Book Reviews

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Artificial Intelligence and Education - Volume One Learning Environments and Tutoring Systems

Edited by Robert W. Lawler and Masoud Yazdani
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In September 1987, the University of Pittsburgh sponsored the third international conference entitled "Artificial Intelligence and Education" featuring presentations by researchers from Europe, the Pacific, the Americas, and other parts of the world deeply involved in AI research. The two years marking the period from the second conference at Exeter University, United Kingdom, have witnessed significant growth in the research associated with this topic. The 1985 conference ended with the proposed merging of the two traditional streams of 'tutoring systems' and 'learning environments' to resolve problems in the design of instructional systems from an AI perspective. "This volume marks the beginning of a synergy between the agendas of the various researchers which promises an interesting and productive future."

The volume, using a collection of the most significant conference presentations or reprints of previously published works by conference participants on research in AI and education, provides a viewpoint on AI's current and future state as envisioned by the world research community. The editors not only whet our appetites with a glimpse of important work in AI and education, but successfully weave and present the two different approaches to the use of computers in education from the Artificial Intelligence perspective: ***Intelligent Tutoring Systems*** and ***Computer Based Learning Environments.*** Then, using the two different approaches, the editors divide the volume's eighteen chapters accordingly. Chapter 1, by Robert W. Lawler, sets the scene on Learning Environments, while Chapter 10, by Masoud Yazdani, discusses Intelligent Tutoring Systems.

Other important chapters in the volume include one by Stellan Ohlsson which discusses how educators should develop general frameworks for ITS construction. In fact, through Ohlsson's recommendations to a more systematic approach to ITS, we see the beginning of the dialogue with Wallace Feurzieg's chapter on learning environments. ITS and learning environments share similar concerns and therefore share the same principles.

The chapter by Andrea A. diSessa is also quite important. Basically, while discussing the debate on the impact of computers on childrens' learning and development, she makes it clear that the extent to which computers can contribute to learning and development depends on how well we understand both what experience is, and what students experience. Similarly, the chapter by Margaret Riel, James Levin, and Barbara Miller-Souviney on interactive media is also impressive. In this chapter, the authors propose the use of educational software in which the amount of assistance provided by the computer is systematically decreased as novices gain experience. They call this principle "dynamic support," and present an example of this support with students learning to write.

This book should interest researchers and educators alike. Potential readers will need no special knowledge of AI, although some previous general knowledge of AI will help. Overall, the editors do a fine job of synthesizing the prospects for Artificial Intelligence in Education and provide encouragement for researchers and educators to continue to use new technology to "enhance both the quantity and quality of knowledge in human minds."

"There is much to be done, but the prospects are promising."

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