web pages (e.g. Wikipedia, Wikibooks)
 - Extracted RLOs are mapped to the learning concept ontology in order to increase the precision of the just-in-time information delivery in workflows
 - Several RLOs explaining the same concepts from LCO can be created that allows adaptive delivery of learning content depending on user profile and preferences

Keywords

- Workflow-embedded e-learning/authoring
- Rapid authoring
- Learning concept ontology
- Concept-driven authoring

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