

Preface

Typically used web-based educational systems such as learning management systems provide a variety of features to support teachers and course developers to create and manage their online courses. However, at current stage, such environments provide very little, or in most cases, neither intelligent support nor adaptivity at all. The need for smart learning environments arise that offer personal services in the whole cycle of education, from counselling, to academic advising, to program planning, to collaborative learning, to tutoring, and to testing.

Considering cognitive aspects such as learning styles and cognitive traits/abilities in web-based educational systems has become a promising area with high potential to support students in learning. By providing students with environments that incorporate their cognitive abilities and their individual preferences about how they like to learn, learning materials and courses can be adapted more accurately and more helpful and suitable intelligent support can be provided, aiming at making learning easier for learners.

This workshop deals with innovative research in the area of intelligent and adaptive web-based educational systems, focussing on the incorporation of cognitive aspects. The workshop aims at providing a forum for presenting and discussing high-quality research about how cognitive aspects can be considered in intelligent and adaptive web-based educational systems, including the detection of cognitive aspects, the development of systems that provide adaptive and intelligent support based on cognitive aspects as well as analyses about the effectiveness of considering cognitive aspects in technology enhanced learning.

This chapter consists of 6 research papers, focussing on the abovementioned issues. It aims at providing an overview of current research works in the area of cognitive aspects in adaptive and intelligent web-based educational systems and encouraging discussion about how to support learners and educators, increase learning opportunities, and improve the efficiency and quality of services by considering cognitive aspects.

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