



9th BILETA Conference The Changing Legal Information Environment

11th & 12th April 1994
Scarman House
University of Warwick
Coventry

The Crimson Parrot:

A Multimedia Project in Law

Ian Wilson and Geraldine Mackenzie

Keywords: Computers - Computer Based Education - Multimedia - Law Instructional Design

Abstract: This paper reports on objectives, methodology and achievements in an ongoing multimedia project in law undertaken by a team of researchers at the Queensland University of Technology. The long-term goal of the project, known as The Crimson Parrot, is to develop a library of custom-made multimedia CBE lessons for use across a broad spectrum of subject units in the LLB degree. The project is focused particularly on identified areas of forensic and other practical skills, where multimedia can significantly augment traditional classroom teaching and learning through real-life, real-time simulation. This paper provides an overview of the whole project and a description of progress and problems to date in development of the first lessons on Evidence. We conclude with a summary of planned development.

Introduction

For the 8th BILETA conference in 1993 Ian Wilson wrote a paper entitled *Project Neleus: Multimedia For Law Schools In The 1990s* (presented by his co-author Stephen Colbran). That paper sets out a brief history of CBE development at the QUT Faculty of Law, over a period of almost ten years, that need not be repeated here. The Neleus paper was concerned with practical issues associated with development of multimedia CBE lessons in law using a low-budget, highly cost-effective approach. It concluded that authors with limited experience in CBE development, working alone or in small groups, could utilise commercially available tools to produce highly effective educational materials at a cost equal to or not greatly exceeding, that applicable to standard "text-driven" CBE. One year on, a number of practical issues discussed in the paper have been overtaken by rapid developments in hardware and software, though by reason of those, its central thesis has been proved relevant and accurate.

The Crimson Parrot is in many ways the antithesis of Project Neleus. It is a project comprised of a team of twelve participants who, through grant applications, have achieved a very high budget with which to work (approximately 60,000 pounds sterling). Its central objective is to develop a library of custom-made multimedia CBE lessons for use across a broad spectrum of subject units in the LLB degree. The project is focused particularly on identified areas of forensic and other practical skills, where multimedia can significantly augment traditional classroom teaching and learning through real-life, real-time simulation.

Despite its size, The Crimson Parrot project continues to identify with several of the central goals of Project Neleus. Perhaps the most important of those is that if multimedia CBE is developed merely

for the sake of doing so, then the game is not worth the candle. For multimedia development to be valid, it must contribute something to the teaching and learning experience over and above traditional classroom methods or text/graphics-driven CBE. That contribution may come from any of a number of sources. These include more effective learning outcomes through "hands-on" experience and simulation, more effective resource distribution through employment of computer technology in lieu of interpersonal contact, and enhancement of the ability to deliver a quality educational experience to distance students. In the case of QUT, all three apply with considerable force. In the case of any large law faculty, areas of forensic and other practical skills are most likely to be seen as the most valid for multimedia enhancement.

For the purpose of our work and this paper, we define multimedia in the context of CBE presentations as the ability to present text, graphics, still images, sound and moving video as part of a single-screen, self-contained, seamless lesson.

What follows is an overview of The Crimson Parrot project, followed by a description of our methodology, achievements and difficulties to date. In contrast to the Neleus paper from last year, we are concerned more with the larger issues of project management and methodology than with the specifics of hardware needs and software functionality. Those technical aspects remain to be addressed elsewhere.

Genesis

The Crimson Parrot project was conceived in a spirit of competition. We learned that grant monies were to be available for CBE development. We learned also that grant applications would come from throughout the university, and we were keen for the law faculty to get a piece of the pie. A meeting was held and it was decided to mount a bid, based on previous experience in CBE by the present authors and two or three other "founding" members and what we thought was a worthwhile idea.

Our idea was to produce a single video sequence lasting about three minutes. The scenario and action contained in that sequence would give rise to a multitude of legal issues. For example, a crime could be committed and its underlying facts would also give rise to actions in tort and contract. Other substantive law issues could also be included, given a good screenplay. Thus, a large number of CBE lessons based on one scenario could be produced over a broad spectrum of LLB course units. At the same time, and perhaps most importantly, adjectival units such as evidence, advocacy and civil procedure could benefit by making subsequent videos of trial procedures arising from the original action and developing lessons around them. Subsequent video sequences might also be made for further illustration of lessons in other law units, including those as diverse as legal research and criminal law. In this way an integrated suite of multimedia CBE, with obvious advantages flowing from its unified structure, could be produced.

Many things were immediately obvious. What we were proposing was unique in Australia and that had to be emphasised in our bid. It had the potential for significant impact on both teaching and learning strategies and resource allocations: we would have to fit our objectives with relevant faculty and university strategic and action planning documents.

The scale of our project raised an awareness of the need to ensure high quality instructional design. Our small team lacked the expertise to write materials in all the unit areas likely to be involved. The team would have to expand. The law faculty lacked the resources to produce the video sequences and lesson programming to the required standard of quality: the Educational Television Unit and the Computer Based Education Unit at QUT would be integral and vital to our success.

Much time would be needed by individuals directly involved in video and lesson production: the faculty would need to give a commitment to significant relief from normal teaching and research activities for those concerned. Effective schemes would need to be devised for testing of programs,

for student feedback and for rigorous review by objective experts outside the faculty and possibly the university.

All of these issues, and more besides, were addressed in our grant applications. We were delighted to learn some weeks after their submission that our project had succeeded in gaining two separate and substantial grants from the university. Our project would come to life.

The central video sequence and its action are centred on a fictional bar which we named The Crimson Parrot. By popular usage the whole project has now assumed that title.

Funding

In the planning stages of the project we identified the ability to gain access to sufficient funding as critical to its chances of success. The resources required for this project were beyond anything likely to be available within the Faculty of Law, and therefore had to be sought elsewhere.

The following were initially identified as funding needs:

- (1) computer programming;
- (2) relief from teaching duties for project team members;
- (3) part-time assistant for necessary research, proofing, and debugging;
- (4) video sequences;
- (5) hardware for development purposes, (a 486 computer with multi-media capability sufficient to run the program).

Funding for multi-media computer laboratory facilities was to come from other sources.

The major grant we were awarded is AUD\$90,000 (about 42,000 pounds) from the Vice-Chancellor's Strategic Initiative in CBE. This extends over two years and can be used for programming, graphics, technical assistance and some instructional design work. Subsequent experience has shown that without this level of support the Crimson Parrot project would be difficult, if not impossible, to undertake.

The team also proved successful in a bid for a QUT Teaching Technology Infrastructure -Grant for 1993. The original budget sought under that grant was \$52,800 (about 25,000 pounds). This was to be for a part-timer to assist in the writing and review of material, funding for video sequences, teaching relief, and development equipment (i.e., multi-media peripherals for existing hardware). The sum of \$40,000 (about 18,000 pounds) was actually awarded. Because of the two year timetable to the project, permission was sought and granted to roll over the money into 1994 when the most significant expenditures will be incurred.

The \$40,000 should prove more than sufficient, because of the CBE grant which operates in conjunction. With the benefit of hindsight, we can now see that our initial budget planning could have been weighted differently. It is our experience that team members have rarely used the services of part-time assistants, preferring to do the work themselves. This is understandable, given the need for a high level of accuracy. Much of this budget item has therefore been re-allocated to other areas.

On the other hand, funding sought for the video sequences would have been vastly inadequate had we not received major support from the University's Educational Television Unit (see post).

Teaching relief proved rather a difficult issue, with some relief being offered by the faculty to certain team members but not to others. The relief afforded was met by the faculty through an existing internal scheme, with the result that grant funds have been made to stretch further. We have however paid from grant funds for part-time staff to allow relief from assessment duties for key team members.

It has been our experience that teaching and assessment relief to team members is crucial to the success of such a project. Academics, at least those with the normal workload at QUT, simply cannot undertake such an additional load on top of their usual teaching duties, research and consultancy commitments, and administrative responsibilities.

Project Management

From the original five or so founders, the number of participants in the project grew quickly to twelve law faculty academics; with the addition of CBE, ETV and instructional design personnel the full project complement is nearer twenty.

By general agreement we jointly undertook the role of team leaders and have carried much of the administrative burden. At the outset, policy decisions and day to day management of the Crimson Parrot were dealt with at meetings of the full project team. These were held on average once a fortnight, with issues being delegated to individuals or ad hoc working parties for action between meetings. The meetings enabled everyone concerned to have direct input on all decisions in the crucial primary phase of the project, where policies and future directions were being set.

We identify the conclusion of this primary phase as the point where we had drafted and settled a project management plan. This document contains:

- a statement of strategic objectives;
- a statement of the teaching and learning context;
- an action plan;
- an implementation plan; and
- an evaluation plan.

As the project gathered momentum it became clear that a much more devolved management structure was going to be necessary in order to accommodate the range and volume of issues arising from involvement by ETV and CBE and from the needs of those involved in preparing individual lessons.

After discussion at several full-team meetings, it was decided to adopt a three-tiered approach. The first tier comprises continued meetings of the law faculty project team. These are responsible for setting overall policy, for ratifying decisions made at lower levels and for compliance with reporting and other requirements associated with grants.

The second tier comprises a number of smaller project teams, each responsible for administration of particular areas. Thus, an Evidence project team of three academics oversees development of lessons in that unit; the same occurs in Criminal Law and will occur for all future unit areas. A CBE project team of two academics and three CBE personnel is responsible for management of lesson programming and delivery. An ETV project team of one academic and two ETV personnel is responsible for management of video production.

The third tier comprises executive responsibility. The authors, as joint project leaders, have an overall executive role and chair full project meetings. Each project team leader exercises executive functions within, and on behalf of, that team and chairs team meetings.

Administrative support is largely co-operative. The authors, plus all project team leaders, generally bear the burden of phone, email, fax and paper (including wordprocessing and distribution), with the law faculty making a nominal contribution and CBE and ETV units carrying out secretarial work associated with their involvement.

Strategic Objectives

The objectives originally set out in our grant applications were reviewed and adjusted at early meetings of the full project team. Those to which the project is now directed, and which appear in our project management plan, are detailed below. They are set in an identified teaching and learning context (see post). We think they are specific enough to give a clear focus and direction, yet flexible enough to accommodate ongoing shifts in emphasis and future expansion in areas of domain, functionality and delivery:

- (a) to enhance the quality of teaching and learning in certain skills based and applied areas within the Faculty of Law through CBE technology;
- (b) to facilitate implementation of multimedia technology in the teaching and learning of law;
- (c) to generate cost efficiencies through reduction of staff contact time whilst continuing to provide a high quality learning environment;
- (d) to utilise CEE technology to create a more self-directed, self-paced learning experience with contemporaneous remedial assistance;
- (e) to generate cost efficiencies and timely feedback to students through utilising CBE assessment options;
- (f) to substantially improve and enhance the ability of the Faculty to provide quality instructional and learning experiences to externally enrolled students;
- (g) to enhance QUT's reputation *as* a quality CBE provider, and
- (h) to facilitate cost recovery through commercial exploitation of project outcomes.

Teaching and Learning Context

The law faculty at QUT has a strong emphasis on innovative teaching methods, and a concentration on student learning. The faculty was one of the first to establish a Teaching Interest Group to foster the development of teaching and learning.

The faculty recently conducted a two year review of its undergraduate degree program, resulting in the introduction of a new curriculum in 1994. Revised objectives have been introduced which strike a balance between traditional theory and practice in legal learning, developments in legal education and practice and the changing needs of society and the market place.

These objectives include:

- (1) developing more flexible and innovative teaching methods to produce more effective learning outcomes; and
- (2) assumption by students of greater responsibility within the learning experience.

A review of possible strategies included computer based education, and interactive multimedia technology. This accorded with QUT and law faculty policy on the use of innovative teaching methods, and the use of technology.

The Crimson Parrot project therefore operates not in isolation, but as part of a greater strategy for effective delivery of legal education.

The project team recognised, within legal education, two distinct developments: a move to a greater concentration on student learning rather than teaching, and a move to student self-responsibility for at least part of the total learning experience. It was felt that CBE, particularly a multimedia approach, could facilitate this by offering a *real world* learning experience to students which could not be achieved in any other way.

CBE is ideal for the teaching of law, because what is being taught is the ability to apply legal principles to new fact situations. The Crimson Parrot program, with its use of a central video depicting a fact situation, gives students an opportunity to apply learned principles to a "real" experience, which they see played out on the screen. It could of course, also be used as a primary learning tool. CBE also gives students the opportunity for one to one learning, and they can repeat lessons or segments at will.

In the Crimson Parrot, the issue of instructional design has been left to the individual module team; more on this below.

Instructional Design

In terms of course design, CBE can complement and assist other teaching and learning strategies within a subject unit. It is flexible enough to fit within a number of different models of instructional design. One of the objectives of the project is to test different lesson goals and modes of delivery and evaluate their effectiveness. This aspect of instructional design has been left to the individual module teams to decide.

The overall objectives of the whole project have been deliberately kept flexible so that future modules can be used for a multitude of purposes. For example, it is intended that the Evidence module be used to replace three weeks of lectures. In other units, the modules may be used to reinforce material which has already been presented in formal classes. In other units the lessons may be used to assess a student's progress, either by way of self-assessment in an informal manner to track progress, or as formal assessment which counts toward the final mark for that unit.

Expertise in instructional design has been available almost from the outset of the project. It has been provided both from within the CBE Unit at QUT, and from an instructional designer employed by the faculty under another grant.

Technology Platforms

From the outset it was clear that the Crimson Parrot project would use ToolBook as its development and delivery software. This product was chosen by the QUT CBE Unit after an evaluation of most commercially available packages. It carries a broad range of multimedia functionality and has excellent arrangements for educational and commercial runtime licenses.

More problematic is the issue of delivery hardware. QUT has a central CBE laboratory of 120 IBM compatible 486 machines with SVGA displays, all linked via LAN to file servers and CD ROM stacks. Other laboratories across the university's three campuses, including the small law faculty facility of ten machines, can access the file servers through Ethernet lines.

One problem is that law usage of the CBE network accounts for only a minuscule proportion of the total, yet the network is operating at 95% capacity. Until now, law CBE delivery has been readily accomplished through the small law facility. It was hoped to triple the size of that by the end of 1994, however tight university and faculty budget lines make the prospect increasingly unlikely. Crimson Parrot lessons will be used by hundreds of law students over thousands of lesson hours each semester. Clearly, it will be necessary to somehow provide additional infrastructure.

A second difficulty centres on the video component of Crimson Parrot and, indeed, most multimedia lessons. Even with file compression, the video for just one evidence lesson will consume at least 250 Mb of disk space. To attempt delivery of lessons through hard disk facilities would be futile. At the same time, delivery of multimedia through Ethernet from the CD ROM stacks is not presently possible. One reason is that the transfer rate of data is unacceptable for a reasonable quality of video output to be maintained. Another is that other demands on the network, coupled with the high data volume, will result in unacceptably slow response times using the current servers. Pending upgrading of the file servers and the Ethernet backbone the only solution will be to run Crimson Parrot lessons on CD ROM disks at stand-alone machines in selected laboratories.

A third difficulty concerns those stand-alone machines themselves. They will obviously need sound cards and headphones, however the video display presents the most difficulty. It is possible to run multimedia video through standard SVGA facilities: the quality varies from fair to poor depending on frame size and the amount of RAM available. What is needed for good quality reproduction over a reasonable frame size is a local video 32 bit co-processor and a lot of RAM. Some extra resources will therefore have to be devoted to these requirements. In saying that, we make the point that student users will probably be highly critical of poor quality video, to the likely detriment of the whole lesson as an educational experience. Unfortunately their expectations in this area are high, at least what they are used to seeing on home VCR.

One other matter deserves mention. We are aware that multimedia technology improves apace, so that the hardware needs of today are not necessarily those of tomorrow. We must be careful to ensure that resources are not expended on facilities that will quickly become redundant. That care will result in our delaying installation of delivery hardware until the latest possible date.

Video Preparation

As stated above, two videos have so far been made, both using the facilities of the QUT Educational Television Unit (ETV). The first video, which is central to the project, is the scene at the Crimson Parrot bar. It depicts a fight between supporters of two rival football teams and lasts about 2 minutes. The fight raises legal issues both criminal and civil, and also provides the opportunity to examine the law of civil procedure and evidence which will arise through subsequent proceedings. In criminal law, issues such as self defence and provocation are raised. The scenario was also kept flexible enough to raise numerous civil law issues. Other modules have been planned in areas as diverse as succession and legal research.

The second video, which supports the Evidence module, depicts courtroom scenes where counsel for the Crown and the defendants appear and argue points which arise both in a voir dire and in parts of the trial itself. The entire trial is not depicted. Later parts of the trial will form part of the Criminal Law module, which is the next one to be produced.

Students will be able to view the videos on the monitor and control them using the mouse on a panel which replicates the controls usually found on a home VCR. They will be able to play, and replay any scene at will.

The videos play a pivotal role in the project, and we would have been unable to produce them without the major assistance of ETV which took up the Crimson Parrot as a major project of its own

for 1993. ETV have provided us with set construction, studios, camera and sound crews, editing and post production. ETV staff have also worked closely with CBE on capturing images and sound from tape to disk, and many considerations normally applying to video production were modified to take account of our desired end use.

Lesson Preparation

Only two lessons have so far been prepared, however, it is anticipated that these will serve as models for future development of the Crimson Parrot. The first two lessons are in Evidence, and two significant difficulties have been encountered to date.

Many readers of this paper will know from personal experience that developing CBE lessons is an extremely time consuming process. This applies with even more force in the case of multimedia. With that in mind, the authors thought it important to ensure, prior to submission of the grant applications, that staff involved in the Crimson Parrot project would have sufficient time available to produce material of the high calibre required.

We discussed this issue with the Dean of the Law faculty, Professor Gardiner. We explained as fully as we could our projected timetable for the project, the number of people likely to be directly involved from time to time and the volume of work they would have to do. Promises of significant support were given. Unfortunately, in some ways the level of support ultimately offered fell below our original understanding. We mention this issue in a constructive way: in projects of this kind it is essential to gain not only a general statement of support but a firm and specific commitment of time and resources. We have learned that lesson the hard way.

A second difficulty in developing the evidence lessons presented itself at a somewhat later stage. By then the evidence project team had written a detailed video script, for subsequent taping. This centred on the evidence which would be given by several witnesses at the trial of two accused arising out of a fight at the Crimson Parrot where someone was stabbed. The objective was to write a single lesson which would serve as a replacement for four hours of lectures. Instead of having practical issues such as cross-examination explained in the dry atmosphere of the lecture theatre, students would learn through interactive involvement in a real-life simulation.

The problem was: how could we develop a lesson that both taught new material from scratch and provided a fully interactive educational experience? Taking students down complicated decision paths on fresh material would probably just obscure the issues. Asking simple questions to test superficial acquisition of knowledge would be trite. The volume of text which a user would need to read, instructional and socratic, would be too great for one program.

The solution has been to write two lessons. The same video sequences appear in both. These are sequences of both the original incident at the bar and the subsequent trial. In the first lesson the new material is presented in an instructional way, using the video sequences as practical examples of what is right and what is not. In the second lesson socratic techniques and decision paths are used to test learning, reinforce knowledge and provide remedial assistance where error is discovered. The student can move back and forward between lessons at will.

The topics which are covered in the two evidence lessons comprise approximately 75% of those which are traditionally taught on examination-in-chief, cross-examination and re-examination. In addition there are many practical hints and demonstrations of procedure and advocacy that could not be achieved in a lecture theatre.

Review Processes

The Project Management Plan drawn up in the initial stage of the project stated the review processes

which were proposed to take place. These were also set out in the grant applications. Essentially there are four levels of review.

(i) a Reference Group independent of the project will be set up with representatives from QUT and also educational experts from outside the university. The Group will be requested to provide overall evaluation of the project, including project outcomes and the final report.

(ii) each unit project team will be overseen by a unit review team. These teams will consist of people with expertise in the substantive area being developed. Their job is to ensure quality control of lesson content and form at the primary stage.

(iii) each member of unit project teams will conduct his or her own monitoring of lesson content and form. Relevant issues will be referred to the lesson team leader, and where appropriate to the full project team. This will be conducted as an ongoing exercise at all times within the implementation period.

(v) student evaluations will form an important part of the review process both during and after lesson trials. It is envisaged that these will be conducted in various ways, including personal interviews and questionnaires. QUT also has an Academic Staff Development Unit which will provide assistance in the design, administration and evaluation of student surveys.

Both the CBE unit and ETV unit have their own management plans designed to dovetail with the overall plan. These provide for reviews of their own part of the project by both units respectively.

As can be seen, members of the Crimson Parrot project take seriously their responsibility to the university and its students to produce results of the highest quality.

Conclusion

From the point of view of the students, it is too early to assess the educational value of the Crimson Parrot. The two lessons so far produced were completed too late to introduce into the curriculum for first semester 1994, though it is hoped some trials will take place. It will be interesting to evaluate data on student response after that and a more extensive trial period later in the year.

We already know that students almost unanimously support text driven CBE as a valuable learning tool, and that a very high percentage of them consider that examination performance is improved by availability of CBE. We are confident that students will see multimedia CBE as a worthwhile improvement, not just an exercise in making lessons look more attractive.

From the point of view of the Crimson Parrot project itself, we are pleased that to date we have been able to remain on track towards meeting the primary objectives which we set for ourselves and that in doing so we have justified the research funding and support given to us.

Current funding for the Crimson Parrot runs out at the end of 1994. We hope by then to have met with enough success to warrant an ongoing continuation of the project and that funds for this will be found. To a large degree that prospect depends upon two crucial matters: the support of the student body and the commitment and foresight of those who manage the faculty.