# Acquiring Conceptual Knowledge
# about How Systems Behave

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There is a need for software that supports learners in actively dealing with theoretical concepts by having them create models and perform concept prediction and explanation (e.g. [3,4,5]). DynaLearn seeks to address this by developing a domain independent Interactive Learning Environment (ILE) based on Qualitative Reasoning (QR) [1]. The QR vocabulary fits the nature of *conceptual* knowledge, and the explicit representation of these notions in the software provides the handles to support an automated communicative interaction that actually discusses and provides feedback at the *conceptual* level.

DynaLearn seeks to provide an instrument for studying the characteristics under which learners develop conceptual knowledge, particularly for ill-defined domains. The DynaLearn ILE offers a suite of technical advances for educational research. The following features can be manipulated (see [2] for design specifications). (*i*) *Use-levels* adapt the interface and tool interaction to tailor for groups of a specific age or experience. (*ii*) Different types of *knowledge-based feedback*, such as recommending terminology, model quality feedback, and suggestions for model improvements. (*iii*) Learner interaction through *virtual characters* with roles such as student, peer, teacher, critic and quizmaster. More specifically the following features will be demonstrated during the interactive event: (*a*) Workbench and its multiple use-levels, (*b*) Basic help, (*c*) Grounding, (*d*) Teachable agent, and (*e*) Quiz. The audience will be allowed to work with the software as if they were students.

# References

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