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Learning in Cyberspace

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Synopsis

Communications and Information Technology is a participant in new challenges for university education in general and legal education in particular. It is seen as part of both the problem and the solution. On the one hand, C&IT has a key role in the processes of globalization and the transformation of legal practice. On the other hand, it is seen as a solution to problems of resources in university education and changes in approaches to learning. At issue is not merely the mode of delivery of higher education, for example the traditional form of lectures and seminars, but also the entire institutional structure which is affected by ideas such as lifelong learning and global distance learning. Can C&IT provide improvements in legal education to cope with pedagogical, social, cultural and technological changes?

Focussing on developments in the United Kingdom, but also drawing on examples in the rest of Europe and other countries, this paper reviews the development and use of C&IT in legal education examining the key issue of ways in which different uses of C&IT in legal education impact on the challenges facing legal education examining in particular:

- Educational theory
- Resource Questions
- Globalization.

Introduction

Imagine Maria, a future law student in Zambia. She is undertaking a law degree at MacMurdoch Global University (Global U) with its headquarters in Cambridge, Massachusetts. For this privilege she paid a fee of \$15,000 US per year, much less than she would have to pay were she studying in on campus in the US. She registered electronically through her PC linked to the Global U intranet. She selected her course units in a similar way after consulting the intranet for course information and inquiring by email about a course she was uncertain of. For this privilege, she obtains access via the intranet to a wide range of datasets such as Westlaw and LEXIS as well as Global U's own collections which include textbooks and articles, reading lists and specialised multimedia course materials including video lectures as well as interactive exercises. She joins a number of electronic audio and video seminar groups in which she can discuss specific and general issues with both her seminar tutor and with fellow students. The intranet provides an assessment and examination schedule with 75% of examinations being computer assessed. Feedback and results for her

examinations are also delivered electronically. She can attend upto four one week optional personal contact programmes in one of ten global centres, the nearest one for her being in Cape Town in South Africa.

Her enrolment can be full or part-time. There are no courses on Zambian law, but she may select optional units on Law and Anthropology and Law and Development. Global U has negotiated with the Zambian and most other governments that their degree will entitle graduates to attend the Zambian Law Institute to qualify for the right to practice in Zambia after one year's study at the Institute if they pass the relevant examination.

Surprisingly, much of this scenario exists already but not in an integrated form. The University of London External Degree programme has been awarding law degrees by correspondence for many years, but mainly through paper based notes and materials. The British Open University has started a similar law degree recently, and although it is currently largely paper based, the OU has ambitious plans for IT development (Daniel 1996, Eisenstadt and Vincent 1998). Most of the C&IT elements suggested can be implemented currently.

We could read this scenario as an optimistic one of the efficient future of legal education in which students anywhere can obtain a high quality education at a reasonable price. Alternatively, we can be concerned that the transition to an electronic global legal culture might lead to the destruction of educational values and of local legal cultures. We might be shocked at the wholesale MacDonaldisation of legal education.

My concern in this paper is to take a sober look at whether and the circumstances in which communications and information technology (C&IT) based learning can enhance legal educational values at a time of dynamism and uncertainty in the future of legal education, a situation to which educational theory, pressure on educational resources and globalization have all contributed. After consideration of pedagogical issues, I will briefly examine the wider context of educational resources and globalization.

A changing pedagogy: From teaching to learning

While there is no unity of theory in any domain, be it education, legal education or information technology in legal education, there is an unsurprising convergence of theoretical approaches within the three areas. The lack of surprise may be a consequence of the role played by education theory in stimulating developments in the other two domains.

Le Brun and Johnstone (1994, p56) cite Biggs (1989, p8) as indicating that cognitive psychology has changed from seeing the learner as a passive recipient of information to "a self-determining agent who actively selects information from the perceived environment, and who constructs new knowledge in the light of what that individual already knows".

This is an obvious basis for the shift in education from teaching to learning, and particularly towards 'student centred' and 'independent' learning. An almost logical development from this is the approach for example of Brown et al (1989) which emphasizes 'situated learning', both 'contextual' learning in the sense that the student learns from the environment and 'active' learning in the sense that the student learns through active interaction with the context and finally 'reflective' learning in which the student learns by reflecting upon the contextual interaction.

Donald Schön (1983, 1987) makes the ultimate connection of seeing the best form of reflection for professionals such as lawyers as that derived from the concrete context of practice itself, from knowing in action – a form of return to the apprentice tradition of legal education. In contrast, Laurillard (1993, p28) captures the orthodoxy of simulated situational-active-reflective learning in higher education:

Because academics are concerned with how their subject is known as well as what is known, teaching must not simply impart de-contextualised knowledge, but must emulate the success of everyday learning by contextualising, situating knowledge in a real-world of activity. However, academic knowledge has a second-order character, as it concerns descriptions of the world. So whereas natural environments afford learning of precepts through a situated cognition, teaching must create artificial environments which afford learning of precepts i.e. descriptions of the world. The implications for design of teaching are that:

- academic teaching must be situated in the domain of the objective, the activities must match that domain,
- academic teaching must address both the direct experience of the world, and the reflection on that experience that will produce the intended way of representing it.

Le Brun and Johnstone (1994) apply these ideas to legal education, while Laurillard (1993, 1997) uses them to develop a pedagogy of information technology in higher education.

In relation to legal education in the United Kingdom, these principles have been reinforced in variable fashion by the Lord Chancellor's Advisory Committee Report on Legal Education and Conduct (1996, 4.21) with its emphasis on contextual, active, self-directed and reflective learning. In relation to Higher Education generally, the Dearing Report (1997 para8.3) emphasizes active and independent learning:

The consensus among many educators is that depth of understanding is fostered by an active approach to learning, and by forging the links between theoretical and practical aspects of the subject. For this to be possible, students must have access to more than just the articulation of knowledge in the form of books and lectures. They also need practical experience that rehearses them in the professional or scholarly skills of their field, and the opportunity to develop and express their own understanding and point of view in an environment that gives constructive feedback.

And in relation to information technology Dearing has emphasized the shift to resource-based learning as a form of independent learning (Dearing 1997 par. 8.34).

The educational ideas are based on research and experiences of teaching and learning. Nevertheless, in relation to legal education, they should be regarded as signposts to the construction of approaches to learning as they represent early steps in pedagogical reconstruction.

Can IT help?

For educationists such as Laurillard (1993, 1997) C&IT has considerable potential in the delivery of the proposed new pedagogy as integrated components of teaching/learning strategies which combine old and new forms of learning (See also Dearing Report 1997; Beetham ed. 1997, Daniel 1996) . However, C&IT in learning is important for other reasons as well. It has become an essential part of contemporary life and work experience, and is therefore in itself relevant to the academic experience. In particular, it has gradually become an integral part of the life of law in such a way that ignoring it would be ignoring an essential aspect of a lawyer's development.

C&IT is affecting legal education through four types of resource:

- hyperlinked information
- communication
- interactive learning

- simulated or active practice

A hyperlinked information resource

Hyperlinked datasets are more than advanced versions of traditional law libraries (Paliwala 1991, Widdison 1995, Jones and Scully 1996). By providing access from desktops to vast datastores, enabling search and navigation using a variety of techniques, including browsing within the internet from one hyperlinked document to another, hyperlinked datasets give a new meaning to resource-based learning. Whereas traditionally library resources had to be carefully managed to ensure reasonable access for students, the electronic resources are there at the desktop inviting mass independent learning in a manner which was never possible before. They enable the students to search for texts, to browse, to instantly compare, to explore new pathways through links and thus provide the potential for independence from the class lectures and texts.

These days we casually accept the existence of legal information retrieval systems, of being able to access a vast range of resources either through proprietary datasets such as Lexis and Westlaw, through various CD based systems or through the vast anarchic libraries of the internet. Until recently, however, its impact was not obvious. Because of cost factors, students in the UK (but not in the US) have been largely sheltered from these tremendous resources. The slowness of the 'world wide wait' is another constraint. A third and more significant constraint is educational methods which have not come to appreciate the potential of resource based learning. They emphasize close structures and exams rather than independent exploration especially through essays and projects which the student can select. The fear of electronic plagiarism could prevent effective use of resource based learning.

Jones and Scully (1996, 1998) raise the issue of whether hypertext can promote 'deep' as opposed to 'surface' learning, relying on the criticism of simple electronic book systems such as by Wan & Johnson (1994 p.852) that 'improving information access, does not typically offer explicit mechanisms to help learners better assimilate information, the context surrounding its creation and use, and the perspective of the author and other learners'. Nevertheless, hyperlinked computerized data sets can stimulate independent learning in ways which traditional texts may find difficult. Of course, linear 'text' is still very important, as is careful reading of key works especially in comfortable hard copy. Equally, a stimulating lecture is 'interactive' in the sense that the student's mind is interacting with the ideas as they are being delivered.

Electronic casebooks have the potential of providing a much richer store of resources than is possible in paper texts (Staudt 1993). They can provide not merely the full text of key legislation and case law, but the text of secondary material, practical examples etc. Intelligent hyperlinking provides the network of pathways for exploration by the student.

Yet, the world wide web is in essence a much richer resource than any individual casebook can provide, with a great deal of primary and secondary information being available for perusal. The wealth of resources seduces students into independent exploration and it is only the limitations of the curriculum in most law schools which relies on set texts and written examinations based these, that prevents students from becoming independent learners in the true sense. It is incumbent on law schools to promote this spirit of exploration but also to provide intelligent pathways through the web of learning through efficient systems of web links and through hyperlinked courseware.

Interactive Learning

The problem with textbook type learning resources is that they may provide a more interconnected learning resource, but are not interactive and do not provide feedback. Traditional learning provided

for interaction in the form of small group sessions and Socratic dialogue in large groups. Nevertheless, such large group teaching has never been popular outside of the United States. Small group teaching has been in decline in the UK and elsewhere because of resource pressures. How can one deal with the individual student's learning needs in a class of fifteen or more students which takes place once a fortnight?

Early forms of programmed learning tried to provide interaction with multiple choice questions, and this was the method adopted in the first generation of computer based learning for example by the US Computer Assisted Legal Instruction Consortium (CALI) (Burris 1979, Clark 1983, 1983a, Korn 1983). Computer based programmed learning provided feedback for individual wrong answers. However, the limitations, particularly monotony, of this were soon obvious.

Intelligent computer assisted learning (ICAL) suggested that artificial intelligence approaches could be used to provide learning pathways according to the individual needs of the student. Perhaps the most interesting model is that suggested by Kevin Ashley (1998) who suggests integrating intelligent tutoring systems based on his CATO program with electronic casebooks.

Multimedia learning technology went in a very different direction. Firstly, multimedia could enhance the text through the illustration of text with diagrams, pictures, sound, animation and video (Migdal and Cartwright 1997, Paliwala 1998). Hyperlinking enabled independent learners to find their own route through the system with course teachers assisting in developing pathways for the learner (Widdison 1995, Collins 1994). But more significantly, the constraints of traditional multiple choice could be overcome by developing a range of interactions involving different types of exercises and feedback. Ultimately, technological constraints do not provide individual student modelling of the type favoured by artificial intelligence researchers, but 'intelligent' authoring (in the academic and not computer sense) enabled the essence of interactivity. The student explores text and materials, and is prompted by exercises and feedback to reflect on her/his learning problems. Of course, artificial feedback needs to be supplemented by personal feedback, but if the system works, such resource expensive real feedback can be channeled in the most effective directions.

Nevertheless, there is some skepticism about interactive multimedia learning being capable of active, creative or 'deep' learning (Jones 1998). Alldridge and Mumford (1998) suggest that current law courseware such as Iolis may be too geared towards the teaching of positive law.

I believe that creative use of courseware environments such as Iolis provides an ideal component in such creative learning. Iolis courseware includes multimedia learning materials covering ten UK LLB degree courses developed by the Law Courseware Consortium at Warwick with the support of all UK law schools with over 70 law professors contributing as authors. Nearly all law schools deliver Iolis across their networks and many students are acquiring their own copies. The main components of Iolis courseware are:

? 80 *workbooks* containing over 200 hours of hypermedia information and interactive exercises. The interactive exercises go beyond the typical multiple choice approaches and include a wide variety of types. A key part of the learning process in exercises is the feedback provided to the user.

? a hypertext *resource book* with the full text of nearly 2,000 relevant legal items (cases, statutes and articles), a legal dictionary and a legal bibliography. The Resourcebook may be accessed from a navigational icon or directly from the workbook from a hypertext link to an appropriate document.

? a *scrapbook (notes) facility* which enables students to save text to a file and add their own notes.

? a *comment facility* for lecturers to 'customize' the workbooks and to engage students in 'conference' type discussion.

? A *video cam tutorial* and a *help facility* to facilitate use.

? A management facility which enables law schools to track the use of the courseware by students, including who has used it, what workbooks have been used and for how long.

A key aspect underlying the success of *IOLIS* has been a user friendly authoring system developed especially to meet the needs of lawyers with very little computer expertise. The software development has benefited greatly from the suggestion of authors. This has enabled administration of the whole project with very limited resources. The software has been licensed to the US Centre for Computer Assisted Legal Instruction and to Australian Law Courseware.

Thus, Iolis enables resource-based and interactive learning in an integrated fashion. The *resourcebook's* hyperlinks invites students to browse through the material in ways which encourages comparison and analysis as well as engage in wider exploration on the World Wide Web. The *workbook* component of Iolis guides the student through the maze by including explanations of the various approaches to the text and analysis of contexts or situations within which the text is relevant. More significantly, multimedia features such as interactive flow-charts and pictures and animated diagrams could be used to overcome the limitations of the text form in illustrating complex technical ideas, conceptual and theoretical frameworks.

Unlike much other courseware, in Iolis, interactive exercises do not perform the role of a separate testing domain, but are part of the flow of the workbook- with the deliberate intention of providing stimulating instruction through task performance and feedback as well as testing. Many Iolis exercises involve the solution of hypothetical legal problems which are a familiar part of Anglo-American teaching. But are the forms of interactive exercises available too limited to really explore more than traditional black letter issues? It is true that many of the Iolis workbooks are 'black letter' in nature, but they are not exclusively so. Colin Scott's workbook on Exemption Clauses explores for example, the nature of bargaining power in contract with cleverly defined scenarios involving Al a consumer, Burry a car dealer and Cant a manufacturer.

Maharg (1998) asks whether Iolis is too geared to 'instructionist' approaches to learning and not sufficiently capable of dealing with 'constructive' learning, of enabling students to obtain an understanding of their own knowledge issues? He suggests that in a typical multiple choice problem, the learning takes place through the student being provided with feedback to right and wrong answers. While the feedback provides a general answer to why a particular response is correct or incorrect, it does not inform the particular student as to why and how she has arrived at the wrong answer. According to him teachers should be involved:

In thinking through not only what students might conceive or – from the point of view of the teacher - misconceive what they are being asked to do, but also what are, from the point of view of the experienced teacher, the common misconceptions held by students in learning the subject.

Maharg describes a range of 'mind tools' which are computer based tools to enable clear communication of conceptual frameworks between students and teachers. For example, the 'concept mapper' developed by Heriott-Watt allows students to create computerized reports in the form of text and multimedia material which clarify the relationships between various concepts and arguments, for example through flow diagrams.

Artificial intelligence based computer assisted learning (AICAL) may, but can't at present deal with this issue. However, it may be too simplistic to assume that the only way the system can be

constructive is through developing a model of the student or enabling the student to communicate their own model of learning. It is true that crude multiple choice will lack the subtlety of suggesting to the students why and how they might be misguided, but Iolis provides much more sophisticated approaches. To take the same example from the Exemption Clauses workbook, after discussion of the issue of power in contracts, the following situations are revealed to the student one at a time:

Which of Al, Burry or Cant has the greatest bargaining power:

- Where Al is a consumer who buys a new car every five years?
- Where Burry is putting on a special promotional campaign, making his cars 20% cheaper than equivalent models elsewhere?
- Where Cant manufactures sought after cars with a two year waiting list?
- Where Al is a major company ordering a new fleet of cars and vans every five years?

A different feedback response is provided depending on whether the student selects Al, Burry or Cant in relation to each scenario. At the beginning, the student may not realize what the learning issues are, but as the scenarios progressively unfold to the last one all but the exceptionally weak student should be able to understand both the author's approach and how the student's own perception of the world relates to that of the author. While the underlying basis of this exercise form and other forms is multiple choice, the sophisticated use of the multiple choice medium enables a complex pedagogic structure in which the student is invited to compare her responses to particular questions with those to other similarly constructed ones and to learn through progressively unfolding feedback to those responses.



Example:
Iolis page
from
Workbook
on
Exemption
Clauses

Ken
Oliphant's
workbook
on the
Reform of
Tort Law
achieves
something
similar by
using a
slightly
different
interactive
technique.
Students are
presented
with three
stereotypes
of Dollar
Bill Bailly (a
US
ambulance

chasing

plaintiff trial lawyer) Fleur Powers (an New Zealand former public servant and law lecturer turned law reformer who is a firm believer in the accident compensation scheme) and Artemis Wellmeadow (An English University academic who may be described as a pragmatic realist or a blinkered and crusty reactionary (according to your point of view) and steeped in the textbook tradition of writers such as Percy Winfield and Sir John Salmond). There follows a round table discussion in which the students and the three stereotypes are asked a series of questions on issues relating to the nature, purpose and reform of Tort law. The students are expected to develop their own perspective and can refer to textual information illustrating theories such as the Deterrence theory, the Corrective Justice theory, Critical Legal Studies, Feminist theory, Atiyah's critique of the Fault principle and Jane Stapleton's Disease and Compensation debate. They then 'interact' with the panel by clicking to find out the response of each member of the panel. The result should be a reflective comparison of the student's own position with that of the stereotypes.

This type of approach can be greatly enhanced by the use of video to the same effect. At present interactive video systems are difficult to deliver to students because the video multimedia components take up too much space even for CDs. But once digital versatile disks (DVD) become common place, and intranet bandwidths improve, the problems of video delivery will be greatly ameliorated. Even under current constraints, Migdal and Cartwright (1997, 1998) make good use of a simulated video discussion between House of Lords judges in *Donoghue v Stevenson*. Such video simulations could be combined with interactive question and answer sessions to provide a basis for reflection by students. A more profound use of simulations may be that of computer models of law based on different theoretical perspectives. For example, we could have a chaos or cybernetic model of the law relating to cyberspace. However, work on legal simulations for academic use is still at a very early stage (Widdison and Schulte 1998).

Interactive learning of this type is very different from the flat instructional systems described by Wan & Johnson (1994) because they provide authors an opportunity to carefully construct navigational avenues for intelligent exploration by students as well as enabling learning through complex interactive feedback (see e.g. Collins 1994 p.7-8).

Communication: electronic conversations

The missing ingredient in interactive learning systems such as Iolis is conversation: discussions between lecturers and students and among students. Iolis does provide a comment facility which can enable such conversations, but dedicated electronic conferencing systems can fulfil the urge to discuss much better.

At the simple level, telephone and voice mail are excellent one to one conversational resources – but with the downside that 250 students all trying to talk electronically with their lecturer is unmanageable. Therefore, the issue of communication becomes that of the art of management.

The development of the internet has greatly facilitated the process of communication to such an extent that email has become a normal part of the working life for most academics, lawyers and many law students. Email discussion groups can improve the management of communication for example where each class can be joined into a single group and/or subdivided into sub-groups. However, email discussions are unstructured – and linear in the sense that everything is organised according to the time of the message. Users can soon lose the thread of the discussion. It is for this reason that ways of management of such threads becomes important. Computer conferencing provides an ideal management device (Petre et al 1998, Jones and Scully 1998, Steeples 1998). The principle is the same as that of email but the email is structured into a variety of separate 'conference' areas and groups of users. Discussions are automatically threaded depending on what messages are being responded to. The systems also provide a degree of self-management by allowing users to enroll electronically in particular discussions. Although the systems are termed

'conferencing' systems, they are asynchronous in allowing users to send their messages to the conference whenever they wish. A variety of such conferencing systems are now available on the internet or as separate proprietary systems.

A typical example of the effective use of such conferencing in the international context has been the development of the Saarlandes based conferencing programme which attracted a worldwide enrolment for its courses on information technology for lawyers (Herberger et al 1998). The Common Law I course at Lancaster innovatively integrates conferencing with traditional teaching methods (Bloxham 1998, Armstrong and Steeples 1998). It is particularly significant in that a large course is involved. Students are organised into teams of lawyers who negotiate contract cases on behalf of clients. There is a public space for instructions, advice and communication from course teachers. There are confidential spaces for negotiation within a team and between teams. The exercise is more than simple role play. Students research the law using traditional and electronic methods and learn through group work. A similar exercise, though differently constructed, is being attempted with the 'Delict Game' between Glasgow Caledonian and Strathclyde Universities (Maharg and Blackie 1998, Blackie 1998).

In theory, one can add the magic ingredient of video conferencing in which students and lecturers interact through live video sessions thus bringing the virtual classroom much closer to the personal contact one. I have little doubt that video conferencing will become ubiquitous in the first decade of the next millenium. Bill Boyd (1998) of the University of Arizona has innovatively used video conferencing for law students, but whereas Computer Conferencing can already be administered in an efficient way having learnt from experiments from the beginning of the decade, video conferencing is currently at an experimental stage (UKERNA/JTAP 1997, 1998, JANET video website).

Simulated or real practice

The role of C&IT in simulated or real practice teaching is important for a number of reasons. Gradually, law practice has become computerized, with considerable potential for further development as is signposted in the Woolf Report (1996, Staudt 1993, Susskind 1997, Widdison 1997, Leith and Hoey 1998). Any simulation of legal work in the academy has to incorporate C&IT to be realistic (Sherr 1997). Furthermore, if legal education is the learning laboratory for the law of the future, C&IT based simulation should be its leading edge in the development of situational learning. The same applies to live clinics. More significantly, the use of C&IT in simulated or real practice can both assist in the efficient management and the best educational use of clinical learning.

Interestingly, computerization of legal practice education commenced with live rather than simulated clinics as in the case of the Pericles project at Harvard (Trautman 1990) and with the Legal Practice Office system at Warwick (Paliwala and Clark 1990). The reason for this was to some extent a simple one. Resource expensive live clinics needed the management and communication efficiencies provided by C&IT. However, such devices could be used equally effectively for simulated learning of legal work – with fewer constraints on pedagogy than those imposed by the live experience. The Lancaster Common Law course described above (Bloxham 1998) is an excellent example of such simulation.

The fact that students everywhere were frequently more computer literate than course teachers provided a new dimension for C&IT based legal practice work in teaching. Students could develop their own computerized legal practice systems. This was tried successfully at Warwick until 1996 with students developing legal expert systems and other legal practice systems as part of the course work for the Law in Information Society Course or for undergraduate dissertations, including a very successful early experiment in using the internet for legal practice. Similar work was done at De Montfort, Strathclyde and Queen's University of Belfast. However, the most consistent and successful use of such development has been by Larry Farmer at Brigham Young University in his

course on legal practice learning (Farmer 1998). The systems developed by students have often proved to be of commercial quality. In such classes the students are not merely learning how to write computer systems, but in the process have to thoroughly understand the area of law concerned through independent research. More significantly, Farmer largely uses electronic supervision and management techniques in the teaching of the course, with the result that he finds that by using his and students' time more efficiently, he gets much more pleasure out of teaching.

Clinical learning is not merely a matter of learning how to practice law but is a key avenue for understanding the nature of law. A key issue in clinical programmes is how to develop the reflective element in clinical legal studies (Sherr 1997, Spiegel 1987, Goldsmith 1993). This is currently achieved normally through 'case conferences'. Communications and information technology managed clinical programmes produce a running dossier for the case as well as providing a facility for discussion of key issues.

Richard Wright's (1998) ambitious approach involves students learning about the nature of law by developing legal expert systems at the Chicago Kent College of Law:

Expert system tools which permit (require) the students themselves to build models of specific areas of law fuse and integrate the specific and the general, the practical and the theoretical, efficiently using the most effective pedagogical technique: learning by doing. The modeling process not only facilitates understanding of the conceptual content and organization of the particular area of law, but also makes concrete and practical the usually abstract and sterile debates on the theme of law and legal reasoning.

Such tools exemplify qualities desired of the constructivist mind tools suggested earlier by Maharg (1998). The student is representing the law, but in order to do so, she needs to understand not merely the substantive area concerned, but also the conceptual relationship between rules – i.e. of the nature of law. This is an excellent framework for learning with one major problem. Expert system approaches have been criticized precisely for their assumption that law is rule based. A student developing a rule based expert system would be encouraged by her tools to see law as a system of rules. Of course, expert systems can develop case based reasoning as well and AI techniques can use a variety of other approaches such as neural networks. However, crude expert systems developers are seduced by positivist legal theory (Leith 1986). Nevertheless, the principle of using construction devices to promote student understanding of the conceptual or contextual framework of law has great attraction. It is a matter of how it is done.

For example, one of my students worked on developing an 'expert system' for divorce litigation. While the system was crude involving the rules of law on divorce and the production of divorce forms based on this simple implementation, the student was concerned to ensure that the computerized system was based on an approach which would feel satisfactory to the solicitor, support staff and especially the client. This involved research in collaboration with a computer software company, a firm of solicitors and the course supervisor. It involved theoretical and practical exploration in areas such as ethnomethodology and the ergonomics of legal work. That is, while the 'expert system' component was rule based, the environment within which it was placed involved the student in exploring the nature of law in action from a variety of perspectives.

The lessons for legal education

It may be that in the digital age, the law itself has become so complex that traditional learning tools of the lecture, tutorial and printed book cannot cope. Certainly in the United States, the need to cite cases from every jurisdiction and not to miss significant decisions requires recourse to electronic information systems. The development of global legal practice means that lawyers need to be aware of global developments which are beyond the limits of traditional law libraries and books. More significantly, the growing complexity of the legal domain, dealing with complex technical and

scientific issues whether to do with reverse engineering in software law, the complexities of medical negligence issues or with the physical or engineering dynamics of plane crashes increasingly require new multimedia forms of communication. For better or worse, it is not only the practice, processes and rules of law which are being impacted by C&IT, but the very internal structure of law may be developing a digital culture (Katsh 1989 cf. Zarisky 1998). At another level, new educational techniques such as clinical and active learning would be difficult to administer without reliance on C&IT.

In the circumstances, I have suggested that there is a serendipity of education, legal education and information technology in education theories in emphasizing student centered, independent, situated, contextual, active and reflective learning. I have also suggested that it would be foolish to ignore C&IT in legal education because C&IT can enhance educational values but also because it is an integral part of life, learning and work experience, including in law, and therefore ignoring it would be ignoring an essential developmental tool for the student and the future lawyer. C&IT can, through new modes of illumination and careful exploration, transcend the limitations of the linear text form and promote slow digestion of issues over time and provide conversational space beyond the classroom. This paper has therefore provided a description of a range of ways in which C&IT can be involved in legal education through 'resource-based learning', the use of interactive multimedia courseware, electronic conversations and integration into clinical and other forms of learning by doing.

It is now necessary to provide a health warning to avoid the following simplicisms:

- an overemphasis on the serendipity of educational, C&IT and legal educational theories;
- a suggestion that traditional forms of learning may be less valuable than C&IT based techniques, which can be entire substitutes for the traditional forms;
- a suggestion that each C&IT based technique can be used independently rather than as part of a whole experience of learning
- a suggestion that educational theories derived from Anglo-American context can be applied uniformly to legal education. I am painfully aware of my relative ignorance of other educational cultures, and readers have to apply their own gloss to what is said here.

The value of new learning theories in higher education generally and in relation to C&IT in particular is not proven. This does not mean that we should stick to old approaches, but that we should handle new approaches with care.

In particular, there is insufficient consciousness of time and resource issues in adventurous approaches to learning. How efficient is it to deliver a lecture compared with a video conference? How expensive is a role play or live clinical experience in terms of both the content delivered and the resource costs compared with other forms of learning? Daniel's (1996) assessment of the resource costs of various learning methodologies is welcome. In particular, multimedia courseware development can be resource expensive, and as John Dale (1996) has suggested, can become a 'money pit' or bottomless hole unless careful attention is given to administration and management. The Law Courseware Consortium found it essential to develop a user friendly tool which could be used by law teachers with modest computing skills, which reduced the need for expensive programmers. Nevertheless, courseware development needs to be based on inter-university collaboration, as is the case with the US CALI consortium, the Law Courseware Consortium and the developing Australian Law Courseware (Paliwala 1998), or require the resources of a mega-university such as our hypothetical Global U.

Moreover, lectures and the reading of texts may stimulate the imagination in more subtle and different ways than electronic forms by providing different types of interaction and reflection compared to a Schönian 'reflection in action'. Glaser's (1991, p1) warning about the fragility of

educational theory needs to be taken to heart. Ultimately, theories, like rules of legislative interpretation, are only imperfect rationalizing devices for explaining realities which are constructed by a variety of social and cultural influences. In the case of higher education, one needs to take account of the whole environment of learning including institutional, student and staff culture.

It is equally necessary not to overhype the value of technological learning in comparison with traditional tools. Safely for the luddites, perhaps the tendency even among the proponents of C&IT is to underhype. Thus the Dearing Report suggests (par. 8.21), 'It is clear to us, however, that personal contact...gives a vitality, originality and excitement that cannot be paralleled by machine based learning, however excellent'.

A sense of proportion is also maintained by Laurillard (1997) who, while proposing a shift to resource based learning and away from lecturers, sees this as a reduction from 60% of staff time devoted to lectures to 10% of time. Of course, as Alldridge and Mumford (1998) suggest, romanticisation of traditional teaching takes insufficient account of the realities of student learning in overlarge classrooms in which for every brilliant and motivated lecture or seminar there is at least an equivalent number of sleep inducing non-performances.

While studies of the value of C&IT based learning have been carried out in a number of situations, their usefulness is reduced for two reasons. They have either been conducted by those with an interest in promoting C&IT or carried out in relation to multimedia materials which might not be adequate or based on the assumption that C&IT is a substitute for traditional methods. For example, positive learning evaluation studies in the US and the UK which suggest significant advantages of C&IT based learning have involved CAL developers such as USCALI (Teich 1991), Migdal and Cartwright (1997, 1998), Widdison and Pritchard (1995), Widdison and Schulte (1998) and Young (1986, 1996). Moodie (1997) provides a more independent assessment. This of course does not mean that these are biased assessments, in particular Migdal and Cartwright (1998) self-critically acknowledge limitations of an approach to courseware which saw it as a complete substitute for personal contact. At the same time some negative assessments also need to be questioned in terms of what is being judged. For example, Dearing's (1997) assessment which suggests students prefer personal contact teaching has to be placed in the context of analyzing the value of new initiatives at an early stage of development in comparison with well established modes of teaching and learning. Critics of CAL courseware may be right in pointing out the limitations of typical non-interactive multimedia page turning type of courseware (Davies and Crowther 1995), but by implication suggest value in more interactive courseware such as Iolis.

A third problem is that of seeing C&IT as being independent devices for learning rather than part of integrated learning environments. The limitations of C&IT in isolation are all too obvious. The most advanced system of WWW, other databases or electronic casebooks will not satisfy the need for interaction and communication. Interactive multimedia courseware such as Iolis will not satisfy the need for communication with other students and lecturers. Communication by itself cannot be enough and learning by doing may lack the structure, analytical frameworks and reflective qualities which promote development of the learner. As Jones and Scully suggest (1998):

Merely slotting a well designed online component into the existing course does not ensure success. The powerful influence of prevailing assessment techniques in operation in higher level education will always invoke 'hidden curriculum' tendencies among students.

However, systems are being created which enable the effective integration of a variety of teaching and learning approaches, including personal contact ones, within an envelope organized with the assistance of C&IT. For example, the administrative intranet at Queen's University of Belfast provides for self-enrolment of students, school timetabling and personalized student timetables, assessment and examination marks (for lecturers), course instructions, lecture notes and slides,

reading lists and access to electronic information sources including web links and links to proprietary law datasets and to electronic discussion groups for each course. Interestingly, it also provides direct access to Iolis on the web, a system complemented by a reciprocal facility in the new issue of Iolis for the provision of direct links to websites assigned by the authors or by the course teachers or administrators. Thus, a student working with Iolis may be directed by the course teachers to their own lecture notes on the subject as well as to wider resources on the web through the Iolis annotation facility or through the web-link facility. Such integrated learning systems effectively answer suggestions such as those of Jones and Scully (1998) that single user systems such as Iolis may not be able to cope with the web based collaborative learning environments. It is for the course teachers to determine what is the most appropriate form of integration for various teaching/learning approaches (e.g. Widdison and Schulte's (1998) integration of Iolis with electronic conferencing) as rigidly designed high level technical systems are unlikely to be delivered efficiently, economically or in ways which promote good learning.

Legal education ought to be pluralistic in the sense that the pedagogic and technological mix is dependent on the nature of the students and the teachers. The argument of this paper is that a careful engagement with communication and information technology will lead to an enhancement of learning. As a minimum, there is need to develop electronic data and electronic resources which would encourage students to independently research legal issues. The development of interactive multimedia courseware can also be of great value as a learning resource, particularly by enabling students to develop basic concepts and ideas at their own pace. Electronic conferencing in specialist groups would assist in extending communication beyond the classroom. Video conferencing could be used for segments of a course but would be difficult to organize on a regular basis until some of the delivery problems are resolved in the next millenium. The use of the broader learning by doing techniques would depend more on the specific educational context of the course.

Personal contact sessions remain a valuable part of learning, but the extent and nature of their use become transformed. For example, it may not be necessary to have as many lectures and small group sessions. Thus lectures may become launch pads for other learning activities, feedback and summarizing sessions. They could even occasionally be used for inspiring presentations. Small group sessions could avoid mundane instruction, if students have already learnt much through their resource work, interactive courseware and communication, and concentrate on advanced discussions or exciting group exercises.

An orthodox implementation of these ideas in a course could permit students to select from a range of approaches. The students would enroll themselves electronically into learning groups. The electronic system would automatically provide learning tasks and learning timetables including arrangements to meet at critical junctures, for example for a special lecture, video conference or for sessions which would be considered essential for all students.

The difference from traditional teaching does not appear too dramatic. C&IT would enable complex organization of the course and permit flexible structures. It would also enable greater and better organized access to learning resources which allow students to explore their special interests according to their time and space. Course teachers would involve themselves in the students' learning experience at moments considered critical.

More adventurous approaches would add learning by doing to the mix described above. For example, students could develop simulations of law or develop legal practice systems. They could use a variety of 'mindtools' to develop electronic representations of the law (Maharg 1998).

In a universe of pluralism the choice of modes of learning law has to be mediated between the teacher and student. What I would hope is that subject to what I say in the next section, in this choice, communications and information technology would have a significant role.

The Wider Context: Globalization, the Market and Resources

The Resource Issues

We can see that C&IT can be educationally liberating, provided it is used in an effective way. However, can we afford such liberation? In particular, is a Global U approach to learning inevitable or the best? The jury is out on these issues. On the negative side is the cost of providing the resources (Dearing 1997). For the less well off students, the cost of computers and internet access may not be affordable. Resource starved law schools, even in the UK do not always find it easy to provide computers for students. The cost of datasets in resource based learning can be proportionately greater than the limited medium of the text book, particularly because of the educational pricing structures of resource providers. Interactive courseware can provide learning material for large numbers of students, but the costs of production are not trivial. Finally, communication based learning can also be very expensive for students who cannot afford access to the internet, especially those in developing countries. To these one needs to add the cost of computing support professionals.

Moreover, these exciting new theoretical approaches coincide with a period of relative penury for most higher educational institutions. Either the resource base has remained the same while the number of students has increased or the resource base has also declined. As a result, most universities and law schools have been faced with the stark reality of having to restructure teaching often in ways which reduce the quality of the learning experience. Class sizes have gone up everywhere. A dramatic development has been the increased reliance on the lecture mode of teaching at the expense of the more interactive tutorial or small group based learning. In the previously well provided UK law schools, there has been a reduction in tutorial sessions from once a week per course to once per fortnight. Tutorial groups have also increased in size, reducing the quality of participation. Furthermore, pressures on students have increased with the reduction in state funding for students. In the developing countries, the pressures are even greater than in the developed ones with serious questions about the survival of higher educational systems.

Globalisation

These pressures have been influenced by the rise of economic liberalism and Globalisation. The rise of the market has led to a decline in state involvement and control over higher education. Marketisation affects higher education in a number of ways. Market led philosophies reduce the tax base of the state and subsequently give rise to pressures on state funding of HE. At the same time they induce the decline of the social democratic welfare state which was largely prevalent in Europe, but less so in the United States. Third World countries had a variety of funding traditions, but the state was dominant in controlling higher education as an important ideological and developmental resource.

But the market for HE is not merely parochial, it is global. Globalisation is perhaps the most significant phenomenon affecting legal work and legal education. There is, of course, much dispute about whether Globalisation is a new phenomenon or represents intensification of existing phenomena. Giddens' (1990), definition of Globalisation as "the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring miles away and vice versa" may be a little too 'event' driven in assuming the influence of one culture or system on another. Some would argue that there are global cultural phenomena which are disembodied from national ones. Santos (1995) points out the power imbalance in Globalisation both through the worldwide spread of Western business and influences such as American fast-food or popular music or through the local impact of global activities including economic policies such as free trade on the environment, culture and the economy, for example resulting in deforestation. Fitzpatrick (1999) on the other hand challenges the dominance of the global by emphasising the resistance of local cultures.

Globalisation has impacted on the culture of legal work, with the dominant form increasingly being global law firms or alliances of law firms. Equally significant are processes of globalisation of law itself. To some extent this is the result of growth in international and transnational law, with a considerable amount of international commercial transactions being contracted using similar legal instruments; tendencies which are likely to be further enhanced by the growth of electronic commerce. Equally significant is the development of harmonisation through IMF and World Bank structural adjustment programmes with their emphasis on economic liberalisation and good governance (Tshuma 1998).

The coming shift is likely to be profound for legal education as leading metropolitan institutions (as well as new entrepreneurial developers) attempt to take over legal education on a global scale. Globalisation of law will enable this change to occur, because of the decline in the national specificities of legal cultures. However, the shift has much more to do with forces affecting higher education generally. The same forces which affected the growth of transnational corporations will impact on the growth of transnational learning institutions who will deliver their educational services either through McDonald and Coca Cola style franchising or through distance learning (Daniel 1996, Ritzer 1993).

Declining state control affects the situation in a variety of ways. State unwillingness to fund HE properly leads, in the developing countries, to poverty of the academy with declining resources, standards for students and staff salaries. Policies of economic liberalization lead to a loosening of the political hold of developing states on educational institutions and permitting of foreign franchised or distance learning ones to operate.

The situation in the developed countries is somewhat different. The inadequacies in state funding are not so marked. Nevertheless, they are significant enough for all institutions to develop their own forms of 'privatisation'. Students play their own part in this marketisation by becoming fee paying consumers with increasing power. The consequence is that universities are a privatized but regulated resource with the state exercising control partly because of its continuing but increasingly limited involvement in funding. Nevertheless, the system becomes open to a wide variety of market type activity precisely in those areas such as distance, lifelong and global learning in which state funding plays a lesser role. Institutions can grow large, collaborate with or even take over others.

For the HE consumer, the market provides intriguing possibilities. Already there is serious competition for students from developing countries with universities spending serious sums on global marketing. The fee paying student is released from the need to seek her education in a particular national jurisdiction, but may also be released from the need to acquire that education in particular space-time modes. The student may have a choice between the traditional three or more years of a degree or doing it as part time in a life-long process; a residential or distance learning programme; study in one or more institutions, and may have the power to decide the mix of learning and assessment techniques. These include - lectures, small group sessions, electronic conferencing, multimedia courseware, coursework or exam based assessment.

Conclusion: Resistant local cultures?

Communications technologies, both physical and electronic, enable the organization, management and delivery of such global education. For example, it is trivial to travel to all parts of the globe these days, to communicate via phone, fax or email; it will soon be trivial, though not necessarily cheap, to do so by video or TV. However, it is at the level of content provision that the changes will be most apparent. Old fashioned distance learning relied on cumbersome delivery of paper materials and lists. The emphasis in the new distance learning is increasingly electronic with world wide web, CD based systems and various forms of computer mediated communication. Personal contact or paper based teaching and assessment do not disappear but are increasingly supplementary to the electronic media (Daniel 1996).

What does all this mean for our Zambian student Maria and other students in rich and poor countries? Maria will possibly get a high class legal education at a cost well below what she would have to pay at Harvard or Cambridge, England. Moreover, she will save by not having to live in expensive countries such as the US or UK. Paradoxically, that may limit the broadening of her academic experience and her short trips to Capetown or other regional centres may prove to be essential. It will certainly be resource rich and if the approaches suggested in this paper are followed, stimulating. However, she may learn very little about her own country and its legal system unless specific attention is given to this by course developers. It may also be formulaically global and lack in any radical critical awareness, because such things are not loved by our mega-corporations. If Maria is relatively fortunate, her poorer cousin Shani may not be so fortunate. Previously she could have attended the University of Zambia where she would have obtained a reasonable education for a fraction of the cost of fees at Global U. However, the advance of Global U and other such Universities has coincided with a decline or even perhaps the future extinction of the law programme at Zambia U, because of the decline in state support for higher education institutions. Shani will either have nothing or possibly much poorer quality distance learning programmes. The lot of Jim and Julietta in richer countries may be somewhat better, but they may no longer have the luxury of full time residential education unless they are mega-rich. They may also suffer from the same reduction in their local cultural values and the lack of radical critique. How will Italian and Belgian law fare in such circumstances? More significantly, they would be expected to work and study at the same time. Politicians and educationalists might applaud this as the new achievement of 'reflective' learning.

Is there another version to this story? The option of resistance to technology is no longer viable. That of resistance to distance learning can be marshalled by strong law schools in the US (Taylor 1998), but this may not be an option for weaker law jurisdictions. The rules constraining distance learning in the US will ultimately not prevent their global delivery.

Yet, there is nothing intrinsically problematic about C&IT based global learning. The issue is how the advantages of C&IT based learning can be used to promote legal cultural values which are appropriate for the local culture. This could be done by a sensitive global institution, but not one which is primarily concerned with profit maximisation. A more promising avenue lies in promoting collaboration between institutions as local institutions may not be capable of developing their own independent solutions. Collaboration could take place on the basis of development of global institutions which support local ones, for example an African open university supported by international funds but which would work closely with local institutions. 'Mega' distance learning universities being developed by governments such as in Sri Lanka, India and South Africa could marshal better financial and local academic resources. Whether these attempts at localisation of learning succeed depends as much on political and economic factors as on educational ones.

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