Alternative approaches to face-to-face teaching: the changing status of options

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Summary

Information Communication Technology (ICT) diffuses to a mixed reception among academics, partly because the scope for pre-adoption experimentation needed for devising new practice is being eroded by the centralized nature of infrastructural controls that accompany initial ICT implementation. Corporate managers now leading Universities are coming to regard ICT as the key to implementing the transition from the modern 'mass university" to the future "virtual university" (see table 3.1 in Delaney 2002). Clearly, face-to-face teaching is soon to be widely regarded as only one of the options in course-unit content delivery, especially if course-unit pre-requisites are to be relaxed in the interests of widening appeal and class sizes without generalizing content so much as to dilute quality, not to mention relevance. It is argued here that, in this context, online delivery should be in hypertext including links to relevant web sites, and that if the university cannot support the necessary net-ware, the hypertext can be distributed on CD with supporting documents, with teacher-student interaction served through a university web site and/or email system.

Introduction

Each generation of academics must adjust to change during a working life-time. In the first decade of the second millennium CE, retiring academics look back on many changes that have had to be embraced, or at least accommodated: rapid advance of knowledge-making and its incorporation into course-unit content, changes in recruitment, student aspirations, the nature of institutional/infrastructural support, and to changes in relevance of the respective disciplines to the professions, the community and the market for trained and educated personnel. Changing too, is the balance between teaching and research, even to the point of threatening the "sacred" teaching-and-research nexus. The rapid nature of recent changes is generally attributed to the digital revolution. Perhaps the most noticeable manifestation of it on campus, apart from administrative information handling is the electronic library based on the

now- ubiquitous information-age technology.   Thus one of the key components of the campus-based teaching model, access to a hard-copy library, is much diluted.

In this context, among the challenges faced by the modern academic, not least has been that of accommodating the diffusion of the information age tools: internet communication, digital media and data handling, and visualization as never experienced before (displacing somewhat the status of the written word) in order to maintain effectiveness as   enrolments, year by year refer to a succession of ever more IT-savvy students.   A transition from the "mass university" to the "virtual university" is now possible, and, with it, "industrialization" of tertiary education. The dominance of "face-to-face" teaching is thereby challenged, especially in countries with deregulated labour markets and an appetite for employing part-time students as casual workers. The courses they are most likely to enroll in will be those that teach them marketable skills and can be completed in an "own-time" way, at an "own-pace" rate. Success in the competition to serve them will attend those institutions that   up-date course content according to the speed at which   old course unit content soon to be made   redundant by new technology   can be restructured to meet the ever-evolving   market.   Much of this re-adjustment involves incorporation of digital data handling skills into the curriculum.

Even for on-campus teaching, ICT must be adopted for giving students a chance to practice data-handling skills with the guide of a tutor. This is apart from whatever the lecturer does by way of delivering lectures via ICT. In both cases, institutional support for the IT infrastructure is called for. Thus the scene can be set for widening application of ICT. It follows that the feasibility of developing a virtual (online) campus will be discussed among academics looking to maintain the appeal of what they have to offer. Opinion is divided about the benefits: for instance, Noble (2001) and Postman (2003) are critical (the former predicting adverse reaction to the coming of the "24-hour professor" :   see Young; 2002) whereas   Kearsley (2000) and Levine (2003) are supportive.   Assessment of the relative merits and demerits must vary not only with point of view, but also according to the appeal of new ICT products, the institutional support for   "eLearning" (adopting and IT servicing of   those products) the nature of the market for the courses delivered using them, and   the leadership   offered in change management. For all that variation,   the practicing academic, unless blessed with the most popular lecture times in the timetable,   must adopt ICT to some degree in order to maintain viable class sizes via the extra appeal that the ICT offers in terms of flexible delivery.   Given that, some interest attaches to developing criteria for deciding when to offer course unit content on line or in some other ICT-supported asynchronous learning mode that satisfies own-time/own pace (flexible) delivery criteria.   Clearly, face-to-face

teaching (conventional delivery mode) is now but one of the course content delivery options available.

ICT : gathering momentum has an impact on university futures

  The mass university concept (now globally implemented) is being challenged by the concept of the virtual university, already implemented in embryonic form: (Tiffin and Rajasingham, 2003). Because of the comprehensive nature and appeal of the digital ICT, the modern educational technologist is an information professional on a world market that is not limited to servicing education. Thus many an academic in a conventional university focused on face-to-face delivery (scheduling and venues) will be wondering whether to adopt ICT as a pioneer or to wait for institutional policy to embrace, staff, and enforce it.   Also of interest, is discovering the extent to which any gap between what the students experience of ICT inside as compared to outside their classes is an advantage or a disadvantage in maintaining engagement, or, indeed, enrolments.

Adoption of ICT in course-unit delivery challenges the tradition that still says that "face-to-face" is best. In its original form (tutorials in very small classes) this was surely true, but few students these days can pay for that style of learning, and governments are less and less inclined to subsidize it.

Nevertheless, traditionally, conventional course-unit delivery (ie "face-to-face" lecturing and supportive tutoring) is said to be "as good as it gets" (as mentioned, by way of challenge, by McDonald 2002). The tradition has been defended for various reasons since the earliest days of advanced education. Today, defense rests not on an obvious lack of acceptable alternatives, but on an unwillingness to adopt unfamiliar technology that is tied to rapidly changing/progressing media formats and the kind of data processing and display power which is seen daily on display in TV advertisements, these being supported by marketing budgets greater than operating budgets of many University Departments. They are of a visual standard beyond the scope of university teachers to emulate.   Nevertheless, each new cohort of students will be familiar with them, and will be ICT-savvy.   Lecturers will have to take that into consideration when up-dating their course-unit content and planning for content delivery each new academic year. ICT is now part of the University course content delivery (educational technology) tool kit.

  Interest in educational technology has a history dating from before the proliferation of tertiary teaching institutes. As   Harris reminds us, since Thorndyke (1912) advocated deliberate use of pictures in lectures (as a labour-saving device) ,   much effort has been devoted to identifying the   "proper   mix of   medium, student, subject matter content, and learning task" (Harris 1983, page   445).   Since then, adoption of ICT is mostly

deployed for   enhancement rather than as an alternative to traditional styles of University teaching.   However, ICT can be deployed not only as enhancement for conventional delivery, but also as a platform for flexible delivery, or as the core of distance (off campus) delivery of course unit content (DiBiase, 2000, Pittinsky,2003). Each time the technology improves, the appeal of ICT to lecturer, and to student, may change. Among notable recent improvements, the diffusion of the wide display screen in the home entertainment market (not to mention some desktop workstations) can be mentioned, because students buying such screens will surely include those with a hitherto very distinct preference for the hard copy rather than the "square-eyes" electronic display.

Unless mandated by university managers, lecturers adopt   ICT   as and when it suits them, and then, assess the success or otherwise of the experiment,   taking into account what they know about what the students expected and what they could cope with, and how well their   innovative ICT plans were brought to practice.   ICT sales-staff and IT managers, on the other hand, are likely to approach university managers and argue that top-down adoption is the best plan.   They have strong arguments: once the pioneer adopters have struggled to demonstrate the merits if ICT, there is always a call for expensive infrastructural support of a kind that, at least at first, must be centralized if value for money is to be assured. Thus use of ICT may become mandatory so quickly that experimentation with the new technology may be rushed, and supported without regard to the "mix" that Harris (*loc. cit.*) mentioned. There arises thereby, a danger that ICT adoption can   become   so much mired in   skepticism   among the academics, that   the ICT   tail may end up wagging the course-unit delivery dog, to be soon rejected as a "bad idea".

There are greater forces than that at work however. The approach of the ICT sales staff to individual universities is a reflection of market forces that are bringing progressively more powerful challenges to traditional teaching roles as practiced in conventional Universities (Noble 2001).   The challenge emerges from realignments in the power balance between the players in the markets for knowledge (and knowledge transfer).   The challenge comes not only from market globalization, and competition as manifest, for instance, in attention given to   Global University Rankings and the selection of key ranking criteria, but from the formalization and institutionalization of intellectual property, and the commodification of skills to be taught, and of teaching and learning delivery techniques.   Small wonder that universities are beginning to be challenged by "for-profit" knowledge transfer companies.

It is advances in ICT that power much of these different challenges.   To meet it, the individual lecturer can enhance delivery by use of internet and data-handling tools in ways that the modern "digitally-savvy" student expects to see.   On the other hand, a

teaching company can invest in assembly and marketing of a digital text book (complete with video streaming, chat and (internet) enhancement sites) with franchised delivery such that university managers will seek to replace lecturers with licensed tutors. Incorporation of ICT as enhancement to conventional delivery   can happen according to the institutional infrastructure provided to the lecturer, although any constraint in these terms can be somewhat relieved by use of blogging . Franchising   will happen if return on investment is thought to be rewarding enough to, and university managers   can be persuaded/ by the franchise owners to adopt .

Why can't the Universities themselves form such teaching companies? They are in completion with each other. Why has not one of the big publishers formed a franchising company?   At present, they make more money publishing text books. Why don't the best lecturers form such a company? They are in competition with each other and busy writing the text books and/or doing research. Why hasn't (online) Phoenix University (URL 1) swept all before it? The bigger institutions have more marketing power.

Will the answers offered above be valid for much longer? The extent to which it will be a case of "once one answer changes, they all change" depends somewhat on which answer changes first.   We can expect a cascade of new questions to emerge:

a) which dominant player will first be in a position to seize the initiative ?
b) will the initiative pass to the next best-positioned player by default (probably borne of institutional inertia) ?
c) what will the students think of the new course-unit content delivery products"?
d) how best to market them?
e) what will be the pattern and rate of adoption of ICT and in what form   will the adoption be most popular (Virtual university, or steadily- improving enhancement of conventional delivery)?
f) how quickly can and will the conventional universities adapt when the changes come?
g) will corporatized teaching companies   become big enough to join the list of dominant players in what, under a virtual university regime, would become the   knowledge transfer industry?
h) will that threaten the present status of the famous and long preserved "teaching-research nexus"?

In any case, University autonomy, along with what it makes possible (notably, collegiality) is being transformed by corporatization. This will remain true whatever answers emerge to any of the above questions. Accordingly, if corporate managers see

fit to support ICT, it will be made available. Conversely, if academics call for it in one way or another, they may or may not be pleased with the kind of answers they get.

Already, academic autonomy (admittedly not always deployed in the past with the necessary intellectual honesty) has been eroded as managers seek greater efficiency by raising minimum class sizes. This practice can lead to the syllabus becoming so generalized that students would be better seeking out a private provider offering the specialism they need. Almost certainly these providers will be using ICT. They will be part of the solution to resolving the conflict between "rationalization" and "specialism".

Thus are imposed upon the traditional academic, constraints upon creativity and innovation.   Despite that, the university must rely on the academic to devise and deliver the course unit content in ways that would meet the claims made by the University marketing office.   Under such pressure, the academic will derive new practice: many will think "ICT to the rescue". The academic will also hope that it does not take too long to learn to use the necessary software tools, and that in the meantime new tools (and further re-training) have not been imposed.

Course−unit content delivery: ICT and face−to−face

 In this context, we argue that   the rate of ICT adoption in teaching and learning will vary according to the relative significance of   driving forces, not the least among which is   academic   resistance to   managerial imposition of ICT , and managerial assumptions that   adoption as enhancement is   not only profitable but also easy, and that lecturers will be happy to innovate and students will prefer it.   If ICT diffusion was more impressive both assumptions would escape being labeled "simplistic". However, apart from the obvious(the   especially constituted online course providers) the diffusion is   clearly constrained, but in ways that vary between institutions, some having a history of   failure because of a one-size-fits-all (understandable in view of the centralized support called for) top-down implementation induction to   ICT, and in other cases, due to institutional inertia deeply embedded "bottom up".   The latter is also understandable, especially in the case of language teaching, although certain attempts at deployment of alternative methods appear to have been successful (URL2)

So far, adoption of ICT as the core of content delivery is rare among traditional academics. However, early adopters will emerge, especially among those academics who find themselves unprotected by meaningful pre-requisites. In such circumstances, ICT offers a way of maintaining standards because with online delivery, learning is asynchronous,   and, within the general framework of the   semester timetable, is taken in an own-time/own-pace context. Mode of ICT adoption depends partly upon access to the technology for staff and, then, for students. In that TV   sets linked to DVD players

are now quite   popular,   the way is open to compose course-unit content in hypertext
(with glossary links and   , perhaps video streaming and animation) and, perhaps,   to
format it   in the same way that   Hollywood/Bollywood dvds are   presented:
navigation via   a hand-held remote control device.   This could be dubbed the "couch
potato solution". Will such a delivery mode allow both consolidation and specialization
for a curriculum?   Which academics/schools will seize the initiative? What institutional
inertia will stand in the way? What will be the relative significance of collaboration and
competition? Some very interesting times are ahead, and technology is no more than the
technical innovation among the driving forces.   These forces are such as makes the
nature of university autonomy as known in the past, a thing of the past.

Course–unit content delivery and the changing nature of autonomy in academia

Tertiary education builds on basic literacy and numeracy acquired in primary and
secondary school, and delivers best if courses can be structured around pre-requisites,
co-requisites and prohibitions in terms of the sequence of course units that successive
cohorts of students enroll for while completing their studies. University control of the
secondary school curriculum makes for greater ease in maintaining such frameworks,
because it is easier to assess applicant suitability for admission to tertiary studies.
However, such control is doomed once school leaving age and tertiary-training entrance
age are about the same, and the number of credibly competitive Universities in any
particular (eg Provincial) jurisdiction is more than one. As a result, in most jurisdictions,
Universities can look back on half a century of steady loss in control over secondary
school curricula, a trend accompanied by university isolation to its core business in
society within an ever-more competitive general market place, including the market for
knowledge transfer.
At the same time, demand in the world economy for trained people has seen tertiary
enrolments increase in parallel (not necessarily in sympathy with) employer needs. In
some jurisdictions this has been at a greater rate than population increase.   An ever
wider (not to mention deeper) demand for expertise/ specialization has seen tertiary
course names/numbers proliferate.   The appeal of each of these courses in the market
changes over time according to the perceptions of the students/customers/employers.
Without manpower planning, we academics, at enrolment time,   are at the mercy of
what the current cohort of 18-year-olds thinks about Life ,   The Universe and
Everything (to use a phrase made famous by Douglas Adams).   Accordingly, the
appeal of a particular course may or may not be influenced by the realities of the

employment market, that other great driver of the desire for training/re-training. Some University administrators, alarmed by the fiscal burden of the proliferation, have sought to rationalize the number of courses and/or course units.   Such rationalization is more likely to be driven by a need to cut costs than a desire to meet community demands (which may, in any case, be unrealistic).   Under further stress there is the temptation to try bold initiatives. History shows that in an ever-changing scenario, such moves often turn out to have been unwise.

Another option is to meet the ever-widening range of demands by adopting content delivery via implementation of ICT.   While we can debate the nature of "best strategy" in these terms (eg,   short-term or longer term   reconciliation of expenditure) it would be important for the demand for each   course unit conversion to ICT format to last long enough for setting-up costs to be recovered.   Clearly the more enrolments, the shorter the pay-off time for the initial investment, and the more reliable the sustaining (up-dating) revenue stream can be. Higher enrolments can be achieved if teaching institutions share students, but under competition policy this can be   difficult to arrange.   This is taking for granted that the academic can find the appropriate place for a particular course unit within Harris's mix.

The ICT options: opportunities versus constraints

ICT is evolving so rapidly, that new scope for its deployment in knowledge transfer emerges regularly. For instance, at the moment, University IT managers will be wondering if the newest giant computer server farms (eg those maintained by Microsoft, Google, Yahoo, and others) will offer internet and other corporate information service so economically that   serious consideration should be given to   outsourcing.   At Monash University, (Australia) for instance, the largest attached file that can pass through the email system is 2Mg. The free email services attached to the giant servers offer more. The University cannot offer video-streaming to course-unit lecturers using the (compulsory) Monash University Online (MUSO) service.   However, if a lecturer needs to offer it as part of   course-unit content, he/she can start a blog site , and,   for a small fee, can restrict access to "friends/students".   If the University cannot give remote students internet access to the   online atlas available on its intranet , no matter: the lecturer can organise a Google Earth mash-up. Indeed, it can happen that , by surfing the www, the student   (unbeknown to the lecturer) can now find a better set of lecture notes   and course materials than offered in class.

We should acknowledge immediately that Universities still hold the advantage in knowledge transfer because of their part in knowledge making, their long-established credentials in transparent examination and assessment   and their near-monopoly on the

kind of accreditation that is still in high demand. Accordingly, a non-threatening time gap can (and usually does) exist between what is offered with each advance in ICT and what is adopted   by Universities.

This gap is widened each time ICT takes a leap forward and it is narrowed somewhat each time course delivery mode changes to take advantage of the new ICT offerings. Advantages only accrue if the adoption is successful, not only technically, but also in terms of acceptance by students and colleagues. In so far as   adoption is predicated upon provision of institutional infrastructural support,   adoption of new ICT may be dependent upon implementation of a top-down (as opposed to grass-roots) managerial approach.   A further reason for the suppression of grass-roots initiatives refers to the need for the marketing administration to centralize monitoring of   all   logos and so on. On the other hand, comprehensive top-down imposition if ICT may involve such all-or-nothing investment in infrastructure that the time needed for engaging the interest of particular lecturers and students is not spent. In such cases the lecturers may not have time to adapt, and the infrastructure will stand idle, and   come to be seen as failing to fulfill promise to give their institution a cutting edge in the market.   By the time ICT policy enforcement begins to be effective, all parties will be hoping the ICT investment has not become out-dated. If it has, there will be talk about the merits of organizing future initiatives with spreading the risk in mind. Institutional collaboration will be mentioned again, as will outsourcing.

Given that in many tertiary institutions, innovation in course-unit delivery is not possible without provision of necessary infrastructural up-grade (including IP protection), University managers are in a position to either greatly constrain or, to impose ICT upon course-unit lecturers: they should not chose the latter unless there are clear indications that the response will be positive. Those with most to gain may also those with most to lose. In many institutions, most of them will be those already busy delivering in Distance Education mode, using well-tried methods that all students accept. Students enrolled in courses made up of course-units delivered conventionally will be more likely to see merit in carefully-introduced ICT-based enhancements, whether or not they have been mentioned in the course literature that students use when choosing electives.   Lecturers serving courses with few electives may have more scope to experiment (support top-down imposition of ICT) in these terms. Nevertheless, the need for support from course coordinators and course-unit lecturers is obvious and, in institutions that have academic promotion policies taking more account of the importance of research output in University rankings, such support may be hard to sustain, or, in some cases, to initiate.

In summary, it is obvious that an academic with an urge to be a pioneer adopter of ICT in course-unit   content delivery will need to circumvent difficulties in order to gain

experience that will be drawn upon when/if the virtual university, or other forms of asynchronous learning modes ,   become the institutional norm.

Overcoming constraints: a view from the coal—face

Increases in University efficiency can accrue from   reduction of the number of course-units offered, so that space in the schedules and   effort devoted to the marketing can be free to service other newly prepared and more market-ready course units.   Some of the course units that come under scrutiny during "efficiency drives" are prime candidates for conflation   because advances in technology and accompanying commodification of skills enables students to learn to deploy modern tools to solve problems that formerly referred to knowledge taught   across a range of course units. Spatial data assembly and handling is an example (URL 3). Others may have long ceased to be relevant to the market for knowledge transfer but retain a place in the curriculum out of tradition. Up-dated curriculum may therefore have to be offered with inconvenient schedules. Many a lecturer will think of the alternative: ICT (flexible delivery) "to the rescue" (of the curriculum).

   The following list of difficulties and possible solutions can be assembled:

1. Shortage of   IT support: (in order of decreased levels)
    a) learn   web authoring   to make the transition for course-unit content to ICT media (eg in hypertext under a browser: eg html) and go online: the difficulties thus overcome refer to   lack of sufficient   support staff in the school
    b) put html on CD   (because the IT network is not open enough to serve hypertext on line to students   )
    c) put hypertext on dvd to be operated by remote control   (because nearly all students have a TV set with attached DVD player : the couch-potato solution)
    d) set up a   moderated blog (because even minor video streaming is not supported by the institution)
    e)   outsource email communication to gmail or hotmail etc (email system has limited attached-file handling so student submission of written work and the necessary feedback is inhibited)

2. Video streaming is not supported
    a) post out a DVD along with the CD
    b) refer students to web sites that stream relevant material

3. University rationalizes course-units to raise class numbers. If out of commodification and conflation, it is likely that ICT will be involved.   In other cases,   generalization of   content so as to appeal to a wider audience can be in spite of the fact that the relevant professional accreditation depends on retaining the discontinued unit :

Transfer course-unit content to ICT mode, and

   a) offer the unit from an open university
   b) offer the unit at   summer school
   c) start negotiating with one of the   major publishers that supports text books with a web site.
   d) form a teaching consortium and offer the unit from the professional peak-body web site.

The above solutions are all feasible and as such show that academics may be recovered lost autonomy and professional standing in the new world of ICT in tertiary teaching.

Conclusion

It is argued that with regard to deployment of ICT in tertiary teaching, success in institutional adoption is certain at the superficial level, but deeper advantage of the new technology can be taken if each lecturer can identify the particular advantage it offers. This will not happen without the institutional support for gradual migration from exclusively face-to-face mode.

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