

Digital Rhetorics- Technological Change & Practice in Higher Education

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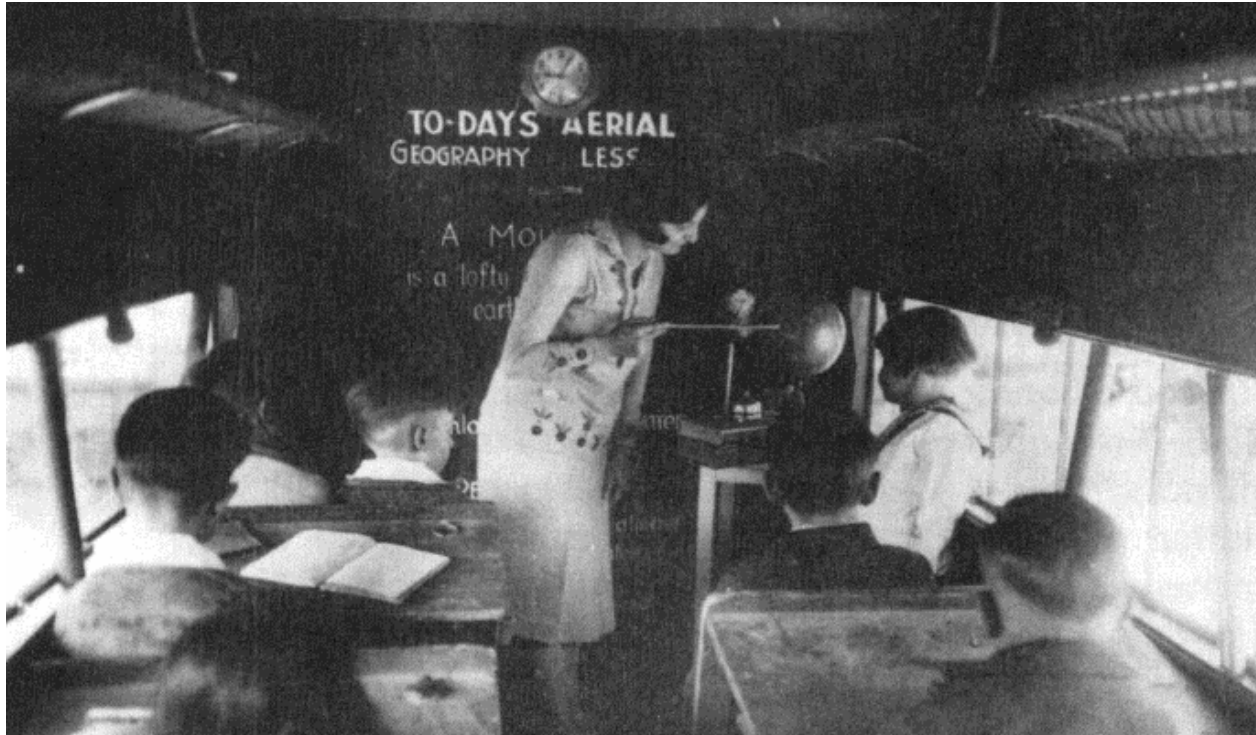


False predictions

- 'I believe that the motion picture is destined to revolutionize our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks.'
- 'I should say that on average we get about 2% efficiency out of school books ... The education of the future, as I see it, will be conducted through the medium of the motion picture ... where it should be possible to obtain 100% efficiency'

Thomas Edison, 1922

Parallels between this image & contemporary media representations of new technology?



Do we have false hopes of NT?

Are we using NT well or are we using NT in the same way as illustrated above, in education today?

Challenge to conventional educational institutions



Changing
post-secondary
environment

Thomson Learning partners with *Universitas 21*
to develop Global e-University



‘Faster, easier, better learning’

Drawing attention to: Technological Practice & Change

Rationale

- examine NTs critically
to ensure we are not just making a grab
for the latest new toys on the shelf,
without being aware of the extent of the
impact of NT adoption
- Not vs. NT in education
- But vs. sleepwalking attitudes towards it

Drawing attention to: Technological Practice & Change

Intentions - drawing on a framework:

- *New pedagogical opportunities & practices*
- *Changing work practices*
- *Technology neutrality*
- *Unintended consequences*

To increase awareness of changes & encourage an *informed* and *critical* view of technology adoption

Drawing attention to: Technological Practice & Change

- New pedagogical opportunities & practices
 - New ways of doing the same thing
 - New ways of doing new things
- Changing work practices
 - Changes in the way we work, how we work, who we work with, and what we work on
- Technology neutrality
 - How technology influences what & how we do things
- Unintended consequences
 - Unpredicted outcomes of new technology adoption

New pedagogical practices?



***Over 600 units online
33,000 student accounts***

What does this mean?

Imperatives

In January, 2001 Japanese Ministry of Education decreed -
50% all postgraduate education must be delivered online.

What does this mean?

New pedagogical opportunities & practices

Microbiology a conventional program:

- lectures and lab sessions
- 20 question tests every 2 weeks

Problems and imperatives:

- decrease in funding
- increase in student numbers (700-800)
- requirement: externalise the program
- very visual subject
- facilitating problem solving exercises
- handling pathogens

New pedagogical practices

Microbiology

- **online**
 - lab demonstrations and procedures - on demand
 - case studies/problem solving activities
 - tutorial exercises
 - self-test assessments
- video tape/CD-ROM/web movies
- print-based study guides & home experiment kits for distance students
- increasing flexibility in course offerings on/off campus, overseas

New pedagogical practices

UTI

Blood

CSF

GIT

STD

RTI

AR

VI

Reference

General Information

Information

Symptomology

Risk factors

Specimen Collection

Mid Stream


Catheter

Supra Pubic Aspirate

Paediatric Bags

Laboratory Analysis

Normal urine is clear and yellow in colour. Alterations in colour (for example due to blood staining or drug therapy), clarity (cloudiness might indicate the presence of organisms) and smell might well indicate abnormality.



At all times, quantitative urine results must be examined in context with other results and symptoms.

Macroscopic Examination

2 of 2

Document: Done

New pedagogical practices

UTI

Blood

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GIT

STD

RTI

AR

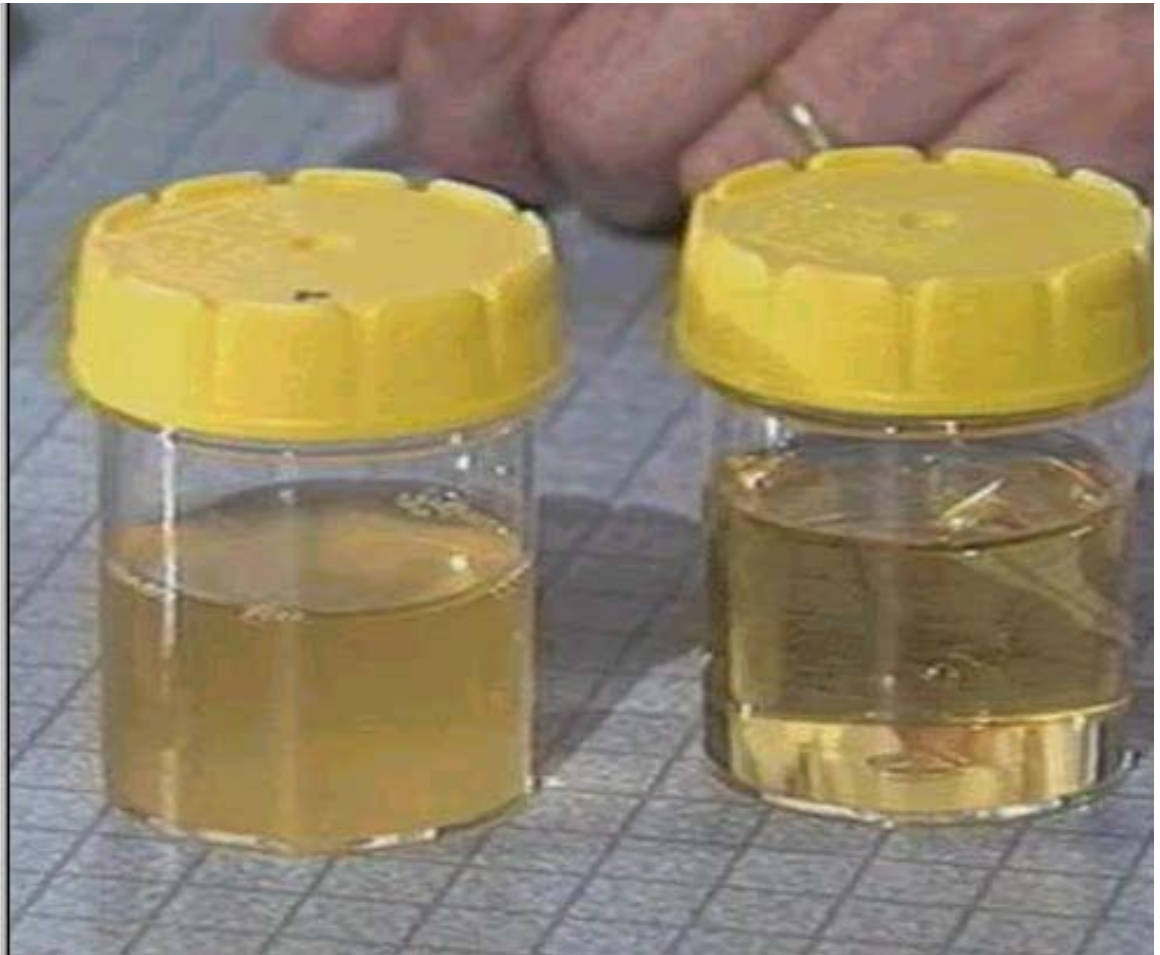
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Reference

- General Information
 - Information
 - Symptomatology
 - Risk factors
- Specimen Collection
 - Mid Stream
 - Catheter
 - Supra Pubic Aspirate
 - Paediatric Bags
 - Storage
- Laboratory Analysis
 - Macroscopic
 - Microscopic
 - Colony Count
 - Dipstick
 - Sensitivity and Identification

Tutorial

- General Information
- Specimen Collection
- Laboratory Analysis



New pedagogical practices

Outcomes in teaching microbiology

- Less live demonstrations & reduction of costs
- Increased efficiencies in using the laboratories
- Students studying more flexibly on/off campus, or a mix or through OLA and offshore
- New opportunities to teach the subject *differently* using NT -eg case studies
- Lecturer changed PhD from Micro to Education
- Snowball effects across the School/Faculty

Changing work practices

- Using CMC in large Business classes
(Video clip – Mike Freeman, UTS)
changing work times
- Using CMC in small postgraduate
science and maths teacher education
classes (Peter Taylor, Curtin)

Changing work practices

Using CMC in a small postgraduate class

- Central concern to 'enable students to develop the ability to reflect critically on their beliefs & values as they struggle to make sense of new ideas that urge them to break with traditional teacher-centred approaches to teaching'
- CMC possibilities -community of learners, reflecting on & engaging in key issues regarding science/maths teaching

Changing work practices

One outcome of many - changing assessment

- 1997 - 1998
Assessment 25% online discussions about issues raised in the course. 75% written assessment.
- 1999 - 2000
Assessment 40% online student involvement in project debates. 60% written assessment
- 2001
Assessment 60 -75% online?

Technology neutrality

Paying attention to technology and its influences

- Dangers of shovelware
- Reading differently online and off screen
- Selecting proprietary systems - *privileging* certain ways of doing things. Differences in orientation observed:
 - WebCT -more on content
 - First Class-more on process

Unintended consequences

- Learning online
 - ‘I didn’t come to University to read text off screen’
- Increase in staff workload
 - Ongoing maintenance of course website
 - ‘Turnaround time’ student expectations
- New student administrative system failures
 - Increase in staff workloads
 - Slow down of the system
 - Extra costs employing extra staff

Conclusions

- Need for continued critical reflective use of ICT
- Need for ongoing R & D
- Recognition: complex changes necessary
- Recognition: new ICT environments favour certain practices & not others
- Unpredictability of impacts & outcomes - expect the unexpected

References

- Alexander, S. & McKenzie, J. 1998, *An Evaluation of Information Technology Projects for University Learning*, Australian Government Publishing Service, Canberra.
- Business of Borderless Education
<http://www.detya.gov.au/highered/eippubs/eip00_3/contents.pdf>
- eLearn Expo
<http://www.elearnexpo.com/hongkong_exhibitors.htm>