Intelligent Team Tutoring Systems: Such Great Potential, So Hard to Build

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Abstract
Intelligent Tutoring Systems (ITS) review actions taken by the user and provide dynamic feedback to teach subject matter to an individual. ITSs have proven successful at teaching math, physics, and programming. An Intelligent Team Tutoring System (ITTS) assesses the performance of a team's individuals, their overall performance as a team, and the interactions of that team to provide dynamic feedback. While extensive research has been conducted regarding single person ITSs, work regarding ITTSs is limited. An ITTS is difficult to design, as the tutor must account for the actions of multiple individuals and their team interactions. The tutor must teach task skills for completing the objective, and team skills for how a team works together to meet the objective. This talk will describe several of the first ITTSs created: a 2-person and 3-person surveillance task. The talk will describe the system architecture required to support team tutoring, some of the metrics for team performance, and the triggers for team and individual feedback.

About the Speaker
Stephen B. Gilbert, Ph.D., is an assistant professor in the Industrial and Manufacturing Systems Engineering department, focusing on Human Factors. He is also Associate Director of Iowa State University's Virtual Reality Application Center, helping lead its Human Computer Interaction graduate program. His research interests focus on technology to advance cognition, including interface design, intelligent tutoring systems, and cognitive engineering. He works closely with industry, NSF, and DoD on research contracts and has also worked in commercial software development and run his own company. He received a BSE from Princeton in 1992 in operations research and PhD from MIT in 1997 in brain and cognitive sciences.