TOWARD SUSTAINABLE DEVELOPMENT OF ELECTRONIC TEACHING IN UNIVERSITIES: CHALLENGES AND CONCERNS

Breena E. Coates
San Diego State University–Imperial Valley Campus, USA

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Summary

Organizational learning about informational technology—its strengths, weaknesses, opportunities, and threats—is a significant part of labor in educational institutions. Such learning is action based and develops from actual practice. While the management and delivery of teaching in institutions of higher education has been greatly enhanced by the strengths and opportunities provided in the electronic age, the prevailing view that informational technology is faster and cheaper is not necessarily true for the classroom/workplace. This is especially so in an economic era that sees educational institutions around the world cutting back on full-time instructors, and simultaneously trying to service a growing educational marketplace. Using an exploratory study as a basis for evidence and inference, this paper looks at the current weaknesses and threats that the electronic age has brought about in colleges and universities, and offers recommendations for learning from, and mitigating, some of them.

1. Introduction

Higher education organizations of the twenty-first century are no longer just providers of teaching and research, but are themselves quintessential learning organizations. Learning today is seen as yet another form of labor in organizations. The learning organization is one that learns collectively to continuously evolve and transform itself. It uses new forms of information technology to better manage its resources, and it empowers its stakeholders to maximize organizational outcomes. Learning is an action-
based process capability. As learning organizations, higher education institutions benefit from on-going evaluation of their strengths and weaknesses, and successes and failures. Learning organizations must, as Albert Einstein once remarked, “see the world anew”—i.e., see challenges and opportunities from a different consciousness than that which created them.

Many such challenges and opportunities have presented themselves to higher education institutions in the last twenty years. Four key areas are the economic paradox of “shrink and grow”; consumer demands, competition for educational marketshare and the revolution in informational technology (IT). Learning about sustainable development and use of electronic technology in universities is the focus of this paper. It is becoming clear that high-quality teaching in the new media of electronic sites “is time and labor intensive.” This is counterintuitive to the strongly held contention that IT is the faster and cheaper way to meet organizational objectives.

Undeniably, IT supports universities’ roles as knowledge gatekeepers. Use of IT not only helps faculty and student learning, it also assists organizational learning about learning. While the investment in IT has doubled for the average higher education institution since 1990, misunderstandings and false assumptions remain over understanding what constitutes education labor, and how instruction output is evaluated and rewarded. Another problem issue lies in the area of integrating teaching systems and computing platforms within organizations. IT applications for higher educational organizations expand at exponential rates. It is no wonder that constituencies find themselves drowning in data. Much of this data needs to be recognized as simply “noise” or random bits of information that obscure knowledge and contribute to organizational disablement as opposed to useful organizational learning. Sustainable development and application of IT requires institutional awareness of the current weaknesses and threats to teaching with technology with a view to minimizing them.

The next section provides an overview of the literature on organizational learning and informational technology. Section 3 provides a set of themes for higher education IT learning that have emerged from evidence and inference provided by studies and discussions among educators from around the globe about need for organizational learning and organizational change. Sections 4–9 develop these themes. The paper ends with some concluding remarks.

2. Overview of the Literature

S. Zuboff’s classic work, The Age of the Smart Machine, about organizational learning in the electronic age, suggests that modern organizations have no choice but to become a “learning institution since many of its principal purposes will have to be expansion of knowledge. This is not knowledge for its own sake (as in academic pursuit), but knowledge that comes to reside at the core of what it means to be productive. Learning is no longer a separate activity that occurs either before one enters the workplace, or in remote classroom settings. Nor is it an activity preserved for a managerial group. The behaviors that define being productive are one and the same. Learning is the heart of productive activity. To put it simply, learning is the new form of labor.”
Anders Ortenblad has looked at and discussed the differences between the concepts of organizational learning and the learning organization. He notes that there appears to be confusion regarding the meaning of the two concepts, and offers his own explanation of the distinction between them. The learning organization, he argues, is an ideal form of organization, whereas organizational learning is an existing, on-going, action-based, active process.

Marquandt asserts that action learning has quickly emerged as one of the most powerful tools in developing organizational competency. To be successful in the new global environment, Marquandt argues that the organization must use new forms of technology to manage its resources. It must empower its valuable human resources to move innovatively towards the maximization of organizational missions. In a similar vein Garvin proposes that modern organizations that use technology can only maximize outcomes if they are able to help their stakeholders sort through the copious minutiae, or “noise” and cut to the heart of the matter, or be able to receive the relevant “signals” necessary for organizational advancement. Garvin suggests that noise from the IT environment obscures knowledge and contributes to “learning disablement.” He cites many such organizational disabilities that arise due to noise: framing effects; illusory causation and correlation; illusion of validity; categorical biases; regression artifacts; and, hindsight bias. Dilworth argues that rapid change afforded by electronic means assists the tendency for organizations to disable themselves: “…change now tends to outdistance our ability to learn. Existing knowledge tends to misdirect inquiry rather than facilitate problem resolution. People and organizations need to learn new ways of coping with problems.”

However, as noted by Jelinek, Nevis, et.al., Shrivastava, Stata, and Wenger, learning is innate to all organizations, thus it behooves such organizations to re-view themselves as continuous learners. To do this, Senge argues, organizations need to integrate ordinary work with learning and make learning a strategic objective. Dutton notes within educational institutions, who he asserts are the true guardians of knowledge, must find out more about their own learning. Thereby they will assist organizational learning—learning styles, learning strengths, weaknesses, opportunities, and threats.

Despite the fact that learning is innate to organizations and that they learn spontaneously, there is still much to learn about the IT venue and organizations often disable themselves in this regard by information complexity and confusion. The Educational Resources Information Center (ERIC) studied the fiscal needs of universities that result in dichotomous—perhaps even contradictory—targets. These tensions concern increase in quantity and quality of services, versus the need to cut costs, to standardize versus individualize services; and centralization versus decentralization. Wheatley has also suggested similar organizational disablement.

In part, organizational disablement was fostered in a climate of cutback management. The first part of the common organizational paradox of “shrink and grow” relates to cuts and reductions in organizational costs and resources, and the second relates to expansion of outputs in response to competition for marketshare and customer demands. Hammer and Champy teach us that in the iterative process of “doing more with less”
organizations, have had to move beyond incremental change to radical reengineering of the enterprise. In educational institutions this has meant both shrinkage of proportion of full time to part time faculty, and increasing institutional workloads of full-time faculty. Despite this reduction, customer demand for quality education have soared. Worldwide economic conditions have dictated that more working adults must return to colleges and universities for increased training and deskilling. The market also demands new educational products to accommodate these learners. Increasingly new competitors to traditional colleges and universities are marketing distance education classes worldwide. In the U.S. itself, the Department of Education found that the number of distance education program offered by colleges and universities had increased by 72%. An estimated 1680 institutions were offering a total of 54 000 distance courses.

Quality of educational output, is nevertheless still the target of higher education institutions around the world. Yet, contrary to popular belief, the use of new media sites and keeping quality high, are “time and labor intensive” as noted in the University of Illinois Distance Pedagogy Report. The report goes on to explain the ways in which this is counterintuitive to the popular belief that informational technology is a faster and cheaper way to reach institutional missions for quality and outreach.

Because more is being squeezed out of less resources educators have experienced a surge in workloads. This represents more time spent on teaching and teaching related activities, more time used to learn, maintain, and use the ever rapidly changing technology, and more one-on-one access to learners via IT venues is another factor. Empirical studies suggest this to be more than a passing trend. Institutions of higher education still use conventional methods of evaluating workload, these must be brought into currency with actual teaching effort in the electronic age.

Motivation theory from Maslow, Alderfer, Hertzberg, McClelland, McGregor, and Chaplin and Krawiec have taught us about intrinsic and extrinsic motivational methods for workplaces. Thorndike has shown that when behavior brings good consequences, that behavior is very likely to be repeated. Thus, organizations need to reward educators for the additional time and value added through modern electronic sites. They must also take into account their personnel cutbacks and what this means to the workload of core personnel, who continue to provide value despite burgeoning workloads. An explanation for this behavior comes from Bandura’s social learning theory, which suggests that those who fall high on the notion of self-efficacy, such as educators, are those who believe that they can accomplish the task, and generally overcome all obstacles to do so, regardless of time and effort. Institutional reinforcement and reward become ever more essential in such organizational climates.

Castells has asserted that the presence or absence of informational networks among groups determine power and domination in social settings. In the same line of thought, Deresky has posited the notion that emergent social structures around the world are increasingly structured around informational technology. Yet, this may be more of an illusion than a reality when it comes down to types and forms of usage. Tapscott has argued that despite the heavy investment in educational IT, one should not automatically assume that all young people, nor all consumers of education, are ready-made users of electronic technology. Universities worldwide need to recognize this fact.
Dutton relates that the reality of the digital world is that proficiencies, preferences, attitudes, and consumption are very varied globally. Malina worries that electronic information is just another costly consumer product, not targeted towards the vast majority of learners around the globe. Again, the existence of an e.elite and an e.underclass means instructors must deliver to both populations simultaneously.

Ownership, security, and privacy issues of electronic intellectual property continue to worry educators, whose work may intentionally or unintentionally be shared around the world without permission of the owner. Rhoades has worried that institutions, not individual educators, may seize ownership rights of intellectual property.

Scholars like Garvin and Dutton have concerned themselves with learning about information overload on electronic sites. Noise from these sites may overload the critical-thinking faculty of all learners in higher education—the organizations themselves, their professionals and the students. Dutton has observed that many: “…users do not read anything. Instead they scan and download images as they click from one hypertext to the other.”

Teheranian deplores the depletion of learning among student peers, via Socratic dialog and other face-to-face means, and fears that a sense of personal obligation to the group, and socialization might be lost in the new electronic teaching sites.

As organizations make greater and greater investments in technology, many of these weaknesses and failures are important aspects to organizational learning about how to sustain and teach over electronic sites in worldwide higher education institutions of the twenty-first century.

3. Emerging Themes for Higher Education IT Learning

Following scholarly inferences and evidence, and participation in conference presentations and discussions derived from educators from across the world, a preliminary empirical study was undertaken by Coates in Spring and Fall 2001. This study set out to explore how IT is perceived, used, and evaluated in institutions of higher education. A number of major themes emerged from that exploratory study. Of these the most salient are defined below and discussed in the following sections.

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Biographical Sketch

Breena E. Coates, PhD, is Chairman of the Departments of Business and Public Administration, and Assistant Professor of Public Administration at San Diego State University–Imperial Valley Campus. Her research interests are public policy impacts on organizational behavior, organizational behavior in global organizations, informational technology impacts on organizational behavior. Dr. Coates teaches administrative behavior, organizational behavior, managing across borders and cultures, and administrative law at San Diego State University. Professor Coates has written and published in scholarly journals and books in the above fields.