

Adaptive E-Learning System Using Fuzzy Logic and Concept Map

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Abstract : This paper proposes an effective adaptive e-learning system that uses a coloured concept map to show the learner's knowledge level for each concept in the chosen subject area. A Fuzzy logic system is used to evaluate the learner's knowledge level for each concept in the domain, and produce a ranked concept list of learning materials to address weaknesses in the learner's understanding. This system obtains information on the learner's understanding of concepts by an initial pre-test before the system is used for learning and a post-test after using the learning system. A Fuzzy logic system is used to produce a weighted concept map during the learning process. The aim of this research is to prove that such a proposed novel adapted e-learning system will enhance learner's performance and understanding. In addition, this research aims to increase participants' overall understanding of their learning level by providing a coloured concept map of understanding followed by a ranked concepts list of learning materials.

Keywords : adaptive e-learning system, coloured concept map, fuzzy logic, ranked concept list

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