ABSTRACT

This invention discloses a computer implemented method for authoring and delivering content in a highly adaptive and easily configurable manner. Given a problem domain, an authoring system, called AuthorIT preferred embodiment, is used to: a) construct abstract syntax tree (AST) based SLT rules representing to be acquired knowledge structures (KR) at multiple levels of abstraction, wherein said SLT rules are sufficient for solving problems in said domain, b) assign instruction, questions and feedback to nodes in said KR, c) represent problem schemas in an observable Blackboard medium enabling communication between an automated tutor and learners and d) set Options defining how diagnostic and instructional decisions are to be made based on what individual learners do and do not know relative to the to be learned knowledge structures. A computer implemented delivery system, called TutorIT preferred embodiment: a) receives authoring system output, optionally supplemented with information received from a user, b) generates specific problems and solutions by executing AST-based SLT rules, c) displays problems on a Blackboard interface, and d) interacts with learners receiving learner responses and presenting instruction and feedback, e) uses input from any given learner, structural relationships within ASTs and options to update the learner’s model relative to said AST-based SLT rules and to decide on what diagnostic and instructional steps to take next.