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# Book Review – Managing Technological Change: Strategies For College And University Leaders

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# Book Review – Managing Technological Change: Strategies For College And University Leaders

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It's well written, cogent, and enjoyable. I saw a presentation by Bates last year and didn't like it. Either I was in a bad mood and didn't hear his message, or that message was different from the message of the book "Managing Technological Change." Likely, it was the former. This book is a must read for anyone in higher education who deals with technology, teaching, administration, or some combination of these elements. The book incorporates technology in that it lists web sites related to a number of topics covered in the various chapters. For example, in the chapter on leadership, visioning, and planning, there are a number of listed web sites that offer examples of strategic and technology plans.

Not only is the book well written, but it is also comprehensive in nature. It covers topics of vital concern for all who are involved in technology-enhanced or technology-based learning. Some of the topics include: (a) the challenge of technology and rationales for using it; (b) technology forms, approaches and their impacts on teaching and learning; (c) leadership in technology use, organizational structures, visioning and strategic planning; (d) infrastructure and access issues including physical and human infrastructure, funding, infrastructure adequacy, the relationship of infrastructure to academic planning, and the issues associated with requiring students to purchase technology or to access it; (e) supporting faculty in terms of development of faculty skills and products, faculty fears, intellectual property, and copyright issues; (f) the costs of teaching with technology; (g) funding strategies, collaborations, and competition; (h) management of technologies; (i) research and evaluation; and (j) a perspective on the technology challenge that faces us all.

The book hits a number of nails right on their heads. It holds true to its intended audiences: administrators, academic department heads, and faculty. The messages for each are important and timely. A few examples will demonstrate what I mean.

University central administrators who read this book will learn about the singularly important job of providing a vision for technology within a university.

When one considers the power of technology and what it brings to each of our desks, the job of visioning becomes centrally important. Technology is becoming less expensive and more powerful, providing many smaller organizational units within a university or college the power to do things that were previously the domain of well financed, centralized production units. Because of this, the importance of visioning and laying out a broad plan about where an institution might go is critically important.

For the faculty member, the issues about design of technology-supported or enabled courses are addressed well. Issues of faculty members' concerns are addressed. In treating these issues Bates rather unassumingly, but importantly, builds his logic and presentation on principles. Thus the approaches that he describes and suggests are flexible (a theme that resounds throughout his book) and adaptable to any number of situations.

Bates covers the waterfront. His is not a "one size fits all" formula. The concepts and approaches are applicable in numerous settings ranging from the small liberal arts college to the large doctoral research university. Bates calls upon his experiences with the British Open University and the University of British Columbia as well as his extensive work with other higher education institutions to provide practical advice and examples.

One of the weak areas or perhaps better stated, an area that I'm not in total agreement with is the notion of the digital divide. Bates comes down squarely on the side of high tech. and more of it. He feels that an institution must provide value-added learning benefits in order to require students to have a computer. However, this does not do much for those who cannot afford the technology tools. While I agree with Bates that value-added is a must for requiring students to purchase technology, that argument does not span the digital divide in terms of student ability to afford technology.

Another weakness is the disjointed presentation of quality issues surrounding technology-enhanced education. Bates devotes little more than a page to discuss elements of quality even though he states "it will become increasingly important for universities and colleges to achieve high quality in any technology-based teaching and learning materials and programs that they develop" (p. 64). The second to last chapter on research and evaluation should be read in conjunction with the brief section on quality. The use of the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) of instructional design as a framework for quality elements in managing technology might well be considered as an addition to the book's brief discussion of quality.

There are little gems of thoughts and truisms scattered thought out the book. They stand alone and carry important messages for us all. Here are a few examples:

- "Reallocation is the ultimate test of an institution's commitment to teach-

ing with technology" (p. 4).

- "To assume that investment in technology will lead to reduced cost in higher education is to misunderstand the nature of the educational process in higher education and the relationship of technology to that process" (p. 19).

- "Whatever the philosophical arguments for or against the use of technology for teaching, improved cost-effectiveness in higher education requires more than just investment in new technologies. It will also require radical changes in teaching methods and organization" (p. 35).

- "Most university teaching has not been influenced to any extent by research into the psychology of learning, organizational management research, communications theories, or human-machine interaction, all of which have influenced one way or another the development of postindustrial knowledge-based organizations" (p. 41).

- "Although technology infrastructure plans are essential, they are not sufficient. It is equally important to develop academic or teaching plans that specify the ways in which technologies will be incorporated into teaching learning activities" (p. 46).

- "Just drifting into technology for teaching can be a dangerously expensive and ineffective policy" (p. 48).

- "It will help enormously if the senior management of the institution has provided an institutional vision or context for change within which the department's vision can 'nest'" (p. 50).

- "The real challenge for a department considering requiring students to have computer access is in ensuring that the computer will provide genuine value-added teaching...The worst policy is to make computer access optional" (p. 90).

For me, a highlight of the book was chapter 2, "Leadership, Vision, and Planning in a Post-Fordist Organization." It should be studied carefully by senior administrators who are being confronted with technology and teaching challenges. Bates uses the open universities from around the world as examples of industrial models of education and notes that they do not exist in North America, in part due to the fragmented state and provincial education systems found there (true of Canada and the United States, but certainly not Mexico). I would add another reason (at least in the United States), the advent of the land grant university.

I like Bates notion of leadership.

> Leadership is not so much a *strategy* as a *quality*. It is really the responsibility of the board of governors and the president, or deans, through their appointment processes, to ensure that senior managers or heads of department have leadership quality and an understanding of the strategic importance of applying new technologies to teaching and learning. (p. 44)

The charge is laid at the door of the central administration, "Presidents and vice presidents have a responsibility to take the long view, to respond to the pressures from society, and to think of the interests of the institution as a whole" (p. 53). What a great message!

Bates uses the Western Governors University (WGU) as an example (among others) of a "post Fordist" (post-industrial) university. While political in his choice of this example, he might have chosen better. WGU is on the ropes and there is concern that it will make it into the realm of sustainable organizations. In spite of the plan for thousands if not tens of thousands of students in a matter of a few years (which have elapsed) and the support of millions of tax and private dollars, WGU presently enrolls about 230 students.

Bates offers strong suggestions about technology infrastructure and organizational structure (though they are treated in separate chapters). From chapter 4, "Technology Infrastructure and Student Access" comes another example of Bates' building on principles. Principle: "Even more important than the physical infrastructures are the people required to make the physical infrastructure work" (p. 77). Application: "There are...four levels of human support required to exploit technology to the full...technology infrastructure support staff...educational technology support staff...instructional design staff...[and] subject experts" (pp. 77-78). Each of these levels is discussed in enough detail to allow a person to develop role statements and begin to staff a technology infrastructure support organization. In concluding this chapter, Bates makes what seems to be an alarming (to faculty members at least) comment. "Although technology infrastructure is important, it is not just a capital cost but also requires high operating costs, which brings it directly into competition for funds for teaching and research" (p. 93). But he just as quickly offers a solution to the dilemma he describes. "There should be strong links and integration between the overall technology plan and the use of technology for teaching and learning, and these in turn should be integrated with the overall vision and strategic directions of the institution" (p. 93).

Bates' chapter on costs (chapter 6, "Calculating the Costs of Teaching with Technology") is one of the few I have read on this topic that acknowledges pedagogy as a cost factor. He spends some time on the issues of student-teacher ratios, noting that they are the basis for many cost factors. It is a fairly comprehensive treatment of approaches and factors to be considered in trying to come to some understanding of the costs of technology based education. A careful

reading of this chapter will help administrators who are perhaps unfamiliar with technology to more easily understand the costs associated with its development and deployment. It certainly drives home the point that technology is not a cheap method to deliver instruction.

Of equal importance to administrators is chapter 8, on organizing for management. This chapter offers guidance to anyone who is either taking a new management job in the educational technology world, or who is a student of technology and organizations. Bates recognizes the amount of technology work that gets done in spite of organizational boundaries. It has been my experience that technology types love their work, but have some misgivings about working in an organization. They love to collaborate across unit divides. Hence, I resonate to the premise that the author offers: "Staff willing to work collaboratively will often work around or across organizational boundaries, and perfect organizational arrangements will not work if petty jealousies and conflicting ambitions get in the way" (p. 181). Bates treats both decentralized and centralized organizational models and then describes a "lightly coordinated decentralized" model (p. 185). This chapter is typical of most in that it offers ideas worthy of experimentation, if not implementation.

Chapter 9 deals with what, for me, has always been a problem in distance and technology-supported education – evaluation and research. Systematic inquiry in the past has used traditional research designs and evaluation models. Bates offers the ACTIONS model (Access and flexibility, Costs, Teaching and learning, Interactivity and user-friendliness, Organizational issues, Novelty, Speed) for assessing the effectiveness of different teaching technologies as a framework for evaluation. He also includes some important questions that need to be asked.

His ideas about researching software applications are on target. Bates relates a situation that parallels a personal experience of mine that underscores the need for rational approaches to software selection. Our unit settled upon a course authoring tool that we had judiciously studied. We had carefully considered a number of the leading software applications and settled on one that we thought was best. Days later, I received a letter from our university president asking why we were not using a competing application. It seems the competing software company's vice-president had personally called our president and explored with him the use of his product. I had to carefully explain how and why we made the selection we did. Bates' suggestions about this assessment function may well have saved us time in defending our choice.

While this book is mostly time-free (i.e., it is not easily outdated because of technology advances) there are some parts that succumb to anachronisms. Bates speaks of projectors that can be connected to an instructor's laptop computer for display in lecture halls. More modern versions of the projector can accept runtime versions of PowerPoint or Presentations on micro-disks that eliminate the need for the computer. These small points are easily and readily forgiven because of the preponderance of help and insight the book delivers.

A small nagging point is Bates' view of how technology is changing teaching. While he lists several attributes that are unique to technology-enhanced learning, he does bring into the argument a couple of points that are not limited to technology, but rather, are actually good practice no matter how the instruction is based. For example, using new technologies to develop and design higher-order learning skills is not limited to just distributed learning. In fact some researchers believe that low-order learning skills predominate in distributed learning.

In summary, this book is founded on principles. It speaks to the relevant issues. It offers numerous examples. It is well constructed and written. Hats off to Tony Bates. Now, I'm not biased, but it is great to be able to recommend a book without reservations. And so much the better when it is written by someone from my alma mater.

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