Project 1: E-Learning Quality Evaluation

SimNet: Simulated Training and Assessment Software for Microsoft Office 2003

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EDCI 660: Strategic Evaluation

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May 24, 2005

Product Overview

SimNet for Office 2003 is a network-based, simulated software learning and assessment product, distributed by McGraw-Hill Higher Education Publishing to colleges and universities across North America. Combining a CD-based multimedia engine with Web-based content delivery, SimNet provides a variety of comprehensive, interactive lessons aimed at teaching fundamental software skills. SimNet also provides faculty with administrative capabilities, including lesson planning, test creation, student usage tracking, and pre- and post-assessments.

This evaluation focuses on the implementation of SimNet in a college-level business course entitled *BUAD 128 – Business Computing Applications*. In addition to weekly lectures, students attend lab sessions where they work unassisted (except for a lab assistant) through the assigned SimNet lessons and competency tests. Appendix 1 provides some screenshot graphics taken from the Excel 2003 module. The course objectives include having students achieve core-level proficiencies (as measured using the Microsoft Office Specialist certification guidelines) in each of the primary Microsoft Office applications. The skills learned in this course serve as prerequisites for other business courses, including accounting, marketing, and finance.

Description of the Evaluation Instrument

In his text "Evaluating E-Learning," William Horton provides an observational checklist for evaluating various characteristics of an online or e-learning course[1]. Although designed for Web-based e-courses, the checklist is adaptable for multimedia-based, computer-assisted learning programs. One of the primary objectives of using such a checklist is to determine the ability of a course or program to meet specific learning needs and objectives, prior to investing

[1] The checklist used in this paper is adapted from Horton, W. (2001). *Evaluating e-learning*. Alexandria: American Society of Training and Development (ASTD).

human and financial resources into delivering the course. The appeal of Horton's checklist is its flexibility, simplicity, practicality, and ease of implementation.

Horton defines the evaluation process in terms of assigning a value to something. His worksheet-based checklist provides an excellent starting point for comparing and contrasting the "value" of two or more e-learning courses. The premise is that certain characteristics, whether usability or motivation, are more important than other factors. After assigning weights to the evaluation criteria, each characteristic is ranked to see how a particular course meets the criteria. The worksheet then uses descriptive statistics to summarize the best "balanced" alternative—which you may or may not use to select one course over another. In other words, the checklist is simply one more tool that you can use to make a decision on whether a course meets your needs.

My selection of Horton's checklist was based on its flexibility (I was able to edit the worksheet categories to relate more closely to SimNet), simplicity (I was able to download a pre-designed worksheet and modify its contents), practicality (the categories were comprehensive and foundational to good e-learning design), and ease of implementation. I used a weighting system based on a 100-point scale and a rating system of 1 to 10 points. Because I was not comparing SimNet to other products, I modified the checklist's formulas to calculate a percentage attainment for each category. The results of my weightings and ratings are provided in Appendix 2 and summarized by category in Table 1 of the next section.

Results of the Evaluation

The overall score for SimNet is a respectable 73.2%, which indicates that SimNet ranked 7.3 on a 10 point scale when averaged across all characteristics. An added benefit of compiling the detailed rankings is that several suggestions arise for the product's next development cycle. Table 1 summarizes the evaluative data and questions from Horton's e-learning checklist.

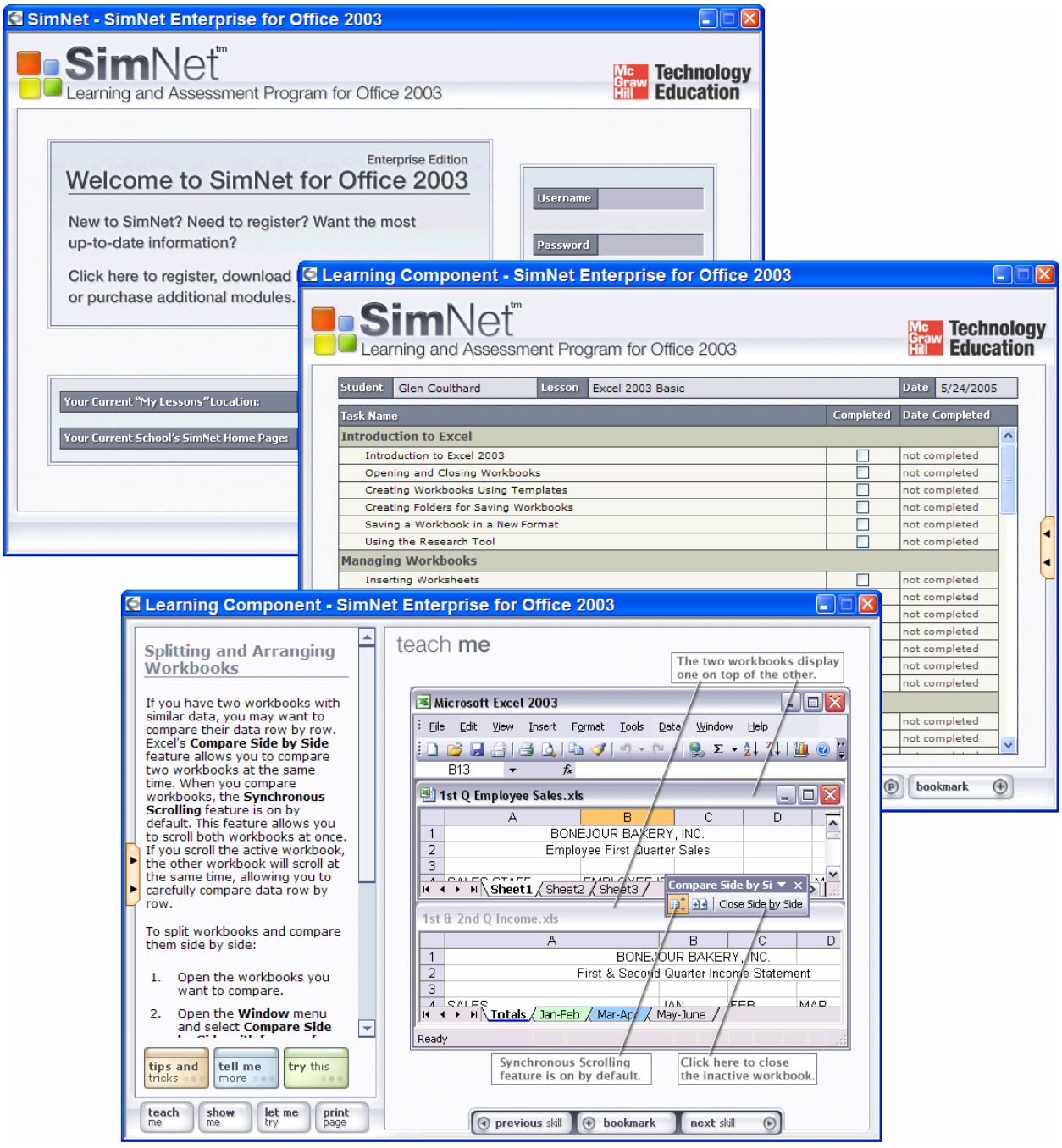
Table 1. Categorical Results of SimNet Evaluation

Business criteria – does the course meet learning objectives given reasonable cost and time parameters?	68.6%
Technical criteria – will the course work within the existing learning environment?	77.8%
Content criteria – is the course content complete, accurate, relevant, up-to-date, error-free, and supported?	87.0%
Instructional design criteria – are the course material, assessments (pre and post), and activities appropriate for the objectives, sequenced logically, and sensitive to learners' needs?	63.8%
Practice and feedback criteria – are learners provided ample opportunity to practice skills and receive feedback?	74.6%
Usability criteria – are learners able to navigate and use the course successfully with limited assistance from supporting personnel?	69.0%
Media criteria – is the course content, including text, graphics, animation, and video, appropriate, interesting, and motivating for the learner?	78.9%
Navigation and control criteria – are learners provided with failsafe control over topic navigation and learning progressions?	70.9%
Motivation criteria – are the course objectives and relevance visible to the learner and is the design appealing and interesting?	65.6%
Additional criteria – are the simulated activities realistic and relevant? Does the course provide sufficient scaffolding for self-regulation?	76.6%

Some apparent deficiencies exist in the instructional design and motivational areas for SimNet, while the product excels with respect to content, media, and simulated activities. For the immediate term, I would recommend supplementing the e-learning modules with additional instructional design activities. However, the next development iteration for SimNet should address these concerns directly. Overall, I like the product and see its value for self-directed and remedial software training, learning, and assessment.

Appendix 1

Screenshots of SimNet's Microsoft Excel 2003 Module (http://www.mhhe.com/cit/simnet/)



Appendix 2

Evaluation of SimNet for Office 2003
Learning product: SimNet Learning and Assessment, McGraw-Hill Higher Education

Summary	Total	Possible	Percent
Total score	14900	20350	**73.2%**

Business criteria	Weight	Rating	Score
Does the course's learning objectives match your learning objectives?	90	8	720
Are the total costs of the course low enough you can meet your financial goals?	75	6	450
Can the course be implemented in time to meet your schedule?	20	5	100
			68.6%

Technical criteria	Weight	Rating	Score
Will the course run on computers learners already have?	60	9	540
Will pages and other components download quickly over learner's network connections?	20	8	160
Can learners take the course without having to obtain and install additional software?	10	2	20
Can the course work under your learning management system?	40	8	320
Does the course comply with applicable e-learning standards (AICC, IMS, SCORM, etc.?)	5	2	10
			77.8%

Content criteria	Weight	Rating	Score
Is material in the course accurate and current?	80	7	560
Does the course cover the subject in sufficient breadth and depth to meet your objectives?	90	10	900
Is the course free of production errors, such as missing graphics and typographical errors, and supported?	60	9	540
			87.0%

Instructional design criteria	Weight	Rating	Score
Is the type of course (tutorial, simulation, online seminar, e-mail) the best choice to meet your objectives?	50	6	300
Is material presented in a logical sequence that helps learners understand and master the material? If the learner can control the sequence, is the default or suggested sequence appropriate?	50	4	200
Are abstract concepts (principles, formulas, rules, etc.) illustrated with concrete, specific examples?	20	3	60

Do post-tests and other assessments adequately measure accomplishment of your learning objectives?	75	6	450
Are diagnostic pre-tests available to help learners custom tailor learning to their needs?	65	10	650

63.8%

Practice and feedback criteria	Weight	Rating	Score
Are learners given the opportunity to practice ideas and skills immediately after they are presented?	75	10	750
Does practice activities exercise knowledge and skills in a way that prepares learners to apply learning to their jobs or coursework?	50	7	350
Are practice activities provided to help learners integrate separate bits of knowledge and low-level skills?	20	4	80
Is feedback in practice activities and tests sufficient to help learners recognize and correct misconceptions?	40	5	200

74.6%

Usability criteria	Weight	Rating	Score
Can learners get started taking the course (locate it, install plug-ins, register, access starting page) using only online assistance?	30	6	180
Is the combination of on-screen instructions and online help sufficient for learners to learn to navigate and operate the course?	70	8	560
Is it clear what learners should do if they get stuck or have questions?	60	6	360
Can learners predict the general result of clicking on each button or link?	40	7	280
Can learners take the course without fear of software crashes, server outages, and misformatted pages?	10	7	70

69.0%

Media criteria	Weight	Rating	Score
Is the text in the course written at a level that learners can fully understand?	50	9	450
Is text legible as displayed using default settings and only default fonts?	15	8	120
Are graphics (illustrations, photographs, graphs, diagrams, etc) used appropriately, for example, to communicate visual and spatial concepts?	35	8	280
Are multimedia content modules used where simple words and pictures are not adequate?	25	8	200
Do graphics and multimedia assist in noticing and learning critical content rather than merely entertaining or possibly distracting learners?	40	8	320
Will the course be accessible to those with visual and hearing impairments?	10	1	10

78.9%

Navigation and control criteria	Weight	Rating	Score
Can learners decide what parts of the course to take, in which order, and at what pace?	70	9	630
Can learners control whether and when large media components are downloaded and played?	20	2	40
Are navigation and access mechanisms (menus, browsing trails, maps, indexes) sufficient that learners can find specific items of content?	50	8	400
Are units self-contained enough that learners can take them out of sequence without becoming confused?	50	8	400
Do learners always know where they are? By examining page titles, constantly displayed menus, or other location indicators, can learners deduce their current location in the course?	40	4	160

70.9%

Motivation criteria	Weight	Rating	Score
Does the course initially make clear to learners what they gain by taking the course?	40	6	240
Does each lesson or other sizable unit make clear to learners what they gain by taking it?	30	6	180
Will the difficulty of the course appropriately challenge, your learners—not too hard or too easy?	40	7	280
Is the visual design (layout, color choices, emblems, icons, etc.) one that will appeal to learners initially and over the entire period of training?	50	7	350

65.6%

Additional criteria	Weight	Rating	Score
Are the simulations provided in Show Me and Let Me Try activities both realistic and practical?	75	7	525
Do the simulations allow for alternative means for completing tasks (i.e., keyboard, toolbar button, menu)?	75	8	600
Does the online assessment report provide suggested areas for further study and practice?	50	9	450
Is the e-learning course sufficiently designed to ensure independent learning and self-regulation through scaffolded activities?	65	7	455

76.6%