A Socio-Cognitive Engineering Approach to

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2. Development methodology

Very few projects in AI and education have put equal emphasis on software, task, knowledge and organizational engineering. Some systems have demonstrated powerful techniques in knowledge representation, but are virtually unusable. Others have attractive interfaces, but do not address a clear educational need. Yet others meet a well-identified need, but do not fit easily into the classroom or workplace.

Instead of relying on intuition or received wisdom about training needs and solutions we have developed a "building block" methodology for the design of knowledge-based training and cognitive support systems (see Table 1) that integrates contributions from software engineering, task engineering, knowledge engineering and organizational engineering. To construct a successful integrated system requires all theognit

An example of computer-assisted instruction is MITS, the Medical Image Teaching System [3]. A typical MITS lesson presents one or more images, a question asking the trainee to identify abnormalities, and a list of possible answers. A computer-assisted instruction system is limited by its inability to know what it is teaching. It cannot engage the student in a discussion of the images beyond what has been anticipated by the programmer, nor can it track a student's deve

dimensional plot showing the distribution o

8. System Integration and Evaluation

The individual pillars of software engineering, task engineering, knowledge engineering and organiza