MANAGING TECHNOLOGY: STRATEGIES FOR TRANSFORMING TEACHING AND LEARNING

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THE CHALLENGE FOR PUBLIC INSTITUTIONS

- increasing enrollments: mass higher education
- reduced state funding
- higher tuition fees
- larger classes
- 21st century skills



growth in for-profit online learning

THE CONTEXT

Move from an elite to mass system of higher education: more with less

Not changed teaching models from 19th century

Knowledge-based society requires skills as well as knowledge

Can technology help and if so, how?



GOALS FOR LEARNING TECHNOLOGY

- increase flexibility of access for diverse student body
- increase personalization of learning and interaction
- develop 21st century skills
- increase cost-effectiveness (better services; lower cost)



GOALS FOR LEARNING TECHNOLOGY

to support learner-centered teaching

From: e-learning 1.0: learning management systems

To: e-learning 2.0: web 2.0 tools that empower learner, develop 21st century skills

new methods of assessment that provide evidence of knowledge and skills

more diversity in our teaching models: classroom, hybrid, fully online 5



21ST CENTURY SKILLS

21st century skills

- good communication skills
- independent learning
- ethics/responsibility
- teamwork
- flexibility
- thinking skills
- knowledge navigation
- IT skills embedded in subject area



THE HOPE

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Technology will enable:

- more students
- improved learning outcomes
- more flexible access
- at less cost



THE REALITY

- Increased investment in learning technologies (costs are going up)
- No evidence of improved learning outcomes
- Real concerns about quality
- What is going wrong?



Lecture capture at MIT

THE STUDY

Topic: the strategic management of digital technologies in universities and colleges Focus: technology for teaching and learning

co-author, Albert Sangra; spring 2011; Jossey-Bass

11 case studies: five in North America, six in Europe



THE CASES

North America

- Virginia Tech
- University of Central Florida
- University of British Columbia Canada
- Southern Alberta Institute of Technology Canada
- Collège Boréal Canada

Europe

- University a Coruña Spain
- University of Alicante Spain
- University Rovira i Virgili Spain
- University of Milan Italy
- Open University of Catalonia Spain
- Open University of Portugal

MEASURING TECHNOLOGY INTEGRATION

Criteria:

- are there powerful **champions** of technology?
- good technology **infrastructure**?
- digitalized admin services?
- strategic **rationale** for use of technology?



MEASURING TECHNOLOGY INTEGRATION

Criteria (cont.)

- % faculty and students using technology (volume)
- how **innovative**?
- **support and training** in use of technology for teaching
- better learning?



BEST AND WORST

Best

Virginia Tech

University of Central Florida

UBC

Open University of Catalonia

Worst

University of Milan

University of a Coruña

University of Rovira i Virgili

SAIT

LESSONS LEARNED

Headings/chapters:

- Leadership and strategy
- Organizational structures
- Quality assurance
- Resources, money and decision-making
- Barriers to change/organizational culture
- Building a 21st century university or college



KEY RESULTS: PLANNING

Main goals for technology:

- 'modern' infrastructure
- digitalize administrative services
- enhance quality of classroom teaching
 Goals too conservative and not
 measurable



First question: reinforce classroom model, or new models, especially hybrid?

KEY RESULTS: PLANNING

institutions with technology in strategic plan did better

strategic *thinking* more important than plan, focusing on how technology can help with:

- learning outcomes for knowledge-based society
- developing ICT competency within subject discipline
- flexible delivery for diverse student body
- re-design of courses



KEY RESULTS: ORGANIZATION

Single technology initiatives not embedded in a wider strategy generally failed

Growth of learning technology support units

Growth of technology committees, but no clear mandates/decision-making authority

Duplication and gaps in technology support/ decision-making

Need for a clear governance structure for technology that includes teaching and learning





KEY RESULTS: QUALITY ASSURANCE

Plenty of guidelines on best practice for elearning

Top-ranked cases used standard program approval processes and professionals in learning technology units



Top-ranked cases used several design models, including project teams, to ensure quality

Lack of evaluation/research in effectiveness of case studies strategies - no follow-up or research

KEY RESULTS: RESOURCES

- No institution knew the real cost of e-learning
- Few institutions knew where the money would come from
- Accounting/budget processes do not capture 'true' technology costs in teaching
- Increased spending on learning technology support units
- Unintended consequences: larger classes, more contract instructors, increased faculty workload
- Important to replace activities (or increase revenues)

KEY RESULTS: RESOURCES

Few understood fully the cost implications or main cost drivers

Technology too often an added cost for no measurable benefit

The time of the instructor is main cost; need course design models that control time and costs in using technology



KEY RESULTS: TRAINING

- Instructors in most institutions were not adequately prepared to teach well (with or without technology)
- Academic administrators in most institutions were not adequately prepared to make good decisions about technology
- Training of all instructors in teaching should be systematic and compulsory (especially in universities)
- Administrators on appointment need special orientation for technology decision making

CURRICULUM FOR INSTRUCTORS

- epistemology and learning theories
- biological basis of learning
- design of teaching
- learning technologies



- + electives (research in teaching, cultural issues, etc.)
- all embedded in project work

ORIENTATION FOR ADMINISTRATORS

- questions to ask about technology proposals/issues
- know institution's key goals/objectives
- briefing on roles and operation of units that support technology applications, by directors of units
- key technologies in use and possible new developments
- IP, security and privacy issues
- readings on management of technology in HE
- site visits to 'best practice' institutions

BARRIERS TO CHANGE

not suggesting changes needed to core mission

however, way the mission is implemented needs to change

organizational culture

- myth of the Socratic dialogue
- administrators or managers?



• autonomy of faculty vs team work: importance of technology decision-making at program level

RESULTS IN CONTEXT

- technology only one aspect of management; and new
- management is messy (Mintzberg)
- administrators were doing their best
- good technology management at UBC, Virginia Tech, University of Central Florida, OU of Catalonia
- organizational culture: fear of managerialism



WHAT SHOULD BE DONE?

- more ambitious goals for teaching
- technology planning at academic program level: include technology specialists
- empower committees
- extend IT governance to teaching



- business plans and activity based accounting
- compulsory training in teaching/admin

CONCLUSIONS

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- overall lack of innovation at an institutional level everywhere
- in most institutions, technology used to reinforce the 'industrial' fixed time/place classroom model
- lack of new models for combining digital/face-to-face learning to:

diverse student body

meet 21st century competencies and skills
increase flexibility for a very



CONCLUSIONS

- if you believe quality of classroom teaching is generally good, no problem
- if you believe teaching needs to change to meet new needs and contexts, then intelligent use of technology essential
- institutions need to set 'innovation in teaching' as strategic goal - and reward it



QUESTIONS

- Should technology be used to reinforce the current classroom model, or should it be used for radical change?
- Should all instructors in post-secondary education be trained in teaching before they are allowed to teach?



- Extend IT governance to teaching?
- How can we evaluate the investment we are making in e-learning ?

Book:

Bates, A. and Sangra, A. (2011) *Managing Technology in Higher Education: Strategies for Transforming Teaching and Learning* San Francisco: Jossey Bass

Slides:

http://tonybates.ca/tonys-publications/selectedkeynotes/ (available: October 25)