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# Personalization and User Modelling for Distributed Learning and Collaboration in Professional Context

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**Abstract:** Personalization and user modelling have been studied mostly in the context of adaptive eLearning system for on-line instructions. The main idea for personalization in such context comes from traditional class-based teaching. Personalization in classic teaching is based on observations a teacher makes about students during teaching. The observations either confirm original instruction or lead to adaptation of the instruction to the new conditions observed. Similar idea was employed in user-adapted (personalized) eLearning applications. Knowledge about a user inferred from the user interactions with an eLearning system is used to personalize offers for learning resources or adapt offered learning resources with personalized guidance through them. The personalization relies usually on knowledge representation and reasoning components implementing personalization heuristics. Heuristics usually encode knowledge about which adaptation or recommendation action to take based on results of match-making between knowledge about learners and learning resources.

With the grow of social web technologies such as wikis or blogs, on-line learning is no longer seen as a passive learning which follows served adapted learning resources. Learning becomes an integral part of problem solving where a user plays different roles. He plays a role of a learner who seeks evidence and knowledge on solving similar or related problems he is facing. He plays a role of expert, mentor, tutor, or teacher by offering the results of his problem solving activities for other members of his community.

In this talk I will review techniques from knowledge representation and reasoning area applied to adaptive instruction. I will discuss how past learning achievements in the form of learner's performance can be successfully employed for heuristics to filter out learning resources which are not yet relevant for his learning context. I will expand on this idea for the context of professional learning where problem solving activities can be used in much broader context. The problem solving activities, collaborations in such activities and context in which the collaboration and the problem solving happen can be used for expert recommendations, team formation, reflections, and triggers for creative ideas. This broader context however brings also new technical challenges. The reasoning support for adaptation as well as user modelling needs to be extended. Different techniques need to be studied such as use of reason maintenance, open user modelling, finding relationships between single user and group profiles, or context dependent use of different fragments of user profiles.