

RETHINKING THE CURRICULUM OF ORGANIZATIONAL AND END-USER INFORMATION SYSTEMS: CHALLENGE AND OPPORTUNITY

L. ROGER YIN

NANCY LIEN

In the midst of the Internet revolution and accelerated computer technology advancements, the volatile global economy is going through an unsettling mode after the “dot.com” hype during the turn of the millennium (Kogut, 2004; Park & Roome, 2001). As Giddens (2002) indicates, we are living through a major period of historical transition, and the tidal wave of globalization is reordering both social and economic capitals of all the countries in the world. Since the presently fluctuating U.S. stock market is creating higher risk for both private and public investors (e.g., government pension funds), the majority of private corporations and state governments alike are exercising tighter capital expenditures, particularly by scrutinizing the expenses in information technology (IT) and studying the impact of IT on all elements in business operations (Devaraj & Kohli, 2002; Keen & Digrius, 2002).

Inevitably, outsourcing computing-related production and services to foreign countries becomes a necessary step for a large number of corporations to cut costs. Within such an atmosphere, what kind of IT workforce do corporations and government agencies demand? The bottom line is that many organizations are streamlining their *front ends* (e.g., public relations, branding, customer relationship management, image, and Web visibility, etc.), *back ends* (e.g., databases, enterprise resource planning, etc.), and *everything in between*. They are seeking talented people as “enablers” and “catalysts” with solid business backgrounds, fluent communication and interpersonal skills, sensitivity to cultural differences, commitment to teamwork, and capacities in various aspects of IT planning and deployment. In other words, corporations want to hire quick learners who can adapt to and make

sense of changes rapidly, display the ability to be cross-trained in various business functions as needed, and hit the ground running.

As a testimonial, Dan Millin (2005), a 28-year veteran in corporate IT management and consulting, adequately pointed out:

My entire career has been focused on solving business problems by utilizing technology. I work with large corporations on a daily basis to evaluate new technologies and methodologies and how they may be used to the fullest capacity. I also help companies understand that the underlying technologies are less important than the business problem to be solved. Technology is becoming the most inexpensive part of the business equation. With global outsourcing, the development of custom applications has been reduced to a commodity. I help companies understand the implications of these trends and the importance of aligning their business requirements and IT direction. Technology is a tool. Used appropriately it can greatly improve the performance of an organization. Used inappropriately or just for the sake of technology, it can be a drain on valuable corporate resources.

L. Roger Yin is Associate Professor, Department of Information Technology and Business Education, University of Wisconsin-Whitewater, Whitewater, Wisconsin.

Nancy Lien is Assistant Professor, Graduate Institute of Multicultural Education, National Hualien Teachers College, Hualien, Taiwan (R.O.C.).

Realistically, the increasing worldwide trend of “give us nobody but the skilled high-tech workers now” has penetrated and imposed significant challenges and threats to Organizational and End-User Information Systems (OEIS) programs. By the end of 2004, 1 of every 10 jobs in U.S. technology companies could be outsourced and moved to emerging markets (Baker, Kripalani, Hof, & Kerstetter, 2004). Worse yet, under such an expertise-based and profit-driven mindset, one pivotal area that seems to take a back seat in many post-secondary business and IT curricula is the inclusion of ethics and professionalism—the true foundation that supports the long-term success of any organization in modern society.

In order to continuously help our graduates succeed as strong contenders in international competition, we IT educators must examine and improve our curricula through validating and sustaining our own disciplinary practice, scholarship, and discourse.

CHALLENGE: PLAN OR TO BE PLANNED FOR?

Like any professional training curriculum, OEIS works as an active system that serves the economy at local, regional, national, as well as global levels. As Ackoff (1981) hinted, in the eyes of the capitalistic planners in the government and private sector, every one of us involved in educational and training practices—student, teacher, and administrator—fits into a certain labor condition with a job description. Critically, our job right now is to foresee the job descriptions for our students and ourselves alike in the next 5 to 10 years. Keeping in mind the most recent iteration of the OEIS Model Curriculum (2004), we must remind ourselves that this model curriculum serves as a reference, *not* as a mandate or requirement, for us to continuously plan, update, and improve our programs, contingent upon our own fiscal resources, personnel, and geopolitical situations that are constantly changing.

In light of AACSB (The Association to Advance Collegiate Schools of Business), ABET (Accreditation Board for Engineering and Technology), AAHE (American Association for Higher Education), NCATE (National Council for

Accreditation of Teacher Education), and other national and international accreditation requirements becoming more demanding than ever, we must ask ourselves: What should we do to ensure excellence through continuous improvement of our programs?

OPPORTUNITY: REDESIGN A PROACTIVE OEIS CURRICULUM WHEN THE ONLY CONSTANT IS CHANGE

Experiencing the demand for restructuring or merging IT- and IS-related post-secondary programs, we generated a modest list of considerations that might supplement the model curriculum and help our endeavors in curricular redesign to be more focused and, hence, more likely to cope with the consequences of change.

1. *Help our students put learned skills—both technical and interpersonal—in context as soon as possible.* Medical education is typically conducted in teaching hospitals, and teacher education always requires a student teaching experience. We need to bridge our OEIS programs with regional, national, and international businesses to generate meaningful co-op opportunities. Therefore, it is recommended that a business internship or co-op be a requirement, and student interns should be supervised at the departmental or college level by dedicated faculty or staff who understand the importance of a professional internship and are passionate about our students' success. According to the experiences of many of our alumni, nothing learned at school can compare to the value of working experience in the real world. Moreover, since an internship or co-op experience will expose our students to daily business practices in the workplace, students will enhance their judgment and social skills while developing their own sense of ethics and values as professionals.
2. *Foster continuing professional development among faculty in order for us to “walk the talk.”* We need to develop ourselves, as faculty, through a variety of developmental activities

related to IT. This will not only advance our own subject matter expertise and help us stay in touch with real-world business activities, but it will also strengthen our programs by linking up with the community of practitioners (Wenger, 1998). In any successful change management case, all parties involved need development opportunities and a path in which to grow. Through deepening our own understanding of the interaction between the professional sphere and the world, we will be more qualified to exchange authentic life stories, including all the tensions and problems with our students (Kanpol, 1994), and motivate them to become a new generation of reflective practitioners (Schön, 1990; Schön & Argyris, 1983) who dare to deal with changes and discover their real identities.

3. *Design OEIS curricula with both formative and summative assessments as integral components.* Are the assessment methods presently used in our programs sufficient to assess a student's readiness for the workplace? Why are students always assessed *after*, instead of *during*, each module or course? Why are there so many assessments *of* learning but only a few assessments *for* learning (Stiggins, 2002)? If we expect our graduates to become lifelong active learners, we must find ways to help test them *in*, rather than test them *out*. In any professional training, both the outcome and the process of building expertise should be equally emphasized.
4. *Maintain a theme and coherence with the same set of business projects and case studies throughout the course streams to foster critical and systems thinking.* At the outset, clearly show students the *big picture* of the program in which they are participating and guide them to identify and solve the simplest, yet complete, problem (Honebein, Duffy, & Fishman, 1993). Once students build a solid foundation of understanding and a confidence level, they can continue to explore problems that are more complicated, ill-structured, and on a much larger scale. Ultimately, we need to empower students to discover new problems and solutions through mentoring and

encouragement in capstone project courses and internship experiences (Savery & Duffy, 1995). Cases built upon the rise and fall of businesses large and small, international and regional, provide different educational values because students can learn the dynamic and changing nature of globalization through transitional, transformational, and critical systems thinking.

5. *Establish an OEIS consortium to create and share business case studies in a shared knowledge base that will evolve and interact with the global economy.* As IT or IS has become an integral part of business planning, we must study, along with our students, the impact of technology-enabled changes to individuals, organizations, and societies from a longitudinal, interdisciplinary perspective. If there were an OEIS consortium with 10 member institutions, the contribution of 2 well-designed cases each year would result in 20 new cases for instructional, developmental, and research purposes. As both the quantity and quality of these business cases and best practices grow, the organic and shared knowledge base will become a critical asset to all members in the OEIS consortium.
6. *Build an OEIS community of practice through action research.* In a nutshell, action research involves all participants in a particular process to become inquirers, who contribute authentic narratives (i.e., in their own words) through dialogical communication and interaction (Argyris, Putnam, & Smith, 1985). Action is not merely an activity or task. One could perform an activity or task mindlessly (e.g., assembly line workers), but an action requires one to reflect upon the meaning of what s/he is doing or has done in a unique sociocultural and geopolitical context. Only through narratives—not experiments, surveys, or questionnaires—could we become a community of OEIS inquirers to better understand the tension, frustration, and moments of enlightenment of all levels of knowledge workers (including all managerial levels), who generate, collect, process, and, most importantly, interpret the information within a learning organization to build new knowledge (Argyris, 1993, 1997).

7. *Embrace a pedagogy that generates new knowledge.* Technology is just a tool. It is the knowledge behind it that matters. We assert that any organization that strives and grows must expand from *know-how* to *know-why*. Such an evolving mindset should be adopted by the OEIS community if we are to pursue excellence in preparing future knowledge workers in an IT and IS workforce for the global economy. The key then, as Freire (1970) suggested, is to shift our paradigm in professional education further from *problem solving* that emphasizes reproducing existing knowledge to *problem posing* that values inventive and critical thinking. (See Table 1). Hence, there needs to be a heightened expectation to transform both ourselves and our students to become *knowledge creators*, not merely *knowledge consumers*.

CONCLUSION: TECHNOLOGY BUSINESS IS PEOPLE BUSINESS

As the train of globalization is leaving the station, the shifting demand for an IT workforce is making our jobs as OEIS educators and practitioners more challenging than ever. On the one hand, employers want their IT personnel to have a firm grasp of business operations and communicate well with nontechnical co-workers. On the other hand, they want each member of the IT department to obtain depth of expertise in specific technical areas so computing-related problems can be resolved in a timely manner. For our OEIS programs to succeed, we must strive to identify the balance of preparation between technical and interpersonal skills in all business and organizational settings.

However, a curriculum as a system is more than the sum of its parts. The new OEIS Model

Table 1: Knowledge System & Objectives of Action

Forms of Knowledge *	Evaluative Criteria **	Verbs in Objectives of Action
Inventive ■ <i>Knowing what-to-do</i> ■ <i>Problem-posing</i> ■ <i>Fluency</i> ~ ~ ~ ~ ~	Evaluation (Managing consequences with criteria or rationale)	Appraise, Assess, Argue, Compare, Critique, Defend, Determine, Diagnose, Evaluate, Judge, Justify, Prioritize, Rank, Rate, Reflect, Reason
Praxic ■ <i>Knowing how-to</i> ■ <i>Problem-solving</i> ■ <i>Competency</i> ~ ~ ~ ~ ~	Synthesis (Forming a New Whole through Induction)	Arrange, Combine, Compose, Construct, Create, Design, Generalize, Invent, Organize, Plan Predict Reconstruct Revise Summarize
Quantitative ■ <i>Knowing that-any</i> ■ <i>Problem-solving</i> ■ <i>Competency</i> ~ ~ ~ ~ ~	Analysis (Breaking into Parts through Deduction)	Analyze, Articulate, Categorize, Classify, Differentiate, Discriminate, Distinguish, Elaborate, Examine, Solve, Troubleshoot
Qualitative ■ <i>Knowing that-one</i> ■ <i>Drill-and-Practice</i> ■ <i>Literacy</i>	Application (Generalization in New or Novel Situations)	Apply, Change, Compute, Assemble, Depict, Develop, Dramatize, Employ, Illustrate, Install, Operate, Translate, Use
	Comprehension (Interpretation of facts and concepts)	Demonstrate, Define, Describe, Explain, Give (non)examples, Indicate, Locate, Match, Paraphrase, Select, Show, Tell, Understand,
	Memorization (Recall of facts & concepts)	Identify, List, Memorize, Name, Recall, Recite, Recognize, Repeat

* Based on Frick's "Implications of Maccia Epistemology." (<http://education.indiana.edu/ist/faculty/episcamp.html>)
 ** Based on Bloom's Taxonomy. Bloom's notion of "knowledge" is substituted with "memorization" since knowledge demands its own categorization for further clarification.

Curriculum arrives as a timely reference for redesigning and restructuring many of our programs. In order to use the model curriculum to empower ourselves and our graduates, we need to think beyond the hierarchical structure of individual courses and put the interests of all people involved at the center as the engines of all possible actions and advancement. In the world of technological advancements, it is people who make the difference. We hope that the supplemental list of recommendations to employ the new OEIS Model Curriculum is of assistance in your curricular redesign endeavors.

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