

**Education Innovation Quest:
A Century in the Service of Knowledge
University of Pretoria,
South Africa:
24-26 June 2008**

**Why universities must change:
the challenge of technology**

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Overview

- 1. Core roles of universities**
- 2. SA needs: technology can help**
- 3. Current pressures on universities**
- 4. Planning for change**
- 5. Defining and understanding e-learning**
- 6. Implications for academic planning**
- 7. Conclusions**

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Core roles of University of Pretoria

Core roles of universities:

- knowledge creation (research)**
- knowledge dissemination (teaching)**
- UofP: primary research university - but also must meet needs of South Africa (if funding to be maintained)**
- change needed in HOW we teach**

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Meeting local needs

Technology not a panacea: tools need to be used appropriately

Needs assessment essential (difficult from Canada)

Main challenges to SA HE:

- expansion/equity/the knowledge economy/quality of HE

Ng'ethe: so far in African higher education: expansion only

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Needs of SA HE

Dep. Min. Ms Phunzile Mlambo-Ngcuka, UNISA, Feb 2007:

- development of ICT skills
- retrain unemployed graduates
- engineering, planning, telecoms, energy
- management in health/education
- maths, science, ICTs, languages in schools

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Meeting the needs

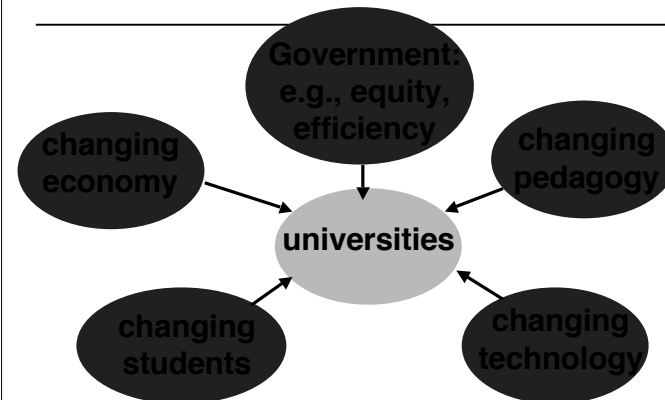
ICTs/e-learning can help meet these needs, but ONLY if:

- there is a parallel shift in the design and delivery of teaching
- there is an institution-wide plan/strategy for e-learning
- academic departments/faculties are fully involved in the planning

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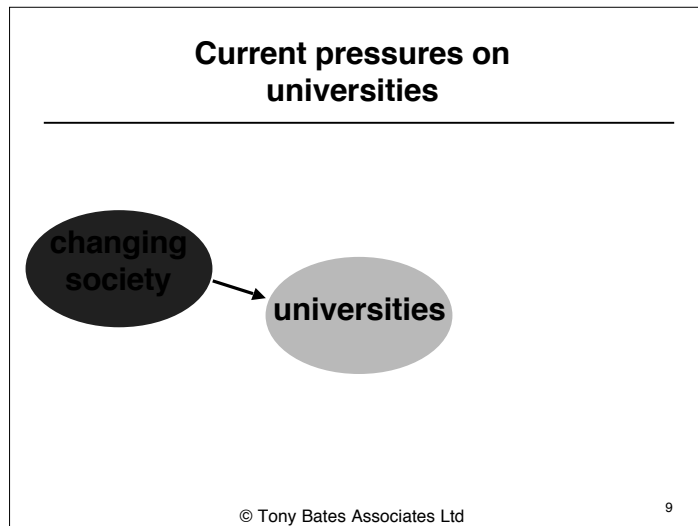
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Current pressures on universities



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Different economies

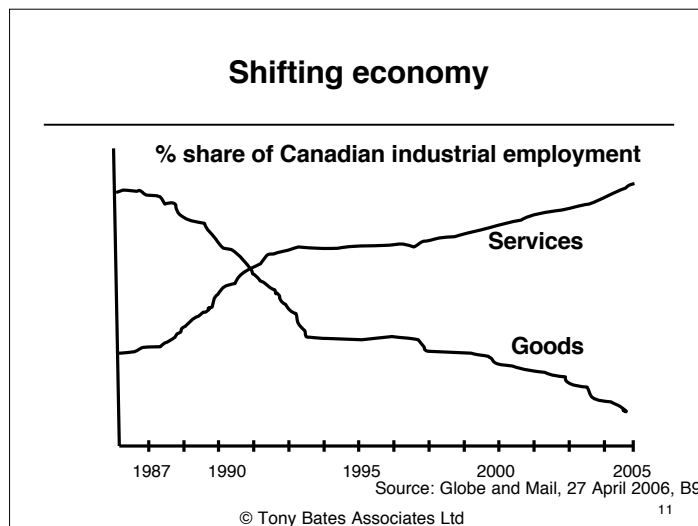
Resource-based: agricultural, mining, fishing: land/sea-based, local

Industrial: manufacturing: urban, national, factories, hierarchical, economies of scale, specialist skills

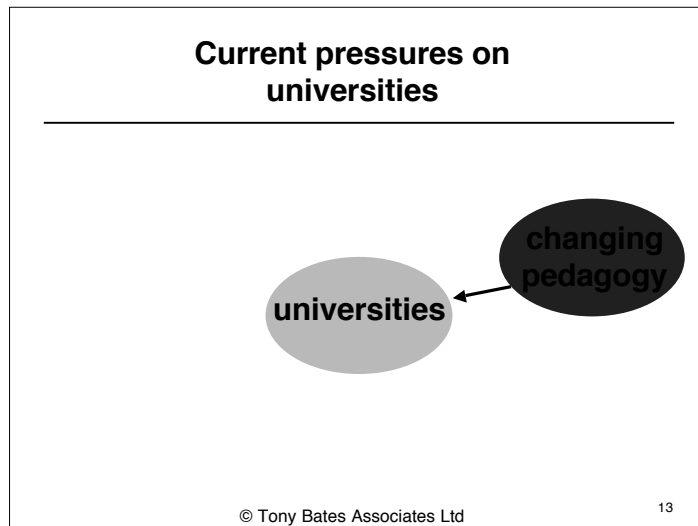
Knowledge-based: financial, bio-technology, ICTs, telecoms, entertainment: 'virtual', global, networked, multi-skilled

All three economies in parallel

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- ### Skills of knowledge-based workers
-
- **problem solving, critical thinking**
 - **communication skills**
 - **computing/Internet skills**
 - **independent learners**
 - **entrepreneurial, initiative**
 - **flexibility**
 - **team-work/networking**
- AS WELL AS subject expertise**
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Changing views of learning (epistemology)

How we know what is true, e.g.: Darwin vs Church

Objectivist: truth exists outside the human mind: scientific laws that describe an unchanging reality

Constructivist: all knowledge is constructed by humans: science is what scientists generally agree; knowledge is relative and personal

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Impact on educational practice

Objectivist:

- a body of knowledge to be learned, defined by experts
- knowledge transmission by experts
- comprehension, memory, rote learning
- authoritative, correct, organized, clear, not to be questioned
- 'right' answers; efficient reasoning

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Impact on educational practice

Constructivist:

- observe, compare, question, reflect, discuss, assimilate, e.g. heat
- reflective, social and personal
- questions, problems, discussion, argument: learners more equal
- quality of argument/thinking assessed

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Why the shift?

Knowledge explosion: too much to learn by heart: smarter rather than more

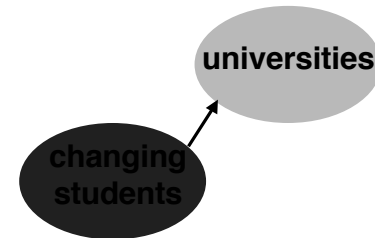
Skills required in knowledge-based businesses (and in life):

- **critical thinking, creative thinking, problem-solving, communication, use of ICTs**

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Current pressures on universities



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Changing students: digital natives (Prensky, 2005)

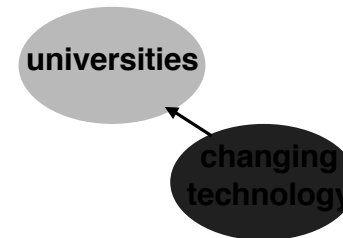


Under 25 years of age: brought up with technology: computers, mobile phones

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Current pressures on universities



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Online learning 1995-2006

Main driver: Internet + learning platforms:

- **WebCT, Blackboard, Moodle, Virtual Campus**
- **integration of teaching and administration**
- **proprietary vs open-source**
- **institution/teacher-focused**

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New technologies: 2005 -

user-created content: blogs, YouTube

social networking: MySpace

mobile learning: phones, MP3s

virtual worlds: Second Life

emerging publication: wikis, e-Portfolios

multi-player games: Lord of the Rings

simulations: MyPhysicsLab.com

synchronous: Skype, Elluminate

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Change is difficult

Change is about people, not technology

Professors are difficult to manage

Institutions have inertia

But we know how to change

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Managing professors



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The 'natural' development of e-learning

1. **Early adopters - all alone**
2. **Grants for early adopters**
3. **Rapid expansion; low quality**
4. **A strategic plan**
5. **Focused, sustainable, high quality e-learning**

Where are you?

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Why strategic planning is needed

Third stage:

- **rationale for e-learning not clear**
- **concerns about poor quality**
- **duplication**
- **faculty (and student) workload increases**
- **increasing costs**
- **disillusion grows, growth stops**

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What is e-learning?

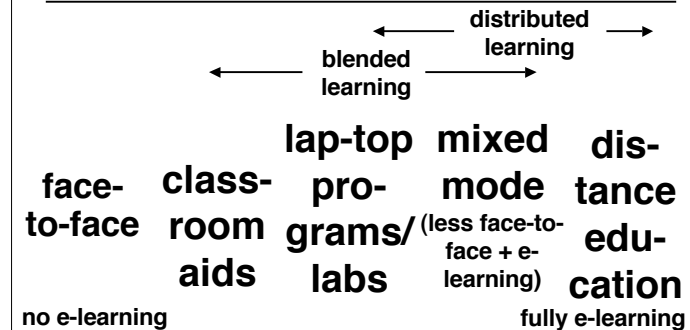
My definition:
all computer and Internet-based activities that support teaching and learning - both on-campus and at a distance

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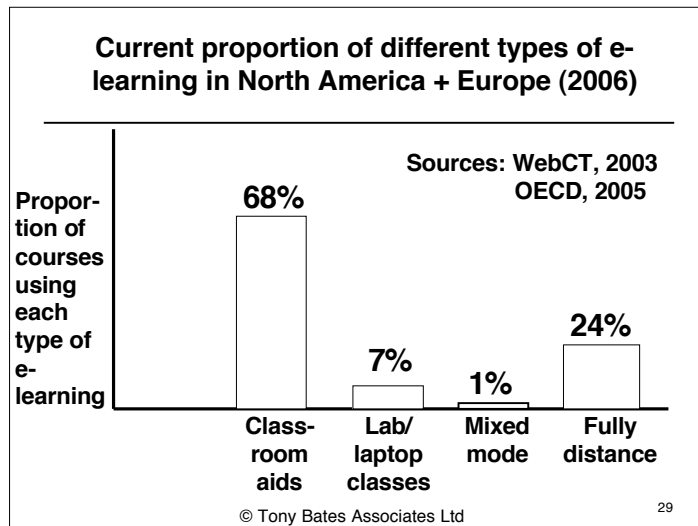
What is e-learning?

(Bates, 2005)



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Making choices

For any program:

Where on the continuum of e-learning should this program be?

Should this continuum reflect course sections or students?

Who should make this decision?

These are academic decisions - must be made by academic departments

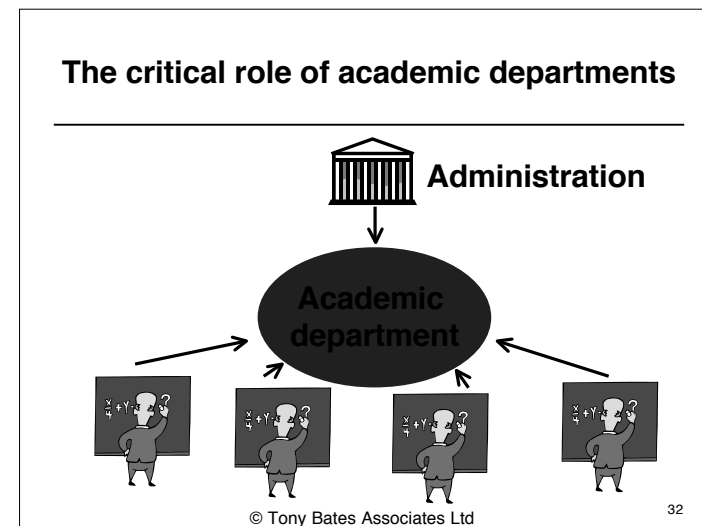
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The importance of academic departments in change and innovation

Two typical approaches to change:

- **top down:** Vice-chancellors or governments decide a strategy then try to implement it
 - universities like graveyards; autonomy of the faculty member
- **bottom up:** early adopters; Lone Rangers

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The importance of the academic department/faculties

Academic departments/faculties determine programs and curriculum

Bridge between autonomy of faculty and institutional objectives

Place where consensus can be built

Academic faculties/departments determine the success of e-learning

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Planning goal for academic faculties/departments

Academic faculties/departments:

Each program will develop a vision and plan for teaching and learning, including the appropriate use of e-learning

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Departmental vision

**e-learning a tool, not a panacea
need to identify where it will bring most benefit**

depends on type of students, nature of topic

program teams to develop vision of teaching/learning + role of e-learning that drives funding

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Determining the role of e-learning

what new markets can we serve?

what new programs do we need?

where does e-learning fit in the faculty's programmes?

how will e-learning change the way we teach?

what do we need to support e-learning

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The basic elements of a plan (overview)

- **mandate/responsibility/deadline**
- **planning process (committee?)**
- **current situation (SWOT analysis)**
- **agreement on definition**
- **rationale for e-learning**
- **core values and principles**
- **vision of teaching with technology**
- **academic plan**

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The basic elements of a plan (overview) cont.

- **faculty needs (training, time)**
- **support needs (design, library)**
- **student needs**
- **technology needs**
- **content management**
- **budget implications**
- **implementation**
- **evaluation/monitoring**

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Conclusions

E-learning supports the development of skills needed in knowledge-based societies, e.g. how to seek, organize, analyse and apply information

Allows new markets to be served

Won't succeed though without:

- **an institutional strategy**
- **major changes in the organization/design of teaching**

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Further information

**Bates, A.W. (2005) Technology, e-Learning and Distance Education
London: Routledge**

**OECD (2005) E-learning in Tertiary
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**Bates, A. (2000) Managing Technological
Change San Francisco: John Wiley**

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Education San Francisco: John Wiley**

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40