

**Assessment & learner modeling**  
**Working group**  
**ICT Workshop on Intelligent Lifelong Learning Companions**  
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Summary

A prerequisite for providing individual learning support is to maintain an estimate of the learner's knowledge, competence, skills, motivation, interests, etc. – i.e., a learner model. Such estimates evolve from assessments of learning, diagnoses of problems, as well as a variety of other kinds of evidence. Learner models are typically used as input for pedagogical decision making, and, in the case of computer-based systems, can be opened for inspection by the learner to support self-assessment and increase motivation. To support learner modeling over extended periods of time (weeks, months, years), *persistence* and *flexibility* (at least) increase in importance. Persistence is key because beliefs about learners need to be maintained indefinitely, and flexibility because of the differences between domains and knowledge being modeled, as well as the variety of ways the model might be used to individualize instruction.

Participants

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Potential discussion questions:

- What are the key demands on a learner model that supports lifelong learning?
- Are “traditional” techniques scalable enough to handle the demands of lifetime modeling of learning and growth? Which approaches hold the most promise?
- What sophistication in reasoning is missing in current approaches that can make extended modeling possible?
- Are there domain-independent learner traits that can be re-used across domains?
- How can “forgetting” and memory decay be modeled accurately?
- What forms of assessment are necessary to inform a lifelong learner model?
- What role do knowledge-lean and/or statistical approaches play for lifelong learner modeling? Should gaming behaviors and other negative tendencies be tracked?
- What role might group learner and social models play? I.e., the modeling of successful collaboration, communication, and teamwork.
- How can we model acquisition of more modern, real-world skills that take extended periods to develop, such as leadership, decision-making, and interpersonal competence?