

# **Intelligent Training Systems: Lessons Learned from Building Before It Is Time**

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I discuss what I learned while developing five generations of intelligent coached apprenticeship systems somewhat earlier than hardware, basic software support, programmers, or users were ready for them. First, it was essential to remain focused on the central instructional principles driving our work. Second, we learned that the social issues in deploying novel systems trump any demonstrations of return on investment or efficacy. People only use what they are comfortable using. Third, we learned that being as free as possible of specific operating system or software commitments was absolutely necessary. Fourth, we learned that the fundamental role of coached apprenticeship systems is to efficiently provide the rare moments from real life that afford the chance to learn deep and transferable skills and knowledge. Fifth, we learned that developing intelligent coached environments affords opportunities for learning by teachers/trainers and designers of work processes as well as by students/trainees. Finally, we learned that capabilities for which we can have complete student models are exactly those destined to be taken over by machines, placing a premium on far transfer as the goal for high-end training/teaching systems.