

No Pain, No Gain: Opportunities and Dilemmas in Online Learning and Teaching

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ABSTRACT

At HKUST, more and more courses are being offered online in different modes: both as supplements or replacements of the traditional face-to-face learning experience in different degrees. In the meantime, lecturers are under pressure to meet both areas of excellence in research and teaching while, traditionally, the emphasis is placed on the former. Students taking online courses have to meet increasingly demanding academic requirements as well as life-long learning disciplines.

As a result of these emerging challenges for both lecturers and students, they will naturally evaluate critically whether technology brings with it opportunities or dilemmas in their course of learning and teaching. As a practitioner in the field of instructional technology at CELT (Center for Enhanced Learning and Teaching), their questions also became mine.

Based on the collaboration experiences with HKUST teaching staff and students, this paper highlights some potential opportunities and dilemmas for online learning and teaching in two major areas:

- *Learning and teaching – self-directed learning, and*
- *Content development – re-purposing atoms to bytes.*

In cases where dilemmas seemed to be avoidable, this paper also recommended suggestions to minimize them, with the aim of helping lecturers and administrators be more aware and responsive to their challenges.

BACKGROUND

Lecturers at HKUST, like lecturers at other research-oriented institutions, are faced with the emerging challenge to prioritize both research and teaching, when research is the sole area for evaluation of excellence. More and more lecturers look to technology for instructional options (Teaching and Learning Tips, 2001; IDEAS-OLT-Experience Sharing, 2000, 2001). As a result, the number of courses being offered online is

increasing at HKUST. The formats of these courses range from either supplementing or replacing parts of the face-to-face teaching in various degree courses.

Since January 2000 up till the present, Instructional Development at CELT have developed and implemented over 50 online courses of different formats in collaboration with the teaching staff and students (IDEAS-OLT, 2001). As a result of this collaboration, we have become more critical with the results of technology in teaching, not only because it is necessary to emulate our clients' needs, but also because it is equally vital to constantly reflect and examine whether we are using technology just for the sake of using it and failing to recognize and prepare for the dilemmas, as well as opportunities, that could occur as a result.

Based on our development experience, this paper highlights some of these opportunities and dilemmas in the areas of learning and teaching, focusing on self-directed learning features, and content development, focusing on re-purposing atoms to bytes. In both areas, this paper also recommends suggestions on how to minimize some of the dilemmas.

LEARNING AND TEACHING

Self-directed learning

Opportunities

Any time, anywhere and any pace are the familiar attributes that come to mind when listing the benefits of the Internet for learning and teaching. Both students and teaching staff can access, transmit, or publish information virtually at any time, from any where to any destination. They can take advantage of these attributes at their own pace because of the flexible and interactive hypertext infrastructure of the Internet that allows them to self-direct their information search.

To enhance the self-directed learning environment on the Internet, lecturers can provide the most updated documents, direct links to online references, or interactive course content to students to increase their motivation to learn.

To take advantage of self-directed learning on the Internet, students may design their own study strategies, such as plan their own study schedule, pick their own level or interest area, choose their own study environment and location to cater to their study habits, etc. Computerized technology makes these options available to students, in a one-to-one learning environment, on when, how, and where to learn. Briefly put, this is the foundation for flexible self-directed learning in a student-centered learning environment (Ausubel, 2000, Gagne, et al, 1992).

Dilemmas

“Any time access” may easily turn out to be “access-before-examination” for many students who are not accustomed to mapping out a study strategy. Their study strategy, if any, is usually based not on learning, but on examinations.

“Anywhere” is not necessarily a study attribute for some students. Apparently with some students, being in a class, physically networking with other classmates seems to be important social as well as study behavior. Undergraduates especially seem to miss the physical congregation that seems to partly validate their study efforts.

The attribute of “any pace” might not apply to every student because the “any pace” might just be one pace: slow. One possible reason could be some students seem to get information-overload anxiety from the daunting amount of some online content. They appear to be weak in discriminating information in the online course content. As a result, possibly because of lack of security, they print almost everything they see in an online course, unnecessarily creating huge amounts of information to digest.

Lecturers, who go online only to supplement their face-to-face class meetings, may find that distributing their entire lectures online will end up with lower class attendance. The hypertext Web system of online references could also be a “black hole” in disguise. Students who might “dive” into the Web from no specific “launching pads” in the course, may easily find themselves trapped in Cyberspace and forget why and how they arrived at their destinations.

Suggestions to minimize dilemmas

- To help students to learn effectively online, a face-to-face orientation, or any medium other than online, is sometimes necessary. In the orientation, you could demonstrate
 - how to navigate the course,
 - provide self-directed study tips,
 - explain the relationships between face-to-face meetings with online learning, etc.
- An informative but concise course calendar that includes items such as
 - reminders of course activities,
 - study tasks,
 - tutorial activities, etc.,could prompt students to study tactically.
- Studying at their own pace would be more productive if the online material could include features such as,
 - clear hierarchical mapping of the contents,
 - listing of assessable learning outcomes,
 - random accessible contents with embedded self assessments,
 - moderate amount of purposeful hyperlinks to targeted page/s of URL sites,

- communication forum where they could connect with others privately and publicly, etc.
- If lecturers want to use online tools to supplement their face-to-face lectures and not affect the class attendance, they could try to approach their lectures in three stages:
 - prior to class—provide the first level of information of the lecture online,
 - during class—provide the second level of information with additional examples or class activities, and
 - after class—provide all levels of information of the lecture online.

As a result, hopefully students will recognize the different purposes of the two learning environments and take advantage of both.

CONTENT DEVELOPMENT

Re-purposing Atoms to Bytes

Opportunities

A face-to-face course that could be re-developed, or re-purposed in today's terms, to be delivered as a "stand-alone" online course with minimal or no face-to-face meetings suggests opportunities for academic programs administrators as well as content providers (Rosenberg, 2001). This is because the opportunity could potentially increase student enrolment with relatively lower cost investments and maximize the allocation of resources of both classroom space and teaching staff. At the same time, a re-purposed online course has more potential for accepting students who might be bound by conflicting work schedules or limitations in traveling.

When re-purposing a classroom-delivered course for online use, most developers would take advantage of the multimedia possibilities on the Internet, such as sound, animation, video, etc. As a result of integrating these dynamic data for instructional purposes, learning becomes more engaging, relevant, and fun, therefore enhancing long-term memory retention and retrieval of knowledge (Ausubel, 2000; Finch, J. and Montambeau, E. 2000).

Dilemmas

The number-one complaint for most lecturers in their first daunting attempt to re-purpose their courses is: not enough time. There could be a number of reasons for this: underestimating the time and resources required, lack of training and environment support from administration, or simply having too lofty a goal.

Re-purposing a course for a different target audience without first analyzing and allowing for the differences in demographic and academic needs, could seriously affect the effectiveness of learning.

Using multimedia for the sake of the bells and whistles could slow down the data transmission, disrupt the learning process, and weaken the effect of multimedia elements.

Suggestions for minimizing dilemmas

- Rome wasn't built in a day; so neither should online course development. Build the contents in phases, and learn from experience as you accomplish each phase. Rome was also built because of having the government's support. Therefore, understanding the scope of your resources before committing would be a good idea.
- Accumulating, in advance, course materials that are digital, free of copyright issues for re-purposing, multimedia in nature, etc. would facilitate your course development considerably.
- If possible, always use text or graphics before considering narration, animation, or video in your content, providing that the results would not hinder other learning abilities.
- Use plug-ins or hardware configuration requirements that are most acceptable by the majority of your target group, or provide options to access the material.
- To re-purpose for a different target group, try to
 - analyze their learning needs and motivation,
 - adjust to their level of competency,
 - adjust to their learning objectives and assessments criteria
 - understand their learning habits,
 - gather their Internet access requirements, etc.

SUMMARY

In general, in the area of learning and teaching, it seems that dilemmas occur when students underestimate the effort required to be an online learner due to lack of independent study experience and skills, while lecturers or administrators overestimated students on their motivation to acquire those skills. In the area of content development, it seems that dilemmas may overshadow the opportunities when content providers and developers overestimate the efficiency of technology by underestimating the implications of the human factors in both the development and learning processes. Overall, some dilemmas seemed to be avoidable but in some cases they could also co-exist with opportunities.

I am a firm believer in “no pain, no gain”. Our experience showed that making progress in the upstream of technology is not by standing still but by moving forward. As long as we are prepared for the undercurrent that could lie ahead and know how to overcome it, we will be more likely to reach the next shore with pride.

REFERENCES

Ausubel, D P (2000). *The acquisition and retention of knowledge*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Bruner, J S (1971). *The relevance of education*. New York, NY: Norton.

Finch, J and Montambeau, E (2000). *Beyond Bells and Whistles: Affecting student learning through technology*.

<http://www.cofc.edu/bellsandwhistles/research/retentionmodel.html>

(Retrieved on November 20, 2002).

Gagne, R; Briggs, L J and Wager, W W (1992). *Principles of instructional design*. Fort worth, Dallas: Harcourt Brace Jovanovich College Publishers.

IDEAS – OLT. CELT (2001).

<http://www.ust.hk/celt/ideas/olt/>

(Retrieved on November 20, 2001).

IDEAS – OLT on Experience Sharing. CELT (2001).

http://www.ust.hk/celt/ideas/olt/experience_sharing/aug01/experience.htm,

http://www.ust.hk/celt/ideas/olt/experience_sharing/feb01/experience.htm, and

http://www.ust.hk/celt/ideas/olt/experience_sharing/oct00/experience.htm

(Retrieved on November 20, 2002).

IDEAS – OLT on Solutions and Applications. CELT (2001).

http://www.ust.hk/celt/ideas/olt/solutions_applications/solutions_applications.htm

(Retrieved on November 20, 2002).

Negroponte, N (1995). *Being digital*. New York, NY: Knopf.

Rosenberg, M J (2001). *E-Learning. Strategies for delivering knowledge in the digital age*. New York, NY: McGraw-Hill.

Rossette, A (1987). *Training needs assessment*. Englewood Cliffs, NJ: Educational Technology Publications.

Teaching and Learning Tips. CELT (2001).

http://www.ust.hk/celt/instr/instr_teachtip.htm

(retrieved on November 20, 2002).

Yeung-Fang, W M (2001). *Does technology hinder or enhance learning and teaching?* Proceedings of the 2001 Technology in Language Education: Meeting the Challenges of Research and Practice. Language Center, HKUST, Hong Kong. In Press.