

THE VIRTUAL PRACTICUM AND RICH-MEDIA VIRTUAL PATIENTS: STEPS IN THE DEVELOPMENT OF COMPREHENSIVE PROGRAM FOR CLINICAL EDUCATION

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Abstract:

The Virtual Practicum incorporates mentor/apprentice learning strategies, case-based learning via rich-media virtual patients, lectures, computer-based activities, interviews with patients, and role-modeling by experts, all in a graphically integrated learning environment. We assert that the template is an optimal one for clinical education. Developed over 20 years evolving from videodisc to CD to the Internet, we believe we have a model that can be generalized and used by others. This workshop is designed to dissect our work and reassemble it in front of your eyes so that the mystery is gone and the possibilities are envisioned. Yes, you too could use our shell (virtual clinic), methods, and development environment (Tamale) for your clinical education project. We call the Tamale an Integrated Development Environment (IDE)

The IDE allows content objects (graphics, lectures, simulations, etc.) to be reused, modified, and shared. It allows delivery of content via broadband Internet or dial-up Internet + CD-ROM. In its current form, it supports scripting by an experienced multimedia programmer. We are currently adding 1) a graphic user interface for limited use by non-programmers, 2) accommodation for end-users with hearing and visual impairment, and 3) 3-D game interface (first-person shooter – Quake II) functionality to Tamale. Tamale will be released as an open-source initiative.

The proposed PRE-WORKSHOP will help educators and producers understand how to develop comprehensive clinical education programs, using an advanced multimedia model called the “Virtual Practicum,” including what some are calling “rich-media virtual patients. The model supports an immersive learning environment and learning experiences using multiple modalities. In addition to scientific and technical knowledge, it deals with less quantifiable, often more complex kinds of knowledge that, as Donald Schön said, “Lie beyond the canons of technical rationality.”

The proposed demonstration will show how we produced programs using the model, as well as demonstrate the Tamale learning environment. Three virtual practicum programs will be demonstrated: *Primary Care of the HIV/AIDS Patient*, *Genetics in Clinical Practice: A Team Approach*, and *Smoking Cessation for Pregnancy and Beyond*. A newly developed program not directly related to medical education, the *Virtual Terrorism Response Academy*, will be shown to demonstrate new features of the Tamale IDE, notably use of 3-D, “first person shooter” interfaces.

All seminar participants will receive copies of the Virtual Practicum program, *Genetics in Clinical Practice: A Team Approach*.

Benefit to Participants Attending This Pre-Workshop:

1. Learn methods for developing “advanced” multimedia for clinical education, using the virtual practicum model.
2. Learn how we develop rich-media virtual patients.
3. See the latest applications of the model and supporting technologies (these will not be shown during the regular SOL session).
4. Learn about the open-source Tamale Integrated Development Environment, optimized for developing virtual practicum programs.

About the workshop leader: Dr. Joseph Henderson, MD brings a broad background to his work as a medical educator and developer of educational technology applications. His work in computer-aided diagnosis for the U. S. Navy provided experience in computer technology and informatics, producing video training materials, and use of simulated/standardized patients for training and evaluation.

Dr. Henderson continues in educational research and development work creating numerous technology-based learning programs for professionals and patients. He has strived to present quantitative, scientific-technical information in the context of complex, qualitative (usually psychosocial) factors that can influence health outcomes. For example, the series of Shared Decision Programs developed for the Foundation for Informed Medical Decision Making presented scientific and quantitative information.

The Interactive Media Laboratory (IML), which he directs, is part of the Department of Community and Family Medicine at Dartmouth Medical School. IML specializes in combining emerging technology with innovative instructional design. For over 18 years, it has produced high-end interactive multimedia educational programs for both patients and health care providers. Additionally, it has developed distance-learning systems capable of delivering rich multimedia over the Internet.