

# From Informal Learner to Active Content Provider: SLEAM approach

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## Introduction

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

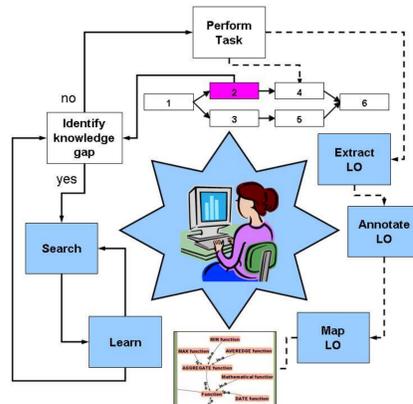
**Problem:** The company does not have proper learning content.

**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:

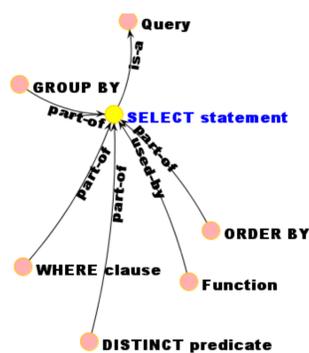


Fig. 1: LCO-driven authoring

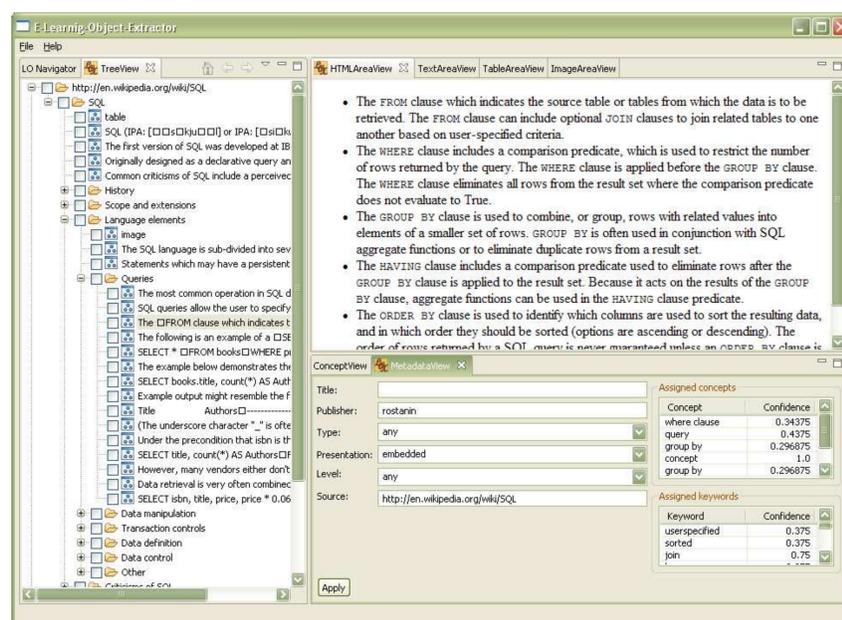


Fig. 5: LO extraction, annotation and mapping

## 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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