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Agenda Item: 8

Can e-Learning equal e-Inspiration?

Purpose: Information

Submitted by: Australia



**APEC Symposium on Open Source
and Open Course for E-Learning
Ha Noi, Viet Nam
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Can e-learning be e-inspirational?

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APEC Symposium on Open Source
and Open Course for E-Learning
Hanoi, Vietnam
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What is inspiration?

- ✘ To breathe life into...
- ✘ To infuse (something) into the mind; to kindle, arouse, awaken in the mind or heart (a feeling, idea, impulse, purpose, etc.)^{OED}

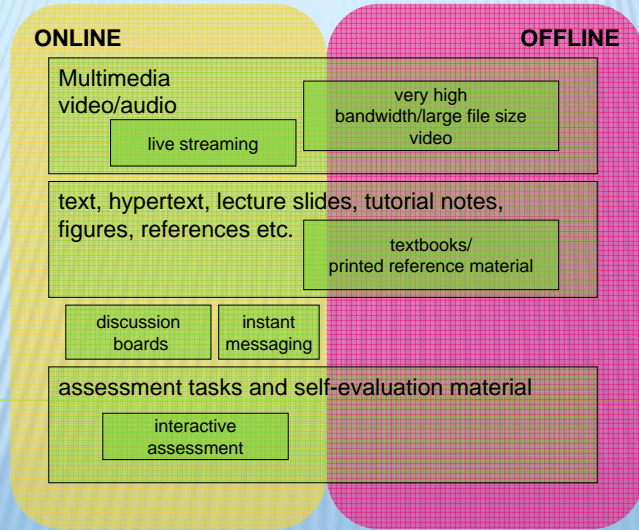
Inspirational teaching

- ✘ Teaching is more than content delivery.
- ✘ Ideally, it should also:
 - + Engender enthusiasm
 - + Encourage participation
 - + Stimulate interest
 - + Provide external motivation to students
- ✘ How much does e-learning contribute to fulfilling these ideal characteristics?
- ✘ How much does e-learning detract from the ability to fulfill these ideal characteristics?
- ✘ Another factor to consider in the deployment of e-learning infrastructure?

What do we mean by e-learning?

- ✘ Delivery of courses by electronic means
- ✘ May include combination of:
 - + Static and/or dynamic websites with varying degrees of interaction
 - + Offline media distribution (e.g. CD/DVD)
 - + Multimedia presentations
 - + Mobile device usage
- ✘ As an adjunct to face to face teaching or as sole mechanism of delivery.

E-learning



What threatens inspirational e-learning?

- ✘ When the technology gets in the way
- ✘ Unhelpful conformity
- ✘ Lack of interactivity
- ✘ Lack of engagement of students
- ✘ Lack of provision of student support

Teleteaching

- ✘ Monash University has made extensive use of *teleteaching* in the past.
- ✘ Monash has several campuses in metropolitan Melbourne.
- ✘ Teleteaching is videoconferencing of lectures over existing ISDN links between metropolitan campuses.

Teleteaching – Issues Apparent

- ✘ The use of teleteaching has decreased markedly in the Faculty of Information Technology at Monash in recent years.
- ✘ The costs outweighed the benefits.
- ✘ “If a rationale for teleteaching is interactivity with remote campuses, then pause and rewind on a tape provides 95% of the sort of interactivity students were desiring”
- ✘ The cost/benefits of on site tech support vs on site teaching?

The dangers of conformity

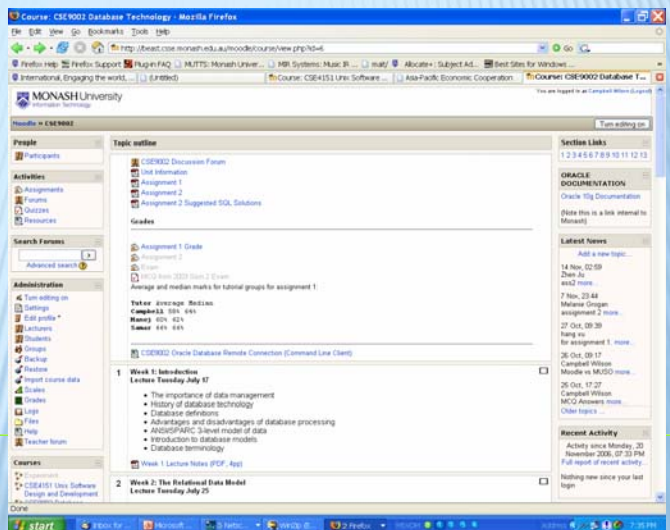
- ✘ Can the rollout of e-learning frameworks promote a “lowest common denominator approach”? It certainly doesn't have to.
- ✘ How much does e-learning influence face to face learning?
- ✘ Institutional and organisational policy frameworks can have competing technical/economic/educational goals.

Personal Experiences – Monash University

- ✘ The Faculty of Information Technology at Monash University has long embraced electronic delivery of course materials, like most universities.
- ✘ A range of systems:
- ✘ MUSO – Monash University Studies Online (commercial solution-WebCT)
- ✘ MULO – Monash University Lectures Online
- ✘ Podcasting
- ✘ Sakai Project partner (one of 4 universities in Australia)
- ✘ Library Teaching Support
 - + Online Reading Lists
 - + Past Exams Database
 - + Lectures Online
 - + Information Literacy Skills
 - + Online Tutorials

Personal experiences

- ✘ Moodle



The screenshot shows a Moodle LMS interface for a course titled "CSE9002 Database Technology". The interface is displayed in a Mozilla Firefox browser window. The course page includes a navigation menu on the left with options like "People", "Activities", "Search Forums", "Administration", "Courses", and "Help". The main content area is titled "Topic outline" and lists various activities and resources, including "CSE9002 Discussion Forum", "Assignment 1", "Assignment 2", "Assignment 3", "Assignment 4", "Assignment 5", "Assignment 6", "Assignment 7", "Assignment 8", "Assignment 9", "Assignment 10", "Assignment 11", "Assignment 12", "Assignment 13", "Assignment 14", "Assignment 15", "Assignment 16", "Assignment 17", "Assignment 18", "Assignment 19", "Assignment 20", "Assignment 21", "Assignment 22", "Assignment 23", "Assignment 24", "Assignment 25", "Assignment 26", "Assignment 27", "Assignment 28", "Assignment 29", "Assignment 30", "Assignment 31", "Assignment 32", "Assignment 33", "Assignment 34", "Assignment 35", "Assignment 36", "Assignment 37", "Assignment 38", "Assignment 39", "Assignment 40", "Assignment 41", "Assignment 42", "Assignment 43", "Assignment 44", "Assignment 45", "Assignment 46", "Assignment 47", "Assignment 48", "Assignment 49", "Assignment 50", "Assignment 51", "Assignment 52", "Assignment 53", "Assignment 54", "Assignment 55", "Assignment 56", "Assignment 57", "Assignment 58", "Assignment 59", "Assignment 60", "Assignment 61", "Assignment 62", "Assignment 63", "Assignment 64", "Assignment 65", "Assignment 66", "Assignment 67", "Assignment 68", "Assignment 69", "Assignment 70", "Assignment 71", "Assignment 72", "Assignment 73", "Assignment 74", "Assignment 75", "Assignment 76", "Assignment 77", "Assignment 78", "Assignment 79", "Assignment 80", "Assignment 81", "Assignment 82", "Assignment 83", "Assignment 84", "Assignment 85", "Assignment 86", "Assignment 87", "Assignment 88", "Assignment 89", "Assignment 90", "Assignment 91", "Assignment 92", "Assignment 93", "Assignment 94", "Assignment 95", "Assignment 96", "Assignment 97", "Assignment 98", "Assignment 99", "Assignment 100".

Experiences with open source e-learning

- ✘ Moodle LMS deployed for several units in the Faculty of Information Technology
- ✘ Students had the opportunity to directly compare this with the commercial LMS system used for other units (WebCT/Blackboard)
- ✘ Feedback was favourable for Moodle.

Experiences with open source e-learning

- ✘ Technical support (installation/server configuration etc) was ad-hoc.
 - ✘ Lecturers for each unit set up the sites.
 - ✘ WebCT platform required specific Java versions, popups enabled in browsers, limited browser capability
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E-learning influences on face to face teaching

- ✘ E-learning frameworks should be driven by face to face teaching not the other way around.
 - ✘ How can it happen the other way?
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Some current research

- ✘ Increasing engagement and interactivity:
 - ✘ Adaptive web site personalisation
 - ✘ The role of multimedia indexing and retrieval
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Adaptive Web Personalisation

With PhD Student *Mylini Munusamy*

- + Restructuring of web graphs as an optimisation problem.
 - + Utilise syntactic (structural) properties of the graph in addition to harvested behavioural attributes of users.
 - + Behavioural attributes gathered on server and client side.
 - + Content based attributes (e.g. tf/idf values)
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Adaptive Web Personalisation

- ✘ How can learning algorithms be employed to suggest web restructuring based on harvested attributes?
- ✘ Extend to include attributes describing end user browsing devices.
- ✘ Goal is device/connection-adaptive and personalized web site construction algorithms and designs.

The E-learning environment

- ✘ Adaptive Web Site Personalization
 - + A prime motivator for the effective design of web sites for optimized navigation is e-learning.
 - + Mobile e-learning in particular can benefit from dynamic adaptation of web content.
 - + An extension of the adaptive personalisation approach to learning user behaviour is more persistent learning that allows for profiling of users in terms of navigation patterns and content preferences. This can be used to increase engagement levels of students.

Relevance Feedback in Multimedia IR

- ✘ It is increasingly recognised that relevance feedback is of particular importance in multimedia information management.
- ✘ This is pertinent to inspirational e-learning frameworks – multimedia presentation of learning material.
- ✘ What general, unified framework for relevance feedback can be developed in order to benefit users of content based multimedia retrieval systems?

Relevance Feedback in Multimedia IR

With PhD Student *Samar Zutshi*

- ✘ Recognise the utility of decoupling the relevance feedback engine of content based retrieval systems from the retrieval engine.
- ✘ RF engines tend to be tightly coupled to the retrieval mechanism. We believe that it may be useful to model relevance feedback as a separate classificatory problem.
- ✘ This separation would allow the feedback to be sent to multiple retrieval engines and also allow feedback on the retrieval engine itself.

Relevance Feedback in Multimedia IR

- ✘ Develop a unified framework that can capture user information needs independent of the retrieval model.
- ✘ Given the separation of the RF engine from the retrieval engine, investigate a model which is expressive enough to capture the semantics of feedback (i.e. what it is about the images that the user has chosen as relevant or non-relevant that resulted in such choices) and also general enough to interface to different retrieval engines.

Relevance Feedback in Multimedia IR

- ✘ Suggest optimum retrieval strategies within a given model based on rough set analysis of user feedback.
- ✘ Relevance feedback process can be considered a problem of *classificatory analysis*. This kind of analysis is what rough set theory is explicitly designed for. The information about the images that the retrieval engine matches on along with the user's classification are all that is necessary for such an analysis. Hence we achieve semantic expressiveness coupled with a generality with this method allowing us to present our relevance feedback framework independently of the retrieval engine.

Relevance Feedback in Multimedia IR

- ✘ Within the framework, establish system-centric criteria for evaluation of retrieval results which can be used to suggest relevant multimedia databases to particular classes of user.
- ✘ There is some controversy over evaluation of image retrieval systems. System-centric objective evaluation measures are being investigated as part of this project. Such measures can suggest appropriate databases based on user query patterns

Where does open source fit?

- ✘ Open source e-learning platforms offer us the greatest chance for *dynamism* in the area of e-learning.
- ✘ High levels of customizability of delivery.
- ✘ Community based development.
- ✘ Potential for the more rapid adoption of new research results.
- ✘ Personal experience with commercial e-learning solutions suggest open source is the way forward!

Conclusions

- ✘ E-learning can be “e-inspirational”
 - ✘ Requires careful consideration of the rationale for the e-learning framework with regard to providing learning experiences
 - ✘ Aggressive adoption of results from other research areas such as adaptive web personalisation, multimedia indexing and retrieval, semantic analysis, convergent technologies etc.
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- ✘ Thank you! Questions?
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