LOOKING TO DIGITAL TECHNOLOGY FOR ASSISTING EDUCATIONAL LEADERSHIP AND ADMINISTRATION IN HIGHER EDUCATION

The Brave New World of Technology

To borrow from the classic futurist novel by Aldous Huxley, the brave new world of technology is one in which life and society are quickly changing to accommodate the perpetual emergence of new technological innovations. This is particularly true when speaking of trends in Higher Education leadership and administration where a plethora of new digital technologies appear before us each day as open doors of opportunity but without the comfort of knowing what is on the other side. It is a brave new world because the institutional investment in technology is as high as the need for administrator accountability to institutional members and other stakeholders concerning decisions being made. Do we adopt this new technology or risk falling behind the other colleges and universities that are using it? Do we adopt this new technology and risk alienating certain institutional members and other stakeholders that do not see the benefits? Do we adopt this new technology and risk losing well entrenched traditional aspects of what made the institution great in the first place?

It is thus a brave new world of Higher Education due to the potency of consequences surrounding a decision to integrate some new technology to advance educational leadership or leverage administrative services. It is also a brave new world because it requires that professionals working in educational leadership roles work without a safety net in a world of technology marked by rapid change and no certainty. As Swiss philosopher and writer, Friedrich Nietzsche put it “The press, the machine, the railway, the telegraph are premises whose thousand-year conclusion no one has yet dared to draw.” That is the difficult situation faced by leaders and administrators working in contemporary Higher Education today. Tough decisions have to be made that will affect many but without any real certainty as to whether the long-term consequences will be worth it. Leadership and administration in Higher
Education are connected to technology, for better or for worse, and we are hoping for the better. However, there is more than hope to guide us. Within this complex realm with no easy solutions, there are ways to move forward that are better than others. Armed with insider institutional knowledge, ongoing professional exchanges, best practices, and information drawn from practical case studies like the ones presented in this volume, helpful insights can be discerned to inform these tough decisions.

THE CHANGING (INTER)FACE OF EDUCATIONAL LEADERSHIP AND ADMINISTRATION IN HIGHER EDUCATION

There will still be things that machines cannot do. They will not produce great art or great literature or great philosophy; they will not be able to discover the secret springs of happiness in the human heart; they will know nothing of love and friendship. --Bertrand Russell (1872-1970)

British logician and philosopher, Bertrand Russell, was keenly aware of the limits of technology in any situation involving humans and human interaction. This is particularly evident today within institutes of Higher Education where complex personal and social factors are juxtaposed with technical and organizational factors. There is no doubt that technology is transforming much of the landscape of educational leadership and administrative services within colleges and universities. But what remains the same is the centrality of the trusted human-human interface, along with the need for solid leadership and strong administration from those of us entrusted to guide technology integration within Higher Education. In this sense, we are the most important and lethal technology of all. When we ask, “will this proposed technology help increase administrative efficiency or effectiveness of some area of program delivery?,” we are also asking other key questions: Is there a reasonable level of organizational readiness for this type of technological change? Are there competent managers and technicians to successful implement and maintain this new technology.

As experienced professionals in higher education know, what looks good on paper does not always work as well in practice. This is particularly true when dealing with technology integration into educational institutions because of the many human factors that go beyond technical alterations and efficiency considerations. Because of the tendency in human nature to resist the unknown, along with complex institutional politics, unique institutional histories, and competing interests among various stakeholder groups within the institution, efforts to implement one-size-fits-all approaches are often met with resistance. This selective volume attempts to capture the complexity and context specificity of technology practices within higher
education with a concentration on advancing practice in educational leadership and university administration.

**ORGANIZATION**

In terms of organization, Cases on Technologies for Educational Leadership and Administration in Higher Education is divided into 25 chapters focusing on particular themes of interest revolving around digital technologies for leadership and administration in higher education. To this end, it is divided into 4 main sections designed to provide the reader with a broad view of how digital technology is currently being applied to leadership and administration in higher education. These sections are dedicated to the followed areas: (a) Section 1: planning and developing e-learning tools, (b) Section 2: implementing and evaluating e-learning tools, (c) Section 3: faculty development and e-learning delivery, and (d) Section 4: advances in e-learning tools and services.

**Section 1: Planning and Developing E-Learning Tools**

Section 1: **Planning and Developing E-Learning Tools** provides a front end look at e-learning planning and design. In today’s challenging economy, universities are turning more and more to the corporate sector for inspiration and guidance in how to improve information management to replace outdated information systems, improve efficiency and effectiveness, and cut costs. One major corporate trend in Information Technology management is to create one universal system for everyone within an organization. These systems, called enterprise systems, have begun to appear in public institutions of higher education. Chapter 1, entitled, “Enterprise System Development in Higher Education,” is a case study focusing on efforts to develop an enterprise system within a university. The case provides a firsthand account of key challenges in reconciling the rationale for having one system for everyone within a university setting. As the author is quick to point out, the core value system in higher education differs from that of the business arena in that universities are seeking ‘long-term investment in the education of citizens’ rather than adhering to the business sector’s ‘bottom-line’ philosophy. Within this chapter a number of similarities and differences between private and public sector IT management are highlighted which provide useful insights, particularly for higher education institutions turning to the corporate sector for information management solutions. The chapter concludes with a glimpse at current challenges and problems facing Higher Education institutions in their efforts to create a fully integrated large-scale information system. A number of institutional, organizational and technical issues
discussed provide food for thought when faced with the challenge of large-scale information systems development within higher education institutions.

Chapter 2, entitled “The Selection of a New Student Administration System at University of Southland,” extends the discussion of large-scale information systems development within higher education institutions by looking at the challenges of selecting a new student administration system at a university in New Zealand. The push for selecting a new system was based on a number of inadequacies in the old system which had been in place for over 15 years using technology that was outdated. This chapter provides and insider look at the many steps taken and challenges encountered to select a new administration system. It raises practical questions and opens the door to new questions for university administrators seeking to maximize system effectiveness: Do we need a new system and when should we start planning for a new system? What systems are available and what are our needs? What will our needs be in five years? In 10 years? How long will it take to find a suitable solution and implement it? What will be the training needs required for system operation? The reality of large-scale information systems development within higher education institutions is complex and context specific. As this chapter illustrates, there is no one size fits all solution and universities have to look inside at their member needs and interests when seeking to change systems.

In Chapter 3, “An Inquiry into the Policies and Practices for Online Education at One Doctoral/Research-Extensive University: A Case Study,” the authors present a qualitative study that focuses on the policies and practices guiding online education at one large North American university. The study draws on interview data gathered from the Chief Information Officer (CIO) along with secondary sources, to better understand policies and practices. Findings from the study help identify reasons underlying one university’s policies and practices in providing online education in line with U.S. accrediting agencies. This chapter provides an excellent best-practice of one university which has demonstrated a high level of self-reported compliance with regulatory standards for online learning programs. In addition, this chapter opens the door to questioning the standards themselves set out by the U.S. Department of Education: Why do some universities struggle with compliance while others do not? Does university compliance add to or take away from the actual quality of online program delivery? What strains are experienced by universities in their efforts to comply with accreditation standards? Are some areas of compliance more difficult to achieve than others, and if so, why?

In Chapter 4, entitled “Building an Interactive Fully-Online Degree Program,” a front end look is provided of a new interactive online undergraduate degree program in 2010 to be implemented at Saint Mary-of-the-Woods College (SMWC). This chapter provides an overview of key program design elements of this new program (Leadership for Environmental and Social Justice) within General Studies.
The new online program was intended to replace an existing program established in 1973 as a correspondence program. The authors do an excellent job at tracing out the process of online program development, key technology concerns, and other challenges encountered during program development. Recommendations on professional development, resource considerations, and quality review are provided at the end of the chapter for added value. This chapter provides an insider look at the painstaking efforts required to plan out an interactive online program to meet the market needs of a potentially diverse student population. This highlights the importance of not only looking within the organization but also keeping abreast of who that program is intended to serve, something that is increasingly important during an economically tough time.

In Chapter 5, “Introducing ICT-Services in a University Environment,” the development and management of innovative ICT-services at a Danish university is explored. The chapter explores the positive and negative aspects of implementing participatory design elements to improve the adoption of ICT-services. These services include, teaching and learning services, administrative services, and services that connect the two (middleware). The chapter demonstrates that such designs have user benefits but may act as a barrier in the acceptance of standardized services. Key areas of ICT-services discussed in chapter include services for administration, communication, education, and integration. One major challenge discussed revolves around an implemented policy of voluntary adoption of ICT-services and its conflict with the developing culture of ICT service organization at Danish universities where board of directors often appoint managers to run ICT services like companies. The authors remark, “Just as no company is likely to succeed with each division running its own ICT-solutions and using joint services arbitrarily so the entirely voluntary adoption of ICT-services at the university is becoming problematic”. This chapter gets at the tough reality of trying to develop innovative ICT services for university members that aligns with the interests of other executive level stakeholders attentive to private sector culture and managerial style in coordinating internal service operations.

Chapter 6, entitled “Planning and Implementing Online Programs: A Case Study in the Graduate School of Education at the State University of New York at Buffalo,” captures the development and implementation of an online Master’s of Library Science (MLS) degree program at a large public research university in the U.S. Using a school-based and a department-based perspective, online programs in education and library science are discussed with a focus on online program planning, development, and implementation. The chapter reviews efforts to implement an online Master’s of Library Science (MLS) degree program and discusses ways in which MLS program development processes can improve by adopting existing school-based policies and procedures. Overall, this chapter provides practical insights
into online program development that can be used to help inform similar efforts at other institutions attempting to implement new online programs.

**Section 2: E-Learning Tool Implementation and Evaluation**

Section 2: **E-Learning Tool Implementation and Evaluation** adds to technology planning and design phases by focusing on what comes after, implementation and evaluation. Chapter 7, “ERP Implementation in Higher Education: An Account of Pre-Implementation and Implementation Phases,” discusses the implementation of Enterprise Resource Planning (ERP) software systems in an institution of higher education. Traditionally ERP’s have been implemented in corporate organizations to allow information across the functional units of a business to be brought together. Now, these systems are making their way into higher education institutions. This case study discusses the implementation of ERP in an institution of higher learning addressing key positive and negative aspects of trying to assimilate this type of technology into higher education. Such changes are important for educational leaders and administrators in higher education to consider before attempting such projects. As noted in the chapter, “The users were daunted by the amount of changes involved and the unexpected rise in workload. Despite the unflinching willingness of users to make the systems implementation a success, they could not endure the frustration of the significant changes in the new system.” This chapter provides a sobering look at the challenges behind transplanting large scale technologies from one type of organization into another with a completely different value system and culture. Valuable lessons can be gained from looking at one institution’s experiences of attempting ERP implementation into higher education.

In Chapter 8, “Breaking the Ice: Organizational Culture and the Implementation of a Student Management System,” another case is presented which discusses the ins and outs of integrating an enterprise system (ES) within a university setting. The chapter provides a breakdown of the steps by which Southern University integrated the Delta student management system (SMS) along with challenges encountered due to resistance within the existing university culture. This chapter provides another excellent example of how the perceived bottom line that determines a project’s success (on time and within budget) is not a true measure of success when met by opposition from organizational units that previously enjoyed a high degree of autonomy in their organizational processes. User dissatisfaction among users and other organizational factors acted as a barrier to ES system integration. The chapter demonstrates the need to consult university members and other stakeholders when attempted projects of this magnitude which require cooperation across the university to ensure system effectiveness. It sends the message, that it does not matter how good the change is if users are unwilling to embrace it.
Chapter 9, “Implementing Virtual Career Counseling and Advising at a Major University,” looks at the lifelong learning through virtual career counseling within a university setting. Career counseling is an important part of the university services sector, helping students connect their educational training to the real world of work. A big challenge for many universities is finding the time for a limited number of career counselors to meet with students to provide resources and advice. The Internet technologies appears to offer an attractive alternative for getting more students the help they need and quicker. Are virtual career services the wave of the future? Can counselors connect with students and provide the needed services online? Will students use such a service if it exists? This chapter opens the door to further discussion of the future of virtual university services.

In chapter 10, “A Case of an IT-Enabled Organizational Change Intervention: The Missing Pieces,” another organizational change intervention is presented, this time a new information technology at a university-owned research foundation (URF). This chapter explores the perceptions and reactions of key stakeholders involved. One key discovery made when faced with in-house opposition from IT-specialist was the need to take change management issues seriously when attempting organization changes to IT systems. As noted by the chapter authors, “The major challenge facing successful implementation of BATON is the mismatch between the legacy IT culture within URF and the paradigm shift inherent in the novel technology”. The chapter provides a fresh look at the tough reality of satisfying IT experts forced to adapt to new system processes and practices that alters an existing practice. IT experts are not immune to the need for preserving their professional culture and identity and will resist changes perceived to threaten an accepted way of working with technology. Given the centrality of IT experts as key players in IT implementation it is necessary for organizational leaders to address the interests and concerns of the IT experts to ensure a better chance at project success.

Chapter 11, “A Statewide Transition From Campus to Centralized System: Challenges and Accomplishments,” discusses the implementation of Liquidus CS in the Grand System of Universities in the effort to move from a campus wide to centralized system at the state level. The GSU is a network including 35 universities and colleges ranging in size and demographic. In the past, some of GSU member institutions did not have the resources to offer their students a state of the art course management system while others did. The desire to provide a common statewide course management system was sought out to provide a solid service to all GSU institutions big and small. The vision of an integrated online learning environment where standardized online course offered could be provided to students across institutions appeared to be a cost effective way to maximize course offerings and standardize quality as well. The Liquidus CS offered many advantages that other institution bound course management system did not offer. This chapter presents a case study with a 3 year
breakdown of project development and major obstacles encountered. Key project outcomes, including benefits and drawbacks, are documented to help inform other institutions embarking on similar projects. It is interesting to note the unexpected acquisition of Liquidus Inc. by another company during project implementation as it highlights the new reality of vendor relations for colleges universities, especially those seeking out cost effective IT solutions offered by industry which can be shared among colleges and universities. The vendor side of IT systems, although not the main focus of the chapter, is changing the face of IT systems management for universities around the world and touching core university functions (i.e., libraries, academic teaching, administration) and threatening traditional autonomy of university units (libraries, departments, service units, etc).

In Chapter 12, “Critical Issues in Evaluating Education Technology” the question arises as to how to best evaluate educational technologies. What do we look for? What are the criteria of success if there are any? To what extent do new educational technologies have to align with traditional educational practices? Now that educational institutions spend so much of their resources on technology, there is the risk of doing so without having any clear plan on how this technology should be integrated into teaching and learning in achieving educational objectives. The “bells and whistles” of a new technology often encourage impulse buying just as easily among institutions as among individual consumers (How many of my own students rushed out to buy their Mac Pros, iPads, and iPhones when these products were still full of kinks and offered lower quality performance compared to cheaper technologies that would have served their needs just as well or better). This chapter brings this discussion to the institutional level. Is the investment on technology in schools worth it? Is a needs assessment carried out before technology implementation required to discern actual and perceived needs? This chapter highlights the importance of asking what a technology does that cannot be done without it? And what is needed to actualize the potential of the technology within the desired setting in terms of training and curriculum adjustments? These questions and more are raised in this thought provoking chapter.

Chapter 13, “Lab Development for Delivering Information Systems Courses Online at Small Campuses,” deals with key issues that arise revolving around delivering online lab-based information systems courses, particularly when there is a limited budget. Figuring out manageable costs, software and hardware requirements, training needs, and required time to get labs online are crucial considerations. This chapter focuses on the efforts of Jackson University (a small U.S. university with a geographically dispersed student population) to offer online labs to students enrolled in the computer science and computer information systems program. The chapter provides a practical breakdown of the project needs, key costs, and outcomes. It is interesting to note that some of the challenges associated with digital technology
implementation have little to do with resistance from the institutional culture as was the case in some of the previous chapters. In this case, the online lab instructors were happy with the developments but space and security became an issue. As noted in the chapter, “Due to the shortage of space, only one of the labs has its own room. The other two labs are shared with regular classes. The computers are arranged along the walls inside the classrooms. Often, these classrooms are unlocked. Security is a great concern.” This goes to show that online teaching and learning does not eliminate the need for campus space. There are still space requirements for campus based online work and hardware storage space needed, not to mention areas for technology training when required. The reality of limited space for carrying out online work is a misnomer that many educational institutions have to deal with. Dedicated space for technology storage and service are needed and given the high price tag on these technologies, the spaces must be secure.

Section 3: Faculty Development and E-Learning Delivery

Section 3: **Faculty Development and E-Learning Delivery** explores efforts to accommodate key organizational members on the front lines of technology integration where teaching and learning with technology are in focus. In Chapter 14, “**Developing an Online Community to Promote Engagement and Professional Learning for Pre-Service Teachers Using Social Software Tools**,” a case study is conducted on an online community of practice implemented to inspire student engagement and collaboration among pre-service teachers. Based on Wenger’s communities of practice model supported by a social software-based technology framework, to enable mutual engagement, joint enterprise, and a shared repertoire, participants were encouraged to form peer-to-peer mentoring relations, through the sharing of voice recordings of critical teaching events from their practicum and a shared blog. Participant exchanges were examined in addition to focus group data gathered from students after their practicum to assess their views on the use of media for peer mentoring and support. The contributions of the online community of learning are discussed and recommendations are made.

Chapter 15, “**Faculty Development in Instructional Technology in the Context of Learning Styles and Institutional Barriers**,” follows a faculty development initiative in instructional technology conducted with ten faculty members who shared their experience and struggles in learning instructional technology. The case details each participants approach and learning style, along with key learning processes and resources. Dominant learning characteristic for participants observed were recorded and compared with results from the Index of Learning Styles Questionnaire of North Carolina State University. The case provides useful information to help inform instructional technology use among faculty members with diverse profiles.
This chapter is particularly useful in highlighting the unique learning needs and interests among faculty members. At large educational institutions, one can expect faculty members from different generations, different races, and different sexes as well. This chapter provides a glimpse at one of the many areas of diversity which can shape faculty learning in acquiring instructional technology training. It raises a number of interesting questions for administrators and faculty development professionals. How much can instruction technology training be tailored to meet the diversity needs of the faculty being trained? What areas of diversity are the most important to consider? How much more time and resources are required to provide instructional training tailored to the diversity of the faculty being trained? And is it necessary to tailor training since faculty are advanced learners who should be highly motivated and capable of acquiring instructional technology skills regardless of how it is offered? These questions and others arise out of this discussion for readers to ponder.

In Chapter 16, “Sharing Insights: Teachers’ Problems and Accomplishments in their Online Day-to-Day Teaching,” a case study provides and insider perspective of online teachers successes and challenges encountered in teaching. Participants were a group of online teachers from a Mexican public university who agreed to participate in an online discussion forum carried out over a semester. The authors examined forum postings findings which focused on important challenges including, administrative issues, student technical challenges, student engagement challenges, time management issues, and a variety of other pedagogical concerns connected to a perceived lack of institutional support. This chapter provides an excellent glimpse at the everyday challenges that online teachers face in doing their jobs. Of particular interest is the illustration of changing teaching concerns voiced in the online forum at different points in the semester (first four weeks, midterm, closure of course), which attest to the complexity of course delivery and the need for online teachers to adapt to new course challenges when they arise.

Chapter 17, “The Adjunct’s Role in Delivering Quality Online Instruction,” explores the motivations and competencies of part-time instructors. At many institutions adjunct instructors make up a significant proportion of the teaching staff. This broad group of instructors can include full-time part-timers who work a variety of adjunct positions, graduate student seeking to transition into full-time roles, and other professionals interested in lending their expertise to teach a course. Often, little is known about them, their competencies, or their motivations for teaching in an adjunct role compared to the core full-time faculty. This is particularly true for adjuncts teaching online courses because they may work entirely at a distance. This case follows one adjunct (Naomi) to get an insider look as she describes challenges encountered and best practices that help her in providing instruction. This case does an excellent job of bringing the experience of an adjunct to the reader along with a
look at some of the major issues that other online instructors can relate to, namely the struggle in seeking a professional identity in online work and the struggle to balance professional and personal commitments. These are issues that resonate for many of us who have worked in online instruction.

Chapter 18, “E-Learning Quality: A Look Towards The Demands of its Good Practices,” asks the question: what is e-learning quality and what does it look like? The chapter discusses the concept of quality and posits criteria that could be used to assess the quality of e-learning practice. This is an important chapter at a time when quality standards in online instruction are a hot topic. Chapter 19, “Developing a Learning Organization Model for Problem-Based Learning: The Emergent Lesson of Education from the IT Trenches,” provides another innovate perspective, this time on how to advance a useful organizational model to guide problem based learning (PBL). This case reviews a recent effort to create a learning organization model within the author’s undergraduate curriculum to support a PBL method of course delivery.

**Section 4: Advances in Virtual Learning Tools and Services**

Section 4: **Advances in Virtual Learning Tools and Services** deals with selected best practices and innovations with digital tools and services. In Chapter 20, “Education Balanced Scorecard for Online Courses: Australia and US Best-Practices,” a best practice is reviewed which took place within an accredited business degree program at an Australian public university. The case discusses an assessment rubric (scorecard) developed from established management science literature used to evaluate the effectiveness of a distance education course. The case provides key details on student performance, satisfaction, course content, and delivery. The chapter provides a thoughtful comparison between the application of scorecards within Australian online courses and previous applications in the U.S. This added value helps connect the international community of online instructors and administrators interested in exchanging ideas on best practices.

Chapter 21, “Building an Online Undergraduate Module from a Graduate Module: A Case Study,” explores the conceptualization of quality and how that can be translated into the assessment of e-learning practice. To ensure quality e-learning practice, key aspects of e-learning are examined in this chapter including, e-learning purpose, institutional support, the connection between the program proposal and e-learning practice, theory and practice linkage, use of interactive and multimedia resources, adequate technology, and appropriate human resource policies for e-learning staff.

In Chapter 22, “The UAB Virtual Campus: An Essential Platform for a European Higher Education Environment,” the volume turns to the European higher education community and the challenging task of trying to coordinate higher education for
adaptation to the new ECTS European credits. This involves, among other things, a change in approach from teacher-centred model to a learner-centred model. This chapter focuses on one university, the Universitat Autònoma de Barcelona (UAB) and their efforts to manage the “Campus Virtual de la UAB” project since 1996. The chapter discusses the use of communication technology to leverage communication between teachers and students and between students.

Chapter 23, “EVAINU Research: New Virtual Learning Environments for Educational Innovation at University,” reviews a research project supported by the Autonomous University of Barcelona to explore new virtual learning environments for educational innovation. The project attempted to identify typical cases of curricular innovation with ICT use in accordance with the European convergence processes. Three ICT curricular practices were documented case studies to investigate their potential for advancing university education. Useful recommendations are offered for leveraging ICT curricular practices.

In Chapter 24, “Excellence in Virtual Education: The Tutor Online Approach,” an up close look at collaborative work in a virtual learning project called the Tutor online project (TOL) is examined. The TOL project was created as a joint venture by the University of Salamanca, Clay Formación Internacional, and Asociación Logo to help leverage continuing education. The chapter shows how Tutor online project (TOL) provided more flexible access online resources which helped continuing education students get the help they needed quicker and easier. Finally, Chapter 25, “Requirements Analysis and Implementation: Converting a Student Survey of Faculty Teaching System from Paper-Based to Web-Based,” explores popular challenges related to transition from a manual information system to an electronic information system. The case takes a step back to look at the key areas of analysis, design, and implementation required to successfully carry out the project.

This edited volume is necessarily selective because of the plethora of issues related to technology for leadership and administration in higher education. That said, this volume advances in its own modest way a selective synthesis of key contemporary studies on technology use for leadership and administration to help guide individuals within institutions of higher education dealing with technological change. This edited volume makes a concerted effort to place a strong emphasis in key areas, namely, planning and developing e-learning tools implementing and evaluating e-learning tools, faculty development and e-learning delivery, and advances in e learning tools and services. These areas were chosen to provide a broad focus on key areas of human engagement with technological tools and services currently being explored for assisting leadership and administration within Higher Education. Despite the modest aims of this project, this editor realizes that it is not possible to please everyone. It is hoped that this volume of practical case studies and essays will be helpful to
individuals involved in leadership and administration within institutions of Higher
Education. Critical comments and suggestions are always welcome.

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