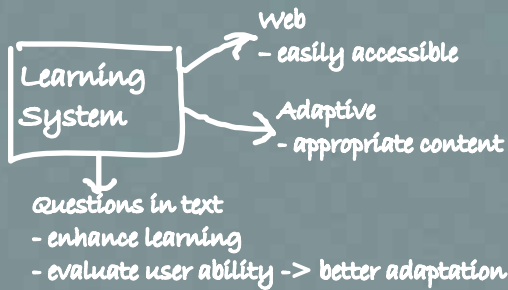


Adaptive Text Question Selection in the Context of Web Based Learning System

Oto VOZár, Supervisor: Professor Mária Bielíková

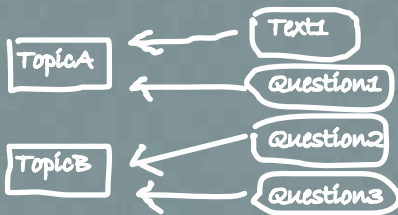
30.4.2008

Objectives:

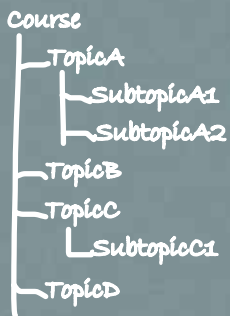


Definition:

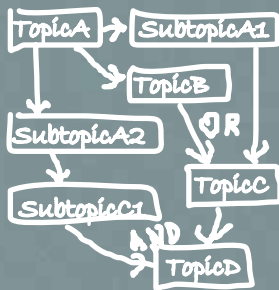
Concepts Learning objects



Concept hierarchy:



Concept prerequisites:



And - all prerequisites
Or - one prerequisite

Course Editor

Define texts, questions (QTI), hierarchy, prerequisites

Selection:

Based on user model (adaptive):



1. Topic selection

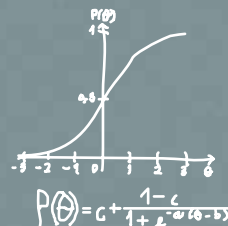
Concept states

A = ability



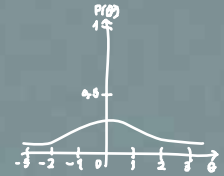
2. Selection of n-best questions using Item Response Theory

Item Characteristic Curve



3PL model
A - discrimination factor
B - difficulty
C - guess factor

Item Information Function



Ability evaluation

- Expected a Posteriori (based on normal distribution)

$$I(\theta) = \frac{P'(\theta)^2}{P(\theta)[1-P(\theta)]}$$

3. History based selection

- Evaluation of each possible question depending on user history
- time of each answer
- whether the answer was correct or not
- Less recently used and incorrectly answered questions are preferred

Presentation:

Web portal:

