

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

Breena E. Coates

San Diego State University–Imperial Valley Campus, USA

Keywords: underclass, learning disablement, learning organization, organizational learning, shrink and grow, informational technology, reward, reinforcement

Contents

1. Introduction
2. Overview of the Literature
3. Emerging Themes for Higher Education IT Learning
4. New Measures of Instructional Output are Required in Modern Universities
5. Re-Learning About Reinforcement and Rewards for Instructional Effort
6. Technological Integration and Support Platforms
7. Higher Education Organizations and Democratic Ideals
8. Intellectual Property
9. Critical Thinking and Technology
10. Conclusion and Recommendations

Glossary

Bibliography

Biographical Sketch

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 evaluate 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 *learning 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 about 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, Herzberg, 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 deplors 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.

-
-
-

TO ACCESS ALL THE 11 PAGES OF THIS CHAPTER,
Visit: <http://www.eolss.net/Eolss-sampleAllChapter.aspx>

Bibliography

Alderfer C.P. (1972). *Existence, Relatedness and Growth: Human Needs in Organizations*. New York: The Free Press. [This represents a comprehensive discussion of levels of human motivation and need.]

American Federation of Teachers and The National Education Association (1999). *What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education*, Washington, D.C. [This presents current research on higher education and distance learning.]

Bandura A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall. [This examines the concept of self-efficacy in meeting goals.]

Castells M. (1997). *The Rise of the Network Society*. Malden, MA: Blackwell Publishers. [Examines the information society with respect to economic and social aspects.]

Chaplin J.P. and Krawiec T.S. (1968). *Systems and Theories of Psychology*. New York: Holt, Rinehart and Winston. [Presents a broad look at the history of psychology.]

DiBella A.J. and Nevis E.C. (1998). *How Organizations Learn*. San Francisco: Jossey Bass. [Expounds on the notion that all organizations have learning capabilities.]

Dilworth R.L. (1998). Action learning in a nutshell. *Performance Improvement Quarterly* 11, 28–43. [Presents the viewpoint that there are learning disabilities in organizations, which come about due to rapid change in the environment.]

Dutton W.H. (1997). *Society on the Line: Information Politics in the Digital Age*. New York: Oxford University Press. [Examines the politics of information technology and telecommunication from political, social and economic aspects.]

Educational Resources Information Center (ERIC) #ed418654 (1998-2000). *Faculty Workload Studies: Perspectives, Needs, and Future Directions*, Washington, D.C. [Trends in higher education that impact faculty workload.]

Garvin D.A. (2000). *Learning in Action: A Guide to Putting the Learning Organization to Work*. Boston: Harvard Business School Press. [Talks about individual and organizational learning and challenges to leadership.]

Hammer M. and Champy J. (1993). *Reengineering the Corporation: A Manifesto for Business Revolution*. New York: Harper Business. [Examines organizational change and corporate reorganizations from the perspective of broad and deep change rather than incremental change.]

Herzberg F. (1968). One more time: How do you motivate employees? *Harvard Business Review*, Jan-Feb, pp. 53–62. [Concerns intrinsic and extrinsic factors of motivation].

Jelinek M. (1979). *Institutionalizing Innovation: A Study of Organizational Learning Systems*, New York: Praeger. [Suggests that organizations must find ways to institutionalize the function of learning about themselves in order to find innovative problem solutions.]

Malina A. (1999). Perspectives on citizen democratisation and alienation in the virtual public sphere. *Digital Democracy: Discourse and Decision Making In the Information Age* (B.D. Hague and B.N. Loader.), New York: Routledge. [Examines the issues of participation and democracy in technological aids].

Marquardt M.J. (1999). *Action Learning in Action*. Palo Alto, CA: Davies-Black Publishing. [Suggests that the wisdom inherent in learning by doing is more important than ever in today's rapidly changing organizations.]

Maslow A.H. (1954). *Motivation and Personality*. New York: Harper and Row. [Explains motivation from a hierarchical perspective, where lower needs once satisfied no longer motivate in a steady state environment.]

McClelland D.C. (1961). *The Achieving Society*. Van Nostrand Co, Inc., Mason, Ohio, N.J. [This examines the achievement motivation of individuals and society.]

McGregor D. (1960). *The Human Side of Enterprise*. New York: McGraw-Hill. [This is a study about management styles, positive and negative leadership styles, and effects on employees.]

Nelson D. and Quick J.C. (2000). *Organizational Behavior: Foundations, Realities and Challenges*. Southwestern College Publishing, Bradford, U.K.. [A comprehensive textbook on all aspects of organizational behavior and employee response.]

Nevis E.C. (1996). *Intentional Revolutions: A Seven-Point Strategy for Transforming Organizations*. San Francisco: Jossey-Bass. [Posits the notion that strategy focuses on organizational learning.]

Ortenblad A. (2001). On Differences Between Organizational Learning and Learning Organization. *The Learning Organization: An International Journal*, 8, 125–133. Emerald Publishers. [This study suggests that organizational learning is an existing process, while the learning organization is an ideal form of organization.]

Rhoades G. (1998) *Managed Professionals: Unionized Faculty and Restructuring Academic Labor*. New York: State University of New York Press. [This work takes a look at the changing nature of academic labor and its relationship with educational management.]

Schiller H.I. (1996). *Information Inequality: The Deepening Social Crisis in America*. New York: Routledge. [Examines the information age with respect to equality and distributive justice in America.]

Senge P. 1990. *The Fifth Discipline*. New York: Doubleday. [The art and practice organizational effectiveness—the learning organization using teams in the workplace.]

Shrivastava P. (1983). *A typology of organizational learning systems*. *Journal of Management Studies*, 20, 7–28. [Provides a systematic look at organizational learning.]

Stata R. (1989). Organizational learning: The key to management innovation. *Sloan Management Review*, 30, 63–74. [Looks at how organizational management can benefit from the innate capacity of the organization to learn.]

Tapscott D. (1998). *Growing Up Digital: The Rise of the Net Generation*. New York: McGraw Hill. [Examines computers, networks and society.]

University of Illinois (1999). *Teaching at An Internet Distance: The Pedagogy of Online Teaching and Learning*, Tucson, Arizona. [This study examines distance learning and teaching on the Internet.]

Vroom V. and Yetton P.W. (1973). *Leadership and Decisionmaking*. Pittsburgh: University of Pittsburgh Press. [This book examines organizational leadership and decisionmaking.]

Wenger E. (1996). Communities of practice: The social fabric of a learning organization. *Healthcare Forum Journal*, 39(4), 20–26.

Wheatley M. (1992). *Leadership and the New Science*. San Francisco: Berrett-Koehler. [This book discusses leadership in the context of self-organizing systems, quantum theory, and chaos in systems.]

Zuboff S. (1988). *In the Age of the Smart Machine: The Future of Work and Power*. New York: Basic Books. [This book looks at organizations and rapid technology growth and suggests that organizations today have no choice but to become learning organizations.]

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.

UNESCO – EOLSS
SAMPLE CHAPTERS