

TEL GRANT PROPOSAL:
THE INTERACTIVE SCENARIO BUILDER (ISB)
A TOOL TO SIMULATE INTERPERSONAL INTERACTIONS

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DESCRIPTION OF THE CURRENT INTERACTIVE SCENARIO BUILDER (ISB)

The Interactive Scenario Builder (ISB) is a tool that generates online simulations of patient/provider interactions. The ISB interface is extremely easy to use and requires no knowledge of programming. Once a scenario is planned and the information entered into the ISB, the program automatically generates a web-ready scenario with the click of a button. The ISB is flexible enough that it can be used to create scenarios in virtually any healthcare context.

Within a scenario, the learner plays the role of the provider who is interacting with a virtual patient. Learners ask questions by selecting items from a “superlist” which includes a variety of questions – some appropriate, some inappropriate. The patient provides a unique response to each question via a text balloon and a photograph. Scenario authors write the questions that appear in the superlist and the patient responses. After the interaction, learners receive feedback on the items they selected, then move on to a plan of care screen where they select plan of care options from another superlist.

The Center for Spirituality and Healing initially worked with Peg Plumbo from Nursing to create the first scenario. After fixing bugs in the tool identified in this process, we went on to mentor faculty and students in the Medical, Nursing, and Pharmacy schools to create scenarios that were used in the following courses:

	PILOT TESTER	USE OF THE CURRENT ISB	FEEDBACK
MEDICINE	Sharon Allen, MD Professor, Family Medicine/Community Health	To demonstrate how the PEARLS model is used for effective patient-provider interactions. Medical school course: <i>Physician and Patient</i>	“I used the scenario in a small group. It went very well and really illustrated the PEARLS model. I’m very pleased with how well it went.”
NURSING	Kevin Smith, PhD Senior Teaching Specialist Georgia Nygaard, PhD Senior Teaching Specialist	To model effective therapeutic communications. Online graduate level Nursing course: <i>8402 Primary Care</i>	“The ISB is an excellent tool for developing in-depth simulated patient encounter scenarios. The scenario that you create becomes an engaging student learning activity, which works very well with online instruction.”
PHARMACY	Kristin Janke, PhD Associate Professor	To model effective self-care practices. Online undergraduate course in Pharmacy: <i>1003 Self Care: A guide to today's non-prescription pharmacy</i>	“We've had fun with our first scenario. In fact, we're currently recruiting a student to write scenarios for us! We also have a group interested in using it for a more traditional scenario to teach pharmacists in practice.”
MED STUDENT	Alexander Kay University of Connecticut Health Center	To create cases on Complementary Medicine for medical student education. Part of a required selective senior project.	“The ISB has been the perfect tool to bring learning experiences previously only available at the hospital into student's homes.”

PROGRAMMATIC APPLICABILITY OF THE ISB

The ability to easily generate instructionally effective online scenarios that simulate interpersonal communications has proven to be highly applicable across a wide range of disciplines in the Academic Health Center. After the ISB was presented to various groups in the AHC, interest was expressed in using the ISB to create scenarios for a variety of courses including *Physician and Society, Clinical Medicine, clerkships, Practice of Pharmaceutical Care, Pharmacotherapy, Human Nutrition and Drug Therapy classes, Therapeutic Communication in Healthcare, Core Interventions for Nursing Practice, Critical Care Nursing classes*, and several other graduate courses. The MN Virtual Clinic development team in the Medical school stated that ISB scenarios have great potential for augmenting their teaching tool. In addition, Dean Powell of the Medical School has expressed enthusiasm about the ISB, stating that it is “exactly the direction the Medical School should be heading.”

We are also discovering that the ISB has widespread programmatic potential in many contexts outside healthcare. For example, interest has been expressed in using the ISB to simulate attorney-witness depositions, model conflict resolution techniques, and conduct interviews of historical characters such as Eleanor Roosevelt. Additional TEL funding would allow us to create a version of the ISB that can be used in any of these contexts.

EDUCATIONAL ACCESS

We plan to make the ISB readily available to the University community via the proposed University Learning Repository. Students, staff, and faculty from every department will be able to download the ISB to their computer and generate scenarios. Scenarios are saved as Flash swf files, which every browser can read. Scenarios can be posted to any website, incorporated into a WebCT course (credit or non-credit), burned onto a CD, or e-mailed.

ENHANCING COMMUNITY

Pilot tests of the ISB demonstrated the tool's potential to build community across different academic units. Faculty became more familiar with the work of their colleagues in other departments, and they used each other's scenarios as examples when creating their own. Ultimately, we envision a large library of scenarios created by faculty from a wide variety of disciplines that can be shared among the various schools and colleges at the U of MN, and potentially other universities.

LEARNING OUTCOMES

Scenarios that simulate interpersonal communications provide learners with:

- An opportunity to practice interview or interpersonal guidelines
- A fun and engaging way to develop problem-solving and critical analysis skills
- Experience identifying salient information from an interview
- Practice formulating an action plan based on information derived from an interaction
- A way to gain confidence in a challenging situation prior to an actual in-person encounter
- An instructional approach that facilitates critical thinking skills more than simple multiple-choice questions

An interesting application of the ISB is to have students design scenarios. Creating a scenario reinforces important concepts learned in class and provides a valuable learning resource that can be shared with other students in the class.

ISB PHASE II

We are seeking funding for Phase II of the ISB. This tool has generated a significant amount of interest from faculty around the University and additional funding would allow us to enhance the tool so that it can be used in any context. To accomplish this goal, we propose a two-stage process. In **Stage 1**, we will make the text on each screen more generic (i.e., change all instances of "patient" to "person") and enhance the ability to customize instructions and buttons for different contexts. In **Stage 2**, we will create a dynamic interface that allows users to select any of the following screens in any order: *Text*, *Interaction* (superlist), *Feedback*, *Q&A*, *Multiple Choice*, and *Course of Action* (superlist). This functionality will significantly enhance the flexibility of the tool by allowing users to decide which types of interactions will best achieve their learning objectives, and in what order. In addition, we will incorporate the feedback collected from our pilot testers, including:

- Research the possibility of using Flash video in place of JPGs.
- Create a digital version of the feedback file that students can e-mail their instructors (specifically useful in distance courses)
- Make all buttons and instruction fields editable
- Allow users to change the order of questions and easily scroll through them
- Enhance the interface

- Reprogram the graphic functionality of the Interview screen so that each photo displays dynamically on the screen capture, and users can delete photos from the queue

EVALUATION AND DISSEMINATION

We intend to continue carefully evaluating the ISB at each stage of development by actively soliciting input from end users and collecting data on scenarios used in courses. We also plan to continue current efforts to disseminate the ISB, including:

- Make the ISB available on the proposed University Learning Repository
- Mentor faculty and students on how to create instructionally effective scenarios
- Provide technical assistance
- Pilot test the ISB
- Update the ISB User Guide
- Create an ISB website for more information
- Present the ISB at local and national conferences

TIMELINE, ROLES, BUDGET

	Date	Activity	Dept. Expenses	TEL Expenses	Cost
Stage 1	Mar, 2005	Finalize list of enhancements for Stages 1 and 2 **Milestone: Design specs sent to programmer	\$1,441		\$1,441
	Apr, 2005	Program Stage 1 **Milestone: Stage 1 alpha programmed and delivered Pilot Test Stage 1 **Milestone: Synthesize faculty pilot testers feedback	\$888	\$1,745	\$2,633
	May, 2005	QA Stage 1 Make programming fixes **Milestone: Final version of Stage 1 (end of month)	\$888	\$1,145	\$2,033
	Jun, 2005	Update User Guide Begin programming Stage 2 **Milestone: Program and User Guide uploaded to TEL Learning Repository	\$712	\$240	\$952
Stage 2	Jul/Aug, 2005	Stage 2 Alpha version created **Milestone: Programmer delivers Stage 2 alpha		\$2,160	\$2,160
	Sept, 2005	Stage 2 Alpha reviewed **Milestone: ID sends alpha QA list to programmer	\$1,074		\$1,074
	Oct/Nov, 2005	Stage 2 Alpha QA programmed **Milestone: Programmer delivers beta		\$720	\$720
	Dec/Jan, 2006	Stage 2 Beta review and pilot test **Milestone: ID sends beta QA items to programmer	\$1,858		\$1,858
	Feb/Mar, 2006	Stage 2 Beta QA programmed **Milestone: Programmer delivers final version		\$1,080	\$1,080
	March, 2006	Asset Development – photo shoots **Milestone: Image library available		\$1,554	\$1,554
	April, 2006	Stage 2 Final version reviewed **Milestone: ID sends final QA list to programmer	\$1,285		\$1,285
	May, 2005	Stage 2 Final version QA programmed User Guide finalized **Milestone: Programmer delivers final product	\$1,285	\$780	\$2,065
	June, 2006	Dissemination **Milestone: Stage 2 ISB program and User Guide uploaded to TEL Learning Repository.	\$395	\$360	\$755
			TOTAL: \$9,826	TOTAL: \$9,784	

2005 Technology-Enhanced Learning (TEL) Grant Program Outcomes Appendix

We received a 2003 TEL Grant for developing Virtual Integrated-Care Scenarios. The project outcomes for this grant include:

- *Development of a robust Interactive Scenario Builder (ISB) tool* that easily generates online simulations of patient/provider interactions. It requires no knowledge of programming.
- *Completion of a detailed ISB User Guide*
- *An ISB website:* <http://www.csh.umn.edu/isb/index.html>
- *Results from a faculty pilot test across the Academic Health Center.* These results indicate that this tool is extremely easy to use and requires no knowledge of programming.
- *Four completed scenarios* including “Menopause” by Peg Plumbo in the Nursing School, “Health Promotion: Obesity” by Kevin Smith and Georgia Nygaard in the Nursing School, “Using the PEARLS model” by Sharon Allen in the Medical School, and “Self Care: Bug Bites” by Kristin Janke in the Pharmacy school. In addition, we are working with Alexander Kay, a medical student at the University of Connecticut Health Center, to develop cases on complementary medicine for medical student education.
- *A high level of interest in the tool* throughout the AHC and also outside healthcare. Interest has been expressed in using the ISB to simulate attorney-witness depositions, model conflict resolution techniques, conduct interviews of historical characters, and teach students how to talk to employers and clients.

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