

Abstract

Adaptive Hypermedia is an alternative to the traditional “one-size-fits-all” approach in the development of hypermedia system. Educational hypermedia is one of adaptive hypermedia systems. Not all learning system use adaptive approach, with adaptive systems user expected to be more focused in education proces. In this research author analyze and design domain models and user models that are suitable for the implementation of knowledge tracing algorithm. Implementation and testing of system parameters determined by specific mechanism.

Domain model which being used is the cognitive domain model which relations between concept are presented with graph. Each of competence has relation to many question but question only connected to one concept. User model is place to save informations about student specially the parameter which use to update knowledge and knowledge itself by knowledge tracing.

Parameters using in knowledge tracing, slip, guess, and learning rate are influential to the value of user knowledge. Slip parameter inversely proportional to the value of knowledge and learning, while guess is directly proportional to knowledge. User response is also a variable that affect the value of knowledge. With the change in the value of the user knowledge, then adaptive navigation system given, which is recommendation materials will also change because of knowledge tracing in making predictions using knowledge at the current state, slip and guess at the next concept.

Keyword: *adaptive hypermedia, user model, domain model, knowledge tracing, adaptive navigation, K_0 , slip, guess, learning rate.*