Abstract

With increasing popularity of web based learning, it is required to design the web layout to reduce cognitive load. Cognitive load theory is widely used to predict the effectiveness of the web based and multimedia learning. The cognitive load induced by instructional and multimedia modes are measured by indirect or subjective methods. Questionnaires are one common form of measuring cognitive load indirectly. In this paper, a questionnaire is prepared to identify the cognitive load of the student and his website preferences in a web learning environment. The cognitive attributes are used as the training input for the Naïve Bayes, Classification Regression Tree(CART), Random Forest and Random Tree for classification. Based on the response of the user, areas for improvement in layout of the web learning system are identified.

References

- Susan Feinberg and Margaret Murphy; Applying Cognitive Load Theory to the Design of Web-Based Instruction; Language Learning & Technology, Volume 2, Number 1, July 1998.
- Martin Graff; Learning from Web based instructional systems and cognitive style; British Journal of Educational Technology, Vol. 34, No. 4, 2003.
- Daniel Y. Shee and Yi-Shun Wang; Multi-criteria evaluation of the web-based e-learning system: A methodology based on learner satisfaction and its applications; Department of Information Management, National Changhua University of Education, Taiwan.

**Index Terms**

Computer Science  
Artificial Intelligence
Keywords

User interface design  Cognitive approach  online learning  decision tree induction

Introduction